New Bed Card

274488

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TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on reverse side prior to initiating this form)*	DATE 7/23/01	TRANSMITTAL NO: 17.11.02.02-002

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the Contractor)

TO:	FROM:	CONTRACT NO:	CHECK ONE:
U.S. Army Corps of Engineers - New Bedford Resident Office 130 Sawyer Street New Bedford, MA 02746 Attention: Mr. Maurice Beaudoin	Foster Wheeler Environmental Corporation New Bedford Harbor Superfund Site Project Office 130 Sawyer Street New Bedford, MA 02746	DACW33-94-D-0002	__ THIS IS A NEW TRANSMITTAL X_ THIS IS A RESUBMITTAL OF TRANSMITTAL 17.11.02.02-001

SPECIFICATION SECTION NO: (Cover only one section with each transmittal) NA	PROJECT TITLE AND LOCATION: New Bedford Harbor Superfund Site OU#1 and OU#2 Remedial Design and Remedial Action

ITEM NO. a.	DESCRIPTION OF ITEM SUBMITTED (Type, size, model number, etc.) b.	MFG. OR CONTR. CAT. CURVE DRAWING OR BROCHURE NO. (See instruction No. 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. e.	CONTRACT REFERENCE DOCUMENT DRAWING SHEET NO. f.	FOR CONTRACTOR USE CODE g.	VARIATION (See instruction No. 6) h.	FOR CE USE CODE i.
1	Final Baseline Air Report	na	6	na	na	GA	na	
	This report is being submitted as final with the addition of these annotated							
	responses to MADEP comments							

REMARKS

FWENC Document #: 2001-017-0229 (response to comments for document # 2001-017-0084)

Distribution:

M. Beaudoin (1)	H. Douglas (1)	FWENC Site (1)
R. Simeone (5)	J. Kraycik (1)	FWENC Boston file
D. Dickerson (2)	A. Ikalainen (1)	R. Hunt (4025 only)
J. Brown (1)	T. Berceli-Boyle (1)	G. Willant (4025 only)
P. Craffey (1)	R. Mamicio (1)	

I certify that the above submitted items have been reviewed in detail and correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

Helen Douglas

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

FOSTER WHEELER ENVIRONMENTAL CORPORATION
TOTAL ENVIRONMENTAL RESTORATION CONTRACT (TERC)
CONTRACT NO. DACW33-94-D-0002, NEW BEDFORD HARBOR SUPERFUND SITE

ANNOTATED RESPONSES TO REVIEW COMMENTS

The following are responses to MADEP review comments on the Draft Final Annual Report Baseline Ambient Air Sampling and Analysis, dated March 2001. The comments are provided in italic type followed by Foster Wheeler's responses in bold type.

Reviewer: P. Craffey – MADEP Date: April 18,2001

Comment 1: *General Comment: The Report is a draft. If finalized, just send out the changed pages and not the total report.*

Response: **Per discussions with USACE and EPA, report submitted as draft (March 2001) is considered final with the addition of these annotated responses to comments. No revisions to the original document were made.**

Comment2: *General Comment: I realize this Report was for June 1, 1999 to May 30, 2000. However, are the air sampling results after May 2000 (such as the September and October 2000 data) going to be included as part of the baseline? The more data added to the baseline the better, since temperature can vary on any given day from year to year.*

Response: **The sampling that occurred after the baseline sampling was done to support individual remediation actions or other construction tasks such as the early action removal of contaminated sediment and the pre-design field test. Consequently, these air monitoring results would not reflect baseline conditions and should not be include in baseline data. Sampling is also performed as a part of site operation and maintenance on a monthly basis at monitors around the perimeter of the cell near the construction trailers. Again, these monitors are not representative of baseline concentration because they are taken around an impoundment that has a small amount of contaminated sediment. For this reason, these monthly samples should not be included in the baseline sampling data.**

Comment 3: *Appendix B, page B-2, Sample Date 6/4/99 – I added the PCB Homologue Groups masses which totaled 76.73. The Homologue Groups Sum is reported as 91.3. Explain the difference or correct. I also did the same for pages B-3 and B-4 with similar results. Please check the result on the other pages.*

Response: **The difference in these sums is attributed to the inclusion of the Estimated Maximum Possible Concentration (EMPCs) for PCB homologues. The EMPC is the maximum possible concentration that could be calculated from the data, because, it includes data that does not fully meet the strict QC criteria that positively identifies the detected compound as a PCB. Where a homologue mass and an EMPC are reported, the homologue mass represents the amount of compound that is definitively PCB (based on QC criteria). The EMPC includes**

data where an interference is present in addition to the PCB and the amount of PCB vs. the amount of interference cannot be determined. The EMPC reflects the highest mass of PCB that would be possible in this situation and is, by definition, the most conservative measure of mass/concentration. Where an EMPC is reported, it was used instead of the measured mass. An example of the total PCB homologue calculation is presented in Section 2.2 (p. 4) of the document and is further described below.

a. Sum the EMPC mass (Sum A)

b. If present, sum the Mass for all PCB homologue groups for which no EMPC mass is reported (Sum B);

c. Excluding DecaCB (see data rejection explanation p. 4-5), sum one half of the detection limit mass for which no EMPC or Mass are reported (Sum C); and

d. Total the sums of A, B, and C.

As an example, the data reported in Appendix B, page B-2 Sample Date 6/4/99 were calculated as follows:

Sum A	**=**	**17.87 ng**	**(Sum of EMPC masses for Penta CB and Hexa CB)**
Sum B	**=**	**71.13 ng**	**(Penta CB mass (5.6 ng) was not included because an EMPC value was present).**
Sum C	**=**	**2.3 ng**	**(½ detection limit for groups with no EMPC or Mass (Deca CB data rejected))**
Total	**=**	**91.3 ng**	

Comment 4: *Appendix C, page C-14 and C-15 – Explain what happened to the PCB results. A footnote on these pages would be appropriate.*

Response: **In general, the concentration values for non-detects are calculated as half the detection limit. However, the exception to this data validation convention is congeners #189 and #209, whose data were considered unreliable. When detected, these congeners were detected intermittently and at relatively low concentrations such that their actual presence was questionable. Including non-detects with elevated detection limits would skew the resulting averages incorrectly high. Consequently, as footnoted in the Appendix C tables, non-detects were disregarded when calculating concentrations for congeners #189 and #209. The Appendix C tables for #189 and #209 do not include any data because those congeners were not detected in the sample. The data validation conventions are more fully described Section 2.2 (pages 4 and 5).**

Comment 5: *Appendix D, page D-8 – The Aerovox location generally has the highest PCB results. However, during November 1999 to February 2000 the Sawyer St. location had the*

highest PCB results. Please note that the Hot Spot removal from the Sawyer St. CDF occurred during this period of time.

Response: **Thank you for the comment. This will be considered for future uses of this data.**

Comment :6 *Appendix I – There are no results in this Appendix. Also, why include these results? These results are in the same form as the results in Appendix B, include in Appendix B if needed.*

Response: **Appendix I presents the sample summaries for the samples taken on June 28, 1999. These sampling events were culled out separately because they represent anomalies compared to other sampling data. As explained in Section 2.3.4 (Page 6), it was observed that the laboratory data from this day were significantly inconsistent with results from other sampling events. In addition, the results of the government QA laboratory samples taken on this day were markedly higher than the primary laboratory's results. This strongly suggests that samples from this date were inadvertently switched and/or mislabeled. Consequently, data from this date were rejected as unreliable and excluded from further consideration in establishing baseline conditions. For these reasons, this data was presented in a separate appendix from the remainder of the data.**

Total Environmental Restoration Contract

New England Division

USACE Contract No. DACW33-94-D-0002

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FINAL ANNUAL REPORT
BASELINE AMBIENT AIR
SAMPLING & ANALYSIS
1 JUNE 1999 – 30 MAY 2000

OPERABLE UNIT #1
NEW BEDFORD HARBOR
SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on reverse side prior to initiating this form)*	DATE 3/30/01	TRANSMITTAL NO: 17.11.02.02 - 001

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the Contractor)

TO:	FROM:	CONTRACT NO:	CHECK ONE:
U.S. Army Corps of Engineers - New Bedford Resident Office 130 Sawyer Street New Bedford, MA 02746 Attention: Mr. Maurice Beaudoin	Foster Wheeler Environmental Corporation New Bedford Harbor Superfund Site Project Office 130 Sawyer Street New Bedford, MA 02746	DACW33-94-D-0002	_X_ THIS IS A NEW TRANSMITTAL __ THIS IS A RESUBMITTAL OF TRANSMITTAL _____

SPECIFICATION SECTION NO: (Cover only one section with each transmittal) NA	PROJECT TITLE AND LOCATION: New Bedford Harbor Superfund Site OU#1 and OU#2 Remedial Design and Remedial Action

ITEM NO. a.	DESCRIPTION OF ITEM SUBMITTED (Type, size, model number, etc.) b.	MFG. OR CONTR. CAT. CURVE DRAWING OR BROCHURE NO. (See Instruction No. 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. e.	CONTRACT REFERENCE DOCUMENT DRAWING SHEET NO. f.	FOR CONTRACTOR USE CODE g.	VARIATION (See instruction No. 6) h.	FOR CE USE CODE i.
1	Draft Final Baseline Air Report	na	6	na	na	GA	na	

REMARKS

FWENC Document #: 2001-017-0084

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P. Craffey (1)	R. Marnicio (1)	

I certify that the above submitted items have been reviewed in detail and correct and in strict conformance with the *contract drawings and specifications except as otherwise stated.*

Helen Douglas

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

USACE CONTRACT NO. DACW33-94-D-0002
TASK ORDER NO. 0017
TOTAL ENVIRONMENTAL RESTORATION CONTRACT

DRAFT

FINAL
ANNUAL REPORT
BASELINE AMBIENT AIR SAMPLING & ANALYSIS
1 JUNE 1999 – 30 MAY 2000

OPERABLE UNIT #1
NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS

March 2001

Prepared by
The KEVRIC Company, Incorporated and
Foster Wheeler Environmental Corporation for
The United States Army Corps of Engineers
New England District
Concord, Massachusetts

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APPENDICES

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Appendix B: Sample Event Summary Report
Appendix C: Analyte Data Summary Reports
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Appendix L: Chemical Quality Assurance Reports
Appendix M: Calibration Information

1.0 INTRODUCTION

Under Task Order No. 17 of the U.S. Army Corps of Engineers (USACE) New England Total Environmental Restoration Contract (NE TERC), Foster Wheeler Environmental Corporation (FWENC) and The KEVRIC Company, Inc. (KEVRIC) have prepared this baseline ambient air sampling and analysis report. This report will document and report results from the one-year baseline ambient air sampling and analysis program at the New Bedford Harbor Superfund Site (Operable Unit #1) in New Bedford, Massachusetts.

This report summarizes collection methods, polychlorinated biphenyl (PCB) data, and meteorological data for samples collected during the period from June 1999 through May 2000. The data is contained in the following appendices to this report:

- Appendix A: Important Terms
- Appendix B: Sample Event Summary Report
- Appendix C: Analyte Data Summary Reports
- Appendix D: Average/Maximum Total PCB Concentrations
- Appendix E: Average/Maximum PCB Congener Concentrations
- Appendix F: Average/Maximum PCB Homologue Concentrations
- Appendix G: Meteorological Data
- Appendix H: Field Data Sheets and Chain of Custody Forms
- Appendix I: 28 June 1999 Summary Reports
- Appendix J: Field Audit Report and Response
- Appendix K: Data Validation Memorandums
- Appendix L: Chemical Quality Assurance Reports
- Appendix M: Calibration Information

Summary data is provided in the narrative that follows. KEVRIC performed field data collection, database design, report programming, and data distribution. Triangle Laboratories, Inc. (TLI) performed the analytical procedures under subcontract to KEVRIC.

1.1. Site Background

The New Bedford Harbor Superfund Site (the site), located in Bristol County, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial port of New Bedford Harbor and adjacent areas of Buzzards Bay. The sediments in the harbor are contaminated with high concentrations of many pollutants, notably PCBs and heavy metals from industrial and urban development surrounding the harbor.

In September 1998, after years of study, public debate, and consensus building, the Environmental Protection Agency (EPA) selected a cleanup remedy for the entire Upper and Lower Harbor area as a solution to the widespread PCB contamination in and around New Bedford Harbor. The remedy involves the dredging of approximately 170 acres and containment of approximately 450,000 cubic yards of PCB contaminated sediment in Confined Disposal Facilities (CDFs) to be constructed along the New Bedford shoreline. The CDFs will be used to isolate the sediments from the public and marine environment. The approximate locations of the four CDFs are shown in Figures 1 and 2, which can be found in the Figures section of this report.

In accordance with the Record of Decision (ROD), ambient air sampling will be conducted during construction/remediation activities to ensure that residential areas near the site are not adversely affected by airborne contaminants. A one-year baseline air sampling and analysis program was also mandated in order to establish baseline conditions prior to the start of construction activities. The first sampling event was conducted in June 1999. Sampling continued on a periodic basis through May 2000. Methods and results of the sampling and analysis program are in the narrative and appendices that follow.

1.2. Monitoring Stations

Seven ambient air monitoring stations, six primary and one duplicate, have been positioned in the area of OU #1, New Bedford Harbor Superfund Site. Sampling locations are located near the future locations of the CDFs. These locations were selected to provide samples that are representative of the impact on surrounding areas. A diagram of sampling locations can be found in Figures 1 and 2 in the Figures section of this report.

Air monitoring and sampling began on 4 June 1999 and continued for a period of one year. A rotational sample cycle (outlined in Section 2.1, Sampling and Analytical Method) was selected to ensure that the baseline program provides representative data without bias due to weather and/or other occasional aberrations. Sampling for the period of June 1999 through August 1999 was conducted at each of the station locations as described in Table 1. Station 26 was not sampled until 22 June 1999 due to property access issues. Sampling for the remainder of the effort was conducted at all of the listed sites.

A total of eight samples were collected for each sampling event: six primaries, one duplicate [or quality assurance (QA)] sample, and a blank. During alternating sampling events, samples from Site 24D, Aerovox Duplicate, were shipped to the government designated QA laboratory. Field blanks (designated as B) were also prepared for shipments to the primary analytical laboratory and the QA laboratory.

Table 1: Sample Locations*

Station No.	Station Name	CDF	Location
21	New Bedford Welding 272 Herman Melville Blvd.	D	Located between Rt. 195 and Rt. 6 in New Bedford
22	Woodlawn Park	Park	Community monitor (west of harbor)
23	Acushnet Substation	Com. Electric	Community monitor (east of harbor)
24	Aerovox	A	Located east of Aerovox building near Upper Harbor
24D	Aerovox Duplicate	A	Duplicate of 24
25	Cliftex	B	Located at the eastern end of Manoment St. next to Cliftex building
26	103 Sawyer Street (Hot Spot CDF)	C	Located at the eastern end of Sawyer St.

* See Figures 1-2.

1.3. Nomenclature

The station locations, identified in Table 1, were numbered sequentially. Site designations began with number 21, which followed previous designations for locations associated with hot spot monitoring and dredging in the New Bedford Harbor Superfund area. Sample identification numbers consist of the

initiation date of the 24-hour sampling event and the station where the sample was collected. For example, the sample number 06049921 identifies that the event was initiated on 4 June 1999 at site number 21, New Bedford Welding.

2.0 QUARTERLY SUMMARY

This section summarizes the sampling and analytical methods, problems encountered during the reporting period, and results. Detailed results are contained in the report appendices.

2.1. Sampling and Analytical Method

The sampling schedule was developed based upon the expected concentrations of the analytes at different times of the year and designed to provide cost effective representative data for the period of the baseline monitoring. PCB concentrations are likely to be highest during the summer months and lower when temperatures drop. Therefore, a rotational cycle sampling schedule was implemented where sampling was more frequent during the summer months (once per week) and less frequent during the spring, autumn (twice per month), and winter months (once per month).

Ambient air samples were collected using EPA Method TO-4A as described in the Sampling and Analysis Plan (SAP) and in the site specific Standard Operating Procedure (SOP) "AQ1-NBH Polychlorinated Biphenyls (PCBs)" developed by FWENC. Samples were collected using PS-1 HI-Vol samplers calibrated to a target flow rate of 225 standard liters per minute (slpm). Sampling media unit consisted of a polyurethane foam (PUF) plug/XAD inserted into a glass sleeve and 4-inch diameter quartz pre-filter. Samplers were calibrated upon installation. Calibration was conducted on a quarterly basis and after each maintenance activity. Flow checks were performed during the sample period and at the conclusion of the sample period. Calibration information was recorded on the PS1 Sampler Calibration Data Sheet. Field data was recorded on the PCB Sample Data Sheets included in Appendix H. Examples of each data sheet are found in "AQ1-NBH Polychlorinated Biphenyls (PCBs)."

Upon conclusion of the sample period, PUF units were removed from the high-volume samplers and samples were packaged on ice for shipment to the analytical laboratory. Field blanks were processed by opening the media on the site and not drawing air through. Chain of custody forms were completed for each sample event, and the original form was sent along with the shipment to the appropriate analytical laboratory. Alternate samples from Site 24D, Aerovox Duplicate, were shipped to the government designated QA laboratory following this procedure. The results and discussion of the independent quality assurance samples are included in Appendix L.

All samples were sent to Triangle Laboratories, Inc., P.O. Box 13485, Research Triangle Park, NC, 27709-3485, for analysis, with the exception of the QA samples. Samples were analyzed using high-resolution gas chromatography with high-resolution mass spectrometry (HRGCMS) operating in selected ion mode (SIM) for total PCB homologue groups. Collected samples were analyzed for total PCB homologue groups as a measure of total PCB concentration. Data are reported for each homologue group (mono through deca) and for total PCBs.

Samples collected during the summer and spring months (June – August 1999, March – April 2000) were also analyzed for the 14 World Health Organization (WHO) congeners. Individual congeners, as shown in Table 2, pose different risks to human receptors and may be useful in the calculation of risk-based action levels for ambient air should this be warranted in the future.

Table 2: List of PCB Congeners

PCB
3,3',4,4'-TetraCB (#77)
3,4,5,4'-TetraCB (#81)
2,3,3',4,4'-PentaCB (#105)
2,3,4,4',5-PentaCB (#114)
2,3',4,4',5-PentaCB (#118)
2',3,4,4',5-PentaCB (#123)
3,3',4,4',5-PentaCB (#126)
2,3,3',4,4',5-HexaCB (#156)
2,3,3',4,4',5'-HexaCB (#157)
2,3',4,4',5,5'-HexaCB (#167)
3,3',4,4',5,5'-HexaCB (#169)
2,2',3,3',4,4',5-HeptaCB (#170)
2,2',3,4,4',5,5'-HeptaCB (#180)
2,3,3',4,4',5,5'-HeptaCB (#189)

2.2. Reporting Conventions

Individual sample results are reported in Appendix B. These include the mass of each analyte as reported by the laboratory, the volume sampled, the resulting sample concentration, and the calculated dioxin toxic equivalency concentration (TEQ). Laboratory and data review qualifiers (discussed in Section 2.4) are described in Appendix A and are included in the tables. Total PCBs are summarized by month in Appendix D and for the year in Table 4. Total PCBs are reported as the sum of the homologue group detected mass values, estimated maximum potential concentrations (EMPC) (where reported), or half of the detection limit values. For example, on 4 June 1999 at Site 25 the following values were reported:

Table 3: Example Total PCB Calculation

Homologue Group	Mass, (ng)*	EMPC, (ng)*	Detection Limit, (ng)*
Total MonoCB	**105**		0.08
Total DiCB	**5640**		0.1
Total TriCB	7710	**7750**	0.06
Total TetraCB	5220	**5230**	0.1
Total PentaCB	**1490**		0.3
Total HexaCB	202	**212**	0.2
Total HeptaCB	35.1	**37.6**	0.4
Total OctaCB	**3.8**		0.5
Total NonaCB	ND		**0.6**
Total DecaCB	ND		**0.7**
Homologue Group Sum (bolded values) = 20469 ng			

* ng : nanograms

In order to calculate analyte concentrations, including subsequent average and maximum concentrations, several data validation conventions are applied. The concentration values for non-detects are calculated at half the detection limit, based on the assumption that the actual concentration is likely to be somewhere between zero and the detection limit. The exception to this data validation convention is congeners #189 and #209, which if detected, were detected intermittently and at relatively low concentrations such that their actual presence is questionable. Including non-detects with elevated detection limits at half the detection limit results in relatively high values; in turn, skewing the resulting averages higher. Consequently, when calculating concentrations for congeners #189 and #209, non-detect values were

disregarded (i.e., not included as a result). For analytes qualified as U, due to blank contamination, the analyte concentrations are calculated at half the reported value. In all cases where an EMPC value was reported, this value is used in calculating analyte concentrations in lieu of the reported value.

2.3. Problems and Corrective Action

2.3.1. Field Audits

2.3.1.1. Performance Audit

FWENC conducted a field performance audit on 7 July 1999 and identified five action items related to the samplers. Each action item was resolved and written confirmation was provided on 12 August 1999. Action items were of a minor maintenance and housekeeping nature. The items included: sampler cleaning (sampler 21); replacement of sampler exhaust hoses (sampler 21 and 25); attaching sampler platform tie downs (samplers 24, 24D, and 26); and bolting of sampler to the platform (sampler 26). The audit flow values versus the sampler flows, contained in Appendix J, were within ±7 %, indicating that no action was required to determine the difference between flow rates. Overall, the audit results were rated as acceptable.

FWENC conducted a second field performance audit on 27 October 1999 and identified two action items related to the samplers. Each action item was resolved and written confirmation was provided on 3 December 1999. Items were of a minor maintenance nature and included the reattachment of a sampler cover (sampler 26) and recalibration of sampler 24D, which had an audit flow versus the sampler flow difference of 7.5%. The audit flow values versus the sampler flows, contained in Appendix J, for the remaining six samplers were within ±7 %, indicating that no action was required to determine the difference between flow rates. Overall, the audit results were rated as acceptable.

FWENC conducted a third field performance audit on 1 March 2000 and identified two action items related to the samplers. Each action item was resolved and written confirmation was provided on 20 March 2000. Items were of a calibration and safety nature and included calibration of all of the samplers for the baseline study (samplers 21, 22, 23, 24, 24D, 25, 26) and a sampler electrical hazard (sampler 22). The audit flow values versus the sampler flows, contained in Appendix J, were within ±7 %, indicating that no action was required to determine the difference between flow rates. Overall, the audit results were rated as acceptable.

FWENC conducted a fourth field performance audit on 24 May 2000. The audit flow values versus the sampler flows, contained in Appendix J, were within ±7 %, indicating that no action was required to determine the difference between flow rates. Overall, the audit results were rated as acceptable, and no conditions required action; therefore, no response to this audit was necessary.

2.3.1.2. Task System Audit

FWENC conducted a task system audit on 17 March 2000 and identified one major and five minor findings. Each finding was resolved and written confirmation was provided on 17 April 2000. The major finding was in reference to a lack of current calibration documentation on samplers. The minor findings included: the lack of an organization chart; spare parts inventory; initials and dates for corrections; completion of blank cells on forms; and a data consistency check. Overall, the audit results were rated as acceptable. The complete audit findings and response are included in Appendix J.

2.3.2. Sample Temperatures

The analytical laboratory (TLI) recorded the temperature for each cooler upon arrival and reported that various samples arrived at the laboratory warm. The laboratory immediately refrigerated the samples to 4°C. Case narratives from the laboratory indicated that sample temperatures fluctuated between 4°C to 28°C. In some cases, the laboratory documented elevated temperatures despite the presence of (still)

frozen ice in the cooler. Samples were originally packed with "blue-ice" blocks until this method proved inadequate. Sampling personnel were informed of the recurring problem. Procedures were modified to ship all samples on "real" ice and to use as much ice in the cooler as possible. No validation action was taken for the temperature exceedances (refer to Section 2.5.1).

2.3.3. Incorrect Units for Results

One set of preliminary sample data was reported by the analytical laboratory (TLI) in concentration units of picograms. These units were incorrect and should have been nanograms. The samples in question were collected 16 June 1999, TLI Project Number 48944. The results have been corrected, and a note has been appended to the original sample result file confirming the laboratory reporting error and correction.

2.3.4. 28 June Anomaly

Results from the government QA laboratory for sample 24D collected 28 June 1999 differed significantly (higher) from those reported by the primary laboratory for the associated sample (24). Upon further review and with comparison to the remainder of the data set (June, July, and August), it was noted that the primary lab's results were significantly lower than typically reported for this location. In addition, none of the reported results (from any station) for this day appeared consistent with other dates. This strongly suggests that samples from this date were inadvertently switched and/or mislabeled, either in the field or in the laboratory. No other problems with the sampling or analysis were identified to resolve the discrepancies. Accordingly, it is recommended that data from this date be rejected as unusable for project objectives and that these data be omitted from further consideration in establishing baseline conditions. The data for this day was excluded from the report summaries in Table 5 and included in Appendix I.

2.3.5. Lost Samples

Two samples collected on 27 August 1999, samples 08279922 (Woodlawn, Site ID 22) and 08279924 (Aerovox, Site ID 24), were lost during the extraction process at the laboratory and cannot be reported.

2.3.6. Cancelled Samples

The sample collected from Woodlawn Park, Site 22, on 17 February 2000 was sent to the analytical laboratory for analysis. The analysis for the sample was cancelled due to insufficient monitoring duration in the field.

2.3.7. Inconsistencies in Factory Calibration of Orifice Flow Standard

The Baseline Air Sampling and Analysis program required the calibration of all air stations using an orifice as a flow standard and a second orifice for periodic audits, as described in the project SAP and in the air sampling SOP. Prior to initiation of this baseline program, the factory supplier (Anderson Instruments, Incorporated) determined the orifice calibration constants for both orifices. The orifices are required to be recalibrated by the supplier annually. Using the orifice standard, the air stations were calibrated each quarter and were also calibrated after any maintenance activity.

Following the first year of sampling, both orifice(s) (flow standards) were sent to Anderson Instruments, Inc. (Anderson) for calibration in June 2000. The calibration results, received on 28 June 2000, were noticeably different from the previous calibration performed a year prior. The orifice(s) were sent to a third independent laboratory, IML Air Science (IML), for calibration verification. The IML calibration (received 7 August 2000) confirmed the results from Anderson's June 2000 calibration. Orifice calibration settings should not vary significantly from year to year; therefore, it appears likely that there was some error in the original factory calibration settings applied to samples collected during the baseline sampling period (June 1999 through May 2000).

To quantify the significance of the potential error in flow rate measurements, theoretical estimates of the different flow rates from the two calibrations were calculated by applying the calibration constants from the June 2000 calibration and comparing the results to the settings recorded during the actual sampling event (from the initial calibration). A calibration curve was generated in the field by setting the sampler magnehelic to several calibration points and recording the response of the orifice manometer. From this curve, a slope and intercept was obtained to calculate the flow rate.

Based on these calculations, a flow rate of 225 slpm from the initial calibration (June 1999) would be calculated as approximately 20% lower (180 slpm) using the June 2000 calibration. Accordingly, if the June 2000 calibration were a more accurate indication of flow rates, the actual concentration of total PCBs would be approximately 20% greater than reported in this baseline report. For example, the total PCB results reported for stations 22 and 24 on 16 June 1999 were 1.5 ng/m^3 and 110 ng/m^3, respectively. Using the more recent calibration to determine flow rate, the total PCB concentrations would be 1.8 ng/m^3 and 130 ng/m^3. The supporting documentation, including the June 1999 and June 2000 calibration data from Anderson and the third party verification from IML, are included in Appendix M.

2.4. Summary Data

Table 4 provides a summary of the total PCB concentration data by sampling site and sampling event date. The meteorological data for each sampling event date included in the table are based on the earliest start and latest end times for all the sampling stations. The meteorological station takes readings every 5 minutes and averages these 5-minute readings at the end of every hour, as contained in Appendix G. For example, the sample at site 21 on 4 June 1999 started at 08:44 a.m. (earliest start time) and the sample at site 22 ended at 11:12 a.m. on 5 June 1999 (latest end time). Therefore, the average temperature, average solar radiation, and total precipitation are calculated based on the 4 June 1999 09:00 a.m. data through 5 June 1999 12:00 p.m. data. The total PCB concentration is the sum of the total PCB homologue groups found in the detailed sampling event data reports in Appendix B. Blank data fields in the tables were the result of one of the following: (1) Samples for Site 26, 103 Sawyer Street, were not initially collected due to property access issues; (2) Samples collected on 27 August 1999 for Woodland Park, Site 22, and Aerovox, Site 24, were lost at the laboratory; (3) Spike sample results are not included in this table; and (4) Sample for Woodlawn Park, Site 22, on 17 February 2000 was cancelled due to insufficient monitoring duration.

Table 4: Total PCB Concentrations (Homologue Basis) and Meteorological Data

Daily Meteorological Data					Total PCB Concentrations (ng/m^3)						
Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F at 2m)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St.
04-Jun-99	NNE	69	370	0.00	16	1.9	27	230	220*	70	‡
10-Jun-99	ENE	65	470	0.00	19	2.4	21	96	100	67	‡
16-Jun-99	ENE	65	270	0.010	18	1.5	17	110	200*	55	‡
22-Jun-99	SSW	76	380	0.00	8.5	3.1	15	150	170	63	28
28-Jun-99	SW	76	280	0.00	PCB data rejected as unusable (see text)						
06-Jul-99	WNW	86	370	0.00	9.8	4.3	40	160	170	24	49
10-Jul-99	NW	73	240	0.00	1.2	0.69	41	74	160*	5.4	18
16-Jul-99	WSW	84	320	0.00	3.8	1.1	42	110	S	13	33
22-Jul-99	SW	77	280	0.00	3.7	1.3	41	120	180*	16	7.9
28-Jul-99	WNW	83	360	0.00	19	2.5	41	140	160	66	69
03-Aug-99	S	76	290	0.00	8.1	4	21	130	300*	54	31
09-Aug-99	NNW	69	330	0.00	11	2.6	54	120	110	58	45
15-Aug-99	NNE	67	96	0.20	20	0.45	27	110	270*	36	30
21-Aug-99	N	65	60	0.00	12	0.84	40	88	97	48	35
27-Aug-99	SSE	76	160	0.00	18	†	23	†	290*	53	33
09-Sep-99	SSW	76	99	0.00	8.1	8.9	24	110	110	53	27
22-Sep-99	NW	59	88	0.010	2.6	0.76	39	54	80*	13	22
08-Oct-99	SSW	63	150	0.00	2.4	1.1	28	74	S	17	7.8
25-Oct-99	NW	50	180	0.010	19	4.2	25	62	100*	42	65
15-Nov-99	WNW	40	99	0.00	1.4	0.84	14	52	46	3	70
16-Dec-99	WSW	45	57	0.00	4.1	4.3	7.4	44	78*	2.3	96
14-Jan-00	NW	12	110	0.00	0.094	0.077	8.8	29	15	0.51	87
17-Feb-00	NNW	29	160	0.00	6.2	C	13	22	23*	6.9	84
15-Mar-00	SSW	52	220	0.00	0.87	0.57	58	68	70	34	28
04-Apr-00	WNW	52	91	0.28	1.4	0.35	22	73	100*	17	160
17-Apr-00	ENE	44	130	0.11	9	1.1	1.1	57	22S	27	23

Daily Meteorological Data					Total PCB Concentrations (ng/m^3)						
Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F at 2m)	Avg. Solar Radiation (w•m^2)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St.
08-May-00	SSE	73	300	0.00	12	9.5	25	100	240*	53	99
30-May-00	SE	57	280	0.00	16	9.1	8	87	92	43	31
				Total PCBs Site Average	9.4	2.7	27	95	140	35	49
				Total PCBs Site Maximum	20	9.5	58	230	300	70	160

* Alternate duplicate samples analyzed by the U.S. Army Corps of Engineers designated laboratory. See Appendix L.
† Samples were lost at the laboratory.
‡ Samples were not initially collected at this site.
S Spike sample.
22S Spike sample collected at site 22.
C Analysis cancel due to insufficient monitoring duration.

The data tables and supporting documentation are found in Appendices A-M and include the information listed in Table 5. The reports provide data collected during each of the sample events (through the end of the reporting period). All field and analytical data are contained in a Microsoft Office Access® database. The database, available for electronic transfer, contains all data, queries, reports, forms, and modules. Written laboratory reports are maintained on file and are available as needed.

Table 5: Description of Summary Reports

Appendix	Report Title	Description/Contents
A	Important Terms	Column heading descriptions and data qualifier definitions.
B	Sample Event Summary Report	Detailed reports for each sample analyzed. Includes the PCB homologues and congeners results, quality flags, detection limits, TEFs, TEQs, EMPCs, meteorological data, and sampling information (flow rate, run time, sample volume).
C	Analyte Data Summary Reports	Concentration results of each PCB congener, by site and sample date.
D	Average/Maximum Total PCB Concentrations	Average and maximum total PCB concentration, by sample site, for each month in each quarter and for the year, as well as a cumulative average and highest value recorded to-date.
E	Average/Maximum PCB Congener Concentrations	Average and maximum congener PCB concentration, by sample site, for each month in each quarter and for the year.
F	Average/Maximum PCB Homologue Concentrations	Average and maximum homologue PCB concentration , by sample site, for each month in each quarter and for the year.
G	Meteorological Data	Hourly summary, by event date, of wind direction and speed, temperature, solar radiation, barometric pressure, relative humidity, and precipitation. It also contains the windrose graphic for that event day.
H	Field Data Sheets and Chain of Custody Forms	Field sample data report sheets and the chain of custody forms, by sampling event date.
I	28 June 1999 Summary Reports	Analyte data report and preliminary sample event summary report for this event date. Results determined to be unusable for project objectives.
J	Field Audit Report and Response	Field audit reports conducted by FWENC and responses from KEVRIC.
K	Data Validation Memorandums	Data review reports prepared by FWENC for data validation purposes.
L	Chemical Quality Assurance Reports	Chemical quality assurance reports prepared by ENSR Corporation.
M	Calibration Information	Information to support the flow rate calculations based on the potential error in factory calibration of orifice flow standard.

2.5. Data Validation and Quality Control Data Review

Air sampling chemistry data have been reviewed for compliance with quality control (QC) criteria to determine their acceptability for use in achieving project objectives. The primary objective for the collection of this air data is to compile one complete year of data as a baseline for comparison with future air sampling results during upcoming construction activities. The data review process and the findings are described in more detail below. The individual data QC memorandums (prepared for each data package) are included in Appendix K. In addition, the USACE assesses data quality with the independent QA analysis of duplicate samples. These results are compared with primary lab results and reported in Chemical Quality Assurance Reports (CQARs), which are included in Appendix L and briefly summarized below.

Air sampling results were given a "checklist" QC review by FWENC for compliance with Project QC criteria. This review was based on the "Region I, EPA NE Data Validation Functional Guidelines for Evaluating Environmental Analyses," December 1996 criteria, and was intended to identify significant QC exceedences which may significantly affect the reported sample results. This brief review was intended to provide information on the quality of the data in more detail than an EPA Region I Tier I validation, but was not intended to provide as much detail as an EPA Region I Tier II validation. This data review included an evaluation of the following QC parameters:

- Data Completeness
- Sample Preservation and Technical Holding Times
- Blank Analysis
- Field Duplicates
- Laboratory Control Spikes
- Surrogate Compounds (spiked before sampling)
- Internal and Recovery Standards (spiked before extraction)
- Initial Calibration
- Continuing Calibration

In developing the data review/validation program, the QC checklist review was chosen to monitor technical quality while providing a cost-effective project approach that could be implemented on a faster schedule than a complete Tier II validation. The data review process was used in conjunction with the government independent QA check, detailed below, of duplicate samples to expedite assessment of data quality. While schedule was not of primary importance for this preliminary sampling program, the intent was to develop procedures that could be implemented on an expedited schedule during remediation, if required.

To ensure that the checklist review was effective at identifying QC exceedences, approximately 10% of the data (three data packages) were selected for a more comprehensive EPA Region I Tier II validation. Selection of the samples for Tier II validation was left to the discretion of the reviewer and was intended to be flexible and biased towards the earlier portion of the program. The earlier data packages (samples collected Summer 1999) were selected because these were samples analyzed for both congeners and homologue groups and were also expected to have the highest concentrations of PCBs. With a more detailed validation performed early in the program, significant problems with the laboratory, especially systematic problems, would be identified and corrected quickly. If the results of the checklist review identified potentially significant QC exceedences, a Tier II validation would be implemented to further evaluate the affect of the problem. Similarly, if the Tier II validation identified systematic problems with the laboratory, additional review and or validation might be necessary to assess the effect on the entire data set. Air chemistry data collected on 10 June, 28 July, and 21 August 1999 were selected for Tier II validation.

A Tier II validation includes a review of the QC parameters listed above and also includes an evaluation of the following:

- Overall Evaluation of Data and Potential Usability Issues
- Sample Quantitation
- Target Compound Identification
- System Performance

The summary level findings of the QC data review and validation process and the effects on reported data are discussed below. The validation memoranda are included in Appendix K.

2.5.1. Summer 1999 (June through August) Sampling Quarter

Sample collection media was identified as a significant source of contamination for air samples collected beginning 10 July through the end of November 1999. The source of contamination was determined by the laboratory to be a compound used as a flame retardant on the PUF material used in sample collection. The flame retardant compound created several interferences that prevented detection of the labeled congener #169 internal standard and interfered with the peaks for congener #170. For samples where the congener #169 internal standard was not detected, the laboratory chose labeled congener #138 to calculate total hexa-CB homologues. These data are considered to be acceptable. Results for congener #169 could not be calculated due to the media interference, and the laboratory reported this congener as "I" (Interference) with no associated value. These data should be considered unusable: the presence or absence of the compound could not be determined for these samples.

The interference discussed above also contributed low levels of contamination to the field and laboratory blanks. Individual congener and homologue groups with results less than five times the highest concentration detected in the blanks were reported as non-detect (U) during data review. These results were treated as non-detected values (i.e., half the reported value was used) in summary calculations for averaging seasonal and annual concentrations (see below). Note that all positive field blank results were attributed to contamination. It should also be noted these field blanks were not qualified due to field contamination.

The interference with congener #170 caused detected concentrations in blanks (false positives) as discussed above and also prevented detection of the 10 ng spike in the Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD). The laboratory subtracted the concentration detected in the blanks from the LCS/LCSD and reported percent recoveries for congener #170 as zero. The presence or absence of this compound could not be determined. Results for congener #170 that were less than five times the concentration found in the blanks were rejected (R) as unusable. These results are excluded from the data set.

Samples collected on 6 July, 10 July, and 22 July 1999 were analyzed outside of the designated holding time of 28 days (51, 55, and 47 days, respectively). It appears that the laboratory postponed extracting the samples when they discovered the interference issues discussed above. Once the source of contamination was identified as the sample media, extractions were continued. Samples collected on 9 August and 15 August 1999 were extracted outside of the 14-day holding time (37 and 31 days, respectively). Samples from eight sampling events from the summer of 1999 were received at the laboratory with cooler temperatures above the 2°C ±2°C requirement. Most of these were at or slightly below ambient temperatures (20-25 °C). Both the holding time and the elevated temperature could potentially cause the loss of target analytes from the PUF, causing sample results to be biased low, especially from the mono and di chlorinated species. The majority of the field surrogate (spiked before sampling) recoveries from these samples were acceptable, indicating that little or no target analyte loss occurred. No validation action was taken for holding times or cooler temperature exceedences.

Other minor QC exceedences were identified during the data review, potentially affecting individual analyte results. These included spike recoveries and continuing calibration percent differences, which

were outside of QC limits. These QC excursions were isolated and generally not applicable to the data set as a whole. With the qualifications discussed above, the data are usable as reported for project objectives.

2.5.2. *Fall 1999 (September through October) Sampling Quarter*

The media contamination issue discussed above affected data generated during the fall quarter. Because the Fall 1999 samples were analyzed for total homologue groups only rather than individual congeners, the contamination effects on reported data were minimized (i.e., individual results did not require rejection). Individual homologue group results less than five times the highest concentration detected in the blanks were reported non-detect (U). These were treated as non-detect values (i.e., half the reported value was used) in summary calculations for averaging seasonal and annual concentrations (see below). Note that all positive field blank results were attributed to contamination. For clarification, these field blanks were not qualified as non-detected (U).

2.5.3. *Winter 1999/2000 (November through March) Sampling Quarter*

Internal Standard (IS) recoveries below 10% resulted in the rejection of a small number of sample results from the December and January sampling events. There were several other IS recoveries that exhibited low results (>10%) causing the over-estimation of sample results. No action was warranted for the low IS (>10%) recoveries.

The air samples were extracted and analyzed within the specified holding time; however, cooler temperatures were elevated at the time of receipt by the laboratory. One cooler temperature was as high as 8°C. This exceedence may or may not have been the cause for low IS recoveries discussed above.

The interferent with congener #169 was found again in the internal standard for the method blank sample. The other hexa-CB results for the method blank were calculated using congener #138.

The interferent with congener #170 in the LCS/LCSD analyses was resolved, but there were some slight exceedences for congeners #114, #126, and #189. These exceedences caused the over-estimation of data for those congeners. None of the exceedences have a significant impact on the reported data.

During this quarter, the blank contamination was similar to the previous quarters. All results from the 17 January 2000 event were detected greater than the action limit and were not affected. However, some positive results, from December 1999 and January 2000, were qualified as non-detect (U) due to the contamination found in the method and field blanks.

2.5.4. *Spring 2000 (April through May) Sampling Quarter*

During this quarter, low recovery of some Internal Standards occurred, possibly due to elevated temperatures in a number of sample coolers received at the laboratory. Each of the samples in this quarter were received in coolers with elevated temperatures, ranging from 4°C to 8°C. The IS deviations did cause the rejection of some data and the over estimation of others. Overall, the impact on the data is not very significant. The samples were extracted and analyzed within specified holding times. The data are acceptable for project use.

There were some slight exceedences in LCS/LCSD recovery for congener #189 in April and May, which caused the results for this congener to be biased high. The data are not significantly affected. No action was taken.

Blank contamination from the flame retardant was observed this quarter, which caused some positive results to be qualified as non-detect. Overall, these actions did not have a significant impact on the data.

2.5.5. *Government Quality Assurance (QA) Air Samples*

As a measure of Quality Assurance, QA split samples were collected at duplicate air station 24D during alternating sampling rounds. The QA samples were sent to Phillip Analytical Services, designated QA laboratory by the USACE, for independent analysis. These samples were analyzed for NOAA congeners using the same method as the primary lab, EPA Method 3540C/8082. Comparison results were discussed in chemical quality assurance reports prepared by ENSR and included in Appendix L. The findings are briefly summarized below.

Primary and QA sample results were compared and summarized in two ways: Overall Agreement and Quantitative Agreement, described as follows:

- Overall Agreement represents the number and percentage agreement of all determinations including non-detects reported by either laboratory; and

- Quantitative Agreement represents the number and percent agreement of those determinations where an analyte was analyzed by both laboratories and detected by at least one laboratory.

Agreement is defined as follows:

- Both results are non-detect; or
- Results are non-detect in one sample with a reporting limit greater than the detected value of the other; or
- Two detected concentrations that are within a factor of 4 of each other.

Data discrepancies were categorized into minor or major. Minor discrepancies were defined as those that exceed the agreement criteria and the results are within a factor of 5 of each other. Major discrepancies were those that differ by more than a factor of 5.

Over the summer months, eight QA samples were collected and analyzed. QA results from samples collected on 28 June 1999 differed significantly from the primary lab results and subsequent investigation indicated that primary lab samples were mislabeled in the field or laboratory. The source of the discrepancy could not be resolved and the data for this date was rejected (R) as unusable. The corresponding primary lab sample from 27 August 1999 was broken during analysis and could not be reported: the QA lab results for this date were consistent with those reported for this location during other sampling events.

In general, QA results for the other six sample comparisons agreed well. Overall agreement percentages ranged from 79% to 96% and Quantitative Agreement percentages ranged from 75% to 95%, with the exception of the data for the 28 June 1999 sampling event. For each sampling event, the results for total PCBs met the agreement criteria of a factor of 4. With the exception of the first sampling event (4 June 1999), the QA lab reported consistently higher total PCB concentrations than the primary lab. Some individual results did not meet comparison criteria and are discussed below.

The most common disagreement between the QA results and the associated sample results occurred with congener #169. This congener was not reported (flagged I) by the primary laboratory during the weeks of 10, 16, 22, and 28 July and 3, 9, 15, 21, and 27 August due to interference from sample media contamination (see data validation summary). This congener was reported non-detect by both laboratories in both June 1999 sampling events (before the contamination problem) and as non-detect by the QA lab during the remaining summer sampling events.

Comparison results for congener #114 were flagged as major discrepancies for five events, with the primary lab results consistently higher than the QA lab. Congener #126 was noted to have major disagreements on four occasions, three of which were for positive results reported by the QA lab and non-detect results by the primary lab. The fourth occasion, 15 August 1999, was a QA result consistent with other events and a very high EMPC reported by the primary lab. Comparisons for congener #167 were

considered major discrepancies in five events, with the QA results consistently being higher than the associated samples. Note that the QA lab reports results for congener #167 as the sum of coeluting congeners #167 and #128. Other anomalous results included a non-detect for mono-CB reported by the primary lab for the 22 July 1999 sampling event that did not agree with the reported result from the QA lab or with data from other sampling events. Results for tri-CB were considered a major discrepancy for the 15 August 1999 sampling event, with the QA lab result being the greater of the two samples.

QA samples were collected during alternate sampling rounds for the remainder of the Baseline Program, for an additional six QA lab comparisons. As noted above, the total PCB concentrations met the factor of 4 agreement criteria for each event and the QA laboratory was the higher of the two results. These comparisons had some individual major discrepancies, including octa-CB in two events, tri-CB in one event, and mono-CB in another event. Minor discrepancies included hepta-CB and octa-CB in one event and nona-CB in another. Discrepancies for the heavier homologue groups (hepta, octa, and nona) were the result of the primary lab data being greater than the associated QA samples. Conversely, the discrepancies for the lighter homologue groups (mono and tri) are associated with QA lab results that are higher than the primary samples.

2.5.6. Field Spike Recoveries

Field spikes were performed on three occasions: 16 July 1999, 8 October 1999, and 7 April 2000. The laboratory spiked felt pads with 10 ng of each of the target congeners, except deca-CB which was spiked at 20 ng. These pads were placed before the filters in the field sample apparatus so that air was drawn through the pad and on to the sample media as a measure of sample collection efficiency. Spiked samples were collected at duplicate (D) samplers at the same time as a corresponding unspiked sample. The first two spikes were collected from station 24D. However, the ambient concentrations at this location were significantly higher than the spike level resulting in poor spike recoveries (see below). The last spike was collected from station 22D, where the ambient (native) concentrations were much lower. Detailed results are included with the data validation memoranda included in Appendix K.

In summary, spike recoveries from the first two rounds (collected from location 24D) were poor due to elevated concentrations of target analyte in the air and in the native sample used for correction. The poor recovery does not appear to be associated with poor collection efficiency and does not appear to represent significant problems with reported results other than those discussed above.

For the first spike round, 17 July 1999, five congeners had recovery with ±50% of the expected value. These tended to be associated with relatively low or non-detect native sample concentrations. Two congeners (#77 and #123) demonstrated low recovery (21% and 39%) and had concentrations greater than the spike level in the native sample. Six compounds associated with relatively high concentrations in the native sample were calculated as having negative recovery because the native result was higher than the spiked result. Congener #170 was not detected in the spiked sample apparently due to the same interference preventing detection of congener #169 and causing poor LCS recovery for congener #170 as discussed above. These results confirm that congeners #169 and #170 data are not usable for samples associated with contamination, as previously noted above.

During the second spike round, 8 October 1999, four homologues had recoveries that met criteria. As with the July spike sample, the acceptable recoveries tended to occur on samples with low or non-detect results. Homologues tetra-CB and penta-CB did have good recovery with high sample concentrations. There were a few congeners in the LCS and LCSD that exhibited high recovery. Congener #114 had recoveries of 975% and 1,230% in the LCS and LCSD, respectively, and congener #118 had recoveries of 770% and 1,200% in the LCS and LCSD, respectively. Although congener #170 does have acceptable recovery (111%) in the LCS, it has low recovery (31%) in the LCSD. These recoveries demonstrate that congener #170 is not usable due to the contamination discussed above.

The third spiked sample was collected on 17 April 2000 from station 22D, where native concentrations were significantly lower than at station 24D. Recoveries from this sample were much improved over those from 24D. Twelve of 14 congeners had recoveries within ±50% the expected value. One congener, #180 had a slightly elevated recovery, 171%, indicating a slight high bias, but not a significant concern. Recovery for congener #170 was 597% indicating potential systematic difficulties with the quantitation of this congener (see above). QC exceedences associated with the quantitation of this single congener are not likely to significantly affect reported data.

2.5.7. Data QA/QC Summary

The QA lab comparisons indicated general overall agreement. Total PCB concentrations reported by the two labs were within a factor of four, meeting agreement acceptance criteria. It is noteworthy to mention, with a single exception, the total PCB concentrations reported by the QA lab were consistently greater than those reported by the primary lab. For the most part, results for individual analytes also met agreement criteria with a few exceptions as discussed above. For samples analyzed during the summer for the 14 WHO congeners, the majority of analytes met criteria with comparisons for only two to four (including congener #169) congeners noted as discrepancies. Investigation of these discrepancies did not indicate systematic laboratory or analytical methodology problems other than already noted due to contamination of the sample media. Similarly, results from the remainder of the Baseline Program were in agreement with some apparently isolated discrepancies for individual homologue group results. The reason for these discrepancies appears to be consistent with the QA lab reporting higher concentrations than the primary lab or differences in the two laboratories' identification and reporting of the higher weight homologue groups. Because comparisons for the majority of congeners, homologue groups, and total PCB results were in agreement, no additional investigation is warranted.

3.0 METEOROLOGICAL DATA

The meteorological data are presented in two formatted reports: a windrose and an hourly summary. The data reports can be found in Appendix G. Electronic versions of the data are contained in a Microsoft Office Excel® spreadsheet. The hourly summary presents the hourly values for each parameter measured as well as the average maximum and minimum values for all parameters except wind direction. The statistical values are not presented for the wind direction since they would have no useful purpose. The wind direction is better depicted in the windrose.

The windrose provides a graphical depiction of the wind speed and wind direction as it varied over the sampling period. It includes a graphic of the prevailing winds and a table providing the percentage of occurrence of each wind speed class. An illustrated example of how to read the windrose is included in Attachment 1.

4.0 SUMMARY

This report is designed to provide background information on the structure and content of the annual report. Data is contained in the appendices to this report. Specifically, Appendices B-F contain summary data regarding air sample results, and Appendix G contains meteorological data.

Figures

FIGURES

Figure 1: Site Diagram – Upper Harbor

Figure 2: Site Diagram – Lower Harbor

Figure 1: Site Diagram – Upper Harbor

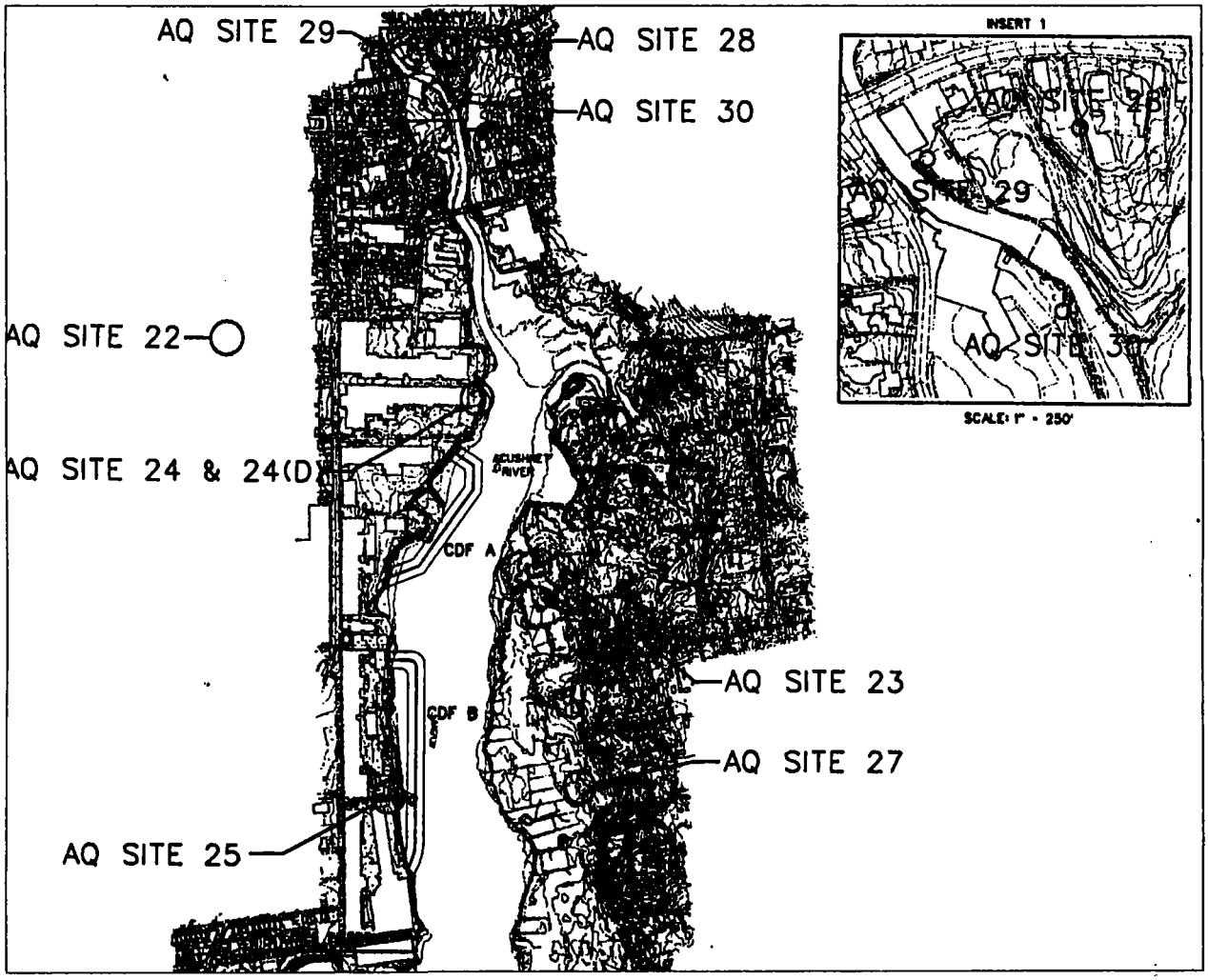
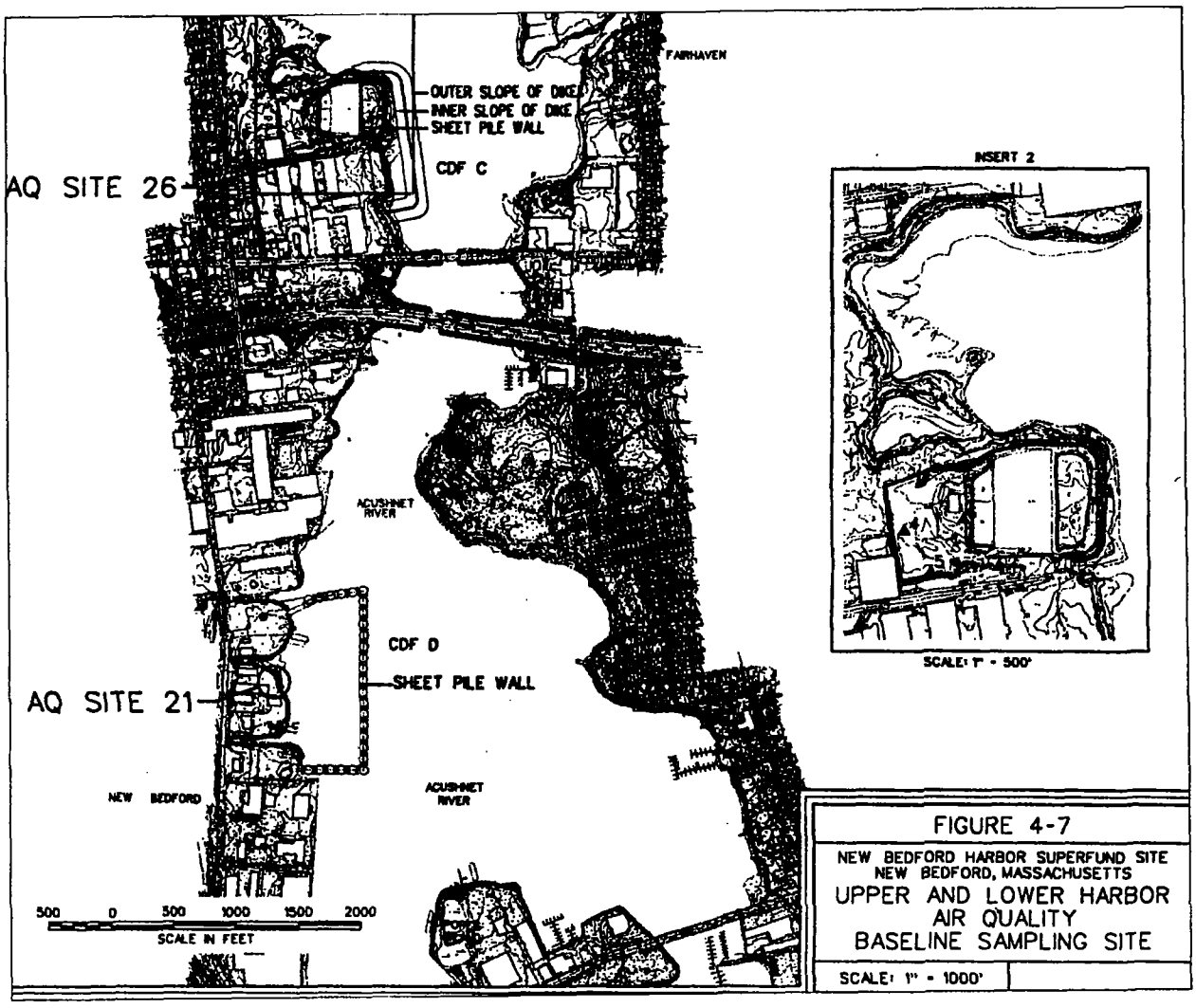


Figure 2: Site Diagram – Lower Harbor



/ **Attachments**

ATTACHMENTS

Attachment 1 – Windrose Graphic Example

Attachment 2 – Windrose Graphic

Attachment 1

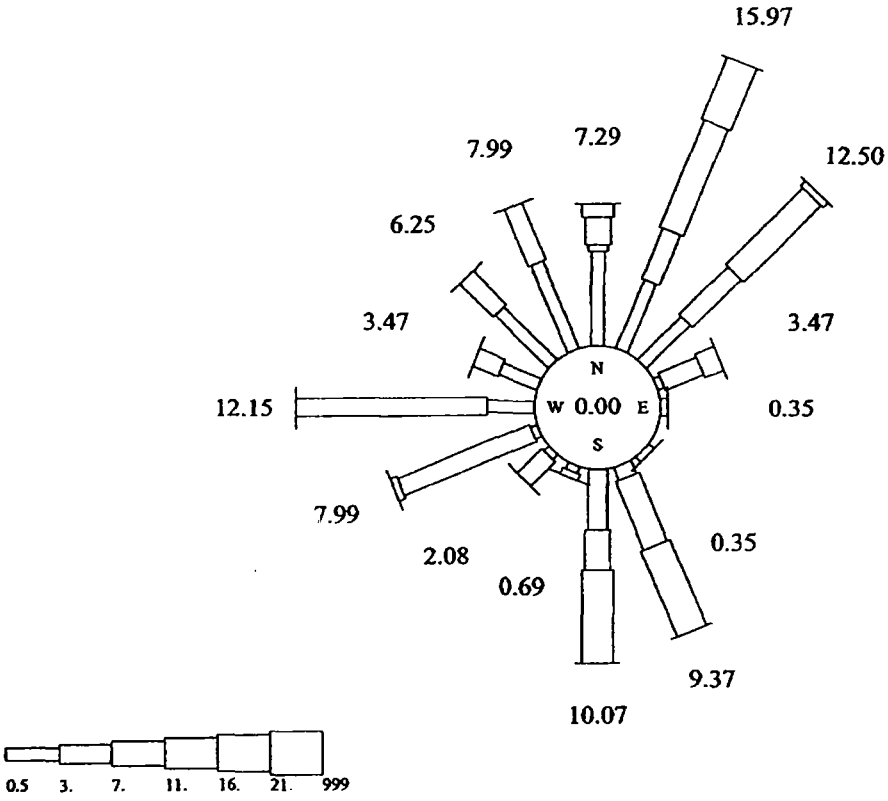
Windrose Graphic Example

The graphic in Attachment 2 provides an example of a windrose developed for this project. The 0.00 in the center of the windrose indicates the percent of calm winds measured during the report period. In this example, there were 0.00% calm winds during the period. Each of the "petals" of the windrose indicates the total percent of time the wind was blowing **from** the indicated direction as well as the percent of each "wind speed class." Using the prevailing NNE petal of the windrose as an example, the graphic provides the following information:

15.97% of the total winds were from the NNE
3.82% were 0.5 to 3 mph winds from the NNE
2.78% were 3 to 7 mph winds from the NNE
5.90% were 7 to 11 mph winds from the NNE
3.47 % were 11 to16 mph winds from the NNE
0.0% were 16 to 21 mph winds from the NNE
None of the NNE winds were > 21 mph

Attachment 2

Windrose Graphic



	WIND SPEED (MPH) PERCENT OCCURRENCE					
	0.5-3.	3.-7.	7.-11.	11.-16.	16.-21.	>21.
N	4.86	0.35	1.39	0.69	0.00	0.00
NNE	3.82	2.78	5.90	3.47	0.00	0.00
NE	3.13	3.47	5.56	0.35	0.00	0.00
ENE	0.35	2.08	1.04	0.00	0.00	0.00
E	0.00	0.35	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.35	0.00	0.00	0.00	0.00
SSE	0.00	0.69	3.82	4.86	0.00	0.00

	WIND SPEED (MPH) PERCENT OCCURRENCE					
	0.5-3.	3.-7.	7.-11.	11.-16.	16.-21.	>21.
S	0.00	3.13	2.08	4.86	0.00	0.00
SSW	0.35	0.35	0.00	0.00	0.00	0.00
SW	0.35	1.74	0.00	0.00	0.00	0.00
WSW	0.35	7.29	0.35	0.00	0.00	0.00
W	2.43	9.72	0.00	0.00	0.00	0.00
WNW	2.08	1.39	0.00	0.00	0.00	0.00
NW	3.82	2.43	0.00	0.00	0.00	0.00
NNW	4.86	3.13	0.00	0.00	0.00	0.00

Appendices

APPENDICES

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Appendix A

Appendix A: Important Terms

Air sample summary reports have been developed for each sample collected. The data is presented in the tables that follow. The following information is provided to help the reader interpret the data reports.

Column Heading Definitions

- **Site ID** – Site Identification Number
- **Sample No.** - formatted month, day, year, site. For example, Sample No. 06049921 represents a sample collected on June 4, 1999 at location 21. A letter "B" following the Sample No. (for example 06049921B) indicates a Field Blank, a letter "D" (06049921D) indicates a duplicate sample. The date is the sample collection ***start date***.
- **ANALYTE** - The name of the PCB congener, homologue or total homologues.
- **DETSYM** - Detection symbol; < denotes not detected, = denotes detected, M denotes EMPC, I denotes interference.
- **RESULT** - Mass of analyte detected in Sample.
- **EMPC** – Estimated Maximum Potential Concentration (denoted as M in the DETSYM column). A value in the EMPC column of a report indicates there were interferences in the sample that may cause an underestimation of the result. In this case, the EMPC value is used to calculate the estimated concentration.
- **UNITS** - Units of mass, nanogram.
- **QFLAG** - Quality flag.
- **Concentration** - Average concentration of analyte over the sampling period, nanograms per cubic meter.
- **TEF** – Toxic Equivalency Factor.
- **TEQ** – Toxic Equivalent Concentration (The TEF is multiplied by the concentration to calculate the TEQ).
- **Prelim. Flow** - For this preliminary data report the flow is assumed to be 225 standard liters per minute (slpm).
- **Run Time** – sample duration in hours.
- **Sample Volume** - Total volume of air sampled, cubic meters.
- **Avg. Temp.** – Average Temperature for the sampling event date, degrees Fahrenheit.
- **Avg. Solar Radiation** – Average Solar Radiation for the sampling event date, watt meter squared.
- **Total Precipitation** – Total Precipitation for the sampling event date, inches of water.

Data Qualifier Flags

In accordance with the Triangle Laboratory's guidelines, and in order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data is discussed in the case narrative report. The most commonly used flags are:

B: A B flag is used to indicate that a PCB analyte was detected in the laboratory method blank as well as in an associated field sample.

E: An E flag is used to indicate a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values, which are outside the calibration curve, are estimates only.

I: An I flag is used to indicate labeled standards have been interfered with on the GC column by co-eluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

J: A J flag is used to indicate a concentration based on an analyte to internal standard ratio which is below the calibration curve. Values, which are outside the calibration curve, are estimates only.

PR: The quantitation amount for a specific analyte will be flagged with a "PR" if the peak shape for the PCB indicates that there may be an interferent or co-eluting signal affecting the PCB analyte or in the case that there are two closely eluting GC peaks that do not have a reasonable valley separating the two. The quantitation amount for the PCB may be overestimated in this case as the interferent species will contribute to the peak area determined for the PCB analyte.

Q: This qualifier is used to warn the data user of the existence of a significant quantitative interference. A significant quantitative interference is +/- 20% of the intensity of the QC ion signal. The reported concentrations for flagged analytes and standards as well as the reported percent recoveries for the standards may be over- or underestimated.

R: Rejected

RO: This flag is used to indicate that a labeled standard has an ion abundance ratio that is outside +/- 15 percent of the theoretical ratio.

S: This qualifier indicates that the response of a GC signal has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a "minimum estimate," regardless of whether or not the retention time and/or ratio criteria are met.

V: A "V" flag indicates that the analytical results reported for a labeled standard are considered *valid* even though the percent recovery standards falls below the lower QC limit of 25 percent. In order for a "V" flag to be applied to a labeled standard, the peak profiles in the chromatogram must meet or exceed the 10:1 signal-to-noise ratio criteria.

U: Not detected. Result is within five times the concentration detected in associated blanks and considered not detected at the reported value.

X: Other problems or irregularities may require an additional flag to fully qualify the analytical results. When used, the "X" flag will be fully described in the Case Narrative. If more than one additional flag is necessary, a different letter (e.g. Y, Z) will be used for each.

Appendix B

Appendix B: Sample Event Summary Report

The information contained in this section includes detailed reports for each sample event date. The reports detail the PCB congeners and homologue results, quality flags, detection limits, TEFs, TEQs, EMPC values, and sampling information. The meteorological data contained in this section are based on the start and end times for each individual sample. The meteorological station takes readings every 5 minutes and averages these 5-minute readings at the end of every hour, as contained in Appendix G. For example, the sample at site 21 on 4 June 1999 started at 08:44 a.m. and ended at 10:25 a.m. on 5 June 1999. Therefore, the average temperature, average solar radiation, and total precipitation are calculated based on the 4 June 1999 09:00 a.m. data through 5 June 1999 11:00 a.m. data.

Sample Event Date	6/4/99	**Lab Sample Number**	06049921	**Prevailing Wind Direction**	NNE
Project Number	48858	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.2
Station	21 New Bedford Welding	**Run Time (hours)**	23.73	**Average Solar Radiation (w•m²)**	343
Sample Type	Normal Sample	**Sample Volume (m³)**	320.355	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	2.8	—		0.0087	0.0001	0.0000009
3,4,5,4'-TetraCB (#81)	<	0.3	—	—		0.0005	0.0001	0.00000005
2,3,3',4,4'-PentaCB (#105)	=	0.3	7.8	—		0.024	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.3	4.8	—		0.015	0.0005	0.000007
2,3',4,4',5-PentaCB (#118)	=	0.3	35.9	—		0.112	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	0.3	0.93	—		0.0029	0.0001	0.0000003
3,3',4,4',5-PentaCB (#126)	<	0.3	—	—		0.0005	0.1	0.00005
2,3,3',4,4',5-HexaCB (#156)	=	0.4	1.3	—		0.0041	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.4	—	—		0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.4	0.72	—		0.0022	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.5	—	—		0.0008	0.01	0.000008
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.8	3.3	—		0.010	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.5	2.4	—		0.0075	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.5	—	—		—	0.0001	
DecaCB (#209)	<	2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	23.7	—		0.0740		
Total DiCB	=	0.1	1030	—	E	3.22		
Total TriCB	M	0.08	2260	2260	E	7.05		
Total TetraCB	M	0.2	1450	1450	E	4.53		
Total PentaCB	M	0.4	396	402		1.25		
Total HexaCB	M	0.3	80	85.7		0.27		
Total HeptaCB	M	0.6	15.1	17.1		0.0534		
Total OctaCB	<	1.3	—	—		0.002		
Total NonaCB	<	1.5	—	—		0.002		
DecaCB (#209)	<	2	—	—		—		
Homologue Groups Sum			**5270**			**16**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/4/99	**Lab Sample Number**	06049921B	**Prevailing Wind Direction**	NNW
Project Number	48858	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	68.2
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	279
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.8	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.9	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.8	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.6	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.7	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.7	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.8	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.8	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.7	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.7	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.9	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	1.4	—	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.9	—	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.9	—	—		—		
DecaCB (#209)	<	2.1	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.4	0.73	—		—		
Total DiCB	=	0.5	14.2	—		—		
Total TriCB	=	0.3	20.6	—		—		
Total TetraCB	=	0.7	35.6	—		—		
Total PentaCB	M	1.3	5.6	16.9		—		
Total HexaCB	M	0.9	—	0.97		—		
Total HeptaCB	<	1	—	—		—		
Total OctaCB	<	1.7	—	—		—		
Total NonaCB	<	1.9	—	—		—		
DecaCB (#209)	<	2.1	—	—		—		
Homologue Groups Sum			**91.3**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/4/99	**Lab Sample Number**	06049922	**Prevailing Wind Direction**	NNE
Project Number	48858	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.4
Station	22 Woodlawn Park	**Run Time (hours)**	22.21	**Average Solar Radiation (w•m²)**	352
Sample Type	Normal Sample	**Sample Volume (m³)**	299.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	2.2	—		0.0073	0.0001	0.0000007
3,4,5,4'-TetraCB (#81)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,3',4,4'-PentaCB (#105)	=	0.2	4.9	—		0.016	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.2	1.3	—		0.0043	0.0005	0.000002
2,3',4,4',5-PentaCB (#118)	=	0.2	11.7	—		0.0390	0.0001	0.000004
2',3,4,4',5-PentaCB (#123)	M	0.2	—	0.5	J	0.002	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	M	0.3	—	0.41	J	0.001	0.0005	0.0000007
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.2	—	—		0.0003	0.00001	0.000000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	1.3	—		0.0043	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	1.7	—		0.0057	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	1.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.1	6.6	7.3	U	0.012		
Total DiCB	=	0.1	82	—	E	0.27		
Total TriCB	M	0.08	165	166		0.554		
Total TetraCB	=	0.2	194	—		0.647		
Total PentaCB	M	0.3	82.3	86		0.287		
Total HexaCB	M	0.2	18.4	19.5		0.0650		
Total HeptaCB	M	0.4	7.4	8.4		0.028		
Total OctaCB	M	0.6	—	1.3		0.004		
Total NonaCB	<	0.7	—	—		0.001		
DecaCB (#209)	<	1.1	—	—		—		
Homologue Groups Sum			**561**			**1.9**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/4/99	**Lab Sample Number**	06049923	**Prevailing Wind Direction**	NNE
Project Number	48858	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68
Station	23 Acushnet Substation	**Run Time (hours)**	23.1	**Average Solar Radiation (w•m²)**	306
Sample Type	Normal Sample	**Sample Volume (m³)**	311.85	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	3.7	—		0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	<	0.4	—	—		0.0006	0.0001	0.00000006
2,3,3',4,4'-PentaCB (#105)	=	0.4	4.8	—		0.015	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.3	3.4	—		0.011	0.0005	0.000005
2,3',4,4',5-PentaCB (#118)	=	0.3	33.7	—		0.108	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	M	0.3	—	0.77		0.002	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.4	—	—		0.0006	0.1	0.00006
2,3,3',4,4',5-HexaCB (#156)	M	0.4	—	0.89		0.003	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	0.4	—	—		0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	M	0.3	—	0.65		0.002	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.5	—	—		0.0008	0.01	0.000008
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	1.2	—		0.0038	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	1.6	—		0.0051	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.4	—	—		—	0.0001	
DecaCB (#209)	<	1.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	46.4	—	E	0.149		
Total DiCB	=	0.2	2030	—	E	6.51		
Total TriCB	M	0.1	3320	3330	E	10.7		
Total TetraCB	M	0.2	2260	2260	E	7.25		
Total PentaCB	M	0.5	557	563	E	1.81		
Total HexaCB	M	0.4	83.3	89		0.285		
Total HeptaCB	=	0.5	15	—		0.048		
Total OctaCB	=	0.9	4.2	—		0.013		
Total NonaCB	<	1.1	—	—		0.002		
DecaCB (#209)	<	1.2	—	—		—		
Homologue Groups Sum			**8340**			**27**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/4/99	**Lab Sample Number**	06049924	**Prevailing Wind Direction**	NNE
Project Number	48858	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.2
Station	24 Aerovox	**Run Time (hours)**	22.02	**Average Solar Radiation (w•m²)**	327
Sample Type	Normal Sample	**Sample Volume (m³)**	297.27	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	41.8	—		0.141	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	—	6.8	—		0.023	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.3	79.2	—		0.266	0.0001	0.00003
2,3,4,4',5-PentaCB (#114)	=	0.2	60.1	—		0.202	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.2	439	—	E	1.48	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.2	11.2	—		0.0377	0.0001	0.000004
3,3',4,4',5-PentaCB (#126)	=	0.2	1.1	—		0.0037	0.1	0.0004
2,3,3',4,4',5-HexaCB (#156)	=	0.3	8.3	—		0.028	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	=	0.2	1.1	—		0.0037	0.0005	0.000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	5.5	—		0.019	0.00001	0.0000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	9.3	—		0.031	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	12.3	—		0.0414	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.4	—	—		—	0.0001	
DecaCB (#209)	<	1.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	196	—	E	0.659		
Total DiCB	=	0.06	11220	—	E	37.74		
Total TriCB	M	0.03	36580	36640	E	123.3		
Total TetraCB	M	0.07	14100	14110	E	47.5		
Total PentaCB	M	0.2	5690	5690	E	19.1		
Total HexaCB	=	0.2	892	—	E	3		
Total HeptaCB	M	0.4	98.3	106		0.357		
Total OctaCB	=	0.8	10.3	—		0.0346		
Total NonaCB	<	1	—	—		0.002		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**68900**			**230**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/4/99	**Lab Sample Number**	06049925	**Prevailing Wind Direction**	NNE
Project Number	48858	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.2
Station	25 Cliftex	**Run Time (hours)**	21.71	**Average Solar Radiation (w•m²)**	327
Sample Type	Normal Sample	**Sample Volume (m³)**	293.085	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	8.3	—		0.028	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	—	1.4	—		0.0048	0.0001	0.0000005
2,3,3',4,4'-PentaCB (#105)	=	0.2	10.8	—		0.0368	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.2	9.5	—		0.032	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.2	90.8	—		0.310	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.2	1.9	—		0.0065	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.3	1.6	—		0.0055	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	1.6	—		0.0055	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	5	—		0.017	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	5.1	—		0.017	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	0.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	105	—	E	0.358		
Total DiCB	=	0.1	5640	—	E	19.2		
Total TriCB	M	0.06	7710	7750	QE	26.4		
Total TetraCB	M	0.1	5230	5230	E	17.8		
Total PentaCB	=	0.3	1490	—	E	5.08		
Total HexaCB	M	0.2	202	212		0.723		
Total HeptaCB	M	0.4	35.1	37.6		0.128		
Total OctaCB	=	0.5	3.8	—		0.013		
Total NonaCB	<	0.6	—	—		0.001		
DecaCB (#209)	<	0.7	—	—		—		
Homologue Groups Sum			**20500**			**70**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109921	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.2
Station	21 New Bedford Welding	**Run Time (hours)**	23.91	**Average Solar Radiation (w•m²)**	397
Sample Type	Normal Sample	**Sample Volume (m³)**	322.785	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	3.6	—		0.011	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.46	—	J	0.0014	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.08	6	—		0.019	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.05	3.8	—		0.012	0.0005	0.000006
2,3',4,4',5-PentaCB (#118)	=	0.07	29.7	—		0.0920	0.0001	0.000009
2',3,4,4',5-PentaCB (#123)	=	0.07	0.71	—		0.0022	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.09	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.09	0.90	—		0.0028	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	M	0.08	—	0.19	J	0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.08	0.54	—		0.0017	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	2.6	—	Q	0.0081	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	1.8	—		0.0056	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	18.7	—		0.0579		
Total DiCB	=	0.07	1220	—	E	3.78		
Total TriCB	=	0.06	2720	—	E	8.43		
Total TetraCB	M	0.1	1760	1770	E	5.48		
Total PentaCB	M	0.1	438	446		1.38		
Total HexaCB	M	0.1	77.9	79.8		0.247		
Total HeptaCB	M	0.1	9.2	10.4	Q	0.032		
Total OctaCB	M	0.2	0.83	1	Q	0.0031		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**6270**			**19**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109922	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.1
Station	22 Woodlawn Park	**Run Time (hours)**	24.47	**Average Solar Radiation (w•m²)**	412
Sample Type	Normal Sample	**Sample Volume (m³)**	330.345	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.1	0.68	—	U	0.0010	0.0001	0.0000001
3,4,5,4'-TetraCB (#81)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,3',4,4'-PentaCB (#105)	<	0.1	1.3	—	U	0.0020	0.0001	0.0000002
2,3,4,4',5-PentaCB (#114)	<	0.08	0.76	—	U	0.0012	0.0005	0.0000006
2,3',4,4',5-PentaCB (#118)	=	0.1	4.4	—		0.013	0.0001	0.000001
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		0.0002	0.0001	0.00000002
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0002	0.1	0.00002
2,3,3',4,4',5-HexaCB (#156)	=	0.1	0.29	—	J	0.00088	0.0005	0.0000004
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—		0.0002	0.0005	0.00000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		0.0002	0.00001	0.000000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.2	—	—		0.0003	0.01	0.000003
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	2.3	—	Q	0.0070	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	1.1	—		0.0033	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.08	6.7	—	U	0.010		
Total DiCB	=	0.1	168	—	QE	0.509		
Total TriCB	M	0.08	339	339	E	1.03		
Total TetraCB	M	0.2	242	242		0.733		
Total PentaCB	<	0.2	63.6	67.9	U	0.103		
Total HexaCB	<	0.1	17.6	18	U	0.0272		
Total HeptaCB	<	0.2	6.9	—	U	0.010		
Total OctaCB	M	0.3	0.84	1.9	Q	0.0058		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**801**			**2.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109923	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.8
Station	23 Acushnet Substation	**Run Time (hours)**	24.23	**Average Solar Radiation (w•m²)**	466
Sample Type	Normal Sample	**Sample Volume (m³)**	327.105	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	3.3	—		0.010	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.35	—	J	0.0011	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.06	5	—		0.015	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.04	3.4	—		0.010	0.0005	0.000005
2,3',4,4',5-PentaCB (#118)	=	0.05	23.8	—		0.0728	0.0001	0.000007
2',3,4,4',5-PentaCB (#123)	=	0.05	0.65	—		0.0020	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.07	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.08	0.54	—		0.0017	0.0005	0.0000008
2,3,3',4,4',5'-HexaCB (#157)	<	0.07	—	—		0.0001	0.0005	0.00000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.07	0.49	—	J	0.0015	0.00001	0.00000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	3	—	Q	0.0092	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	2	—		0.0061	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	25.3	—		0.0773		
Total DiCB	=	0.04	1500	—	QE	4.6		
Total TriCB	=	0.03	3050	—	E	9.32		
Total TetraCB	M	0.04	1920	1920	E	5.87		
Total PentaCB	M	0.08	393	394		1.2		
Total HexaCB	M	0.07	80.7	81		0.248		
Total HeptaCB	=	0.1	14.6	—	Q	0.0446		
Total OctaCB	=	0.2	2.2	—	Q	0.0067		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**6990**			**21**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109924	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.1
Station	24 Aerovox	**Run Time (hours)**	24.48	**Average Solar Radiation (w•m²)**	412
Sample Type	Normal Sample	**Sample Volume (m³)**	330.48	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	24.4	—		0.0738	0.0001	0.000007
3,4,5,4'-TetraCB (#81)	=	—	3.8	—		0.011	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.3	42.2	—		0.128	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	=	0.2	32.4	—		0.0980	0.0005	0.00005
2,3',4,4',5-PentaCB (#118)	=	0.3	254	—	E	0.769	0.0001	0.00008
2',3,4,4',5-PentaCB (#123)	=	0.3	6.1			0.018	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	=	0.4	0.56	—		0.0017	0.1	0.0002
2,3,3',4,4',5-HexaCB (#156)	=	0.4	5.6	—		0.017	0.0005	0.000008
2,3,3',4,4',5'-HexaCB (#157)	=	0.3	0.95	—		0.0029	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.3	4.4	—		0.013	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.5	—	—		0.0008	0.01	0.000008
2,2',3,3',4,4',5-HeptaCB (#170)	=	1	5.7	—		0.017	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.6	9.1	—		0.028	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.5	—	—		—	0.0001	
DecaCB (#209)	<	2.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.2	231	—	E	0.699		
Total DiCB	=	0.2	6670	—	E	20.2		
Total TriCB	M	0.1	9640	9650	E	29.2		
Total TetraCB	M	0.2	10550	10570	E	31.98		
Total PentaCB	M	0.4	3770	3770	E	11.4		
Total HexaCB	M	0.4	765	770	E	2.33		
Total HeptaCB	M	0.6	66.2	66.7	Q	0.202		
Total OctaCB	=	0.8	3.7	—		0.011		
Total NonaCB	<	1.1	—	—		0.002		
DecaCB (#209)	<	2.1	—	—		—		
Homologue Groups Sum			**31700**			**96**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109924D	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.1
Station	24D Aerovox Duplicate	**Run Time (hours)**	24.5	**Average Solar Radiation (w•m²)**	412
Sample Type	Field Duplicate	**Sample Volume (m³)**	330.75	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.4	24.2	—		0.0732	0.0001	0.000007
3,4,5,4'-TetraCB (#81)	=	—	3.7	—		0.011	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.3	41.8	—		0.126	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	=	0.2	36.7	—		0.111	0.0005	0.00006
2,3',4,4',5-PentaCB (#118)	=	0.3	255	—	E	0.771	0.0001	0.00008
2',3,4,4',5-PentaCB (#123)	=	0.3	5.9	—		0.018	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	=	0.3	0.74	—		0.0022	0.1	0.0002
2,3,3',4,4',5-HexaCB (#156)	=	0.3	5.8	—		0.018	0.0005	0.000009
2,3,3',4,4',5'-HexaCB (#157)	=	0.3	0.97	—		0.0029	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.3	4.4	—		0.013	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.4	—	—		0.0006	0.01	0.000006
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.9	5	—		0.015	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.6	8.3	—		0.025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.4	—	—		—	0.0001	
DecaCB (#209)	<	1.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.3	265	—	E	0.801		
Total DiCB	=	0.2	7610	—	E	23		
Total TriCB	=	0.1	9840	—	E	29.8		
Total TetraCB	M	0.3	10630	10640	E	32.17		
Total PentaCB	M	0.5	4130	4140	E	12.5		
Total HexaCB	=	0.3	740	—	E	2.2		
Total HeptaCB	=	0.6	59.9	—	Q	0.181		
Total OctaCB	=	0.7	3.1	—		0.0094		
Total NonaCB	<	0.9	—	—		0.001		
DecaCB (#209)	<	1.7	—	—		—		
Homologue Groups Sum			**33300**			**100**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109925	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.4
Station	25 Cliftex	**Run Time (hours)**	24.53	**Average Solar Radiation (w•m²)**	417
Sample Type	Normal Sample	**Sample Volume (m³)**	331.155	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	11.8	—		0.0356	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	—	1.6	—		0.0048	0.0001	0.0000005
2,3,3',4,4'-PentaCB (#105)	=	0.2	14.1	—		0.0426	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.1	11.7	—		0.0353	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.2	100	—	E	0.30	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.2	2.3	—		0.0069	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	=	0.2	0.39	—	J	0.0012	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	=	0.3	2.1	—		0.0063	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	0.33	J	0.001	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	1.9	—		0.0057	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.8	6.3	—	Q	0.019	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.5	4.7	—		0.014	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.4	—	—		—	0.0001	
DecaCB (#209)	<	0.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	71.4	—	QE	0.216		
Total DiCB	M	0.2	5470	5480	E	16.5		
Total TriCB	M	0.09	7680	7700	E	23.3		
Total TetraCB	M	0.2	6810	6820	E	20.6		
Total PentaCB	M	0.3	1870	1880	E	5.68		
Total HexaCB	M	0.3	356	357	E	1.08		
Total HeptaCB	M	0.5	37.1	37.3	Q	0.113		
Total OctaCB	=	0.6	3	—	Q	0.0091		
Total NonaCB	<	0.8	—	—		0.001		
DecaCB (#209)	<	0.9	—	—		—		
Homologue Groups Sum			**22300**			**67**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/10/99	**Lab Sample Number**	06109926B	**Prevailing Wind Direction**	ENE
Project Number	48894	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	62.7
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	349
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	0.17	—	J	—		
3,4,5,4'-TetraCB (#81)	<	0.08	—	—		—		
2,3,3',4,4'-PentaCB (#105)	=	0.07	0.33	—	J	—		
2,3,4,4',5-PentaCB (#114)	=	0.05	0.22	—	J	—		
2,3',4,4',5-PentaCB (#118)	=	0.07	0.87	—	B	—		
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.07	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.1	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.09	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.09	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.2	—	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.2	—	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
PCB Homologue Groups								
Total MonoCB	M	0.04	2.3	2.5		—		
Total DiCB	=	0.04	28	—	Q	—		
Total TriCB	M	0.04	34.6	34.7		—		
Total TetraCB	M	0.07	36	39		—		
Total PentaCB	=	0.08	13.9	—		—		
Total HexaCB	=	0.1	7.7	—		—		
Total HeptaCB	M	0.2	1.3	1.6		—		
Total OctaCB	<	0.2	—	—		—		
Total NonaCB	<	0.3	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**128**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169921	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	21 New Bedford Welding	**Run Time (hours)**	23.42	**Average Solar Radiation (w•m²)**	273
Sample Type	Normal Sample	**Sample Volume (m³)**	316.17	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	3.7	—		0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.52	—		0.0016	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.2	7.4	—		0.023	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	5.3	—		0.017	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.2	37	—		0.12	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	0.2	1.1	—		0.0035	0.0001	0.0000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	1	—		0.0032	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	=	0.2	0.30	—	J	0.00095	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.65	—		0.0021	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	1.6	—		0.0051	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	1.6	—		0.0051	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	12.8	—		0.0405		
Total DiCB	=	0.09	1010	—	E	3.19		
Total TriCB	M	0.07	2380	2380	E	7.53		
Total TetraCB	M	0.1	1730	1730	E	5.47		
Total PentaCB	M	0.2	437	439		1.39		
Total HexaCB	=	0.2	90.2	—		0.285		
Total HeptaCB	=	0.3	10.6	—		0.0335		
Total OctaCB	<	0.4	—	—		0.0006		
Total NonaCB	<	0.6	—	—		0.0009		
DecaCB (#209)	<	1	—	—		—		
Homologue Groups Sum			**5670**			**18**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169922	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	22 Woodlawn Park	**Run Time (hours)**	24.11	**Average Solar Radiation (w•m²)**	273
Sample Type	Normal Sample	**Sample Volume (m³)**	325.485	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	0.67	—		0.0021	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,3',4,4'-PentaCB (#105)	=	0.2	1.6	—		0.0049	0.0001	0.0000005
2,3,4,4',5-PentaCB (#114)	=	0.1	0.80	—		0.0025	0.0005	0.000001
2,3',4,4',5-PentaCB (#118)	=	0.1	4.6	—		0.014	0.0001	0.000001
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	0.14	—	J	0.00043	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.2	—	—		0.0003	0.00001	0.000000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.2	—	—		0.0003	0.01	0.000003
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.4	—	—		0.0006	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	0.67	—		0.0021	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	M	0.1	4.3	4.7		0.014		
Total DiCB	=	0.09	86.8	—	E	0.267		
Total TriCB	M	0.08	176	176		0.541		
Total TetraCB	M	0.1	152	155		0.476		
Total PentaCB	M	0.2	44	53.6		0.16		
Total HexaCB	M	0.2	11.8	12.5		0.0384		
Total HeptaCB	=	0.2	4.2	—		0.013		
Total OctaCB	=	0.3	1.6	—		0.0049		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			495			1.5		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169923	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	63
Station	23 Acushnet Substation	**Run Time (hours)**	22.31	**Average Solar Radiation (w•m²)**	134
Sample Type	Normal Sample	**Sample Volume (m³)**	301.185	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	1.7	—		0.0056	0.0001	0.0000006
3,4,5,4'-TetraCB (#81)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,3',4,4'-PentaCB (#105)	=	0.2	2.3	—		0.0076	0.0001	0.0000008
2,3,4,4',5-PentaCB (#114)	=	0.1	2.9	—		0.0096	0.0005	0.000005
2,3',4,4',5-PentaCB (#118)	=	0.1	16.6	—		0.0551	0.0001	0.0000006
2',3,4,4',5-PentaCB (#123)	M	0.2	—	0.47	J	0.002	0.0001	0.00000002
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	0.31	—	J	0.0010	0.0005	0.0000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.27	—	J	0.00090	0.00001	0.000000009
3,3',4,4',5,5'-HexaCB (#169)	<	0.2	—	—		0.0003	0.01	0.000003
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.5	—	—		0.0008	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.3	—	1.1		0.004	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	0.6	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	21.7	—		0.0720		
Total DiCB	=	0.09	1100	—	E	3.7		
Total TriCB	=	0.07	2260	—	E	7.5		
Total TetraCB	M	0.1	1430	1430	E	4.75		
Total PentaCB	M	0.2	282	288		0.956		
Total HexaCB	=	0.2	57.9	—		0.192		
Total HeptaCB	M	0.3	6.1	7.2		0.024		
Total OctaCB	=	0.4	1.5	—		0.0050		
Total NonaCB	<	0.5	—	—		0.0008		
DecaCB (#209)	<	0.6	—	—		—		
Homologue Groups Sum			**5170**			**17**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169923B	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	65.2
Station	23 Acushnet Substation	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	282
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.1	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.1	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.07	—	—		—		
2,3',4,4',5-PentaCB (#118)	=	0.09	0.27	—	JB	—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.1	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.09	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.09	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.3	—	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.2	—	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.08	0.73	—		—		
Total DiCB	M	0.08	4.6	9		—		
Total TriCB	M	0.07	8.5	9.3		—		
Total TetraCB	M	0.1	4.5	5.1		—		
Total PentaCB	M	0.1	1.6	3		—		
Total HexaCB	M	0.1	0.56	0.9		—		
Total HeptaCB	<	0.2	—	—		—		
Total OctaCB	<	0.2	—	—		—		
Total NonaCB	<	0.3	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**28.4**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169924	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.6
Station	24 Aerovox	**Run Time (hours)**	22.18	**Average Solar Radiation (w•m²)**	266
Sample Type	Normal Sample	**Sample Volume (m³)**	299.43	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	25.3	—		0.0845	0.0001	0.000008
3,4,5,4'-TetraCB (#81)	=	—	4.3	—		0.014	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.2	47.4	—		0.158	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.2	42.7	—		0.143	0.0005	0.00007
2,3',4,4',5-PentaCB (#118)	=	0.2	282	—	E	0.942	0.0001	0.00009
2',3,4,4',5-PentaCB (#123)	=	0.2	7	—		0.023	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	=	0.3	0.60	—		0.0020	0.1	0.0002
2,3,3',4,4',5-HexaCB (#156)	=	0.3	5.3	—		0.018	0.0005	0.000009
2,3,3',4,4',5'-HexaCB (#157)	=	0.3	0.61	—		0.0020	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.3	4.2	—		0.014	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.7	7.3	—		0.024	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	8.2	—		0.027	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	0.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	335	—	E	1.12		
Total DiCB	=	0.1	8570	—	E	28.6		
Total TriCB	M	0.07	9820	9820	E	32.8		
Total TetraCB	M	0.2	10410	10430	E	34.83		
Total PentaCB	M	0.3	3670	3680	E	12.3		
Total HexaCB	M	0.2	745	745	E	2.49		
Total HeptaCB	=	0.4	64.6	—		0.216		
Total OctaCB	M	0.6	4.9	5.4		0.018		
Total NonaCB	=	0.8	0.50	—		0.0017		
DecaCB (#209)	<	0.9	—	—		—		
Homologue Groups Sum			**33700**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/16/99	**Lab Sample Number**	06169925	**Prevailing Wind Direction**	ENE
Project Number	48944	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.5
Station	25 Cliftex	**Run Time (hours)**	24.23	**Average Solar Radiation (w•m²)**	264
Sample Type	Normal Sample	**Sample Volume (m³)**	327.105	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	9.3	—		0.028	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	—	1.6	—		0.0049	0.0001	0.0000005
2,3,3',4,4'-PentaCB (#105)	=	0.2	14.1	—		0.0431	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.1	14	—		0.043	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.2	93.5	—		0.286	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.2	2.2	—		0.0067	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	1.7	—		0.0052	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	=	0.2	0.18	—	J	0.00055	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	M	0.2	—	1.4		0.004	0.00001	0.00000004
3,3',4,4',5,5'-HexaCB (#169)	<	0.3	—	—		0.0005	0.01	0.000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	2.1	—		0.0064	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	3.2	—		0.0098	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	0.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	58.1	—	E	0.178		
Total DiCB	=	0.1	4430	—	E	13.5		
Total TriCB	M	0.06	6280	6300	E	19.3		
Total TetraCB	M	0.1	5270	5280	E	16.1		
Total PentaCB	M	0.2	1440	1450	E	4.43		
Total HexaCB	M	0.2	287	291		0.890		
Total HeptaCB	M	0.3	23.1	24.3		0.0743		
Total OctaCB	=	0.4	1.6	—		0.0049		
Total NonaCB	<	0.5	—	—		0.0008		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**17800**			**55**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229921	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.4
Station	21 New Bedford Welding	**Run Time (hours)**	23.5	**Average Solar Radiation (w•m²)**	249
Sample Type	Normal Sample	**Sample Volume (m³)**	317.25	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	3.2	—		0.010	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.51	—		0.0016	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.1	9.6	—		0.030	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.1	4.9	—		0.015	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.1	34.1	—		0.107	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	0.1	0.68	—		0.0021	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	=	0.2	0.27	—	J	0.00085	0.1	0.00009
2,3,3',4,4',5-HexaCB (#156)	=	0.1	1.9	—		0.0060	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	0.24	J	0.0008	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	0.92	—		0.0029	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.3	—	2		0.006	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	2.4	—		0.0076	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	0.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	6.4	—		0.020		
Total DiCB	=	0.1	298	—	E	0.939		
Total TriCB	M	0.07	949	950	E	2.99		
Total TetraCB	M	0.1	1000	1010	E	3.2		
Total PentaCB	M	0.1	312	332		1.05		
Total HexaCB	M	0.1	92	94.2		0.30		
Total HeptaCB	M	0.2	9.7	12.2		0.038		
Total OctaCB	=	0.3	1.6	—		0.0050		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.7	—	—		—		
Homologue Groups Sum			**2700**			**8.5**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229921B	**Prevailing Wind Direction**	SSE
Project Number	48964	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	72.5
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	334
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.07	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.08	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.08	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.06	—	—		—		
2,3',4,4',5-PentaCB (#118)	M	0.07	—	0.15	J	—		
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.09	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.06	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.05	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.05	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.2	—	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.1	—	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—		
DecaCB (#209)	<	0.3	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.06	0.33	—		—		
Total DiCB	=	0.05	2.5	—		—		
Total TriCB	M	0.04	2.4	2.8		—		
Total TetraCB	M	0.07	1.8	2.1		—		
Total PentaCB	M	0.09	0.34	2.3		—		
Total HexaCB	M	0.08	0.16	0.36		—		
Total HeptaCB	<	0.1	—	—		—		
Total OctaCB	<	0.2	—	—		—		
Total NonaCB	<	0.2	—	—		—		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**10.6**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229922	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	22 Woodlawn Park	**Run Time (hours)**	23.88	**Average Solar Radiation (w•m²)**	281
Sample Type	Normal Sample	**Sample Volume (m³)**	322.38	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	1	—		0.0031	0.0001	0.0000003
3,4,5,4'-TetraCB (#81)	M	—	—	0.15	J	0.0005	0.0001	0.00000005
2,3,3',4,4'-PentaCB (#105)	=	0.1	2.1	—		0.0065	0.0001	0.0000007
2,3,4,4',5-PentaCB (#114)	=	0.08	1.3	—		0.0040	0.0005	0.000002
2,3',4,4',5-PentaCB (#118)	=	0.1	8.5	—		0.026	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	M	0.1	—	0.27	J	0.0008	0.0001	0.00000008
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0002	0.1	0.00002
2,3,3',4,4',5-HexaCB (#156)	<	0.09	—	—		0.0001	0.0005	0.00000007
2,3,3',4,4',5'-HexaCB (#157)	<	0.08	—	—		0.0001	0.0005	0.00000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.08	0.20	—	J	0.00062	0.00001	0.000000006
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	0.63	—		0.0020	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	1.1	—		0.0034	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	10.4	—		0.0323		
Total DiCB	=	0.08	169	—	E	0.524		
Total TriCB	M	0.06	376	376		1.17		
Total TetraCB	M	0.1	299	300		0.931		
Total PentaCB	M	0.1	89.8	93.7		0.291		
Total HexaCB	M	0.1	26.2	26.4		0.0819		
Total HeptaCB	M	0.2	5.8	6.4		0.020		
Total OctaCB	=	0.3	2.1	—		0.0065		
Total NonaCB	=	0.3	0.34	—		0.0011		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**984**			**3.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229923	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.1
Station	23 Acushnet Substation	**Run Time (hours)**	24.13	**Average Solar Radiation (w•m²)**	358
Sample Type	Normal Sample	**Sample Volume (m³)**	325.755	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	3.6	—		0.011	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.43	—	J	0.0013	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.2	5.4	—		0.017	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.2	5	—		0.015	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.2	32.5	—		0.0998	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	0.2	0.69	—		0.0021	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.3	—	—		0.0005	0.1	0.00005
2,3,3',4,4',5-HexaCB (#156)	M	0.2	—	0.68		0.002	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.60	—		0.0018	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.2	—	—		0.0003	0.01	0.000003
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	1.3	—		0.0040	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	1.8	—		0.0055	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	1.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	24.2	—		0.0743		
Total DiCB	M	0.1	920	923	E	2.8		
Total TriCB	M	0.08	1850	1850	E	5.68		
Total TetraCB	M	0.1	1540	1550	E	4.76		
Total PentaCB	=	0.2	399	—		1.22		
Total HexaCB	M	0.2	100	101		0.31		
Total HeptaCB	M	0.3	9.8	11.9		0.037		
Total OctaCB	=	0.5	1.7	—		0.0052		
Total NonaCB	<	0.7	—	—		0.001		
DecaCB (#209)	<	1.2	—	—		—		
Homologue Groups Sum			**4860**			**15**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229924	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	24 Aerovox	**Run Time (hours)**	24.13	**Average Solar Radiation (w•m²)**	281
Sample Type	Normal Sample	**Sample Volume (m³)**	325.755	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	43.1	—		0.132	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	—	6.1	—		0.019	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.09	92.4	—		0.284	0.0001	0.00003
2,3,4,4',5-PentaCB (#114)	=	0.06	72.2	—		0.222	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.08	491	—	E	1.51	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.08	13.2	—		0.0405	0.0001	0.000004
3,3',4,4',5-PentaCB (#126)	=	0.1	1.3	—		0.0040	0.1	0.0004
2,3,3',4,4',5-HexaCB (#156)	=	0.07	13.7	—		0.0421	0.0005	0.00002
2,3,3',4,4',5'-HexaCB (#157)	=	0.06	2.2	—		0.0068	0.0005	0.000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	9.8	—		0.030	0.00001	0.0000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.09	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	14.4	—		0.0442	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	17.9	—		0.0549	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.36	—	J	—	0.0001	
DecaCB (#209)	<	0.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.05	185	—	QE	0.568		
Total DiCB	=	0.04	10280	—	QE	31.56		
Total TriCB	=	0.02	13210	—	QE	40.55		
Total TetraCB	M	0.06	19150	19170	E	58.85		
Total PentaCB	M	0.08	6060	6060	E	18.6		
Total HexaCB	M	0.08	1400	1400	E	4.3		
Total HeptaCB	=	0.1	126	—		0.387		
Total OctaCB	=	0.2	9.3	—		0.029		
Total NonaCB	=	0.2	2.2	—		0.0068		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**50400**			**150**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229924D	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	24D Aerovox Duplicate	**Run Time (hours)**	20.14	**Average Solar Radiation (w•m²)**	281
Sample Type	Field Duplicate	**Sample Volume (m³)**	271.89	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	40.4	—		0.149	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	—	6.6	—		0.024	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.1	89.7	—		0.330	0.0001	0.00003
2,3,4,4',5-PentaCB (#114)	=	0.09	69.7	—		0.256	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.1	469	—	E	1.72	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.1	12.3	—		0.0452	0.0001	0.000005
3,3',4,4',5-PentaCB (#126)	=	0.1	1.2	—		0.0044	0.1	0.0004
2,3,3',4,4',5-HexaCB (#156)	=	0.1	12.4	—		0.0456	0.0005	0.00002
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	2	—		0.0074	0.0005	0.000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	8.5	—		0.031	0.00001	0.0000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	11.1	—		0.0408	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	14.8	—		0.0544	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.25	—	J	—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	248	—	QE	0.912		
Total DiCB	=	0.06	9700	—	QE	36		
Total TriCB	=	0.03	12180	—	E	44.8		
Total TetraCB	M	0.08	17620	17640	E	64.88		
Total PentaCB	M	0.1	5850	5850	E	21.5		
Total HexaCB	M	0.1	1290	1290	E	4.74		
Total HeptaCB	=	0.2	105	—		0.386		
Total OctaCB	=	0.2	6.8	—		0.025		
Total NonaCB	=	0.3	0.69	—		0.0025		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**47000**			**170**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229925	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	25 Cliftex	**Run Time (hours)**	23.92	**Average Solar Radiation (w•m²)**	281
Sample Type	Normal Sample	**Sample Volume (m³)**	322.92	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.09	11.7	—		0.0362	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	—	1.3	—		0.0040	0.0001	0.0000004
2,3,3',4,4'-PentaCB (#105)	=	0.1	16.2	—		0.0502	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.09	17	—		0.053	0.0005	0.00003
2,3',4,4',5-PentaCB (#118)	=	0.1	118	—	E	0.365	0.0001	0.00004
2',3,4,4',5-PentaCB (#123)	=	0.1	2.3	—		0.0071	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	=	0.1	0.36	—	J	0.0011	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	2.3	—		0.0071	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	=	0.09	0.43	—	J	0.0013	0.0005	0.0000007
2,3',4,4',5,5'-HexaCB (#167)	=	0.09	2.1	—		0.0065	0.00001	0.00000007
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	3.3	—		0.010	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	4.6	—		0.014	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	102	—	E	0.316		
Total DiCB	=	0.06	4700	—	E	15		
Total TriCB	M	0.04	7500	7510	E	23		
Total TetraCB	M	0.07	6230	6250	E	19.4		
Total PentaCB	M	0.1	1500	1510	E	4.7		
Total HexaCB	=	0.1	332	—	E	1.03		
Total HeptaCB	M	0.2	30.7	32.4		0.100		
Total OctaCB	=	0.3	3.4	—		0.011		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**20400**			**63**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/22/99	**Lab Sample Number**	06229926	**Prevailing Wind Direction**	SSW
Project Number	48964	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	26 103 Sawyer St	**Run Time (hours)**	23.86	**Average Solar Radiation (w•m²)**	306
Sample Type	Normal Sample	**Sample Volume (m³)**	322.11	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	7.9	—		0.025	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	—	0.83	—		0.0026	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.08	9	—		0.028	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.05	8	—		0.025	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.07	52.9	—		0.164	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.07	1.2	—		0.0037	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	=	0.08	0.28	—	J	0.00087	0.1	0.00009
2,3,3',4,4',5-HexaCB (#156)	=	0.06	1	—		0.0031	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	=	0.05	0.22	—	J	0.00068	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	0.86	—		0.0027	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.07	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	1.6	—		0.0050	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	2	—		0.0062	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	41.4	—	E	0.129		
Total DiCB	=	0.05	1680	—	E	5.22		
Total TriCB	M	0.03	3350	3350	E	10.4		
Total TetraCB	M	0.06	3010	3020	E	9.38		
Total PentaCB	M	0.08	706	706	E	2.19		
Total HexaCB	M	0.07	134	137		0.425		
Total HeptaCB	=	0.1	13.4	—		0.0416		
Total OctaCB	M	0.2	1.8	1.9		0.0059		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**8950**			**28**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069921	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86.2
Station	21 New Bedford Welding	**Run Time (hours)**	23.17	**Average Solar Radiation (w•m²)**	348
Sample Type	Normal Sample	**Sample Volume (m³)**	312.795	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	4.1	—		0.013	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	—	0.60	—		0.0019	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.1	16.1	—		0.0515	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.07	5.7	—		0.018	0.0005	0.000009
2,3',4,4',5-PentaCB (#118)	=	0.09	42.9	—		0.137	0.0001	0.000001
2',3,4,4',5-PentaCB (#123)	=	0.09	1.2	—		0.0038	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	=	0.1	0.39	—	J	0.0012	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	=	0.08	3.2	—		0.010	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	M	0.07	—	0.6		0.002	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.07	1.5	—		0.0048	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	3.3	—		0.011	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	4.3	—		0.014	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.09	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.09	6.2	—		0.020		
Total DiCB	=	0.07	246	—	E	0.786		
Total TriCB	=	0.05	907	—	E	2.9		
Total TetraCB	M	0.09	1330	1340	E	4.28		
Total PentaCB	M	0.09	411	412		1.32		
Total HexaCB	M	0.09	126	127		0.406		
Total HeptaCB	M	0.1	20.3	21.1		0.0675		
Total OctaCB	M	0.2	3.3	3.6		0.012		
Total NonaCB	=	0.3	0.87	—		0.0028		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**3060**			**9.8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069922	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86
Station	22 Woodlawn Park	**Run Time (hours)**	24.5	**Average Solar Radiation (w•m²)**	341
Sample Type	Normal Sample	**Sample Volume (m³)**	330.75	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	0.90	—		0.0027	0.0001	0.0000003
3,4,5,4'-TetraCB (#81)	=	—	0.14	—	J	0.00042	0.0001	0.00000004
2,3,3',4,4'-PentaCB (#105)	=	0.07	3	—		0.0091	0.0001	0.0000009
2,3,4,4',5-PentaCB (#114)	=	0.05	1.6	—		0.0048	0.0005	0.000002
2,3',4,4',5-PentaCB (#118)	=	0.06	10.3	—		0.0311	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	=	0.06	0.35	—	J	0.0011	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	=	0.08	0.38	—	J	0.0011	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	=	0.07	0.67	—		0.0020	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	M	0.06	—	0.12	J	0.0004	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	0.26	—	J	0.00079	0.00001	0.000000008
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	1.4	—		0.0042	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.1	—	1.9		0.006	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	11.6	—		0.0351		
Total DiCB	M	0.06	234	235	E	0.711		
Total TriCB	M	0.04	561	562	E	1.7		
Total TetraCB	M	0.08	454	457	E	1.38		
Total PentaCB	M	0.08	114	116		0.351		
Total HexaCB	M	0.08	36.5	38		0.115		
Total HeptaCB	M	0.1	8.4	10.4		0.031		
Total OctaCB	M	0.2	3.8	4.3		0.013		
Total NonaCB	=	0.3	0.98	—	Q	0.0030		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**1440**			**4.3**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069923	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.9
Station	23 Acushnet Substation	**Run Time (hours)**	23.91	**Average Solar Radiation (w•m²)**	362
Sample Type	Normal Sample	**Sample Volume (m³)**	322.785	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	11.7	—		0.0362	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	—	1	—		0.0031	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.07	14.8	—		0.0459	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.05	10.2	—		0.0316	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.06	88.3	—		0.274	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.06	2.2	—		0.0068	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	=	0.08	0.41	—	J	0.0013	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	=	0.05	2.1	—		0.0065	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	=	0.05	0.24	—	J	0.00074	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	1.7	—		0.0053	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	3.7	—		0.011	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	4.4	—		0.014	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	62.8	—	E	0.195		
Total DiCB	=	0.06	2240	—	E	6.94		
Total TriCB	=	0.04	4800	—	E	15		
Total TetraCB	M	0.09	4390	4390	E	13.6		
Total PentaCB	M	0.08	1130	1130	E	3.5		
Total HexaCB	M	0.08	272	274		0.849		
Total HeptaCB	M	0.1	27.5	28.2		0.0874		
Total OctaCB	=	0.2	4.8	—		0.015		
Total NonaCB	M	0.2	0.80	1.5	Q	0.0046		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**12900**			**40**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069924	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86
Station	24 Aerovox	**Run Time (hours)**	22.71	**Average Solar Radiation (w•m²)**	341
Sample Type	Normal Sample	**Sample Volume (m³)**	306.585	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	73.3	—		0.239	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	—	11.2	—		0.0365	0.0001	0.000004
2,3,3',4,4'-PentaCB (#105)	=	0.08	237	—	E	0.773	0.0001	0.00008
2,3,4,4',5-PentaCB (#114)	=	0.06	97	—		0.32	0.0005	0.0002
2,3',4,4',5-PentaCB (#118)	=	0.08	704	—	E	2.3	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.08	24.5	—		0.0799	0.0001	0.000008
3,3',4,4',5-PentaCB (#126)	=	0.09	2.6	—		0.0085	0.1	0.0008
2,3,3',4,4',5-HexaCB (#156)	=	0.07	30.9	—		0.101	0.0005	0.00005
2,3,3',4,4',5'-HexaCB (#157)	=	0.06	5.2	—		0.017	0.0005	0.000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	14.6	—		0.0476	0.00001	0.0000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	37.6	—		0.123	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	50.1	—		0.163	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.48	—	J	—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	141	—	QE	0.460		
Total DiCB	=	0.06	5950	—	E	19.4		
Total TriCB	=	0.03	12200	—	E	39.8		
Total TetraCB	M	0.08	21820	21840	E	71.24		
Total PentaCB	M	0.09	6960	6970	E	22.7		
Total HexaCB	M	0.09	1830	1880	E	6.13		
Total HeptaCB	M	0.1	266	266		0.868		
Total OctaCB	=	0.2	27.4	—		0.0894		
Total NonaCB	=	0.3	2.7	—	Q	0.0088		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**49300**			**160**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069924D	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86
Station	24D Aerovox Duplicate	**Run Time (hours)**	20.53	**Average Solar Radiation (w•m²)**	341
Sample Type	Field Duplicate	**Sample Volume (m³)**	277.155	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	68.4	—		0.247	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	—	10.5	—		0.0379	0.0001	0.000004
2,3,3',4,4'-PentaCB (#105)	=	0.08	234	—	E	0.844	0.0001	0.00008
2,3,4,4',5-PentaCB (#114)	=	0.05	103	—	E	0.372	0.0005	0.0002
2,3',4,4',5-PentaCB (#118)	=	0.07	719	—	E	2.59	0.0001	0.0003
2',3,4,4',5-PentaCB (#123)	=	0.07	24.2	—		0.0873	0.0001	0.000009
3,3',4,4',5-PentaCB (#126)	=	0.09	2.1	—		0.0076	0.1	0.0008
2,3,3',4,4',5-HexaCB (#156)	=	0.07	28.2	—		0.102	0.0005	0.00005
2,3,3',4,4',5'-HexaCB (#157)	=	0.06	4.7	—		0.017	0.0005	0.000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	14.6	—		0.0527	0.00001	0.0000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.09	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	39.4	—		0.142	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	50.5	—		0.182	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.55	—		—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.3	151	—	QE	0.545		
Total DiCB	M	0.04	5370	5960	E	21.5		
Total TriCB	=	0.03	11890	—	E	42.9		
Total TetraCB	M	0.06	20700	20730	E	74.8		
Total PentaCB	M	0.07	6650	6650	E	24		
Total HexaCB	M	0.08	1920	1920	E	6.93		
Total HeptaCB	M	0.1	288	289		1.04		
Total OctaCB	M	0.3	25.7	26.3		0.0949		
Total NonaCB	M	0.4	1.9	2.4	Q	0.0087		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**47600**			**170**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069925	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86.2
Station	25 Cliftex	**Run Time (hours)**	24.23	**Average Solar Radiation (w•m²)**	348
Sample Type	Normal Sample	**Sample Volume (m³)**	327.105	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	5.9	—		0.018	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	—	0.57	—		0.0017	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.08	9.8	—		0.030	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.06	6.3	—		0.019	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.08	50.3	—		0.154	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.08	1.2	—		0.0037	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	=	0.09	0.28	—	J	0.00086	0.1	0.00009
2,3,3',4,4',5-HexaCB (#156)	=	0.07	1.6	—		0.0049	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	M	0.06	—	0.2	J	0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	1.1	—		0.0034	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	3.4	—		0.010	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	5	—		0.015	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	38.7	—	E	0.118		
Total DiCB	=	0.07	1320	—	E	4.04		
Total TriCB	=	0.05	3070	—	E	9.39		
Total TetraCB	M	0.09	2690	2700	E	8.25		
Total PentaCB	M	0.09	635	637	E	1.95		
Total HexaCB	M	0.09	178	179		0.547		
Total HeptaCB	=	0.1	30.4	—		0.0929		
Total OctaCB	=	0.2	5.9	—		0.018		
Total NonaCB	=	0.3	0.95	—	Q	0.0029		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**7980**			**24**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069926	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	86
Station	26 103 Sawyer St	**Run Time (hours)**	23.52	**Average Solar Radiation (w•m²)**	341
Sample Type	Normal Sample	**Sample Volume (m³)**	317.52	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	39.6	—		0.125	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	—	2.1	—		0.0066	0.0001	0.0000007
2,3,3',4,4'-PentaCB (#105)	=	0.07	17.6	—		0.0554	0.0001	0.000006
2,3,4,4',5-PentaCB (#114)	=	0.05	14.7	—		0.0463	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.07	125	—	E	0.394	0.0001	0.00004
2',3,4,4',5-PentaCB (#123)	=	0.07	3.1	—		0.0098	0.0001	0.000001
3,3',4,4',5-PentaCB (#126)	=	0.08	1.6	—		0.0050	0.1	0.0005
2,3,3',4,4',5-HexaCB (#156)	=	0.05	2.4	—		0.0076	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	=	0.05	0.27	—	J	0.00085	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	2.5	—		0.0079	0.00001	0.00000008
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	4	—		0.013	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	5.3	—		0.017	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.09	—	—		—	0.0001	
DecaCB (#209)	<	0.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	109	—	E	0.343		
Total DiCB	=	0.07	2430	—	E	7.65		
Total TriCB	M	0.04	4860	4920	E	15.5		
Total TetraCB	M	0.08	5810	5820	E	18.3		
Total PentaCB	M	0.08	1720	1730	E	5.45		
Total HexaCB	M	0.08	396	396	E	1.25		
Total HeptaCB	=	0.1	35.8	—		0.113		
Total OctaCB	M	0.2	4.9	5.1		0.016		
Total NonaCB	=	0.3	0.52	—	Q	0.0016		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**15400**			**49**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069926B	**Prevailing Wind Direction**	W
Project Number	49048	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	88.1
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	313
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.07	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.07	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.08	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.05	—	—		—		
2,3',4,4',5-PentaCB (#118)	=	0.07	0.24	—	J	—		
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.08	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.07	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.06	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.06	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.2	—	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.1	—	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.09	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.08	0.94	—		—		
Total DiCB	=	0.06	4.6	—		—		
Total TriCB	M	0.06	4.6	4.6		—		
Total TetraCB	M	0.09	4.6	5.2		—		
Total PentaCB	M	0.09	1.1	7.3		—		
Total HexaCB	M	0.08	0.14	0.72		—		
Total HeptaCB	<	0.1	—	—		—		
Total OctaCB	<	0.2	—	—		—		
Total NonaCB	<	0.3	—	—		—		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**23.7**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109921	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.7
Station	21 New Bedford Welding	**Run Time (hours)**	23.91	**Average Solar Radiation (w•m²)**	206
Sample Type	Normal Sample	**Sample Volume (m³)**	322.785	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.04	1	—	U	0.0015	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	=	0.04	0.26	—	J	0.00081	0.0001	0.00000008
2,3,3',4,4'-PentaCB (#105)	=	0.03	4.1	—		0.013	0.0001	0.000001
2,3,4,4',5-PentaCB (#114)	=	0.02	1.8	—		0.0056	0.0005	0.000003
2,3',4,4',5-PentaCB (#118)	=	0.03	10.8	—		0.0335	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	=	0.03	0.38	—	J	0.0012	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	=	0.05	0.63	—		0.0020	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	=	0.04	0.14	—	J	0.00043	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.04	0.28	—	J	0.00087	0.00001	0.000000009
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.09	1.5	—		0.0046	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.06	—	—		—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.02	3.3	—	U	0.0051		
Total DiCB	<	0.01	33.9	—	U	0.0525		
Total TriCB	=	0.01	125	—		0.387		
Total TetraCB	M	0.02	182	182		0.564		
Total PentaCB	<	0.03	76.3	77.8	U	0.121		
Total HexaCB	<	0.04	32.7	33.3	U	0.0516		
Total HeptaCB	<	0.09	5.4	8.6	U	0.013		
Total OctaCB	<	0.2	1.1	1.3	U	0.0020		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**386**			**1.2**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109921B	**Prevailing Wind Direction**	WSW
Project Number	49076	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	77.3
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	152
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	M	0.06	—	0.72	B	—		
3,4,5,4'-TetraCB (#81)	<	0.07	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.07	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.09	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.09	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.1	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	3	—	Q	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.2	—	0.17	J	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	1.5	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.04	4.1	—		—		
Total DiCB	=	0.04	9.7	—		—		
Total TriCB	M	0.04	7.6	7.7		—		
Total TetraCB	M	0.05	10.9	11.7		—		
Total PentaCB	M	0.09	8.9	194		—		
Total HexaCB	M	0.1	3.2	7.4	Q	—		
Total HeptaCB	M	0.2	13.6	14.1	Q	—		
Total OctaCB	M	0.4	0.61	10.6	Q	—		
Total NonaCB	<	0.4	—	—		—		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**260**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109922	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.7
Station	22 Woodlawn Park	**Run Time (hours)**	24.21	**Average Solar Radiation (w•m²)**	206
Sample Type	Normal Sample	**Sample Volume (m³)**	326.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.04	0.84	—	U	0.0013	0.0001	0.0000001
3,4,5,4'-TetraCB (#81)	<	0.05	—	—		0.00008	0.0001	0.000000008
2,3,3',4,4'-PentaCB (#105)	=	0.04	1.1	—		0.0034	0.0001	0.0000003
2,3,4,4',5-PentaCB (#114)	=	0.03	0.47	—	J	0.0014	0.0005	0.0000007
2,3',4,4',5-PentaCB (#118)	M	0.04	—	3.2	B	0.01	0.0001	0.000001
2',3,4,4',5-PentaCB (#123)	<	0.04	—	—		0.00006	0.0001	0.000000006
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	<	0.1	—	—		0.0002	0.0005	0.00000008
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	0.30	—		0.00092	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		0.0002	0.00001	0.000000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	0.83	—		0.0025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—	0.0001	
DecaCB (#209)	<	0.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.02	5.5	—	U	0.0084		
Total DiCB	<	0.01	33.6	—	U	0.0514		
Total TriCB	M	0.02	62.1	62.6		0.192		
Total TetraCB	<	0.03	67.9	—	U	0.104		
Total PentaCB	<	0.04	21.6	134	U	0.205		
Total HexaCB	<	0.1	10.8	16.9	U	0.0259		
Total HeptaCB	<	0.1	42.6	43.1	U	0.0659		
Total OctaCB	<	0.2	0.35	23.6	U	0.036		
Total NonaCB	M	0.4	—	0.31	Q	0.0009		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**225**			**0.69**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109923	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.5
Station	23 Acushnet Substation	**Run Time (hours)**	24.36	**Average Solar Radiation (w•m²)**	231
Sample Type	Normal Sample	**Sample Volume (m³)**	328.86	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	8.5	—	B	0.026	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	0.08	0.93	—		0.0028	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.06	8.7	—		0.026	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.04	9.8	—		0.030	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.05	74.5	—		0.227	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.05	2.1	—		0.0064	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	<	0.07	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	2.2	—		0.0067	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	0.30	—		0.00091	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	1.7	—		0.0052	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	3.3	—		0.010	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.05	78.3	—	QE	0.238		
Total DiCB	=	0.03	2730	—	QE	8.3		
Total TriCB	=	0.02	5460	—	QSE	16.6		
Total TetraCB	=	0.05	4380	—	E	13.3		
Total PentaCB	<	0.07	905	958	U	1.46		
Total HexaCB	M	0.1	224.5	225.5		0.6857		
Total HeptaCB	<	0.2	36.9	39.9	U	0.0607		
Total OctaCB	<	0.4	3.1	10.2	U	0.016		
Total NonaCB	M	0.6	0.55	0.87	Q	0.0026		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**13400**			**41**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109924	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.7
Station	24 Aerovox	**Run Time (hours)**	23.92	**Average Solar Radiation (w•m²)**	206
Sample Type	Normal Sample	**Sample Volume (m³)**	322.92	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	27.4	—	Q	0.0849	0.0001	0.000008
3,4,5,4'-TetraCB (#81)	=	0.08	4.9	—	Q	0.015	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.09	75.7	—		0.234	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.06	34.8	—		0.108	0.0005	0.00005
2,3',4,4',5-PentaCB (#118)	=	0.07	210	—	E	0.65	0.0001	0.00007
2',3,4,4',5-PentaCB (#123)	=	0.07	7.5	—		0.023	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0002	0.1	0.00002
2,3,3',4,4',5-HexaCB (#156)	=	0.1	9.1	—		0.028	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	1.4	—		0.0043	0.0005	0.000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	3.8	—		0.012	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	16.3	—		0.0505	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.14	—	J	—	0.0001	
DecaCB (#209)	<	1.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	157	—	QE	0.486		
Total DiCB	M	0.04	2140	3750	QSE	11.6		
Total TriCB	=	0.03	6840	—	QSE	21.2		
Total TetraCB	M	0.06	10310	10310	QE	31.93		
Total PentaCB	M	0.08	2050	2120	E	6.57		
Total HexaCB	M	0.1	655.9	657.9	E	2.037		
Total HeptaCB	<	0.2	106	—	U	0.164		
Total OctaCB	<	0.5	5.4	24.5	U	0.038		
Total NonaCB	=	0.8	0.55	—	Q	0.0017		
DecaCB (#209)	<	1.8	—	—		—		
Homologue Groups Sum			**23900**			**74**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109925	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.7
Station	25 Cliftex	**Run Time (hours)**	24.35	**Average Solar Radiation (w•m²)**	206
Sample Type	Normal Sample	**Sample Volume (m³)**	328.725	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.07	1.6	—	U	0.0024	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	=	0.08	0.25	—	J	0.00076	0.0001	0.00000008
2,3,3',4,4'-PentaCB (#105)	=	0.07	2	—		0.0061	0.0001	0.0000006
2,3,4,4',5-PentaCB (#114)	M	0.05	—	1.9		0.006	0.0005	0.000003
2,3',4,4',5-PentaCB (#118)	=	0.06	12.5	—		0.0380	0.0001	0.000004
2',3,4,4',5-PentaCB (#123)	<	0.06	—	—		0.00009	0.0001	0.000000009
3,3',4,4',5-PentaCB (#126)	<	0.08	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.09	0.45	—	J	0.0014	0.0005	0.0000007
2,3,3',4,4',5'-HexaCB (#157)	<	0.08	—	—		0.0001	0.0005	0.00000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.07	0.25	—	J	0.00076	0.00001	0.000000008
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—		0.0002	0.01	0.000002
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	2.5	—		0.0076	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	0.6	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.04	7.2	—	U	0.011		
Total DiCB	=	0.04	280	—	E	0.85		
Total TriCB	=	0.03	736	—	E	2.24		
Total TetraCB	M	0.06	604	605	E	1.84		
Total PentaCB	<	0.07	132	174	U	0.265		
Total HexaCB	M	0.09	47.7	50.2		0.153		
Total HeptaCB	<	0.2	14.1	17.1	U	0.0260		
Total OctaCB	<	0.4	3	3.2	U	0.0049		
Total NonaCB	<	0.6	—	0.35	U	0.0005		
DecaCB (#209)	<	0.6	—	—		—		
Homologue Groups Sum			**1770**			**5.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/10/99	**Lab Sample Number**	7109926	**Prevailing Wind Direction**	NW
Project Number	49076	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	73
Station	26 103 Sawyer St	**Run Time (hours)**	24.3	**Average Solar Radiation (w•m²)**	242
Sample Type	Normal Sample	**Sample Volume (m³)**	328.05	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.05	13.7	—		0.0418	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	0.05	0.78	—		0.0024	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.08	8.5	—		0.026	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.06	7.8	—		0.024	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.07	52.7	—		0.161	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		0.0001	0.0001	0.00000001
3,3',4,4',5-PentaCB (#126)	<	0.08	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	1.2	—		0.0037	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—		0.0002	0.0005	0.00000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		0.0002	0.00001	0.000000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	1.7	—		0.0052	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.09	—	—		—	0.0001	
DecaCB (#209)	<	1.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.05	60.9	—	E	0.186		
Total DiCB	=	0.04	1370	—	E	4.18		
Total TriCB	=	0.03	2390	—	E	7.29		
Total TetraCB	M	0.05	1680	1680	E	5.12		
Total PentaCB	<	0.07	624	746	U	1.14		
Total HexaCB	M	0.1	153.7	157.2		0.4792		
Total HeptaCB	<	0.1	20.1	20.6	U	0.0314		
Total OctaCB	<	0.3	0.46	8.3	U	0.013		
Total NonaCB	=	0.3	0.16	—	Q	0.00049		
DecaCB (#209)	<	1.3	—	—		—		
Homologue Groups Sum			**6050**			**18**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169921	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	21 New Bedford Welding	**Run Time (hours)**	22.56	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	304.56	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.05	2.4	—	U	0.0039	0.0001	0.0000004
3,4,5,4'-TetraCB (#81)	=	0.05	0.37	—	J	0.0012	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.07	11.8	—		0.0387	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.05	7.6	—		0.025	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.06	30.2	—		0.0992	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	<	0.06	—	—		0.0001	0.0001	0.00000001
3,3',4,4',5-PentaCB (#126)	<	0.07	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	2.3	—		0.0076	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	0.4	Q	0.001	0.0005	0.0000007
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	1	—		0.0033	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	3	—		0.0099	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.09	—	—		—	0.0001	
DecaCB (#209)	<	0.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.04	7.1	—	U	0.012		
Total DiCB	=	0.03	66.3	—	E	0.218		
Total TriCB	=	0.03	330	330		1.1		
Total TetraCB	=	0.04	444	445	Q	1.46		
Total PentaCB	<	0.06	268	394	U	0.647		
Total HexaCB	=	0.1	105.3	109.8		0.3605		
Total HeptaCB	<	0.1	24.2	—	U	0.0397		
Total OctaCB	<	0.2	2.4	9.6	U	0.016		
Total NonaCB	=	0.3	0.26	—		0.00085		
DecaCB (#209)	<	0.9	—	—		—		
Homologue Groups Sum			**1170**			**3.8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169922	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	22 Woodlawn Park	**Run Time (hours)**	24.24	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	327.24	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.05	0.67	—	U	0.0010	0.0001	0.0000001
3,4,5,4'-TetraCB (#81)	=	0.05	0.070	—	J	0.00021	0.0001	0.00000002
2,3,3',4,4'-PentaCB (#105)	=	0.08	2.1	—	B	0.0064	0.0001	0.0000006
2,3,4,4',5-PentaCB (#114)	<	0.06	—	—		0.00009	0.0005	0.00000005
2,3',4,4',5-PentaCB (#118)	=	0.07	5.9	—	B	0.018	0.0001	0.000002
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		0.0001	0.0001	0.00000001
3,3',4,4',5-PentaCB (#126)	<	0.08	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	0.50	—		0.0015	0.0005	0.0000008
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	1.8	Q	0.006	0.0005	0.000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	0.30	—		0.00092	0.00001	0.000000009
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	1.3	—		0.0040	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—	0.0001	
DecaCB (#209)	<	0.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.06	7.7	—	U	0.012		
Total DiCB	<	0.03	49.2	—	U	0.0752		
Total TriCB	=	0.03	103	103		0.315		
Total TetraCB	=	0.05	102	102		0.312		
Total PentaCB	<	0.07	63.1	219	U	0.335		
Total HexaCB	<	0.1	29.2	33.1	U	0.0506		
Total HeptaCB	<	0.1	13.2	15.4	U	0.0235		
Total OctaCB	<	0.2	8.5	9	U	0.014		
Total NonaCB	=	0.3	0.50	—		0.0015		
DecaCB (#209)	<	0.7	—	—		—		
Homologue Groups Sum			**372**			**1.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169923	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	23 Acushnet Substation	**Run Time (hours)**	24.24	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	327.24	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	8.4	—		0.026	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	0.06	0.77	—		0.0024	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.1	14.3	—		0.0437	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.07	14.2	—		0.0434	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.09	93.3	—		0.285	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.09	2.3	—		0.0070	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0002	0.1	0.00002
2,3,3',4,4',5-HexaCB (#156)	=	0.1	2.2	—		0.0067	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	0.4		0.001	0.0005	0.0000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	1.9	—		0.0058	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	3.6	—		0.011	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	1.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.05	70.8	—	E	0.216		
Total DiCB	=	0.03	2650	—	E	8.1		
Total TriCB	=	0.03	5790	—	E	17.7		
Total TetraCB	=	0.05	3740	3740	E	11.4		
Total PentaCB	=	0.08	1150	1300	E	3.97		
Total HexaCB	=	0.1	321.3	325.2		0.9938		
Total HeptaCB	<	0.2	37.7	40	U	0.0611		
Total OctaCB	<	0.4	1.9	14.7	U	0.022		
Total NonaCB	=	0.5	0.43	—		0.0013		
DecaCB (#209)	<	1.8	—	—		—		
Homologue Groups Sum			**13900**			**42**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169924	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	24 Aerovox	**Run Time (hours)**	22.69	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	306.315	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	41	—		0.13	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.1	5.9	—		0.019	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.2	190	—	E	0.62	0.0001	0.00006
2,3,4,4',5-PentaCB (#114)	=	0.1	92.2	—		0.301	0.0005	0.0002
2,3',4,4',5-PentaCB (#118)	=	0.2	538	—	E	1.76	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.1	18.6	—		0.0607	0.0001	0.000006
3,3',4,4',5-PentaCB (#126)	=	0.2	2.5	—		0.0082	0.1	0.0008
2,3,3',4,4',5-HexaCB (#156)	=	0.2	29.1	—		0.0950	0.0005	0.00005
2,3,3',4,4',5'-HexaCB (#157)	=	0.2	3.4	—	Q	0.011	0.0005	0.000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	11.4	—		0.0372	0.00001	0.0000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	39	—		0.13	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.2	0.55	—		—	0.0001	
DecaCB (#209)	<	2.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.0	168	—	QE	0.548		
Total DiCB	=	0.05	2830	4550	QSE	14.9		
Total TriCB	=	0.05	8320	—	QSE	27.2		
Total TetraCB	=	0.1	13490	13500	E	44.07		
Total PentaCB	=	0.1	4440	4670	E	15.2		
Total HexaCB	=	0.2	1565.6	1576.2	E	5.1457		
Total HeptaCB	=	0.3	192	—	Q	0.627		
Total OctaCB	<	0.7	30.2	—	U	0.0493		
Total NonaCB	=	0.8	1.5	—		0.0049		
DecaCB (#209)	<	2.7	—	—		—		
Homologue Groups Sum			**33000**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	71699 spike	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	24D Aerovox Duplicate	**Run Time (hours)**	21.24	**Average Solar Radiation (w•m²)**	309
Sample Type	Field Spike	**Sample Volume (m³)**	286.74	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	43.1	—		0.150	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	0.09	5.3	—		0.018	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.1	145	—	E	0.506	0.0001	0.00005
2,3,4,4',5-PentaCB (#114)	=	0.1	80	—		0.28	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.1	401	—	E	1.4	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.1	22.5	—		0.0785	0.0001	0.000008
3,3',4,4',5-PentaCB (#126)	=	0.1	9.2	—		0.032	0.1	0.003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	27	—		0.094	0.0005	0.00005
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	12.9	—	Q	0.0450	0.0005	0.00002
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	18	—		0.063	0.00001	0.0000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.3	—	2.5	QB	0.009	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	35.3	—		0.123	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.2	8.9	—		—	0.0001	
DecaCB (#209)	=	2	14.1	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	183	—	QE	0.638		
Total DiCB	=	0.04	2820	4700	QSE	16.4		
Total TriCB	=	0.04	8450	—	SE	29.5		
Total TetraCB	=	0.07	12220	12230	E	42.65		
Total PentaCB	=	0.1	3710	3890	QE	13.6		
Total HexaCB	=	0.2	990.3	996.8	E	3.476		
Total HeptaCB	=	0.2	163	168	Q	0.586		
Total OctaCB	=	0.5	18.6	33.3	Q	0.116		
Total NonaCB	=	0.6	0.99	1.1	Q	0.0038		
DecaCB (#209)	=	2	14.1	—		—		
Homologue Groups Sum			**30700**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169925	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.8
Station	25 Cliftex	**Run Time (hours)**	25.17	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	339.795	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	4.1	—	B	0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.09	0.40	—	J	0.0012	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	M	0.1	—	7.7		0.02	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	M	0.09	—	8		0.02	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.1	38.5	—		0.113	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		0.0001	0.0001	0.00000001
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.2	1.3	—		0.0038	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	0.1		0.0003	0.0005	0.0000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	0.90	—		0.0026	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.3	3	—	U	0.0044	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	4	—		0.012	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	21.7	—		0.0639		
Total DiCB	=	0.04	634	—	E	1.87		
Total TriCB	=	0.04	1870	—	E	5.5		
Total TetraCB	=	0.06	1250	1250	QE	3.68		
Total PentaCB	<	0.1	430	663	U	0.98		
Total HexaCB	=	0.1	147.2	153.6		0.4520		
Total HeptaCB	<	0.2	40.3	43.1	U	0.0634		
Total OctaCB	<	0.5	5	20.4	U	0.030		
Total NonaCB	=	0.5	0.49	—		0.0014		
DecaCB (#209)	<	2	—	—		—		
Homologue Groups Sum			**4290**			**13**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169926	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	84
Station	26 103 Sawyer St	**Run Time (hours)**	24.24	**Average Solar Radiation (w•m²)**	322
Sample Type	Normal Sample	**Sample Volume (m³)**	327.24	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	31.1	—		0.0950	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.08	1.8	—		0.0055	0.0001	0.0000006
2,3,3',4,4'-PentaCB (#105)	=	0.1	18.6	—		0.0568	0.0001	0.000006
2,3,4,4',5-PentaCB (#114)	=	0.09	18	—		0.055	0.0005	0.00003
2,3',4,4',5-PentaCB (#118)	=	0.1	127	—	E	0.388	0.0001	0.00004
2',3,4,4',5-PentaCB (#123)	=	0.1	2.9	—		0.0089	0.0001	0.0000009
3,3',4,4',5-PentaCB (#126)	M	0.1	—	4.2		0.01	0.1	0.001
2,3,3',4,4',5-HexaCB (#156)	=	0.2	3.1	—		0.0095	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	0.7	Q	0.002	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	3.4	—		0.010	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	4.8	—		0.015	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	1.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	59.8	—	E	0.183		
Total DiCB	=	0.05	1640	—	E	5.01		
Total TriCB	=	0.05	3860	—	E	11.8		
Total TetraCB	=	0.07	3250	3250	QE	9.93		
Total PentaCB	=	0.1	1510	1620	QE	4.95		
Total HexaCB	=	0.1	435.1	438.6	E	1.34		
Total HeptaCB	<	0.2	39.1	41	U	0.0626		
Total OctaCB	<	0.4	8	9.5	U	0.015		
Total NonaCB	=	0.4	0.39	1.7		0.0052		
DecaCB (#209)	<	1.4	—	—		—		
Homologue Groups Sum			**10900**			**33**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/16/99	**Lab Sample Number**	7169926B	**Prevailing Wind Direction**	WSW
Project Number	49130	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	82.1
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	290
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	0.78	—	B	—		
3,4,5,4'-TetraCB (#81)	<	0.09	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.1	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.1	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.2	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.2	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.3	—	3.7	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	0.21	—	J	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—		
DecaCB (#209)	<	2	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.07	2.5	3		—		
Total DiCB	=	0.05	11.4	—		—		
Total TriCB	=	0.05	7.9	9.1		—		
Total TetraCB	=	0.08	13.8	14.4		—		
Total PentaCB	=	0.1	36.2	220	Q	—		
Total HexaCB	=	0.2	6	10.8	Q	—		
Total HeptaCB	=	0.2	15.5	19.8	Q	—		
Total OctaCB	=	0.5	0.81	14.5	Q	—		
Total NonaCB	<	0.6	—	—		—		
DecaCB (#209)	<	2	—	—		—		
Homologue Groups Sum			303					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229921	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.9
Station	21 New Bedford Welding	**Run Time (hours)**	23.89	**Average Solar Radiation (w•m²)**	267
Sample Type	Normal Sample	**Sample Volume (m³)**	322.515	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.2	2	—	U	0.0031	0.0001	0.0000003
3,4,5,4'-TetraCB (#81)	<	0.3	—	—		0.0005	0.0001	0.00000005
2,3,3',4,4'-PentaCB (#105)	<	0.4	—	—		0.0006	0.0001	0.00000006
2,3,4,4',5-PentaCB (#114)	<	0.3	—	—		0.0005	0.0005	0.0000002
2,3',4,4',5-PentaCB (#118)	=	0.3	14	—		0.043	0.0001	0.000004
2',3,4,4',5-PentaCB (#123)	<	0.3	—	—		0.0005	0.0001	0.00000005
3,3',4,4',5-PentaCB (#126)	<	0.4	—	—		0.0006	0.1	0.00006
2,3,3',4,4',5-HexaCB (#156)	=	0.4	1.4	—		0.0043	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	M	0.3	—	0.4		0.001	0.0005	0.0000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.3	0.50	—		0.0016	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.8	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.5	2	—		0.0062	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.5	—	—		—	0.0001	
DecaCB (#209)	<	5.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.2	4.6	5.6	U	0.0087		
Total DiCB	=	0.1	49.2	—		0.153		
Total TriCB	M	0.1	142	142		0.440		
Total TetraCB	=	0.2	188	—		0.583		
Total PentaCB	M	0.3	123	712	E	2.21		
Total HexaCB	M	0.4	51	55.7		0.17		
Total HeptaCB	<	0.6	35	36.6	U	0.057		
Total OctaCB	M	1.1	2.5	22.1	Q	0.069		
Total NonaCB	<	1.2	—	—		0.002		
DecaCB (#209)	<	5.7	—	—		—		
Homologue Groups Sum			**1190**			**3.7**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229921B	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	76.7
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	239
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	0.33	—	JB	—		
3,4,5,4'-TetraCB (#81)	<	0.1	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.2	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.1	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.2	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.2	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	0.4		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.2	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	2.7	—	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	0.24	—	J	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—		
DecaCB (#209)	<	1.5	—	—		—		
PCB Homologue Groups								
Total MonoCB	<	—	—	—		—		
Total DiCB	M	0.09	6.6	7.3		—		
Total TriCB	M	0.08	6.1	7.1		—		
Total TetraCB	M	0.1	11.6	12.4		—		
Total PentaCB	M	0.2	—	160		—		
Total HexaCB	M	0.2	2.5	6	Q	—		
Total HeptaCB	=	0.3	15.2	—	Q	—		
Total OctaCB	M	0.6	0.88	10.8	Q	—		
Total NonaCB	<	0.7	—	—		—		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**219**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229922	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	77
Station	22 Woodlawn Park	**Run Time (hours)**	23.79	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	321.165	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.1	1	—	U	0.0016	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.1	—	—		0.0002	0.0001	0.00000002
2,3,3',4,4'-PentaCB (#105)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,4,4',5-PentaCB (#114)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5-PentaCB (#118)	=	0.2	5.2	—		0.016	0.0001	0.000002
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.2	—	—		0.0003	0.00001	0.000000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.3	0.82	—	U	0.0013	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.09	4.1	4.8	U	0.0075		
Total DiCB	<	0.07	27.4	—	U	0.0427		
Total TriCB	=	0.07	49.4	—		0.154		
Total TetraCB	=	0.1	63	—		0.20		
Total PentaCB	M	0.2	42.4	238	E	0.741		
Total HexaCB	<	0.2	13.2	18.8	U	0.0293		
Total HeptaCB	<	0.3	25.1	28.8	U	0.0448		
Total OctaCB	M	0.7	20.8	23.8	Q	0.0741		
Total NonaCB	<	0.8	—	—		0.001		
DecaCB (#209)	<	2	—	—		—		
Homologue Groups Sum			414			1.3		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229923	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	77
Station	23 Acushnet Substation	**Run Time (hours)**	23.92	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	322.92	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	7.5	—		0.023	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.4	0.60	—		0.0019	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.5	11.5	—		0.0356	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.4	10.2	—		0.0316	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.5	76.8	—		0.238	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	<	0.5	—	—		0.0008	0.0001	0.00000008
3,3',4,4',5-PentaCB (#126)	<	0.5	—	—		0.0008	0.1	0.00008
2,3,3',4,4',5-HexaCB (#156)	=	0.6	1.7	—		0.0053	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	M	0.5	—	0.5		0.002	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.5	1.7	1.2		0.0037	0.00001	0.00000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.8	3.1	—		0.0096	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.7	—	—		—	0.0001	
DecaCB (#209)	<	4.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.3	63.7	—	E	0.197		
Total DiCB	=	0.2	2470	—	E	7.65		
Total TriCB	=	0.2	5440	—	E	16.8		
Total TetraCB	M	0.3	3780	3780	E	11.7		
Total PentaCB	M	0.5	954	1070	E	3.31		
Total HexaCB	M	0.5	214.2	233.6		0.7234		
Total HeptaCB	<	0.8	44.8	47.1	U	0.0729		
Total OctaCB	M	1.8	3	20.8	Q	0.064		
Total NonaCB	<	2	—	—		0.003		
DecaCB (#209)	<	4.9	—	—		—		
Homologue Groups Sum			**13100**			**41**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229924	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	77.1
Station	24 Aerovox	**Run Time (hours)**	23.8	**Average Solar Radiation (w•m²)**	283
Sample Type	Normal Sample	**Sample Volume (m³)**	321.3	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	45.1	—		0.140	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.2	6.9	—		0.021	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.3	177	—	E	0.551	0.0001	0.00006
2,3,4,4',5-PentaCB (#114)	=	0.2	92.2	—		0.287	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.2	522	—	E	1.62	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.2	17.4	—		0.0542	0.0001	0.000005
3,3',4,4',5-PentaCB (#126)	M	0.3	—	6.6		0.02	0.1	0.002
2,3,3',4,4',5-HexaCB (#156)	=	0.3	26.1	—		0.0812	0.0005	0.00004
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	4.9		0.02	0.0005	0.000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	10.9	—		0.0339	0.00001	0.0000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	31.5	—		0.0980	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.3	0.53	—		—	0.0001	
DecaCB (#209)	<	2.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.1	—	—		0.0002		
Total DiCB	=	0.1	6610	—	QSE	20.6		
Total TriCB	=	0.07	11510	—	E	35.82		
Total TetraCB	M	0.1	13350	13360	E	41.58		
Total PentaCB	M	0.2	4600	4710	E	15		
Total HexaCB	M	0.3	1417.3	1426.1	E	4.4385		
Total HeptaCB	=	0.4	172	—	Q	0.535		
Total OctaCB	M	0.8	27.9	30.4	Q	0.0946		
Total NonaCB	=	0.9	0.80	—		0.0025		
DecaCB (#209)	<	2.2	—	—		—		
Homologue Groups Sum			**37800**			**120**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229925	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.9
Station	25 Cliftex	**Run Time (hours)**	23.8	**Average Solar Radiation (w•m²)**	267
Sample Type	Normal Sample	**Sample Volume (m³)**	321.3	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	3.6	—	B	0.011	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.1	0.32	—	J	0.0010	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.2	6.3	—		0.020	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	5	—		0.016	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.2	34.3	—		0.107	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	1	—		0.0031	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	0.5		0.002	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.70	—		0.0022	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	3.1	—		0.0096	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	28.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	M	0.1	20.9	21.1		0.0657		
Total DiCB	=	0.07	798	—	E	2.48		
Total TriCB	=	0.07	2230	—	E	6.94		
Total TetraCB	M	0.1	1510	1510	E	4.7		
Total PentaCB	M	0.2	400	510		1.6		
Total HexaCB	M	0.2	108.7	115.1		0.3582		
Total HeptaCB	<	0.3	37.1	38.1	U	0.0593		
Total OctaCB	M	0.6	3.8	18.1	Q	0.056		
Total NonaCB	<	0.7	—	—		0.001		
DecaCB (#209)	<	28.8	—	—		—		
Homologue Groups Sum			**5220**			**16**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/22/99	**Lab Sample Number**	7229926	**Prevailing Wind Direction**	SW
Project Number	49159	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.9
Station	26 103 Sawyer St	**Run Time (hours)**	23.77	**Average Solar Radiation (w•m²)**	267
Sample Type	Normal Sample	**Sample Volume (m³)**	320.895	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	5	—	B	0.016	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.1	0.41	—	J	0.0013	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.2	6.5	—		0.020	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	4.5	—		0.014	0.0005	0.000007
2,3',4,4',5-PentaCB (#118)	=	0.2	30.3	—		0.0944	0.0001	0.000009
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	1	—		0.0031	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	0.6		0.002	0.0005	0.0000009
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.60	—		0.0019	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	1.8	—		0.0056	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	16.2	—		0.0505		
Total DiCB	=	0.08	436	—	E	1.36		
Total TriCB	=	0.07	668	—	E	2.08		
Total TetraCB	M	0.1	886	889	E	2.77		
Total PentaCB	M	0.2	278	391		1.22		
Total HexaCB	M	0.2	85.5	97.9		0.305		
Total HeptaCB	<	0.3	32.1	32.3	U	0.0503		
Total OctaCB	M	0.6	2.6	17.9	Q	0.056		
Total NonaCB	<	0.7	—	—		0.001		
DecaCB (#209)	<	8	—	—		—		
Homologue Groups Sum			**2530**			**7.9**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289921	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	82.9
Station	21 New Bedford Welding	**Run Time (hours)**	25.23	**Average Solar Radiation (w•m²)**	354
Sample Type	Normal Sample	**Sample Volume (m³)**	340.605	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	5.2	—		0.015	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.03	0.59	—		0.0017	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.04	17.5	—		0.0514	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.03	8.5	—		0.025	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.04	59.8	—		0.176	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	M	0.04	—	2		0.006	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00007	0.1	0.000007
2,3,3',4,4',5-HexaCB (#156)	=	0.1	3	—		0.0088	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	1.1	U	0.002	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	1.4	—	U	0.0021	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.02	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.01	3.4	—		0.010	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.008	—	—		—	0.0001	
DecaCB (#209)	<	9.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	24.1	—		0.0708		
Total DiCB	=	0.02	906	—	E	2.66		
Total TriCB	=	0.02	2860	—	E	8.4		
Total TetraCB	=	0.03	2070	2070	E	6.08		
Total PentaCB	<	0.05	652	800	U	1.17		
Total HexaCB	=	0.1	173.7	181.8		0.5338		
Total HeptaCB	<	0.01	26.3	26.6	U	0.0390		
Total OctaCB	<	0.2	0.86	9.3	U	0.014		
Total NonaCB	<	0.2	—	2.7	U	0.004		
DecaCB (#209)	<	9.9	—	—		—		
Homologue Groups Sum			**6460**			**19**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289921B	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	82.4
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	313
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	0.39	—	JB	—		
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.04	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.03	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.04	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.04	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	M	0.04	—	0.4		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	M	0.04	—	1.1	Q	—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.1	1.7	—	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.08	—	0.52	Q	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.07	—	—		—		
DecaCB (#209)	<	0.5	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.03	3.1	—		—		
Total DiCB	=	0.02	11.8	17.5		—		
Total TriCB	=	0.02	8.4	9.5		—		
Total TetraCB	=	0.03	12.1	13.9		—		
Total PentaCB	M	0.04	—	46		—		
Total HexaCB	=	0.04	5.5	9.6	Q	—		
Total HeptaCB	=	0.09	7.8	8.7	Q	—		
Total OctaCB	=	0.1	4.2	4.7	Q	—		
Total NonaCB	<	0.1	—	—		—		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			113					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289922	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.1
Station	22 Woodlawn Park	**Run Time (hours)**	25.23	**Average Solar Radiation (w•m²)**	363
Sample Type	Normal Sample	**Sample Volume (m³)**	340.605	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.05	1.6	—	U	0.0023	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.06	—	—		0.00009	0.0001	0.000000009
2,3,3',4,4'-PentaCB (#105)	<	0.08	—	—		0.0001	0.0001	0.00000001
2,3,4,4',5-PentaCB (#114)	<	0.06	—	—		0.00009	0.0005	0.00000004
2,3',4,4',5-PentaCB (#118)	=	0.08	9.2	—		0.027	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	<	0.08	—	—		0.0001	0.0001	0.00000001
3,3',4,4',5-PentaCB (#126)	<	0.08	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	<	0.1	0.60	—	U	0.00088	0.0005	0.0000004
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	0.1	U	0.0001	0.0005	0.00000007
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	0.2	U	0.0003	0.00001	0.000000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	1.6	—		0.0047	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	2.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.001	—	—		0.000001		
Total DiCB	=	0.02	123	—	E	0.361		
Total TriCB	=	0.02	333	333	E	0.978		
Total TetraCB	=	0.04	233	234		0.687		
Total PentaCB	<	0.06	75.2	217	U	0.319		
Total HexaCB	<	0.1	22.2	30.6	U	0.0449		
Total HeptaCB	<	0.2	30.5	40.1	U	0.0589		
Total OctaCB	<	0.3	0.67	20.1	U	0.030		
Total NonaCB	<	0.3	—	—		0.0004		
DecaCB (#209)	<	2.8	—	—		—		
Homologue Groups Sum			**844**			**2.5**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289923	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	82.7
Station	23 Acushnet Substation	**Run Time (hours)**	25.2	**Average Solar Radiation (w•m²)**	342
Sample Type	Normal Sample	**Sample Volume (m³)**	340.2	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	8.5	—		0.025	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.07	0.90	—		0.0026	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.09	13.3	—		0.0391	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.07	11.9	—		0.0350	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.09	88.2	—		0.259	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.09	2.4	—		0.0071	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	M	0.09	—	76.2		0.2	0.1	0.02
2,3,3',4,4',5-HexaCB (#156)	=	0.1	2.2	—		0.0065	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	1.9	U	0.003	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	2.2	—	U	0.0032	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.2	2.4	—	U	0.0035	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	1.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	86.1	—	E	0.253		
Total DiCB	=	0.04	2950	—	E	8.67		
Total TriCB	=	0.03	5690	5690	E	16.7		
Total TetraCB	=	0.06	3860	3870	E	11.4		
Total PentaCB	=	0.08	944	1130	E	3.32		
Total HexaCB	=	0.1	235.2	244.5		0.7187		
Total HeptaCB	<	0.2	34	—	U	0.050		
Total OctaCB	<	0.4	14.3	—	U	0.0210		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	1.4	—	—		—		
Homologue Groups Sum			**14000**			**41**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289924	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.1
Station	24 Aerovox	**Run Time (hours)**	25.18	**Average Solar Radiation (w•m²)**	363
Sample Type	Normal Sample	**Sample Volume (m³)**	339.93	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	67.2	—		0.198	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	0.1	10	—		0.029	0.0001	0.000003
2,3,3',4,4'-PentaCB (#105)	=	0.1	212	—	E	0.624	0.0001	0.00006
2,3,4,4',5-PentaCB (#114)	=	0.09	128	—	E	0.377	0.0005	0.0002
2,3',4,4',5-PentaCB (#118)	=	0.1	774	—	E	2.28	0.0001	0.0002
2',3,4,4',5-PentaCB (#123)	=	0.1	24.1	—		0.0709	0.0001	0.000007
3,3',4,4',5-PentaCB (#126)	M	0.1	—	81.8		0.2	0.1	0.02
2,3,3',4,4',5-HexaCB (#156)	=	0.1	22.9	—	Q	0.0674	0.0005	0.00003
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	3.7		0.01	0.0005	0.000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	12.4	—		0.0365	0.00001	0.0000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	14.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	9	22.5	—		0.0662	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	8.2	0.35	—	QJ	—	0.0001	
DecaCB (#209)	<	1.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	386	—	QE	1.14		
Total DiCB	=	0.03	2830	8010	SE	23.6		
Total TriCB	=	0.02	9060	9060	SE	26.7		
Total TetraCB	=	0.06	20090	20100	SE	59.13		
Total PentaCB	=	0.1	7430	7720	E	22.7		
Total HexaCB	=	0.1	1969.9	1976.5	E	5.8144		
Total HeptaCB	=	9.9	177	179	Q	0.527		
Total OctaCB	<	0.5	30.7	31.2	U	0.0459		
Total NonaCB	<	0.5	—	1.1	U	0.002		
DecaCB (#209)	<	1.9	—	—		—		
Homologue Groups Sum			**47400**			**140**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289924D	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	83.1
Station	24D Aerovox Duplicate	**Run Time (hours)**	25.18	**Average Solar Radiation (w•m²)**	363
Sample Type	Field Duplicate	**Sample Volume (m³)**	339.93	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	69.4	—		0.204	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	0.1	9.9	—		0.029	0.0001	0.000003
2,3,3',4,4'-PentaCB (#105)	=	0.2	237	—	E	0.697	0.0001	0.00007
2,3,4,4',5-PentaCB (#114)	=	0.1	139	—	E	0.409	0.0005	0.0002
2,3',4,4',5-PentaCB (#118)	=	0.2	855	—	E	2.52	0.0001	0.0003
2',3,4,4',5-PentaCB (#123)	=	0.2	27.3	—		0.0803	0.0001	0.000008
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	=	0.2	21.8	—		0.0641	0.0005	0.00003
2,3,3',4,4',5'-HexaCB (#157)	=	0.2	4.5	—		0.013	0.0005	0.000007
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	13	—		0.038	0.00001	0.0000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	19.3	—		0.0568	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.3	0.33	—	J	—	0.0001	
DecaCB (#209)	<	3.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	405	—	QE	1.19		
Total DiCB	=	0.04	2750	7680	SE	22.6		
Total TriCB	=	0.04	14350	14350	SE	42.21		
Total TetraCB	=	0.09	20570	20590	SE	60.57		
Total PentaCB	=	0.1	7680	8010	E	23.6		
Total HexaCB	=	0.2	2094.3	2098.1	E	6.1722		
Total HeptaCB	=	0.4	167	—		0.491		
Total OctaCB	<	0.7	10.4	29.1	U	0.0428		
Total NonaCB	<	0.8	1.1	—	U	0.0016		
DecaCB (#209)	<	3.3	—	—		—		
Homologue Groups Sum			**53300**			**160**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289925	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	82.9
Station	25 Cliftex	**Run Time (hours)**	25.22	**Average Solar Radiation (w•m²)**	354
Sample Type	Normal Sample	**Sample Volume (m³)**	340.47	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	13.5	—		0.0397	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	0.07	1.4	—		0.0041	0.0001	0.0000004
2,3,3',4,4'-PentaCB (#105)	=	0.1	19.1	—		0.0561	0.0001	0.000006
2,3,4,4',5-PentaCB (#114)	=	0.07	21.6	—		0.0634	0.0005	0.00003
2,3',4,4',5 PentaCB (#118)	=	0.09	165	—	E	0.485	0.0001	0.00005
2',3,4,4',5-PentaCB (#123)	=	0.09	4.1	—		0.012	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	M	0.1	—	20.4		0.06	0.1	0.006
2,3,3',4,4',5-HexaCB (#156)	M	0.1	—	3.2	Q	0.009	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	0.60	—	U	0.00088	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	3.9	—	Q	0.011	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	5.7	—	Q	0.017	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.2	0.12	—	J	—	0.0001	
DecaCB (#209)	<	1.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	123	—	E	0.361		
Total DiCB	=	0.03	4640	—	SE	13.6		
Total TriCB	=	0.03	8150	—	SE	23.9		
Total TetraCB	=	0.06	7140	7140	E	21		
Total PentaCB	=	0.08	1820	1950	E	5.73		
Total HexaCB	=	0.1	443.4	452	E	1.328		
Total HeptaCB	<	0.2	59.5	60.2	U	0.0884		
Total OctaCB	<	0.3	16.3	17.1	U	0.0251		
Total NonaCB	<	0.4	0.62	—	U	0.00091		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**22500**			**66**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/28/99	**Lab Sample Number**	7289926	**Prevailing Wind Direction**	WNW
Project Number	49201	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	82.9
Station	26 103 Sawyer St	**Run Time (hours)**	25.34	**Average Solar Radiation (w•m²)**	354
Sample Type	Normal Sample	**Sample Volume (m³)**	342.09	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	70.1	—		0.205	0.0001	0.00002
3,4,5,4'-TetraCB (#81)	=	0.08	4.3	—		0.013	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.1	39	—		0.11	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	=	0.08	42.9	—		0.125	0.0005	0.00006
2,3',4,4',5-PentaCB (#118)	=	0.1	290	—	E	0.85	0.0001	0.00008
2',3,4,4',5-PentaCB (#123)	=	0.1	7.8	—		0.023	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	M	0.1	—	66		0.2	0.1	0.02
2,3,3',4,4',5-HexaCB (#156)	M	0.1	—	4.2	Q	0.01	0.0005	0.000006
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	0.7	U	0.001	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	5.2	—	U	0.0076	0.00001	0.00000008
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	4.8	—		0.014	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	1.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.05	127	—	E	0.371		
Total DiCB	=	0.03	3950	—	SE	11.5		
Total TriCB	=	0.03	7480	7580	SE	22.2		
Total TetraCB	=	0.05	7870	7870	E	23		
Total PentaCB	=	0.09	3070	3260	E	9.53		
Total HexaCB	=	0.1	722.6	730.9	E	2.137		
Total HeptaCB	<	0.2	52.5	55.2	U	0.0807		
Total OctaCB	<	0.4	15.6	17.3	U	0.0253		
Total NonaCB	<	0.5	1.1	1.6	U	0.0023		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**23600**			**69**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039921	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	21 New Bedford Welding	**Run Time (hours)**	23.83	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	321.705	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	2.8	—	B	0.0087	0.0001	0.0000009
3,4,5,4'-TetraCB (#81)	=	0.05	0.29	—	J	0.00090	0.0001	0.00000009
2,3,3',4,4'-PentaCB (#105)	=	0.07	9.7	—		0.030	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	0.05	7.4	—		0.023	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.07	30.9	—		0.0961	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	<	0.07	—	—		0.0001	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	M	0.07	—	29.9		0.09	0.1	0.009
2,3,3',4,4',5-HexaCB (#156)	<	0.1	1.9	—	U	0.0030	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	0.4	U	0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	0.80	—		0.0025	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.2	10.3	—	U	0.0160	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.1	2.2	—	U	0.0034	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—		—	0.0001	
DecaCB (#209)	<	1.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.04	8.9	—	U	0.014		
Total DiCB	=	0.02	314	—	E	0.976		
Total TriCB	=	0.02	1140	—	E	3.54		
Total TetraCB	M	0.03	795	796	E	2.47		
Total PentaCB	<	0.05	295	517	U	0.804		
Total HexaCB	M	0.1	62.9	77.5	Q	0.241		
Total HeptaCB	<	0.1	37.4	38	U	0.0591		
Total OctaCB	<	0.2	1.7	21.3	U	0.033		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**2620**			**8.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039922	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	22 Woodlawn Park	**Run Time (hours)**	23.84	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	321.84	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.03	1.6	—	U	0.0025	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	<	0.06	—	—		0.00009	0.0001	0.000000009
2,3,4,4',5-PentaCB (#114)	M	0.04	—	6.3		0.02	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.05	9.9	—	B	0.031	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	<	0.05	—	—		0.00008	0.0001	0.000000008
3,3',4,4',5-PentaCB (#126)	<	0.06	—	—		0.00009	0.1	0.000009
2,3,3',4,4',5-HexaCB (#156)	<	0.1	—	1.1	U	0.002	0.0005	0.0000009
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	3	U	0.005	0.0005	0.000002
2,3',4,4',5,5'-HexaCB (#167)	M	0.1	—	0.7		0.002	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.09	1	—	U	0.0016	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.07	—	—		—	0.0001	
DecaCB (#209)	<	1.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.03	10.1	—	U	0.0157		
Total DiCB	=	0.02	229	—	E	0.712		
Total TriCB	=	0.02	502	—	E	1.56		
Total TetraCB	=	0.03	310	—		0.96		
Total PentaCB	<	0.04	97.3	390	U	0.606		
Total HexaCB	<	0.1	29.8	39.2	U	0.0609		
Total HeptaCB	<	0.1	31.1	48.1	U	0.0747		
Total OctaCB	<	0.2	0.50	30.5	U	0.047		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	1.5	—	—		—		
Homologue Groups Sum			**1300**			**4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039923	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	23 Acushnet Substation	**Run Time (hours)**	23.83	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	321.705	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.08	3.9	—	B	0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.09	0.27	—	J	0.00084	0.0001	0.00000008
2,3,3',4,4'-PentaCB (#105)	=	0.1	5.9	—		0.018	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	M	0.1	—	9.7		0.03	0.0005	0.00002
2,3',4,4',5 PentaCB (#118)	=	0.1	36	—		0.11	0.0001	0.00001
2',3,4,4',5 PentaCB (#123)	<	0.1	—	—		0.0002	0.0001	0.00000002
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		0.0002	0.1	0.00002
2,3,3',4,4',5-HexaCB (#156)	<	0.2	1.5	—	U	0.0023	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	—	—	1.2	U	0.002	0.0005	0.0000009
2,3',4,4',5,5'-HexaCB (#167)	M	0.1	—	1.3		0.004	0.00001	0.00000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.2	1.6	—	U	0.0025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	4.9	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	28.7	—		0.0892		
Total DiCB	=	0.05	1610	—	E	5		
Total TriCB	=	0.04	2790	—	E	8.67		
Total TetraCB	M	0.07	1540	1540	E	4.79		
Total PentaCB	M	0.1	408	698	E	2.17		
Total HexaCB	M	0.2	91.5	123.2	Q	0.383		
Total HeptaCB	M	0.2	27.3	34.9	Q	0.108		
Total OctaCB	M	0.5	0.50	30.5	Q	0.095		
Total NonaCB	<	0.6	—	—		0.0009		
DecaCB (#209)	<	4.9	—	—		—		
Homologue Groups Sum			**6860**			**21**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039924	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	24 Aerovox	**Run Time (hours)**	23.82	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	321.57	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	29.1	—		0.0905	0.0001	0.000009
3,4,5,4'-TetraCB (#81)	=	0.05	3.7	—		0.012	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.07	82	—		0.25	0.0001	0.00003
2,3,4,4',5-PentaCB (#114)	=	0.05	2.6	—		0.0081	0.0005	0.000004
2,3',4,4',5-PentaCB (#118)	=	0.07	404	—	E	1.26	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.06	10.4	—		0.0323	0.0001	0.000003
3,3',4,4',5-PentaCB (#126)	<	0.07	—	—		0.0001	0.1	0.00001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	9.8	—		0.030	0.0005	0.00002
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	2.4	U	0.004	0.0005	0.000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	7.2	—		0.022	0.00001	0.0000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	12.7	—		0.0395	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.1	0.18	—	QJ	—	0.0001	
DecaCB (#209)	<	1.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	305	—	E	0.948		
Total DiCB	M	0.02	4290	8060	QSE	25.1		
Total TriCB	M	0.02	10760	10760	SE	33.46		
Total TetraCB	M	0.04	15090	15090	SE	46.93		
Total PentaCB	M	0.06	7640	7810	E	24.3		
Total HexaCB	M	0.1	837.1	943.1	E	2.933		
Total HeptaCB	<	0.1	111	113	U	0.176		
Total OctaCB	<	0.3	4.1	31.9	U	0.050		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	1.2	—	—		—		
Homologue Groups Sum			**43000**			**130**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039924B	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	75
Station	24 Aerovox	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	267
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	M	0.08	—	0.42	JB	—		
3,4,5,4'-TetraCB (#81)	<	0.09	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.08	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.1	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	=	0.1	0.40	—		—		
2,3,3',4,4',5'-HexaCB (#157)	M	0.1	—	1.6	Q	—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.3	—	5.1	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	0.73	—	B	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	1.9	—	—		—		
PCB Homologue Groups								
Total MonoCB	M	0.07	2.9	3.4		—		
Total DiCB	M	0.05	10.6	11.6		—		
Total TriCB	M	0.05	10.8	11.5		—		
Total TetraCB	M	0.08	11.1	13		—		
Total PentaCB	M	0.1	4.8	213		—		
Total HexaCB	M	0.1	12.3	14	Q	—		
Total HeptaCB	M	0.2	12	19.1	Q	—		
Total OctaCB	M	0.4	1.3	12.8	Q	—		
Total NonaCB	<	0.5	—	—		—		
DecaCB (#209)	<	1.9	—	—		—		
Homologue Groups Sum			**299**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039925	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	25 Cliftex	**Run Time (hours)**	23.84	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	321.84	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	8.1	—		0.025	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	0.33	0.81	—		0.0025	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.5	12.2	—		0.0379	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.3	17	—		0.053	0.0005	0.00003
2,3',4,4',5-PentaCB (#118)	=	0.4	90	—		0.28	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	<	0.4	—	—		0.0006	0.0001	0.00000006
3,3',4,4',5-PentaCB (#126)	<	0.5	—	—		0.0008	0.1	0.00008
2,3,3',4,4',5-HexaCB (#156)	=	0.6	2.3	—		0.0071	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	<	0.5	—	0.7	U	0.001	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.5	1.8	—		0.0056	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.8	3.1	—	U	0.0048	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.6	—	—		—	0.0001	
DecaCB (#209)	<	14	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.2	84.9	—	E	0.264		
Total DiCB	=	0.1	3800	—	E	12		
Total TriCB	M	0.2	7400	7400	E	23		
Total TetraCB	M	0.2	4340	4340	E	13.5		
Total PentaCB	M	0.4	1070	1370	E	4.26		
Total HexaCB	M	0.6	226	245.7		0.763		
Total HeptaCB	<	0.8	54.2	55	U	0.0854		
Total OctaCB	<	1.9	0.38	33.2	U	0.052		
Total NonaCB	<	2.3	—	—		0.004		
DecaCB (#209)	<	14	—	—		—		
Homologue Groups Sum			**17300**			**54**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/3/99	**Lab Sample Number**	08039926	**Prevailing Wind Direction**	S
Project Number	49236	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	26 103 Sawyer St	**Run Time (hours)**	23.86	**Average Solar Radiation (w•m²)**	288
Sample Type	Normal Sample	**Sample Volume (m³)**	322.11	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	10.1	—		0.0314	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	0.1	0.79	—		0.0025	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.2	12.6	—		0.0391	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.1	14.9	—		0.0463	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.2	77.5	—		0.241	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	<	0.2	1.9	—	U	0.0029	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	0.9	U	0.001	0.0005	0.0000007
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	1.6	—		0.0050	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.3	2.1	—	U	0.0033	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—		—	0.0001	
DecaCB (#209)	<	3.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	44.6	—	E	0.138		
Total DiCB	=	0.07	1860	—	E	5.77		
Total TriCB	=	0.07	4540	—	E	14.1		
Total TetraCB	M	0.1	2890	2890	E	8.97		
Total PentaCB	<	0.2	852	987	U	1.53		
Total HexaCB	M	0.2	183.1	190.5		0.5914		
Total HeptaCB	<	0.3	28.8	31	U	0.0481		
Total OctaCB	<	0.7	0.48	17.8	U	0.028		
Total NonaCB	<	0.8	—	—		0.001		
DecaCB (#209)	<	3.8	—	—		—		
Homologue Groups Sum			**10000**			**31**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099921	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.3
Station	21 New Bedford Welding	**Run Time (hours)**	24.48	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	330.48	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.02	2.9	—	U	0.0044	0.0001	0.0000004
3,4,5,4'-TetraCB (#81)	=	0.03	0.33	—	J	0.0010	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.05	7.4	—		0.022	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.04	5.1	—		0.015	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.05	34	—		0.10	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	M	0.05	—	0.72		0.002	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	<	0.5	0.90	—	U	0.0014	0.0005	0.0000007
2,3,3',4,4',5'-HexaCB (#157)	<	0.5	—	0.5	U	0.0008	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.5	0.50	—		0.0015	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.07	1.5	—	U	0.0023	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—	0.0001	
DecaCB (#209)	<	0.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	25.1	—		0.0760		
Total DiCB	=	0.02	639	—	E	1.93		
Total TriCB	=	0.01	1390	—	E	4.21		
Total TetraCB	=	0.02	1150	1150	E	3.48		
Total PentaCB	<	0.03	353	481	U	0.728		
Total HexaCB	=	0.05	67.6	75.5		0.228		
Total HeptaCB	<	0.06	17.5	19.8	U	0.0300		
Total OctaCB	<	0.2	0.60	14.2	U	0.021		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	0.7	—	—		—		
Homologue Groups Sum			**3540**			**11**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099922	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.7
Station	22 Woodlawn Park	**Run Time (hours)**	24.25	**Average Solar Radiation (w•m²)**	334
Sample Type	Normal Sample	**Sample Volume (m³)**	327.375	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.02	0.98	—	U	0.0015	0.0001	0.0000001
3,4,5,4'-TetraCB (#81)	=	0.02	0.090	—	J	0.00027	0.0001	0.00000003
2,3,3',4,4'-PentaCB (#105)	=	0.03	2.1	—		0.0064	0.0001	0.0000006
2,3,4,4',5-PentaCB (#114)	=	0.02	1.2	—		0.0037	0.0005	0.000002
2,3',4,4',5-PentaCB (#118)	<	0.03	7.1	—	U	0.011	0.0001	0.000001
2',3,4,4',5-PentaCB (#123)	<	0.03	—	—		0.00005	0.0001	0.000000005
3,3',4,4',5-PentaCB (#126)	<	0.03	—	—		0.00005	0.1	0.000005
2,3,3',4,4',5-HexaCB (#156)	<	0.2	0.30	—	U	0.00046	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	0.4	U	0.0006	0.0005	0.0000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.2	0.20	—		0.00061	0.00001	0.000000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.07	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	0.60	—	U	0.00092	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.02	—	—		—	0.0001	
DecaCB (#209)	<	0.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.02	15.5	—	U	0.0237		
Total DiCB	=	0.01	173	—	E	0.528		
Total TriCB	=	0.007	323	—	E	0.987		
Total TetraCB	=	0.01	236	236		0.721		
Total PentaCB	<	0.02	61.6	167	U	0.255		
Total HexaCB	<	0.2	15.5	19.9	U	0.0304		
Total HeptaCB	<	0.04	10.1	11.9	U	0.0182		
Total OctaCB	<	0.09	0.30	9.4	U	0.014		
Total NonaCB	<	0.2	0.15	—	U	0.00023		
DecaCB (#209)	<	0.5	—	—		—		
Homologue Groups Sum			**844**			**2.6**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099923	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.5
Station	23 Acushnet Substation	**Run Time (hours)**	24.27	**Average Solar Radiation (w•m²)**	314
Sample Type	Normal Sample	**Sample Volume (m³)**	327.645	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	13.3	—		0.0406	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	0.02	1.2	—		0.0037	0.0001	0.0000004
2,3,3',4,4'-PentaCB (#105)	=	0.04	16.2	—		0.0494	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.03	23.3	—		0.0711	0.0005	0.00004
2,3',4,4',5-PentaCB (#118)	=	0.04	190	—	E	0.58	0.0001	0.00006
2',3,4,4',5-PentaCB (#123)	=	0.04	4.7	—		0.014	0.0001	0.000001
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	=	0.04	3	—		0.0092	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	—	0.8	U	0.001	0.0005	0.0000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.04	2.2	—		0.0067	0.00001	0.00000007
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.09	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.06	5.1	—		0.016	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.03	—	—		—	0.0001	
DecaCB (#209)	<	0.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	199	—	E	0.607		
Total DiCB	=	0.01	1700	3680	SE	11		
Total TriCB	=	0.009	5350	—	SE	16.3		
Total TetraCB	=	0.02	5750	5780	SE	17.6		
Total PentaCB	=	0.03	2080	2210	E	6.75		
Total HexaCB	=	0.04	257.7	369.4	E	1.127		
Total HeptaCB	<	0.05	43.8	44.2	U	0.0675		
Total OctaCB	<	0.1	2	12.1	U	0.018		
Total NonaCB	<	0.2	0.39	—	U	0.00060		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**17600**			**54**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099924	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.7
Station	24 Aerovox	**Run Time (hours)**	24.33	**Average Solar Radiation (w•m²)**	334
Sample Type	Normal Sample	**Sample Volume (m³)**	328.455	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.005	35.3	—	Q	0.107	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.005	4.7	—	Q	0.014	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.01	79.4	—		0.242	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.008	67.3	—		0.205	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.01	371	—	E	1.13	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.01	10.8	—		0.0329	0.0001	0.000003
3,3',4,4',5-PentaCB (#126)	<	0.01	—	—		0.00002	0.1	0.000002
2,3,3',4,4',5-HexaCB (#156)	=	0.05	16.2	—		0.0493	0.0005	0.00002
2,3,3',4,4',5'-HexaCB (#157)	M	0.05	—	2.6	Q	0.008	0.0005	0.000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	9.4	—		0.029	0.00001	0.0000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.02	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.02	7.7	—		0.023	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.009	—	—		—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	2210	—	E	6.73		
Total DiCB	=	0.004	1440	6480	QSE	19.7		
Total TriCB	=	0.004	8980	—	QSE	27.3		
Total TetraCB	=	0.006	15420	15430	QSE	46.98		
Total PentaCB	=	0.007	4640	4770	E	14.5		
Total HexaCB	=	0.01	902	908	E	2.76		
Total HeptaCB	<	0.01	58	59.2	U	0.090		
Total OctaCB	=	0.04	4.2	50.3	Q	0.15		
Total NonaCB	<	0.06	0.50	—	U	0.00076		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**38900**			**120**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099924B	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	70.3
Station	24 Aerovox	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	309
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	0.54	—	B	—		
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.04	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.03	—	—		—		
2,3',4,4',5-PentaCB (#118)	=	0.04	1.5	—	B	—		
2',3,4,4',5-PentaCB (#123)	<	0.04	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	=	0.04	0.40	—		—		
2,3,3',4,4',5'-HexaCB (#157)	M	0.03	—	0.4	Q	—		
2,3',4,4',5,5'-HexaCB (#167)	M	0.03	—	0.04		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.09	1.3	—	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.06	0.57	—	B	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—		
DecaCB (#209)	<	3.9	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.04	4.3	—		—		
Total DiCB	=	0.02	8.8	—		—		
Total TriCB	=	0.01	6.2	—		—		
Total TetraCB	=	0.02	9.6	10.2		—		
Total PentaCB	=	0.03	3.2	123		—		
Total HexaCB	=	0.04	5.4	8.2	Q	—		
Total HeptaCB	=	0.05	8.9	9.5	Q	—		
Total OctaCB	M	0.2	—	8.9	Q	—		
Total NonaCB	<	0.3	—	—		—		
DecaCB (#209)	<	3.9	—	—		—		
Homologue Groups Sum			179					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099924D	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.7
Station	24D Aerovox Duplicate	**Run Time (hours)**	24.28	**Average Solar Radiation (w•m²)**	334
Sample Type	Field Duplicate	**Sample Volume (m³)**	327.78	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.009	31.4	—		0.0958	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.01	4	—	Q	0.012	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.02	71.9	—		0.219	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.01	61.1	—		0.186	0.0005	0.00009
2,3',4,4',5-PentaCB (#118)	=	0.02	336	—	E	1.03	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.02	9.6	—		0.029	0.0001	0.000003
3,3',4,4',5-PentaCB (#126)	=	0.02	0.95	—		0.0029	0.1	0.0003
2,3,3',4,4',5-HexaCB (#156)	=	0.02	5	—		0.015	0.0005	0.000008
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	—	0.5	U	0.0008	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.02	2.9	—		0.0088	0.00001	0.00000009
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.05	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.03	6.9	—		0.021	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	M	0.02	—	0.03	J	—	0.0001	
DecaCB (#209)	<	0.3	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.02	2030	—	E	6.19		
Total DiCB	=	0.007	1240	5330	QSE	16.3		
Total TriCB	=	0.007	10530	—	QSE	32.13		
Total TetraCB	=	0.01	13810	13820	QSE	42.16		
Total PentaCB	=	0.01	4050	4150	QE	12.7		
Total HexaCB	=	0.02	668.7	670.8	E	2.046		
Total HeptaCB	<	0.03	56.4	56.4	U	0.0860		
Total OctaCB	<	0.09	5.5	14.7	U	0.022		
Total NonaCB	<	0.1	0.47	—	U	0.00072		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**36600**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099925	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.7
Station	25 Cliftex	**Run Time (hours)**	24.46	**Average Solar Radiation (w•m²)**	334
Sample Type	Normal Sample	**Sample Volume (m³)**	330.21	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.01	8	—		0.024	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.01	0.91	—		0.0028	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.02	12	—		0.036	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.01	12.2	—		0.0369	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.01	88.2	—		0.267	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.01	2.3	—		0.0070	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	<	0.02	—	—		0.00003	0.1	0.000003
2,3,3',4,4',5-HexaCB (#156)	=	0.01	2	—		0.0061	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	<	0.01	—	0.6	U	0.0009	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	<	0.01	1.6	—	U	0.0024	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.02	—	—		0.00003	0.01	0.0000003
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.02	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.02	4	—		0.012	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.01	0.030	—	J	—	0.0001	
DecaCB (#209)	<	0.07	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	191	—	E	0.578		
Total DiCB	=	0.01	5040	—	SE	15.3		
Total TriCB	=	0.008	6800	—	SE	21		
Total TetraCB	=	0.02	5530	5540	E	16.8		
Total PentaCB	=	0.01	1260	1260	E	3.82		
Total HexaCB	=	0.01	249	250		0.757		
Total HeptaCB	<	0.01	22	—	U	0.033		
Total OctaCB	<	0.04	2.8	2.8	U	0.0042		
Total NonaCB	<	0.06	0.50	—	U	0.00076		
DecaCB (#209)	<	0.07	—	—		—		
Homologue Groups Sum			**19100**			**58**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/9/99	**Lab Sample Number**	08099926	**Prevailing Wind Direction**	NNW
Project Number	49273	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	68.3
Station	26 103 Sawyer St	**Run Time (hours)**	24.44	**Average Solar Radiation (w•m²)**	309
Sample Type	Normal Sample	**Sample Volume (m³)**	329.94	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	38.3	—		0.116	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.02	2.4	—		0.0073	0.0001	0.0000007
2,3,3',4,4'-PentaCB (#105)	=	0.04	33.7	—		0.102	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	=	0.03	32.3	—		0.0979	0.0005	0.00005
2,3',4,4',5-PentaCB (#118)	=	0.04	209	—	E	0.633	0.0001	0.00006
2',3,4,4',5-PentaCB (#123)	=	0.04	4.7	—		0.014	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	=	0.04	3.3	—		0.010	0.1	0.001
2,3,3',4,4',5-HexaCB (#156)	=	0.1	3	—		0.0091	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	0.7	U	0.001	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	3.2	—		0.0097	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.07	8.2	—		0.025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—	0.0001	
DecaCB (#209)	<	1.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.02	129	—	E	0.391		
Total DiCB	=	0.01	1450	3320	SE	10.1		
Total TriCB	=	0.007	4490	—	SE	13.6		
Total TetraCB	=	0.02	4650	4650	E	14.1		
Total PentaCB	=	0.03	1820	1910	E	5.79		
Total HexaCB	=	0.1	444.8	447.2	E	1.355		
Total HeptaCB	<	0.06	53.6	56.4	U	0.0855		
Total OctaCB	<	0.2	2	18.8	U	0.028		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	1.1	—	—		—		
Homologue Groups Sum			**15000**			**45**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159921	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	21 New Bedford Welding	**Run Time (hours)**	23.75	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	320.625	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	4.4	—	B	0.014	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.02	0.56	—		0.0017	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.04	13.1	—		0.0409	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.03	8.9	—		0.028	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.04	55.3	—		0.172	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	M	0.03	—	2		0.006	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	<	—	1.4	—	U	0.0022	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	—	—	0.3	U	0.0005	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.0	0.80	—		0.0025	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.09	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.06	2.7	—		0.0084	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.03	—	—		—	0.0001	
DecaCB (#209)	<	0.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	50	—	E	0.16		
Total DiCB	=	0.02	1300	—	E	4.1		
Total TriCB	=	0.01	2180	—	E	6.8		
Total TetraCB	M	0.02	1970	1970	E	6.14		
Total PentaCB	M	0.02	593	693	E	2.16		
Total HexaCB	M	0.03	120.5	122.1		0.3808		
Total HeptaCB	<	0.05	21	21.3	U	0.033		
Total OctaCB	<	0.1	2.5	10.7	U	0.017		
Total NonaCB	<	0.2	0.34	0.71	U	0.0011		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**6330**			**20**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159922	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	22 Woodlawn Park	**Run Time (hours)**	23.95	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	323.325	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.4	0.78	—	U	0.0012	0.0001	0.0000001
3,4,5,4'-TetraCB (#81)	=	0.5	0.040	—	J	0.00012	0.0001	0.00000001
2,3,3',4,4'-PentaCB (#105)	=	0.8	1.2	—		0.0037	0.0001	0.0000004
2,3,4,4',5-PentaCB (#114)	<	0.6	—	—		0.0009	0.0005	0.0000005
2,3',4,4',5 PentaCB (#118)	<	0.8	3.3	—	U	0.0051	0.0001	0.0000005
2',3,4,4',5-PentaCB (#123)	<	0.8	—	—		0.001	0.0001	0.0000001
3,3',4,4',5-PentaCB (#126)	<	0.8	—	—		0.001	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	<	0.6	0.60	—	U	0.00093	0.0005	0.0000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.6	—	—		0.0009	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	<	0.6	—	—		0.0009	0.00001	0.000000009
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.8	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	1.2	0.49	—	U	0.00076	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.7	—	—		—	0.0001	
DecaCB (#209)	<	13.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.6	6.5	—	U	0.010		
Total DiCB	<	0.3	30.1	30.2	U	0.0467		
Total TriCB	<	0.2	44.5	44.6	U	0.0690		
Total TetraCB	<	0.3	52.2	52.3	U	0.0809		
Total PentaCB	<	0.5	29.1	127	U	0.196		
Total HexaCB	<	0.7	9.2	11	U	0.017		
Total HeptaCB	<	1	9	—	U	0.014		
Total OctaCB	<	3.2	8.4	—	U	0.013		
Total NonaCB	<	5.2	0.21	0.51	U	0.00079		
DecaCB (#209)	<	13.8	—	—		—		
Homologue Groups Sum			**145**			**0.45**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159923	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	23 Acushnet Substation	**Run Time (hours)**	24.1	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	325.35	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.09	4	—	B	0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.1	0.46	—	J	0.0014	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.2	6.6	—		0.020	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	7	—		0.022	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.2	49.4	—		0.152	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.2	1.3	—		0.0040	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	<	—	0.90	—	U	0.0014	0.0005	0.0000007
2,3,3',4,4',5'-HexaCB (#157)	<	—	—	0.5	U	0.0008	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.0	0.70	—		0.0022	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.06	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	1.7	—	U	0.0026	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.02	—	—		—	0.0001	
DecaCB (#209)	<	3.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.1	74.2	—	E	0.228		
Total DiCB	=	0.05	2110	—	SE	6.49		
Total TriCB	=	0.03	3150	—	SE	9.68		
Total TetraCB	M	0.07	2620	2620	E	8.05		
Total PentaCB	M	0.1	561	665	E	2.04		
Total HexaCB	M	0.1	115.6	117.4		0.3608		
Total HeptaCB	<	0.03	15.6	16.8	U	0.0258		
Total OctaCB	<	0.6	6.8	8.3	U	0.013		
Total NonaCB	<	1	0.24	0.46	U	0.00071		
DecaCB (#209)	<	3.4	—	—		—		
Homologue Groups Sum			**8750**			**27**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159923B	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	67.8
Station	23 Acushnet Substation	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	61.5
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.58

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	0.50	—	JB	—		
3,4,5,4'-TetraCB (#81)	<	0.2	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.09	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	0.1	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	M	0.1	—	29		—		
2,3,3',4,4',5-HexaCB (#156)	M	—	—	0.6	Q	—		
2,3,3',4,4',5'-HexaCB (#157)	M	—	—	0.5	Q	—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	4.1	—	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.3	—	0.34	JB	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	2.1	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.06	2.8	—		—		
Total DiCB	M	0.03	5.6	5.9		—		
Total TriCB	=	0.04	7.5	—		—		
Total TetraCB	M	0.08	9.7	9.8		—		
Total PentaCB	M	0.1	2	103	Q	—		
Total HexaCB	M	0.2	1.2	3.6	Q	—		
Total HeptaCB	M	0.2	9.1	9.6	Q	—		
Total OctaCB	M	0.5	—	6.9	Q	—		
Total NonaCB	=	0.8	0.19	—	Q	—		
DecaCB (#209)	<	2.1	—	—		—		
Homologue Groups Sum			149					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159924	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	24 Aerovox	**Run Time (hours)**	24.5	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	330.75	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.01	46.3	—		0.140	0.0001	0.00001
3,4,5,4'-TetraCB (#81)	=	0.01	7.4	—		0.022	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.01	86.6	—	Q	0.262	0.0001	0.00003
2,3,4,4',5-PentaCB (#114)	=	0.01	66.4	—	Q	0.201	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.01	363	—	QE	1.1	0.0001	0.0001
2',3,4,4',5-PentaCB (#123)	=	0.01	10.5	—	Q	0.0317	0.0001	0.000003
3,3',4,4',5-PentaCB (#126)	<	0.01	—	74.9	U	0.1	0.1	0.01
2,3,3',4,4',5-HexaCB (#156)	M	—	—	6.6	Q	0.02	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	<	—	1.3	—	U	0.0020	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.0	3.8	—	Q	0.011	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.05	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.03	9.1	—		0.028	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.01	0.040	—	QJ	—	0.0001	
DecaCB (#209)	<	0.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.005	1410	—	SE	4.26		
Total DiCB	M	0.002	661	5560	QSE	16.8		
Total TriCB	=	0.002	7270	—	QSE	22		
Total TetraCB	M	0.006	16150	16160	QSE	48.86		
Total PentaCB	M	0.01	3920	4130	QE	12.5		
Total HexaCB	M	0.02	75	763.7	QE	2.3		
Total HeptaCB	<	0.02	48.5	49.4	U	0.0747		
Total OctaCB	<	0.06	1.7	16.7	U	0.025		
Total NonaCB	<	0.09	0.40	0.78	U	0.0012		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**35300**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159925	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	25 Cliftex	**Run Time (hours)**	24.47	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	330.345	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	6.8	—	B	0.021	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.2	0.94	—		0.0028	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	0.2	7.5	—		0.023	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	8.2	—		0.025	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.1	58.4	—		0.177	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.1	1.5	—		0.0045	0.0001	0.0000005
3,3',4,4',5-PentaCB (#126)	<	0.1	—	44.6	U	0.07	0.1	0.007
2,3,3',4,4',5-HexaCB (#156)	<	—	—	1.5	U	0.002	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	—	—	1	U	0.002	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.0	0.80	—	Q	0.0024	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	2	—	B	0.0061	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—	0.0001	
DecaCB (#209)	<	5.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.04	79.3	—	E	0.240		
Total DiCB	=	0.03	2450	—	SE	7.42		
Total TriCB	=	0.02	4700	—	SE	14		
Total TetraCB	M	0.05	3400	3410	E	10		
Total PentaCB	M	0.1	719	928	E	2.81		
Total HexaCB	M	0.2	141.7	148	Q	0.4480		
Total HeptaCB	<	0.2	23.5	23.9	U	0.0362		
Total OctaCB	<	0.6	—	14.1	U	0.02		
Total NonaCB	<	0.9	0.18	0.66	U	0.0010		
DecaCB (#209)	<	5.2	—	—		—		
Homologue Groups Sum			**11700**			**36**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/15/99	**Lab Sample Number**	08159926	**Prevailing Wind Direction**	NNE
Project Number	49312	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	66.6
Station	26 103 Sawyer St	**Run Time (hours)**	23.99	**Average Solar Radiation (w•m²)**	95.7
Sample Type	Normal Sample	**Sample Volume (m³)**	323.865	**Total Precipitation (inches H_2O)**	0.20

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.9	11.8	—		0.0364	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	=	1	1	—		0.0031	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	1	7.7	—	Q	0.024	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.8	11.2	—	Q	0.0346	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	1	58.4	—	Q	0.180	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	1	1.7	—	Q	0.0052	0.0001	0.0000005
3,3',4,4',5-PentaCB (#126)	<	1	—	34.5	U	0.05	0.1	0.005
2,3,3',4,4',5-HexaCB (#156)	<	—	—	1.4	U	0.002	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	—	—	1.3	U	0.002	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.0	0.80	—	Q	0.0025	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	2.5	1.6	—	U	0.0025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	1.1	—	—		—	0.0001	
DecaCB (#209)	<	30	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.3	75	—	E	0.23		
Total DiCB	=	0.2	2120	—	SE	6.55		
Total TriCB	=	0.2	3980	—	SE	12.3		
Total TetraCB	M	0.4	2210	2700	E	8.34		
Total PentaCB	M	0.8	618	773	QE	2.39		
Total HexaCB	M	1.1	126.2	130.9	Q	0.4042		
Total HeptaCB	<	1.9	20.1	20.4	U	0.0315		
Total OctaCB	<	3.4	0.17	9.3	U	0.014		
Total NonaCB	<	5.6	—	0.23	U	0.0004		
DecaCB (#209)	<	30	—	—		—		
Homologue Groups Sum			**9790**			**30**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219921	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	21 New Bedford Welding	**Run Time (hours)**	24.37	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	328.995	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.09	2.6	—	U	0.0040	0.0001	0.0000004
3,4,5,4'-TetraCB (#81)	=	0.1	0.35	—	J	0.0011	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.1	5.4	—	B	0.016	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.1	4.7	—		0.014	0.0005	0.000007
2,3',4,4',5-PentaCB (#118)	=	0.1	28.2	—		0.0857	0.0001	0.000009
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		0.0002	0.0001	0.00000002
3,3',4,4',5-PentaCB (#126)	M	0.1	—	42.3		0.1	0.1	0.01
2,3,3',4,4',5-HexaCB (#156)	M	0.2	—	3	Q	0.009	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—	U	0.0002	0.0005	0.00000008
2,3',4,4',5,5'-HexaCB (#167)	M	0.1	—	1.4	Q	0.004	0.00001	0.00000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	M	20.9	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	13.2	1.1	—	U	0.0017	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	12	—	—		—	0.0001	
DecaCB (#209)	<	2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.06	15.1	—	U	0.0229		
Total DiCB	=	0.05	585	—	E	1.78		
Total TriCB	=	0.05	1750	—	E	5.32		
Total TetraCB	M	0.09	1160	1170	E	3.56		
Total PentaCB	<	0.1	335	542	U	0.824		
Total HexaCB	<	0.2	50.5	59.1	U	0.0898		
Total HeptaCB	<	14.5	27	31.3	U	0.048		
Total OctaCB	<	0.5	17.9	20.1	U	0.0305		
Total NonaCB	<	0.6	—	—		0.0009		
DecaCB (#209)	<	2	—	—		—		
Homologue Groups Sum			**3840**			**12**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219922	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	22 Woodlawn Park	**Run Time (hours)**	23.91	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	322.785	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.1	1.2	—	U	0.0019	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.1	—	—		0.0002	0.0001	0.00000002
2,3,3',4,4'-PentaCB (#105)	<	0.2	—	—		0.0003	0.0001	0.00000003
2,3,4,4',5-PentaCB (#114)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5-PentaCB (#118)	<	0.2	—	3.8	U	0.006	0.0001	0.0000006
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—		0.0003	0.0001	0.00000003
3,3',4,4',5-PentaCB (#126)	M	0.2	—	85.9		0.3	0.1	0.03
2,3,3',4,4',5-HexaCB (#156)	M	0.2	—	1.8		0.006	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	<	0.2	—	—		0.0003	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	M	0.2	—	0.6		0.002	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.4	0.43	—	U	0.00067	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	3.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.06	4.5	—	U	0.0070		
Total DiCB	=	0.05	21.5	—		0.0666		
Total TriCB	<	0.06	47.1	—	U	0.0730		
Total TetraCB	<	0.1	53.6	54.5	U	0.0844		
Total PentaCB	<	0.2	15.5	306	U	0.474		
Total HexaCB	<	0.2	3.1	16.9	U	0.026		
Total HeptaCB	<	0.4	38	39	U	0.060		
Total OctaCB	<	0.9	—	32.7	U	0.05		
Total NonaCB	<	1	—	—		0.002		
DecaCB (#209)	<	3.7	—	—		—		
Homologue Groups Sum			272			0.84		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219923	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	23 Acushnet Substation	**Run Time (hours)**	24.93	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	336.555	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.7	3.4	—		0.010	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.9	0.41	—	J	0.0012	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	1.1	5.5	—	B	0.016	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.8	7	—		0.021	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	1.1	48.5	—		0.144	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	1	1.1	—		0.0033	0.0001	0.0000003
3,3',4,4',5-PentaCB (#126)	M	1.1	—	63.7		0.2	0.1	0.02
2,3,3',4,4',5-HexaCB (#156)	M	1.4	—	1.9	Q	0.006	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	<	1.1	0.20	—	U	0.00030	0.0005	0.0000001
2,3',4,4',5,5'-HexaCB (#167)	M	1.2	—	1.5	Q	0.004	0.00001	0.00000004
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	2.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	1.6	1.7	—		0.0051	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	1.4	—	—		—	0.0001	
DecaCB (#209)	<	13.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.5	121	—	E	0.360		
Total DiCB	=	0.4	3490	—	E	10.4		
Total TriCB	=	0.4	6010	—	E	17.9		
Total TetraCB	=	0.7	3310	—	E	9.83		
Total PentaCB	<	1.2	678	875	U	1.3		
Total HexaCB	M	1.3	98	106.6		0.32		
Total HeptaCB	<	1.7	25.9	29.8	U	0.0443		
Total OctaCB	<	3.8	0.39	16.4	U	0.024		
Total NonaCB	<	4.3	—	—		0.006		
DecaCB (#209)	<	13.5	—	—		—		
Homologue Groups Sum			**13500**			**40**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219924	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	24 Aerovox	**Run Time (hours)**	24.13	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	325.755	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.3	27.4	—		0.0841	0.0001	0.000008
3,4,5,4'-TetraCB (#81)	=	0.4	3.4	—		0.010	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	0.5	60.4	—		0.185	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.4	42.4	—		0.130	0.0005	0.00007
2,3',4,4',5-PentaCB (#118)	=	0.5	250	—	E	0.77	0.0001	0.00008
2',3,4,4',5-PentaCB (#123)	=	0.5	7.2	—		0.022	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	M	0.5	—	92.2		0.3	0.1	0.03
2,3,3',4,4',5-HexaCB (#156)	M	0.7	—	8.3		0.03	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	<	0.6	1	—	U	0.0015	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.6	4.9	—	Q	0.015	0.00001	0.0000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.9	7.2	—		0.022	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.8	—	—		—	0.0001	
DecaCB (#209)	<	10.8	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.2	323	—	E	0.992		
Total DiCB	M	0.1	3930	5920	SE	18.2		
Total TriCB	=	0.1	9780	—	SE	30		
Total TetraCB	M	0.3	9200	9200	E	28		
Total PentaCB	M	0.5	2710	2990	E	9.18		
Total HexaCB	M	0.6	512.5	524	E	1.609		
Total HeptaCB	<	1	74.8	77.8	U	0.119		
Total OctaCB	<	2.3	4.1	28	U	0.043		
Total NonaCB	<	2.6	—	—		0.004		
DecaCB (#209)	<	10.8	—	—		—		
Homologue Groups Sum			**28800**			**88**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219924D	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	24D Aerovox Duplicate	**Run Time (hours)**	23.25	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Field Duplicate	**Sample Volume (m³)**	313.875	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	1.5	25.7	—		0.0819	0.0001	0.000008
3,4,5,4'-TetraCB (#81)	=	1.7	3	—		0.0096	0.0001	0.000001
2,3,3',4,4'-PentaCB (#105)	=	2.3	55.8	—		0.178	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	1.7	39.6	—		0.126	0.0005	0.00006
2,3',4,4',5-PentaCB (#118)	=	2.2	237	—	E	0.755	0.0001	0.00008
2',3,4,4',5-PentaCB (#123)	=	2.2	8.1	—		0.026	0.0001	0.000003
3,3',4,4',5-PentaCB (#126)	M	2.3	—	330	E	1	0.1	0.1
2,3,3',4,4',5-HexaCB (#156)	M	2.9	—	7.4		0.02	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	<	2.4	1	—	U	0.0016	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	2.5	4.8	—		0.015	0.00001	0.0000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	5.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	3.5	6.6	—	U	0.011	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	3.1	—	—		—	0.0001	
DecaCB (#209)	<	109	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.8	302	—	E	0.962		
Total DiCB	=	0.7	6040	—	SE	19.2		
Total TriCB	=	0.6	10570	—	SE	33.68		
Total TetraCB	M	1.3	9570	9580	E	30.5		
Total PentaCB	M	2.1	2750	3280	E	10.5		
Total HexaCB	M	2.6	477.8	491.4	E	1.566		
Total HeptaCB	<	3.8	47.3	69.2	U	0.110		
Total OctaCB	<	8	30.4	52.1	U	0.0830		
Total NonaCB	<	9	—	—		0.01		
DecaCB (#209)	<	109	—	—		—		
Homologue Groups Sum			**30300**			**97**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219925	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	25 Cliftex	**Run Time (hours)**	24.03	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	324.405	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.8	5.6	—		0.017	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	1	0.73	—		0.0023	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	1.3	8.8	—		0.027	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	1	11.7	—		0.0361	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	1.3	67.1	—		0.207	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	1.2	1.9	—		0.0059	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	M	1.3	—	115	E	0.4	0.1	0.04
2,3,3',4,4',5-HexaCB (#156)	M	1.6	—	3.1	Q	0.01	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	1.3	0.30	—	U	0.00046	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	M	1.4	—	1.5		0.005	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	2.1	3.2	—	U	0.0049	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	1.9	—	—		—	0.0001	
DecaCB (#209)	<	24.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.4	90.9	—	QE	0.280		
Total DiCB	=	0.4	3600	—	E	11		
Total TriCB	=	0.4	6360	—	QE	19.6		
Total TetraCB	=	0.7	3960	—	E	12.2		
Total PentaCB	M	1.2	984	1300	E	4.01		
Total HexaCB	M	1.4	143	158.7		0.489		
Total HeptaCB	<	2.3	39.4	40.3	U	0.0621		
Total OctaCB	<	5	2.6	19	U	0.029		
Total NonaCB	<	5.7	—	—		0.009		
DecaCB (#209)	<	24.4	—	—		—		
Homologue Groups Sum			**15500**			**48**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219926	**Prevailing Wind Direction**	N
Project Number	49345	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	64.7
Station	26 103 Sawyer St	**Run Time (hours)**	23.06	**Average Solar Radiation (w•m²)**	60.3
Sample Type	Normal Sample	**Sample Volume (m³)**	311.31	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.9	8	—		0.026	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	1	0.71	—		0.0023	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	1.5	9.2	—		0.030	0.0001	0.000003
2,3,4,4',5-PentaCB (#114)	=	1.1	8.3	—		0.027	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	1.4	58.7	—		0.189	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	<	1.4	—	—		0.002	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	M	1.5	—	111	E	0.4	0.1	0.04
2,3,3',4,4',5-HexaCB (#156)	M	1.8	—	3.1		0.01	0.0005	0.000005
2,3,3',4,4',5'-HexaCB (#157)	<	1.5	—	—		0.002	0.0005	0.000001
2,3',4,4',5,5'-HexaCB (#167)	=	1.5	1.9	—		0.0061	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.9	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	2.5	2.4	—	U	0.0039	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	2.2	—	—		—	0.0001	
DecaCB (#209)	<	24.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.4	59.1	—	E	0.190		
Total DiCB	=	0.4	2390	—	E	7.68		
Total TriCB	=	0.4	4790	—	E	15.4		
Total TetraCB	M	0.8	2850	2850	E	9.15		
Total PentaCB	<	1.3	722	1010	U	1.62		
Total HexaCB	M	1.7	115.1	123.2		0.3957		
Total HeptaCB	<	2.7	39.3	—	U	0.0631		
Total OctaCB	<	6.2	—	25.1	U	0.04		
Total NonaCB	<	7	—	—		0.01		
DecaCB (#209)	<	24.2	—	—		—		
Homologue Groups Sum			**10800**			**35**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/21/99	**Lab Sample Number**	08219926B	**Prevailing Wind Direction**	NE
Project Number	49345	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	65.2
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	49.8
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	1.2	0.63	—		—		
3,4,5,4'-TetraCB (#81)	<	1.4	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	2.2	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	1.7	—	—		—		
2,3',4,4',5-PentaCB (#118)	<	2.1	—	—		—		
2',3,4,4',5-PentaCB (#123)	<	2.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	2.3	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	2.5	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	M	2.1	—	1	Q	—		
2,3',4,4',5,5'-HexaCB (#167)	<	2.2	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	M	4.6	—	3.6	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	2.9	—	0.74		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	2.6	—	—		—		
DecaCB (#209)	<	505	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.7	3.3	—		—		
Total DiCB	=	0.6	12.3	—		—		
Total TriCB	M	0.7	11.7	12		—		
Total TetraCB	M	1.2	14.3	15.7		—		
Total PentaCB	M	1.8	6.1	115		—		
Total HexaCB	M	2.3	3	12	Q	—		
Total HeptaCB	M	3.2	16.2	20.9	Q	—		
Total OctaCB	M	7.9	—	19	Q	—		
Total NonaCB	<	8.8	—	—		—		
DecaCB (#209)	<	505	—	—		—		
Homologue Groups Sum			215					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/27/99	**Lab Sample Number**	08279921	**Prevailing Wind Direction**	SSE
Project Number	49384	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	21 New Bedford Welding	**Run Time (hours)**	18.1	**Average Solar Radiation (w•m²)**	161
Sample Type	Normal Sample	**Sample Volume (m³)**	244.35	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.6	3.8	—	U	0.0078	0.0001	0.0000008
3,4,5,4'-TetraCB (#81)	M	0.7	—	0.44	J	0.002	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	1	9.8	—		0.040	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.7	8.5	—		0.035	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.9	47.5	—		0.194	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.9	1.5	—		0.0061	0.0001	0.0000006
3,3',4,4',5-PentaCB (#126)	<	1	—	—		0.002	0.1	0.0002
2,3,3',4,4',5-HexaCB (#156)	<	1.1	—	1.2	U	0.002	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	<	0.9	—	—		0.002	0.0005	0.0000009
2,3',4,4',5,5'-HexaCB (#167)	=	1	0.80	—		0.0033	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	2.6	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	1.7	2	—	U	0.0041	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	1.5	—	—		—	0.0001	
DecaCB (#209)	<	218	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.001	—	—		0.000002		
Total DiCB	=	0.3	527	—	E	2.16		
Total TriCB	=	0.3	2020	—	E	8.27		
Total TetraCB	M	0.5	1500	1500	E	6.1		
Total PentaCB	<	0.7	465	597	U	1.22		
Total HexaCB	M	1.1	117	117	Q	0.479		
Total HeptaCB	<	1.8	38.4	40.2	U	0.0823		
Total OctaCB	<	3.7	21.7	22.1	U	0.0452		
Total NonaCB	<	4.1	—	—		0.008		
DecaCB (#209)	<	218	—	—		—		
Homologue Groups Sum			**4500**			**18**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/27/99	**Lab Sample Number**	08279923	**Prevailing Wind Direction**	SSE
Project Number	49384	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	23 Acushnet Substation	**Run Time (hours)**	24.46	**Average Solar Radiation (w•m²)**	161
Sample Type	Normal Sample	**Sample Volume (m³)**	330.21	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.5	3.8	—	U	0.0058	0.0001	0.0000006
3,4,5,4'-TetraCB (#81)	=	0.6	0.40	—	J	0.0012	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.9	7.1	—		0.022	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.7	10.3	—		0.0312	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.8	44	—		0.13	0.0001	0.00001
2',3,4,4',5-PentaCB (#123)	=	0.8	1.3	—		0.0039	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	M	0.9	—	9.6		0.03	0.1	0.003
2,3,3',4,4',5-HexaCB (#156)	<	0.9	1.2	—	U	0.0018	0.0005	0.0000009
2,3,3',4,4',5'-HexaCB (#157)	M	0.8	—	1.7	Q	0.005	0.0005	0.000003
2,3',4,4',5,5'-HexaCB (#167)	M	0.8	—	0.6		0.002	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	2.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	1.3	1.6	—	U	0.0024	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	1.2	—	—		—	0.0001	
DecaCB (#209)	<	11.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.3	40.2	—	E	0.122		
Total DiCB	=	0.2	1590	—	E	4.82		
Total TriCB	=	0.2	3300	—	E	10		
Total TetraCB	=	0.4	2120	—	E	6.42		
Total PentaCB	<	0.6	498	639	U	0.968		
Total HexaCB	M	0.9	128.2	137.2	Q	0.4155		
Total HeptaCB	<	1.4	31.7	—	U	0.0480		
Total OctaCB	<	3.5	—	23.5	U	0.04		
Total NonaCB	<	3.9	—	—		0.006		
DecaCB (#209)	<	11.5	—	—		—		
Homologue Groups Sum			**7540**			**23**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/27/99	**Lab Sample Number**	08279924B	**Prevailing Wind Direction**	ESE
Project Number	49384	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	75.1
Station	24 Aerovox	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	120
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	1.7	—		—		
3,4,5,4'-TetraCB (#81)	<	0.08	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.1	—	—		—		
2,3',4,4',5-PentaCB (#118)	M	0.1	—	1.7	B	—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—		—		
3,3',4,4',5-PentaCB (#126)	M	0.1	—	30.2		—		
2,3,3',4,4',5-HexaCB (#156)	M	0.1	—	0.8		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.1	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	3.7	—	QB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.3	—	0.6		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—		—		
DecaCB (#209)	<	7	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.03	3.8	—		—		
Total DiCB	M	0.03	12.8	12.9		—		
Total TriCB	M	0.02	10.1	10.4		—		
Total TetraCB	M	0.08	49.6	55.6		—		
Total PentaCB	M	0.07	—	155	Q	—		
Total HexaCB	M	0.1	4.3	9.5		—		
Total HeptaCB	M	0.2	11.9	13.5	Q	—		
Total OctaCB	M	0.7	—	16	Q	—		
Total NonaCB	<	1.2	—	—		—		
DecaCB (#209)	<	7	—	—		—		
Homologue Groups Sum			**277**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/27/99	**Lab Sample Number**	08279925	**Prevailing Wind Direction**	SSE
Project Number	49384	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	25 Cliftex	**Run Time (hours)**	24.24	**Average Solar Radiation (w•m²)**	161
Sample Type	Normal Sample	**Sample Volume (m³)**	327.24	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	1	8.8	—		0.027	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	1.2	0.88	—		0.0027	0.0001	0.0000003
2,3,3',4,4'-PentaCB (#105)	=	1.7	13.7	—		0.0419	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	1.3	18.8	—		0.0575	0.0005	0.00003
2,3',4,4',5-PentaCB (#118)	=	1.6	103	—	E	0.315	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	1.6	2.5	—		0.0076	0.0001	0.0000008
3,3',4,4',5-PentaCB (#126)	<	1.7	—	—		0.003	0.1	0.0003
2,3,3',4,4',5-HexaCB (#156)	<	2	2.4	—	U	0.0037	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	=	1.7	2.1	—		0.0064	0.0005	0.000003
2,3',4,4',5,5'-HexaCB (#167)	=	1.7	2.1	—		0.0064	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.9	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	2.4	3.1	—		0.0095	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	2.2	—	—		—	0.0001	
DecaCB (#209)	<	21.4	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.001	—	—		0.000002		
Total DiCB	=	0.4	3340	—	E	10.2		
Total TriCB	=	0.4	7300	—	E	22		
Total TetraCB	M	0.8	5050	5050	E	15.4		
Total PentaCB	M	1.2	1200	1320	E	4		
Total HexaCB	M	1.9	252.6	278.1		0.8498		
Total HeptaCB	<	2.7	39.2	41.3	U	0.0631		
Total OctaCB	<	6.3	0.37	24	U	0.037		
Total NonaCB	<	7.1	—	—		0.01		
DecaCB (#209)	<	21.4	—	—		—		
Homologue Groups Sum			**17300**			**53**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	8/27/99	**Lab Sample Number**	08279926	**Prevailing Wind Direction**	SSE
Project Number	49384	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	26 103 Sawyer St	**Run Time (hours)**	23.77	**Average Solar Radiation (w•m²)**	161
Sample Type	Normal Sample	**Sample Volume (m³)**	320.895	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.1	7.4	—	U	0.012	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	M	0.2	—	0.74		0.002	0.0001	0.0000002
2,3,3',4,4'-PentaCB (#105)	=	0.2	11.5	—		0.0358	0.0001	0.000004
2,3,4,4',5-PentaCB (#114)	=	0.2	10.1	—		0.0315	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.2	78.2	—		0.244	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	M	0.2	—	2.2		0.007	0.0001	0.0000007
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—		0.0003	0.1	0.00003
2,3,3',4,4',5-HexaCB (#156)	<	0.3	1.6	—	U	0.0025	0.0005	0.000001
2,3,3',4,4',5'-HexaCB (#157)	M	0.2	—	1.9	Q	0.006	0.0005	0.000003
2,3',4,4',5,5'-HexaCB (#167)	M	0.2	—	1.7		0.005	0.00001	0.00000005
3,3',4,4',5,5'-HexaCB (#169)	I	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.5	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.3	1.8	—	U	0.0028	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.3	—	—		—	0.0001	
DecaCB (#209)	<	2.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	61.1	—	E	0.190		
Total DiCB	=	0.06	1890	—	E	5.89		
Total TriCB	M	0.06	4390	4390	E	13.7		
Total TetraCB	=	0.1	3370	—	E	10.5		
Total PentaCB	<	0.2	829	989	U	1.54		
Total HexaCB	M	0.2	187.7	199.5		0.6217		
Total HeptaCB	<	0.3	30.7	33.3	U	0.0519		
Total OctaCB	<	0.9	2.4	25.8	U	0.040		
Total NonaCB	M	1	—	0.42		0.001		
DecaCB (#209)	<	2.7	—	—		—		
Homologue Groups Sum			**10400**			**33**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099921	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.7
Station	21 New Bedford Welding	**Run Time (hours)**	24.31	**Average Solar Radiation (w•m²)**	96
Sample Type	Normal Sample	**Sample Volume (m³)**	328.185	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.02	5.7	—	U	0.0087		
Total DiCB	=	0.01	334	—	E	1.02		
Total TriCB	=	0.007	1140	—	E	3.47		
Total TetraCB	M	0.01	918	920	E	2.8		
Total PentaCB	<	0.02	251	370	U	0.564		
Total HexaCB	M	0.04	54.7	59.1		0.180		
Total HeptaCB	<	0.05	12.3	13.9	U	0.0212		
Total OctaCB	<	0.1	0.25	10.7	U	0.016		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	1.1	1.6	—	U	—		
Homologue Groups Sum			**2650**			**8.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099922	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.8
Station	22 Woodlawn Park	**Run Time (hours)**	24.37	**Average Solar Radiation (w•m²)**	95.4
Sample Type	Normal Sample	**Sample Volume (m³)**	328.995	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	17.7	—	Q	0.0538		
Total DiCB	=	0.01	637	—	QE	1.94		
Total TriCB	M	0.01	1180	1250	E	3.8		
Total TetraCB	=	0.02	819	—	E	2.49		
Total PentaCB	<	0.03	179	308	U	0.468		
Total HexaCB	<	0.05	45.6	46.9	U	0.0713		
Total HeptaCB	<	0.08	17.9	18.4	U	0.0280		
Total OctaCB	<	0.2	0.32	13	U	0.020		
Total NonaCB	<	0.3	0.24	—	U	0.00036		
DecaCB (#209)	<	1.5	—	3.3	U	—		
Homologue Groups Sum			**2920**			**8.9**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099923	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.6
Station	23 Acushnet Substation	**Run Time (hours)**	24.41	**Average Solar Radiation (w•m²)**	98.4
Sample Type	Normal Sample	**Sample Volume (m³)**	329.535	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.03	29.9	—	Q	0.0907		
Total DiCB	=	0.02	1510	—	E	4.58		
Total TriCB	=	0.01	3350	—	SE	10.2		
Total TetraCB	=	0.02	2580	—	E	7.83		
Total PentaCB	<	0.04	556	657	U	0.997		
Total HexaCB	M	0.06	116.3	123.9	Q	0.3760		
Total HeptaCB	<	0.1	20.5	21.1	U	0.0320		
Total OctaCB	<	0.2	0.45	11.8	U	0.018		
Total NonaCB	<	0.3	0.18	—	U	0.00027		
DecaCB (#209)	<	1.2	1.7	—	U	—		
Homologue Groups Sum			**7940**			**24**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099924	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.8
Station	24 Aerovox	**Run Time (hours)**	24.22	**Average Solar Radiation (w•m²)**	95.4
Sample Type	Normal Sample	**Sample Volume (m³)**	326.97	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	588	—	QE	1.8		
Total DiCB	M	0.01	834	6170	QSE	18.9		
Total TriCB	=	0.01	6900	—	QSE	21		
Total TetraCB	M	0.02	15170	15180	QSE	46.43		
Total PentaCB	M	0.03	5350	5440	QE	16.6		
Total HexaCB	M	0.04	1066.9	1070.1	E	3.2728		
Total HeptaCB	M	0.06	82.1	83.6	Q	0.256		
Total OctaCB	<	0.1	14.4	16.2	U	0.0248		
Total NonaCB	<	0.2	0.89	—	U	0.0014		
DecaCB (#209)	<	0.9	1.5	—	U	—		
Homologue Groups Sum			**35400**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099924D	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.8
Station	24D Aerovox Duplicate	**Run Time (hours)**	24.24	**Average Solar Radiation (w•m²)**	95.4
Sample Type	Field Duplicate	**Sample Volume (m³)**	327.24	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.03	646	—	QE	1.97		
Total DiCB	M	0.02	876	5900	QSE	18		
Total TriCB	=	0.02	6750	—	SE	20.6		
Total TetraCB	M	0.04	15080	15090	QSE	46.11		
Total PentaCB	M	0.04	5000	5100	QE	16		
Total HexaCB	M	0.07	1044	1047.3	E	3.2		
Total HeptaCB	=	0.1	83.5	—	Q	0.255		
Total OctaCB	<	0.3	14.1	16.3	U	0.0249		
Total NonaCB	<	0.4	1.2	—	U	0.0018		
DecaCB (#209)	<	7.2	—	1.9	U	—		
Homologue Groups Sum			**34600**			**110**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099925	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.8
Station	25 Cliftex	**Run Time (hours)**	24.8	**Average Solar Radiation (w•m²)**	95.4
Sample Type	Normal Sample	**Sample Volume (m³)**	334.8	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.08	94.4	—	E	0.282		
Total DiCB	M	0.05	3390	4720	SE	14.1		
Total TriCB	=	0.04	6080	—	QSE	18.2		
Total TetraCB	=	0.06	5360	—	E	16		
Total PentaCB	M	0.09	1160	1260	E	3.76		
Total HexaCB	M	0.2	225	232.4		0.694		
Total HeptaCB	<	0.3	38.6	39.6	U	0.0591		
Total OctaCB	<	0.7	1.7	15.6	U	0.023		
Total NonaCB	<	0.8	—	—		0.001		
DecaCB (#209)	<	3.7	—	—		—		
Homologue Groups Sum			**17800**			**53**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099926	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.8
Station	26 103 Sawyer St	**Run Time (hours)**	25.43	**Average Solar Radiation (w•m²)**	92.8
Sample Type	Normal Sample	**Sample Volume (m³)**	343.305	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.04	22.5	—		0.0655		
Total DiCB	=	0.03	1580	—	E	4.6		
Total TriCB	=	0.02	3860	—	SE	11.2		
Total TetraCB	M	0.04	3240	3240	E	9.44		
Total PentaCB	<	0.06	678	752	U	1.1		
Total HexaCB	M	0.09	125.3	128.6	Q	0.3746		
Total HeptaCB	<	0.1	18.7	19.2	U	0.0280		
Total OctaCB	<	0.3	0.73	9.6	U	0.014		
Total NonaCB	<	0.5	0.25	—	U	0.00036		
DecaCB (#209)	<	1.4	—	0.72	U	—		
Homologue Groups Sum			**9220**			**27**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/9/99	**Lab Sample Number**	09099926B	**Prevailing Wind Direction**	SSW
Project Number	49449	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	75.9
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	89.1
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	M	0.02	1.6	2.8		—		
Total DiCB	=	0.02	14.8	—		—		
Total TriCB	M	0.02	14.4	14.5		—		
Total TetraCB	M	0.04	9.8	9.9		—		
Total PentaCB	M	0.05	3	116	Q	—		
Total HexaCB	M	0.1	2.6	8.4	Q	—		
Total HeptaCB	M	0.2	12.4	13.4	Q	—		
Total OctaCB	=	0.4	11.6	—	Q	—		
Total NonaCB	<	0.5	—	—		—		
DecaCB (#209)	<	3.5	—	—		—		
Homologue Groups Sum			**192**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229921	**Prevailing Wind Direction**	NW
Project Number	49530	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	21 New Bedford Welding	**Run Time (hours)**	21.81	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	294.435	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	1.5	12.9	—	U	0.0219		
Total DiCB	=	0.09	130	—	E	0.44		
Total TriCB	=	0.06	225	—		0.764		
Total TetraCB	M	0.2	192	194		0.659		
Total PentaCB	<	0.5	84.2	311	U	0.528		
Total HexaCB	<	0.4	20.1	24.4	U	0.0414		
Total HeptaCB	<	0.8	40.1	40.8	U	0.0693		
Total OctaCB	<	1.4	0.56	25.8	U	0.044		
Total NonaCB	<	2.4	—	—		0.004		
DecaCB (#209)	<	5.1	—	—		—		
Homologue Groups Sum			**758**			**2.6**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229922	**Prevailing Wind Direction**	NW
Project Number	49530	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	22 Woodlawn Park	**Run Time (hours)**	24.52	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	331.02	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.02	5.3	—	U	0.0080		
Total DiCB	<	0.02	31.5	—	U	0.0476		
Total TriCB	<	0.01	36.2	36.4	U	0.0550		
Total TetraCB	<	0.03	35.1	36.3	U	0.0548		
Total PentaCB	<	0.08	70.1	319	U	0.482		
Total HexaCB	<	0.06	7.8	12	U	0.018		
Total HeptaCB	<	0.1	38.2	38.5	U	0.0582		
Total OctaCB	<	0.3	0.14	26.8	U	0.040		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.8	—	—		—		
Homologue Groups Sum			**253**			**0.76**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229922B	**Prevailing Wind Direction**	N
Project Number	49530	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	62.2
Station	22 Woodlawn Park	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	55.5
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.01	3.4	—		—		
Total DiCB	M	0.02	8.1	11	Q	—		
Total TriCB	=	0.01	4.3	—		—		
Total TetraCB	M	0.02	4.6	4.9	Q	—		
Total PentaCB	M	0.07	2.8	656	QE	—		
Total HexaCB	M	0.06	1.7	5.7		—		
Total HeptaCB	M	0.1	30.6	31.3	Q	—		
Total OctaCB	M	0.2	0.16	21.2	Q	—		
Total NonaCB	<	0.4	—	—		—		
DecaCB (#209)	<	1.1	—	—		—		
Homologue Groups Sum			738					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229923	**Prevailing Wind Direction**	NW
Project Number	49530	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	23 Acushnet Substation	**Run Time (hours)**	23.88	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	322.38	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.03	60.6	—	U	0.0940		
Total DiCB	=	0.04	4060	—	SE	12.6		
Total TriCB	M	0.02	4430	4430	SE	13.7		
Total TetraCB	=	0.04	3120	—	E	9.68		
Total PentaCB	<	0.1	819	1230	U	1.91		
Total HexaCB	M	0.1	139.1	143.8		0.4461		
Total HeptaCB	<	0.3	57.6	59.5	U	0.0923		
Total OctaCB	<	0.5	—	27.5	U	0.04		
Total NonaCB	<	0.9	—	—		0.001		
DecaCB (#209)	<	15.3	—	—		—		
Homologue Groups Sum			**12400**			**39**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229924	**Prevailing Wind Direction**	NW
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	24 Aerovox	**Run Time (hours)**	23.81	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	321.435	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	120	—	QE	0.37		
Total DiCB	M	0.02	2410	4190	SE	13		
Total TriCB	=	0.009	5100	—	SE	16		
Total TetraCB	M	0.02	6520	6520	E	20.3		
Total PentaCB	<	0.03	1870	2020	U	3.14		
Total HexaCB	M	0.03	318.5	322.7	Q	1.004		
Total HeptaCB	<	0.06	42.1	42.7	U	0.0664		
Total OctaCB	<	0.1	102	103	U	0.160		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	1.7	—	—		—		
Homologue Groups Sum			**17300**			**54**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229925	**Prevailing Wind Direction**	NW
Project Number	49530	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	25 Cliftex	**Run Time (hours)**	23.85	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	321.975	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	19.1	—		0.0593		
Total DiCB	M	0.02	958	968	E	3.01		
Total TriCB	=	0.009	1440	—	E	4.47		
Total TetraCB	M	0.02	1030	1040	E	3.23		
Total PentaCB	<	0.06	326	1100	U	1.71		
Total HexaCB	M	0.06	62.7	66.4		0.206		
Total HeptaCB	<	0.1	85.9	86.5	U	0.134		
Total OctaCB	<	0.2	209	212	U	0.329		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.7	—	—		—		
Homologue Groups Sum			**4230**			**13**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	9/22/99	**Lab Sample Number**	09229926	**Prevailing Wind Direction**	NW
Project Number	49530	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	59
Station	26 103 Sawyer St	**Run Time (hours)**	23.71	**Average Solar Radiation (w•m²)**	87.5
Sample Type	Normal Sample	**Sample Volume (m³)**	320.085	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.009	47.4	—	E	0.148		
Total DiCB	=	0.009	2090	—	E	6.53		
Total TriCB	=	0.004	2340	—	E	7.31		
Total TetraCB	=	0.008	1810	—	E	5.65		
Total PentaCB	<	0.02	641	1200	U	1.87		
Total HexaCB	M	0.02	111.6	117.3		0.3665		
Total HeptaCB	<	0.05	31.8	36.3	U	0.0567		
Total OctaCB	<	0.08	—	19.1	U	0.03		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.4	—	—		—		
Homologue Groups Sum			**7030**			**22**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089921	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	61.9
Station	21 New Bedford Welding	**Run Time (hours)**	23.01	**Average Solar Radiation (w•m²)**	135
Sample Type	Normal Sample	**Sample Volume (m³)**	310.635	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.2	5.4	—	U	0.0087		
Total DiCB	=	0.02	71.7	—	QE	0.231		
Total TriCB	M	0.01	159	159		0.512		
Total TetraCB	M	0.02	146	146		0.470		
Total PentaCB	<	0.02	37.2	633	U	1.02		
Total HexaCB	<	0.04	23.6	34.6	U	0.0557		
Total HeptaCB	<	0.08	19.5	20.2	U	0.0325		
Total OctaCB	<	0.1	14.4	—	U	0.0232		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	15.3	—	—		—		
Homologue Groups Sum			**731**			**2.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089922	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	62.1
Station	22 Woodlawn Park	**Run Time (hours)**	23.29	**Average Solar Radiation (w•m²)**	112
Sample Type	Normal Sample	**Sample Volume (m³)**	314.415	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.06	4.1	—	U	0.0065		
Total DiCB	<	0.04	27.2	—	U	0.0433		
Total TriCB	M	0.02	44.3	44.3		0.141		
Total TetraCB	M	0.04	60.9	61.3		0.195		
Total PentaCB	<	0.04	42.7	296	U	0.471		
Total HexaCB	M	0.09	17.9	67.9	Q	0.216		
Total HeptaCB	<	0.2	15.6	16.7	U	0.0266		
Total OctaCB	<	0.3	10.1	11.5	U	0.0183		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	2.1	—	—		—		
Homologue Groups Sum			351			1.1		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089923	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	62.1
Station	23 Acushnet Substation	**Run Time (hours)**	23.07	**Average Solar Radiation (w•m²)**	112
Sample Type	Normal Sample	**Sample Volume (m³)**	311.445	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.4	40.3	—	E	0.129		
Total DiCB	=	0.3	2410	—	E	7.74		
Total TriCB	=	0.2	3480	—	E	11.2		
Total TetraCB	M	0.3	2340	2340	E	7.51		
Total PentaCB	<	0.4	441	786	U	1.26		
Total HexaCB	M	0.8	120.8	146.4	Q	0.4701		
Total HeptaCB	<	1.5	31.9	32.4	U	0.0520		
Total OctaCB	<	2.3	2.2	14.3	U	0.023		
Total NonaCB	<	2.9	—	—		0.005		
DecaCB (#209)	<	13.9	—	—		—		
Homologue Groups Sum			**8830**			**28**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089924	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	61.9
Station	24 Aerovox	**Run Time (hours)**	21.39	**Average Solar Radiation (w•m²)**	135
Sample Type	Normal Sample	**Sample Volume (m³)**	288.765	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	11.4	—		0.0395	0.0001	0.000004
2,3,3',4,4'-PentaCB (#105)	=	0.5	37.5	—		0.130	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	M	0.3	—	68.5		0.2	0.0005	0.0001
2,3',4,4',5-PentaCB (#118)	=	0.4	174	—	E	0.603	0.0001	0.00006
2',3,4,4',5-PentaCB (#123)	=	0.4	4.3	—		0.015	0.0001	0.000001
3,3',4,4',5-PentaCB (#126)	<	0.5	—	—		0.002	0.1	0.0002
2,3,3',4,4',5-HexaCB (#156)	=	0.6	5.7	—	Q	0.020	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	M	0.5	1	—	Q	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.5	2.8	—	Q	0.0097	0.00001	0.0000001
3,3',4,4',5,5'-HexaCB (#169)	<	—	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.3	4.1	—	Q	0.014	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.8	6.7	—		0.023	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.9	0.34	—	J	—	0.0001	
DecaCB (#209)	<	10.7	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.5	174	—	QE	0.603		
Total DiCB	M	0.2	2380	5470	QSE	18.9		
Total TriCB	M	0.1	6510	6510	SE	22.5		
Total TetraCB	M	0.2	7090	7090	E	24.6		
Total PentaCB	M	0.2	1360	1580	E	5.47		
Total HexaCB	M	0.5	509.6	512.9	QE	1.776		
Total HeptaCB	<	1	57.8	58.7	U	0.102		
Total OctaCB	<	1.7	11.2	14.2	U	0.0246		
Total NonaCB	<	2.1	—	—		0.004		
DecaCB (#209)	<	10.7	—	—		—		
Homologue Groups Sum			**21400**			**74**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089924D	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	61.9
Station	24D Aerovox Duplicate	**Run Time (hours)**	20.96	**Average Solar Radiation (w•m²)**	135
Sample Type	Field Spike	**Sample Volume (m³)**	282.96	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	18.5	—	Q	0.0654	0.0001	0.000007
2,3,3',4,4'-PentaCB (#105)	=	0.1	56.9	—		0.201	0.0001	0.00002
2,3,4,4',5-PentaCB (#114)	=	0.09	45.2	—		0.160	0.0005	0.00008
2,3',4,4',5-PentaCB (#118)	=	0.1	200	—	E	0.71	0.0001	0.00007
2',3,4,4',5-PentaCB (#123)	=	0.1	19.3	—		0.0682	0.0001	0.000007
3,3',4,4',5-PentaCB (#126)	=	0.1	10.2	—		0.0360	0.1	0.004
2,3,3',4,4',5-HexaCB (#156)	=	0.1	10.4	—		0.0368	0.0005	0.00002
2,3,3',4,4',5'-HexaCB (#157)	=	0.1	6.4	—		0.023	0.0005	0.00001
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	8.6	—		0.030	0.00001	0.0000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.0	—	—	I	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.6	22.1	—	Q	0.0781	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.4	16.4	—		0.0580	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.3	6.1	—		—	0.0001	
DecaCB (#209)	=	4.7	17.6	—	Q	—	—	
PCB Homologue Groups								
Total MonoCB	M	0.05	0.17	0.31		0.0011		
Total DiCB	M	0.02	1320	3230	QSE	11.4		
Total TriCB	=	0.01	5140	—	QSE	18.2		
Total TetraCB	M	0.04	7960	7970	QSE	28.2		
Total PentaCB	M	0.05	1610	1960	QE	6.93		
Total HexaCB	=	0.1	349.5	357.7		1.264		
Total HeptaCB	M	0.4	142	144	Q	0.509		
Total OctaCB	M	0.7	10.6	78.6	Q	0.278		
Total NonaCB	M	1.1	—	17	Q	0.06		
DecaCB (#209)	=	4.7	17.6	—	Q	—		
Homologue Groups Sum			**18900**			**67**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089925	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	63.2
Station	25 Cliftex	**Run Time (hours)**	23.64	**Average Solar Radiation (w•m²)**	153
Sample Type	Normal Sample	**Sample Volume (m³)**	319.14	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	1.8	22.6	—	Q	0.0708		
Total DiCB	=	0.3	939	—	E	2.94		
Total TriCB	=	0.2	1760	—	E	5.51		
Total TetraCB	M	0.6	1720	1730	QE	5.42		
Total PentaCB	M	0.6	194	794	QE	2.49		
Total HexaCB	M	1.7	83.6	100.8	Q	0.316		
Total HeptaCB	M	6.2	99.4	101	Q	0.316		
Total OctaCB	<	12.3	0.91	94.7	U	0.15		
Total NonaCB	<	15.5	—	—		0.02		
DecaCB (#209)	<	62	—	—		—		
Homologue Groups Sum			**5500**			**17**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089925B	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	51.6
Station	25 Cliftex	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	185
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.02	1.7	—		—		
Total DiCB	=	0.02	10.5	—		—		
Total TriCB	M	0.02	7.7	7.9		—		
Total TetraCB	M	0.03	9.5	10.4		—		
Total PentaCB	M	0.03	2.1	611	QE	—		
Total HexaCB	M	0.05	3	9	Q	—		
Total HeptaCB	M	0.1	22.3	31.8	Q	—		
Total OctaCB	M	0.3	—	31	Q	—		
Total NonaCB	<	0.3	—	—		—		
DecaCB (#209)	<	12.8	—	—		—		
Homologue Groups Sum			**713**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/8/99	**Lab Sample Number**	10089926	**Prevailing Wind Direction**	SSW
Project Number	49643	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	61.7
Station	26 103 Sawyer St	**Run Time (hours)**	23.35	**Average Solar Radiation (w•m²)**	132
Sample Type	Normal Sample	**Sample Volume (m³)**	315.225	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.1	—	0.86	U	0.001		
Total DiCB	=	0.04	494	—	E	1.57		
Total TriCB	M	0.02	832	832	E	2.64		
Total TetraCB	M	0.04	655	655	E	2.08		
Total PentaCB	<	0.07	175	679	U	1.08		
Total HexaCB	M	0.1	45	61.8	Q	0.20		
Total HeptaCB	<	0.3	43.3	45.2	U	0.0717		
Total OctaCB	<	1.2	—	62.2	U	0.1		
Total NonaCB	M	1.8	—	19.5	Q	0.06		
DecaCB (#209)	<	25.2	—	—		—		
Homologue Groups Sum			**2460**			**7.8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259921	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.3
Station	21 New Bedford Welding	**Run Time (hours)**	23.3	**Average Solar Radiation (w•m²)**	173
Sample Type	Normal Sample	**Sample Volume (m³)**	314.55	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total DiCB	=	0.04	2420	—	E	7.69		
Total TriCB	=	0.02	2040	—	E	6.49		
Total TetraCB	=	0.03	1200	—	E	3.8		
Total PentaCB	<	0.05	201	748	U	1.19		
Total HexaCB	M	0.09	36.4	48.6	Q	0.155		
Total HeptaCB	<	0.2	30.9	31.7	U	0.0504		
Total OctaCB	<	0.3	22.7	25.4	U	0.0404		
Total NonaCB	<	0.5	—	—		0.0008		
DecaCB (#209)	<	2.6	—	—		—		
Homologue Groups Sum			**6110**			**19**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259922	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.8
Station	22 Woodlawn Park	**Run Time (hours)**	26.3	**Average Solar Radiation (w•m²)**	177
Sample Type	Normal Sample	**Sample Volume (m³)**	355.05	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.06	—	1.3	U	0.002		
Total DiCB	=	0.02	444	—	E	1.25		
Total TriCB	=	0.01	519	—	E	1.46		
Total TetraCB	M	0.02	264	264		0.744		
Total PentaCB	<	0.03	41.9	453	U	0.638		
Total HexaCB	<	0.07	11.9	22	U	0.0310		
Total HeptaCB	<	0.2	42.8	45.3	U	0.0638		
Total OctaCB	<	0.3	34.8	39.1	U	0.0551		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	24.1	—	—		—		
Homologue Groups Sum			**1510**			**4.2**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259923	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.8
Station	23 Acushnet Substation	**Run Time (hours)**	24.07	**Average Solar Radiation (w•m²)**	177
Sample Type	Normal Sample	**Sample Volume (m³)**	324.945	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total DiCB	=	0.03	2780	—	SE	8.56		
Total TriCB	=	0.01	2940	—	QSE	9.05		
Total TetraCB	=	0.02	2010	—	E	6.19		
Total PentaCB	<	0.03	331	884	U	1.36		
Total HexaCB	M	0.05	64.3	73.6	Q	0.226		
Total HeptaCB	<	0.1	26	26.3	U	0.040		
Total OctaCB	<	0.2	16.3	18.6	U	0.0286		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	1.3	—	—		—		
Homologue Groups Sum			**8270**			**25**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259924	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.3
Station	24 Aerovox	**Run Time (hours)**	24.56	**Average Solar Radiation (w•m²)**	173
Sample Type	Normal Sample	**Sample Volume (m³)**	331.56	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.5	202	—	QE	0.609		
Total DiCB	M	0.03	2290	4500	QSE	13.6		
Total TriCB	=	0.02	6620	—	QSE	20		
Total TetraCB	M	0.05	6870	6880	SE	20.8		
Total PentaCB	M	0.06	1670	1970	QE	5.94		
Total HexaCB	M	0.1	287.6	292.8	Q	0.8831		
Total HeptaCB	<	0.2	54.4	54.9	U	0.0828		
Total OctaCB	<	0.4	25.4	28.9	U	0.0436		
Total NonaCB	<	0.7	—	—		0.001		
DecaCB (#209)	<	3.9	—	—		—		
Homologue Groups Sum			**20500**			**62**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259925	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.3
Station	25 Cliftex	**Run Time (hours)**	24.85	**Average Solar Radiation (w•m²)**	173
Sample Type	Normal Sample	**Sample Volume (m³)**	335.475	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.03	132	—	E	0.393		
Total DiCB	M	0.04	2260	4830	QSE	14.4		
Total TriCB	=	0.02	4260	—	SE	12.7		
Total TetraCB	M	0.04	4310	4320	QSE	12.9		
Total PentaCB	<	0.04	647	1010	U	1.51		
Total HexaCB	M	0.09	109.7	120.1	Q	0.3580		
Total HeptaCB	<	0.1	23.9	24.3	U	0.0362		
Total OctaCB	<	0.3	0.52	13.9	U	0.021		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	1.9	—	—		—		
Homologue Groups Sum			**14200**			**42**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259925B	**Prevailing Wind Direction**	WNW
Project Number	49752	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	47
Station	25 Cliftex	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	158
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.03	2.3	—		—		
Total DiCB	M	0.03	22.6	25		—		
Total TriCB	M	0.01	11.9	12.2		—		
Total TetraCB	M	0.02	7.5	8.2		—		
Total PentaCB	M	0.03	1.1	163	QE	—		
Total HexaCB	M	0.03	1.1	2.5	Q	—		
Total HeptaCB	M	0.04	3.6	4	Q	—		
Total OctaCB	M	0.07	2	2.1	Q	—		
Total NonaCB	<	0.1	—	—		—		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			219					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	10/25/99	**Lab Sample Number**	10259926	**Prevailing Wind Direction**	NW
Project Number	49752	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	49.8
Station	26 103 Sawyer St	**Run Time (hours)**	23.96	**Average Solar Radiation (w•m²)**	177
Sample Type	Normal Sample	**Sample Volume (m³)**	323.46	**Total Precipitation (inches H_2O)**	0.010

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	584	—	E	1.81		
Total DiCB	M	0.03	2340	7070	SE	21.9		
Total TriCB	=	0.02	5140	—	QSE	15.9		
Total TetraCB	M	0.04	5990	5990	SE	18.5		
Total PentaCB	M	0.05	1280	1800	QE	5.56		
Total HexaCB	M	0.1	254	264.3	QE	0.817		
Total HeptaCB	<	0.2	45.7	46	U	0.0711		
Total OctaCB	<	0.4	25	28	U	0.043		
Total NonaCB	<	0.6	—	—		0.0009		
DecaCB (#209)	<	2.4	—	—		—		
Homologue Groups Sum			**20900**			**65**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169921	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.5
Station	21 New Bedford Welding	**Run Time (hours)**	21.85	**Average Solar Radiation (w•m²)**	88.4
Sample Type	Normal Sample	**Sample Volume (m³)**	294.975	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.006	3	—	U	0.0051		
Total DiCB	<	0.01	35.9	—	U	0.0609		
Total TriCB	M	0.006	86.3	86.4		0.293		
Total TetraCB	M	0.02	99	99.5		0.34		
Total PentaCB	<	0.04	14.9	266	U	0.451		
Total HexaCB	<	0.06	5.1	14.7	U	0.025		
Total HeptaCB	<	0.3	47.2	59.8	U	0.101		
Total OctaCB	<	0.6	—	99.5	U	0.2		
Total NonaCB	<	0.8	—	2.9	U	0.005		
DecaCB (#209)	<	1.4	2.6	—	U	—		
Homologue Groups Sum			**427**			**1.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169921B	**Prevailing Wind Direction**	NW
Project Number	49924	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	42
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	79.2
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.03	1.7	—	Q	—		
Total DiCB	=	0.07	28.5	—		—		
Total TriCB	M	0.01	6	6.5	Q	—		
Total TetraCB	=	0.03	12.1	—		—		
Total PentaCB	M	0.03	—	224	Q	—		
Total HexaCB	M	0.07	1.5	6	Q	—		
Total HeptaCB	=	0.2	43.2	—	Q	—		
Total OctaCB	M	0.3	2.6	30.7	Q	—		
Total NonaCB	M	0.4	—	3.1	Q	—		
DecaCB (#209)	=	0.0	4.1	—		—		
Homologue Groups Sum			**356**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169922	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.4
Station	22 Woodlawn Park	**Run Time (hours)**	24.21	**Average Solar Radiation (w•m²)**	93.3
Sample Type	Normal Sample	**Sample Volume (m³)**	326.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.006	2	—	U	0.0031		
Total DiCB	<	0.01	26.9	—	U	0.0412		
Total TriCB	<	0.005	13.6	13.6	U	0.0208		
Total TetraCB	<	0.01	12.8	13.2	U	0.0202		
Total PentaCB	<	0.03	3.4	382	U	0.58		
Total HexaCB	<	0.07	2.5	11.3	U	0.017		
Total HeptaCB	<	0.2	55.3	55.9	U	0.0855		
Total OctaCB	<	0.3	—	38.9	U	0.06		
Total NonaCB	<	0.5	—	4.3	U	0.007		
DecaCB (#209)	<	1.3	—	2.3	U	—		
Homologue Groups Sum			**274**			**0.84**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169923	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.4
Station	23 Acushnet Substation	**Run Time (hours)**	22.92	**Average Solar Radiation (w•m²)**	93.3
Sample Type	Normal Sample	**Sample Volume (m³)**	309.42	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	16.4	—		0.0530		
Total DiCB	=	0.02	1380	—	E	4.46		
Total TriCB	M	0.01	1660	1660	E	5.36		
Total TetraCB	=	0.03	937	—	E	3.03		
Total PentaCB	<	0.05	125	631	U	1.02		
Total HexaCB	M	0.08	28.9	34.7	Q	0.112		
Total HeptaCB	<	0.2	30.8	31.5	U	0.0509		
Total OctaCB	<	0.6	—	42.2	U	0.07		
Total NonaCB	<	0.8	—	4.4	U	0.007		
DecaCB (#209)	<	2.4	2.6	—	U	—		
Homologue Groups Sum			**4380**			**14**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169924	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.4
Station	24 Aerovox	**Run Time (hours)**	22.56	**Average Solar Radiation (w•m²)**	93.3
Sample Type	Normal Sample	**Sample Volume (m³)**	304.56	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.0	20.8	—	E	0.0683		
Total DiCB	M	0.03	2960	5350	SE	17.6		
Total TriCB	=	0.008	4030	—	QSE	13.2		
Total TetraCB	M	0.02	5040	5040	E	16.5		
Total PentaCB	M	0.03	753	1090	E	3.58		
Total HexaCB	M	0.06	241.9	251.1		0.8245		
Total HeptaCB	<	0.2	69	75.2	U	0.12		
Total OctaCB	<	0.5	4.7	34.8	U	0.057		
Total NonaCB	<	0.6	—	6.5	U	0.01		
DecaCB (#209)	<	1	—	1	U	—		
Homologue Groups Sum			**15800**			**52**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169924D	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.5
Station	24D Aerovox Duplicate	**Run Time (hours)**	20.76	**Average Solar Radiation (w•m²)**	98.7
Sample Type	Field Duplicate	**Sample Volume (m³)**	280.26	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.3	125	—	QE	0.446		
Total DiCB	M	0.03	2500	4550	SE	16		
Total TriCB	=	0.01	3580	—	SE	12.8		
Total TetraCB	M	0.02	3850	3850	E	13.7		
Total PentaCB	<	0.04	631	848	U	1.51		
Total HexaCB	M	0.07	200.9	205	Q	0.7315		
Total HeptaCB	<	0.3	30.9	67.1	U	0.120		
Total OctaCB	<	0.9	0.90	55.9	U	0.10		
Total NonaCB	<	1.3	—	6.6	U	0.01		
DecaCB (#209)	<	0.0	1.2	—	U	—		
Homologue Groups Sum			**12800**			**46**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169925	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.5
Station	25 Cliftex	**Run Time (hours)**	23.65	**Average Solar Radiation (w•m²)**	98.7
Sample Type	Normal Sample	**Sample Volume (m³)**	319.275	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.01	3.5	—	U	0.0055		
Total DiCB	<	0.03	134	135	U	0.211		
Total TriCB	=	0.01	86.6	—		0.271		
Total TetraCB	M	0.03	60.4	60.5		0.189		
Total PentaCB	<	0.09	12.9	1140	U	1.79		
Total HexaCB	<	0.1	4	21.1	U	0.033		
Total HeptaCB	<	0.5	160	161	U	0.25		
Total OctaCB	<	1.1	17.2	128	U	0.200		
Total NonaCB	<	1.5	—	14.8	U	0.02		
DecaCB (#209)	<	2.8	1.7	—	U	—		
Homologue Groups Sum			**949**			**3**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	11/15/99	**Lab Sample Number**	11169926	**Prevailing Wind Direction**	WNW
Project Number	49924	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	39.5
Station	26 103 Sawyer St	**Run Time (hours)**	23.85	**Average Solar Radiation (w•m²)**	88.4
Sample Type	Normal Sample	**Sample Volume (m³)**	321.975	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	M	0.01	394	1090	SE	3.39		
Total DiCB	M	0.02	1330	8380	QSE	26		
Total TriCB	=	0.01	5920	—	QSE	18.4		
Total TetraCB	=	0.03	5360	—	E	16.6		
Total PentaCB	M	0.04	1060	1340	E	4.16		
Total HexaCB	M	0.1	298.7	305	Q	0.9473		
Total HeptaCB	<	0.3	72	—	U	0.11		
Total OctaCB	<	0.5	1.6	52.7	U	0.082		
Total NonaCB	<	0.7	—	4.2	U	0.007		
DecaCB (#209)	<	8	4.2	—	U	—		
Homologue Groups Sum			**22500**			**70**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169921	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.7
Station	21 New Bedford Welding	**Run Time (hours)**	23.71	**Average Solar Radiation (w•m²)**	48.7
Sample Type	Normal Sample	**Sample Volume (m³)**	320.085	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.01	2.3	3.8	U	0.0059		
Total DiCB	=	0.07	134	—	E	0.419		
Total TriCB	M	0.006	23	23.1		0.072		
Total TetraCB	M	0.02	29.9	30.2		0.0943		
Total PentaCB	M	0.09	20	1020	E	3.2		
Total HexaCB	<	0.1	9.8	91.9	U	0.14		
Total HeptaCB	<	0.2	18.6	18.7	U	0.0292		
Total OctaCB	<	0.8	—	69.8	U	0.1		
Total NonaCB	M	1.2	—	8.7	Q	0.03		
DecaCB (#209)	M	0.0	—	7.3	B	—		
Homologue Groups Sum			**1310**			**4.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169922	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.7
Station	22 Woodlawn Park	**Run Time (hours)**	23.78	**Average Solar Radiation (w•m²)**	48.7
Sample Type	Normal Sample	**Sample Volume (m³)**	321.03	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.06	3.8	—	U	0.0059		
Total DiCB	=	0.2	107	—	E	0.333		
Total TriCB	M	0.02	16	16.1		0.050		
Total TetraCB	M	0.04	21.4	21.7		0.0676		
Total PentaCB	M	0.1	2.9	1220	QE	3.8		
Total HexaCB	<	0.08	3.9	10.8	U	0.017		
Total HeptaCB	<	0.05	0.68	1.1	U	0.0017		
Total OctaCB	<	0.3	—	1.4	U	0.002		
Total NonaCB	<	0.4	—	—		0.0006		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**1370**			**4.3**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169922B	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.7
Station	22 Woodlawn Park	**Run Time (hours)**		**Average Solar Radiation (w•m²)**	48.7
Sample Type	Field Blank	**Sample Volume (m³)**		**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.02	0.34	—		—		
Total DiCB	=	0.05	7.6	—		—		
Total TriCB	M	0.005	1.2	1.2		—		
Total TetraCB	M	0.02	2.5	3.2		—		
Total PentaCB	M	0.05	—	338	QE	—		
Total HexaCB	M	0.03	0.81	2.5	Q	—		
Total HeptaCB	M	0.02	0.20	0.39	Q	—		
Total OctaCB	<	0.07	—	—		—		
Total NonaCB	<	0.1	—	—		—		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			353					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169923	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.4
Station	23 Acushnet Substation	**Run Time (hours)**	23.81	**Average Solar Radiation (w•m²)**	49.2
Sample Type	Normal Sample	**Sample Volume (m³)**	321.435	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	13.7	—		0.0426		
Total DiCB	=	0.04	957	—	E	2.98		
Total TriCB	=	0.006	430	—	E	1.3		
Total TetraCB	=	0.02	323	—		1		
Total PentaCB	M	0.08	172	572	QE	1.78		
Total HexaCB	<	0.1	31	46.1	U	0.072		
Total HeptaCB	<	0.2	20.8	21.9	U	0.0341		
Total OctaCB	<	1.1	75.1	—	U	0.117		
Total NonaCB	<	1.7	—	—		0.003		
DecaCB (#209)	<	3	—	—		—		
Homologue Groups Sum			**2370**			**7.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169924	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.7
Station	24 Aerovox	**Run Time (hours)**	23.79	**Average Solar Radiation (w•m²)**	48.7
Sample Type	Normal Sample	**Sample Volume (m³)**	321.165	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.006	136	—	QE	0.423		
Total DiCB	M	0.02	3490	7830	SE	24.4		
Total TriCB	=	0.003	2260	—	SE	7.04		
Total TetraCB	M	0.008	2460	2460	E	7.66		
Total PentaCB	M	0.04	1490	1510	E	4.7		
Total HexaCB	<	0.02	175	175	U	0.272		
Total HeptaCB	<	0.01	8.9	—	U	0.014		
Total OctaCB	<	0.06	1.8	2.1	U	0.0033		
Total NonaCB	M	0.09	—	0.46	Q	0.001		
DecaCB (#209)	<	0.09	—	0.19	U	—		
Homologue Groups Sum			**14300**			**44**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169925	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.3
Station	25 Cliftex	**Run Time (hours)**	23.65	**Average Solar Radiation (w•m²)**	57.7
Sample Type	Normal Sample	**Sample Volume (m³)**	319.275	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.03	11.7	—	Q	0.0366		
Total DiCB	=	0.07	408	—	QE	1.28		
Total TriCB	=	0.006	93	—		0.29		
Total TetraCB	M	0.01	81.8	82.1		0.257		
Total PentaCB	M	0.04	104	127		0.398		
Total HexaCB	<	0.03	9.9	10.2	U	0.016		
Total HeptaCB	<	0.02	1.6	—	U	0.0025		
Total OctaCB	<	0.1	1.4	—	U	0.0022		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			729			2.3		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	12/16/99	**Lab Sample Number**	12169926	**Prevailing Wind Direction**	WSW
Project Number	50182	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	44.3
Station	26 103 Sawyer St	**Run Time (hours)**	24.21	**Average Solar Radiation (w•m²)**	57.7
Sample Type	Normal Sample	**Sample Volume (m³)**	326.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	M	0.01	396	1410	SE	4.31		
Total DiCB	M	0.05	6510	22120	QSE	67.7		
Total TriCB	=	0.006	3180	—	QSE	9.73		
Total TetraCB	M	0.02	2900	2910	QE	8.9		
Total PentaCB	M	0.09	897	1510	QE	4.62		
Total HexaCB	<	0.1	106	126	U	0.193		
Total HeptaCB	<	0.1	33.9	34.5	U	0.0528		
Total OctaCB	<	0.9	111	—	U	0.170		
Total NonaCB	<	1.4	—	—		0.002		
DecaCB (#209)	<	8.6	—	—		—		
Homologue Groups Sum			**31300**			**96**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140021	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.5
Station	21 New Bedford Welding	**Run Time (hours)**	23.6	**Average Solar Radiation (w•m²)**	106
Sample Type	Normal Sample	**Sample Volume (m³)**	318.6	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.01	1.5	—	U	0.0024		
Total DiCB	<	0.06	45.2	—	U	0.0709		
Total TriCB	<	0.003	3.7	3.7	U	0.0058		
Total TetraCB	<	0.007	3.1	—	U	0.0049		
Total PentaCB	M	0.02	2	2.3		0.0072		
Total HexaCB	<	0.02	0.98	1.2	U	0.0019		
Total HeptaCB	<	0.02	0.17	0.2	U	0.00031		
Total OctaCB	<	0.09	—	—		0.0001		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**29.8**			**0.094**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140022	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	22 Woodlawn Park	**Run Time (hours)**	23.53	**Average Solar Radiation (w•m²)**	113
Sample Type	Normal Sample	**Sample Volume (m³)**	317.655	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.05	0.94	1.3	U	0.0020		
Total DiCB	<	0.3	31.7	42	U	0.0661		
Total TriCB	<	0.008	1.8	1.8	U	0.0028		
Total TetraCB	<	0.02	2.1	2.1	U	0.0033		
Total PentaCB	<	0.05	0.30	—	U	0.00047		
Total HexaCB	<	0.03	0.96	—	U	0.0015		
Total HeptaCB	<	0.02	0.14	—	U	0.00022		
Total OctaCB	<	0.1	—	—		0.0002		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**24.4**			**0.077**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140023	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	23 Acushnet Substation	**Run Time (hours)**	23.23	**Average Solar Radiation (w•m²)**	107
Sample Type	Normal Sample	**Sample Volume (m³)**	313.605	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	14.7	—	Q	0.0469		
Total DiCB	=	0.1	2200	—	E	7		
Total TriCB	=	0.005	309	—		0.985		
Total TetraCB	M	0.01	175	175		0.558		
Total PentaCB	M	0.04	57.7	58.1		0.185		
Total HexaCB	M	0.04	14.1	14.6		0.0466		
Total HeptaCB	M	0.04	0.85	1.4		0.0045		
Total OctaCB	<	0.2	—	—		0.0003		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**2770**			**8.8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140023B	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	14.6
Station	23 Acushnet Substation	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	102
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.02	0.50	—		—		
Total DiCB	=	0.07	16.3	—		—		
Total TriCB	M	0.008	2	2		—		
Total TetraCB	M	0.02	2.5	2.6		—		
Total PentaCB	M	0.03	0.26	0.57		—		
Total HexaCB	=	0.04	0.44	—		—		
Total HeptaCB	M	0.03	—	0.04		—		
Total OctaCB	<	0.2	—	—		—		
Total NonaCB	<	0.2	—	—		—		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			22.7					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140024	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	24 Aerovox	**Run Time (hours)**	23.53	**Average Solar Radiation (w•m²)**	113
Sample Type	Normal Sample	**Sample Volume (m³)**	317.655	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.0	41.4	—	QE	0.130		
Total DiCB	=	0.09	7020	—	E	22.1		
Total TriCB	=	0.004	943	—	E	2.97		
Total TetraCB	=	0.01	833	—	E	2.62		
Total PentaCB	M	0.01	288	290		0.913		
Total HexaCB	M	0.02	84.3	84.8		0.267		
Total HeptaCB	M	0.02	5.2	5.2	Q	0.016		
Total OctaCB	=	0.07	1.4	—	Q	0.0044		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**9220**			**29**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140024D	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	24D Aerovox Duplicate	**Run Time (hours)**	23.74	**Average Solar Radiation (w•m²)**	113
Sample Type	Field Duplicate	**Sample Volume (m³)**	320.49	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.03	—	—		0.00005		
Total DiCB	M	0.1	2820	2820	E	8.8		
Total TriCB	=	0.01	936	—	E	2.92		
Total TetraCB	M	0.03	776	777	E	2.42		
Total PentaCB	=	0.05	282	—		0.880		
Total HexaCB	=	0.06	75.7	—		0.236		
Total HeptaCB	=	0.05	4.9	—		0.015		
Total OctaCB	M	0.2	0.21	0.63		0.0020		
Total NonaCB	<	0.3	—	—		0.0005		
DecaCB (#209)	<	0.3	—	—		—		
Homologue Groups Sum			**4900**			**15**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140025	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	25 Cliftex	**Run Time (hours)**	23.64	**Average Solar Radiation (w•m²)**	113
Sample Type	Normal Sample	**Sample Volume (m³)**	319.14	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	<	0.02	1.4	—	U	0.0022		
Total DiCB	M	0.1	91.9	102	E	0.320		
Total TriCB	=	0.005	10.2	—		0.0320		
Total TetraCB	<	0.01	7	7	U	0.011		
Total PentaCB	M	0.03	6	43.7		0.14		
Total HexaCB	<	0.03	1.6	—	U	0.0025		
Total HeptaCB	M	0.03	0.27	0.36		0.0011		
Total OctaCB	<	0.1	—	—		0.0002		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**161**			**0.51**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	1/14/00	**Lab Sample Number**	01140026	**Prevailing Wind Direction**	NW
Project Number	50305	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	12.4
Station	26 103 Sawyer St	**Run Time (hours)**	22.91	**Average Solar Radiation (w•m²)**	107
Sample Type	Normal Sample	**Sample Volume (m³)**	309.285	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	1000	—	E	3.2		
Total DiCB	=	0.09	23750	—	E	76.79		
Total TriCB	=	0.005	1350	—	E	4.36		
Total TetraCB	=	0.01	675	—	E	2.18		
Total PentaCB	M	0.03	223	223		0.721		
Total HexaCB	M	0.04	37.7	38.4		0.124		
Total HeptaCB	M	0.02	1.8	1.9		0.0061		
Total OctaCB	<	0.1	—	—		0.0002		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**27000**			**87**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170021	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	28
Station	21 New Bedford Welding	**Run Time (hours)**	24.18	**Average Solar Radiation (w•m²)**	159
Sample Type	Normal Sample	**Sample Volume (m³)**	326.43	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	28.8	—	E	0.0882		
Total DiCB	=	0.02	744	—	E	2.28		
Total TriCB	M	0.01	853	860	E	2.63		
Total TetraCB	=	0.02	297	—		0.910		
Total PentaCB	=	0.04	68.1	—		0.209		
Total HexaCB	M	0.02	10.8	10.9		0.0334		
Total HeptaCB	=	0.05	2.4	—		0.0074		
Total OctaCB	<	0.08	—	—		0.0001		
Total NonaCB	<	0.09	—	—		0.0001		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**2010**			**6.2**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170021B	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	30.8
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	158
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.01	0.27	—		—		
Total DiCB	=	0.01	3.6	—		—		
Total TriCB	=	0.01	6.5	—		—		
Total TetraCB	=	0.01	4.6	—		—		
Total PentaCB	M	0.02	1.5	55.1		—		
Total HexaCB	=	0.01	1.1	—		—		
Total HeptaCB	M	0.03	0.98	1.1		—		
Total OctaCB	<	0.09	—	—		—		
Total NonaCB	<	0.1	—	—		—		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**72.4**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170023	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	28.1
Station	23 Acushnet Substation	**Run Time (hours)**	24.1	**Average Solar Radiation (w•m²)**	154
Sample Type	Normal Sample	**Sample Volume (m³)**	325.35	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	29.4	—	E	0.0904		
Total DiCB	=	0.02	1140	—	E	3.5		
Total TriCB	=	0.02	2180	—	E	6.7		
Total TetraCB	M	0.02	845	845	E	2.6		
Total PentaCB	M	0.04	170	171		0.53		
Total HexaCB	M	0.02	20.2	20.5		0.0630		
Total HeptaCB	M	0.05	2.7	2.9		0.0089		
Total OctaCB	<	0.08	—	—		0.0001		
Total NonaCB	M	0.09	—	0.05		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**4390**			**13**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170024	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	28.1
Station	24 Aerovox	**Run Time (hours)**	24.19	**Average Solar Radiation (w•m²)**	157
Sample Type	Normal Sample	**Sample Volume (m³)**	326.565	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	91.8	—	E	0.281		
Total DiCB	=	0.02	1870	—	E	5.73		
Total TriCB	=	0.01	3110	—	E	9.52		
Total TetraCB	M	0.02	1490	1490	E	4.56		
Total PentaCB	=	0.03	408	—		1.25		
Total HexaCB	M	0.02	55.2	55.4		0.170		
Total HeptaCB	M	0.04	6.9	7.5		0.023		
Total OctaCB	M	0.07	0.43	0.6		0.0018		
Total NonaCB	<	0.08	—	—		0.0001		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**7030**			**22**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170025	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	28
Station	25 Cliftex	**Run Time (hours)**	24.21	**Average Solar Radiation (w•m²)**	159
Sample Type	Normal Sample	**Sample Volume (m³)**	326.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	13.4	—		0.0410		
Total DiCB	=	0.01	502	—	E	1.54		
Total TriCB	=	0.01	1090	—	E	3.34		
Total TetraCB	M	0.02	538	538	E	1.65		
Total PentaCB	=	0.01	80.3	—		0.246		
Total HexaCB	=	0.01	14.6	—		0.0447		
Total HeptaCB	M	0.03	2.5	2.6		0.0080		
Total OctaCB	M	0.06	0.37	0.44		0.0013		
Total NonaCB	<	0.08	—	—		0.0001		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**2240**			**6.9**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	2/17/00	**Lab Sample Number**	02170026	**Prevailing Wind Direction**	NNW
Project Number	50488	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	28.7
Station	26 103 Sawyer St	**Run Time (hours)**	26.73	**Average Solar Radiation (w•m²)**	152
Sample Type	Normal Sample	**Sample Volume (m³)**	360.855	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	1160	—	E	3.21		
Total DiCB	M	0.01	2310	10110	SE	28		
Total TriCB	=	0.008	11930	—	SE	33.06		
Total TetraCB	M	0.01	5710	5720	E	15.9		
Total PentaCB	=	0.01	1230	—	E	3.41		
Total HexaCB	=	0.01	185	—		0.513		
Total HeptaCB	M	0.03	20.2	20.3		0.0563		
Total OctaCB	M	0.08	2.4	3.7		0.010		
Total NonaCB	<	0.1	—	—		0.0001		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**30400**			**84**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150021	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	21 New Bedford Welding	**Run Time (hours)**	24.14	**Average Solar Radiation (w•m²)**	209
Sample Type	Normal Sample	**Sample Volume (m³)**	325.89	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	M	0.03	—	0.2	J	0.0006	0.0001	0.00000006
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	<	0.03	1	—	U	0.0015	0.0001	0.0000002
2,3,4,4',5-PentaCB (#114)	=	0.03	0.86	—		0.0026	0.0005	0.000001
2,3',4,4',5 PentaCB (#118)	=	0.03	3.8	—	B	0.012	0.0001	0.000001
2',3,4,4',5 PentaCB (#123)	<	0.02	—	—		0.00003	0.0001	0.000000003
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	<	0.02	0.21	—	U	0.00032	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	—	—		0.00003	0.0005	0.00000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.02	—	0.08	U	0.0001	0.00001	0.000000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.03	—	—		0.00005	0.01	0.0000005
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	0.60	—	U	0.00092	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	0.70	—	U	0.0011	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.08	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	2.1	—		0.0064		
Total DiCB	=	0.02	42.4	—		0.130		
Total TriCB	M	0.02	102	102		0.313		
Total TetraCB	M	0.03	84.7	87		0.267		
Total PentaCB	=	0.04	42	—		0.13		
Total HexaCB	<	0.03	8.2	9.4	U	0.014		
Total HeptaCB	<	0.05	1.9	2.8	U	0.0043		
Total OctaCB	<	0.06	0.090	0.62	U	0.00095		
Total NonaCB	<	0.06	—	—		0.00009		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**282**			**0.87**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150022	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	22 Woodlawn Park	**Run Time (hours)**	24.01	**Average Solar Radiation (w•m²)**	209
Sample Type	Normal Sample	**Sample Volume (m³)**	324.135	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	0.19	—	J	0.00059	0.0001	0.00000006
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	<	0.04	0.63	—	U	0.00097	0.0001	0.0000001
2,3,4,4',5-PentaCB (#114)	=	0.05	0.72	—		0.0022	0.0005	0.000001
2,3',4,4',5-PentaCB (#118)	=	0.04	3	—	B	0.0093	0.0001	0.0000009
2',3,4,4',5-PentaCB (#123)	<	0.04	—	—		0.00006	0.0001	0.000000006
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	<	0.04	0.10	—	U	0.00015	0.0005	0.00000008
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	—	—		0.00006	0.0005	0.00000003
2,3',4,4',5,5'-HexaCB (#167)	<	0.04	—	—		0.00006	0.00001	0.0000000006
3,3',4,4',5,5'-HexaCB (#169)	<	0.05	—	—		0.00008	0.01	0.0000008
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	0.20	—	U	0.00031	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	0.34	—	U	0.00052	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—	0.0001	
DecaCB (#209)	<	0.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	2.5	—		0.0077		
Total DiCB	=	0.02	39.9	—		0.123		
Total TriCB	M	0.01	66.6	66.7		0.206		
Total TetraCB	=	0.02	47.8	—		0.147		
Total PentaCB	M	0.03	24.5	24.9		0.0768		
Total HexaCB	<	0.03	5.9	6.1	U	0.0094		
Total HeptaCB	<	0.04	1.9	—	U	0.0029		
Total OctaCB	<	0.1	0.34	0.65	U	0.0010		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**186**			**0.57**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150023	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	23 Acushnet Substation	**Run Time (hours)**	23.88	**Average Solar Radiation (w•m²)**	209
Sample Type	Normal Sample	**Sample Volume (m³)**	322.38	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	3.6	—		0.011	0.0001	0.000001
3,4,5,4'-TetraCB (#81)	=	0.02	0.44	—	J	0.0014	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.03	6.4	—		0.020	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.04	9.9	—		0.031	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.04	52.5	—		0.163	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.03	0.98	—		0.0030	0.0001	0.0000003
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	<	0.03	0.95	—	U	0.0015	0.0005	0.0000007
2,3,3',4,4',5'-HexaCB (#157)	=	0.03	0.29	—	J	0.00090	0.0005	0.0000004
2,3',4,4',5,5'-HexaCB (#167)	=	0.02	0.67	—		0.0021	0.00001	0.00000002
3,3',4,4',5,5'-HexaCB (#169)	<	0.03	—	—		0.00005	0.01	0.0000005
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.04	1.4	—	U	0.0022	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.03	2.2	—	U	0.0034	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	0.060	—	U	—	0.0001	
DecaCB (#209)	<	0.07	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	466	—	E	1.45		
Total DiCB	=	0.01	6350	—	E	19.7		
Total TriCB	=	0.01	7100	—	E	22		
Total TetraCB	M	0.02	3890	3900	E	12.1		
Total PentaCB	=	0.03	915	—	E	2.84		
Total HexaCB	=	0.02	115	—		0.357		
Total HeptaCB	<	0.03	13.3	—	U	0.0206		
Total OctaCB	<	0.07	1.4	1.9	U	0.0029		
Total NonaCB	<	0.07	—	—		0.0001		
DecaCB (#209)	<	0.07	—	—		—		
Homologue Groups Sum			**18900**			**58**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150024	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	24 Aerovox	**Run Time (hours)**	24	**Average Solar Radiation (w•m²)**	209
Sample Type	Normal Sample	**Sample Volume (m³)**	324	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	6.8	—		0.021	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.03	1.2	—		0.0037	0.0001	0.0000004
2,3,3',4,4'-PentaCB (#105)	=	0.04	21.9	—		0.0676	0.0001	0.000007
2,3,4,4',5-PentaCB (#114)	=	0.05	22	—		0.068	0.0005	0.00003
2,3',4,4',5-PentaCB (#118)	=	0.05	95.1	—		0.294	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.04	2.6	—		0.0080	0.0001	0.0000008
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	=	0.03	2.1	—	B	0.0065	0.0005	0.000003
2,3,3',4,4',5'-HexaCB (#157)	=	0.03	0.47	—	J	0.0015	0.0005	0.0000007
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	1	—		0.0031	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.04	—	—		0.00006	0.01	0.0000006
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	2.3	—	U	0.0035	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	4	—	U	0.0062	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.08	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.007	72.3	—	QE	0.223		
Total DiCB	=	0.02	5450	—	E	16.8		
Total TriCB	=	0.02	9170	—	E	28.3		
Total TetraCB	M	0.03	5750	5750	E	17.7		
Total PentaCB	=	0.04	1340	—	E	4.14		
Total HexaCB	=	0.03	191	—		0.590		
Total HeptaCB	=	0.05	24	—		0.074		
Total OctaCB	<	0.08	2.3	2.5	U	0.0039		
Total NonaCB	<	0.09	—	—		0.0001		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**22000**			**68**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150024D	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	24D Aerovox Duplicate	**Run Time (hours)**	23.99	**Average Solar Radiation (w•m²)**	209
Sample Type	Field Duplicate	**Sample Volume (m³)**	323.865	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.03	—	—		0.00005	0.0001	0.000000005
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	=	0.04	23	—		0.071	0.0001	0.000007
2,3,4,4',5-PentaCB (#114)	=	0.05	23.6	—		0.0729	0.0005	0.00004
2,3',4,4',5-PentaCB (#118)	=	0.05	99.9	—		0.308	0.0001	0.00003
2',3,4,4',5-PentaCB (#123)	=	0.04	2.5	—		0.0077	0.0001	0.0000008
3,3',4,4',5-PentaCB (#126)	<	0.06	—	—		0.00009	0.1	0.000009
2,3,3',4,4',5-HexaCB (#156)	=	0.03	2.3	—	B	0.0071	0.0005	0.000004
2,3,3',4,4',5'-HexaCB (#157)	M	0.03	—	0.53		0.002	0.0005	0.0000008
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	1.1	—		0.0034	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.04	—	—		0.00006	0.01	0.0000006
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	2.3	—	U	0.0036	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	4	—	U	0.0062	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.08	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.4	79.7	—	QE	0.246		
Total DiCB	=	0.02	5930	—	QE	18.3		
Total TriCB	=	0.02	9480	—	E	29.3		
Total TetraCB	=	0.03	5570	—	E	17.2		
Total PentaCB	M	0.04	1410	1410	E	4.35		
Total HexaCB	M	0.03	215	215		0.664		
Total HeptaCB	=	0.05	24.2	—		0.0747		
Total OctaCB	<	0.09	2.3	2.5	U	0.0039		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**22700**			**70**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150025	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52.3
Station	25 Cliftex	**Run Time (hours)**	24.02	**Average Solar Radiation (w•m²)**	209
Sample Type	Normal Sample	**Sample Volume (m³)**	324.27	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	2	—		0.0062	0.0001	0.0000006
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	=	0.04	3.1	—		0.0096	0.0001	0.000001
2,3,4,4',5-PentaCB (#114)	=	0.05	4.8	—		0.015	0.0005	0.000007
2,3',4,4',5-PentaCB (#118)	=	0.05	25.6	—		0.0789	0.0001	0.000008
2',3,4,4',5-PentaCB (#123)	=	0.04	0.55	—		0.0017	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.06	—	—		0.00009	0.1	0.000009
2,3,3',4,4',5-HexaCB (#156)	<	0.03	0.45	—	U	0.00069	0.0005	0.0000003
2,3,3',4,4',5'-HexaCB (#157)	=	0.03	0.16	—	J	0.00049	0.0005	0.0000002
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	0.32	—	JB	0.00099	0.00001	0.00000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.04	—	—		0.00006	0.01	0.0000006
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.04	0.59	—	U	0.00091	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	1	—	U	0.0015	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—	0.0001	
DecaCB (#209)	<	0.07	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.02	278	—	E	0.857		
Total DiCB	=	0.02	3950	—	E	12.2		
Total TriCB	=	0.02	4210	—	E	13		
Total TetraCB	M	0.02	2060	2060	E	6.35		
Total PentaCB	=	0.04	506	—	E	1.56		
Total HexaCB	M	0.03	54.8	56.1		0.173		
Total HeptaCB	<	0.04	6.3	—	U	0.0097		
Total OctaCB	<	0.08	0.81	—	U	0.0012		
Total NonaCB	<	0.09	—	—		0.0001		
DecaCB (#209)	<	0.07	—	—		—		
Homologue Groups Sum			**11100**			**34**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150026	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52
Station	26 103 Sawyer St	**Run Time (hours)**	24.21	**Average Solar Radiation (w•m²)**	204
Sample Type	Normal Sample	**Sample Volume (m³)**	326.835	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	5.1	—		0.016	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	=	0.03	0.46	—	J	0.0014	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.04	7	—		0.021	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.05	12.5	—		0.0382	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.04	65.7	—		0.201	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.03	1.3	—		0.0040	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	=	0.03	1.3	—	B	0.0040	0.0005	0.000002
2,3,3',4,4',5'-HexaCB (#157)	=	0.03	0.34	—	J	0.0010	0.0005	0.0000005
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	0.82	—		0.0025	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.03	—	—		0.00005	0.01	0.0000005
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	2.2	—	U	0.0034	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	3.1	—	U	0.0047	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	0.090	—	U	—	0.0001	
DecaCB (#209)	<	0.07	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	145	—	E	0.444		
Total DiCB	=	0.02	2210	—	E	6.76		
Total TriCB	=	0.02	3370	—	E	10.3		
Total TetraCB	M	0.02	2270	2280	E	6.98		
Total PentaCB	=	0.03	897	—	E	2.74		
Total HexaCB	M	0.03	136	136		0.416		
Total HeptaCB	<	0.04	17	—	U	0.026		
Total OctaCB	<	0.08	3.3	—	U	0.0050		
Total NonaCB	=	0.08	0.29	—		0.00089		
DecaCB (#209)	<	0.07	—	—		—		
Homologue Groups Sum			**9050**			**28**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	3/15/00	**Lab Sample Number**	03150026B	**Prevailing Wind Direction**	SSW
Project Number	50647	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	48.8
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	186
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.02	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.02	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.03	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.04	—	—		—		
2,3',4,4',5-PentaCB (#118)	M	0.03	—	0.22	JB	—		
2',3,4,4',5-PentaCB (#123)	<	0.03	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.02	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.02	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.03	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.04	0.17	—	JB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.03	—	0.24	JB	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.03	—	—		—		
DecaCB (#209)	<	0.05	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.01	0.33	—		—		
Total DiCB	M	0.01	4.2	5		—		
Total TriCB	=	0.01	6.6	—		—		
Total TetraCB	=	0.02	3.3	—		—		
Total PentaCB	M	0.03	0.50	1		—		
Total HexaCB	=	0.02	0.58	—		—		
Total HeptaCB	M	0.03	0.26	0.5		—		
Total OctaCB	<	0.06	—	—		—		
Total NonaCB	<	0.06	—	—		—		
DecaCB (#209)	<	0.05	—	—		—		
Homologue Groups Sum			**17.4**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040021	**Prevailing Wind Direction**	WNW
Project Number	50754A	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	51.4
Station	21 New Bedford Welding	**Run Time (hours)**	23	**Average Solar Radiation (w•m²)**	91.8
Sample Type	Normal Sample	**Sample Volume (m³)**	310.5	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.01	0.51	—		0.0016	0.0001	0.0000002
3,4,5,4'-TetraCB (#81)	<	0.01	—	—		0.00002	0.0001	0.000000002
2,3,3',4,4'-PentaCB (#105)	<	0.007	1	—	U	0.0016	0.0001	0.0000002
2,3,4,4',5-PentaCB (#114)	=	0.008	0.85	—		0.0027	0.0005	0.000001
2,3',4,4',5-PentaCB (#118)	<	0.007	3.3	—	U	0.0053	0.0001	0.0000005
2',3,4,4',5-PentaCB (#123)	<	0.006	—	—		0.00001	0.0001	0.000000001
3,3',4,4',5-PentaCB (#126)	<	0.01	—	—		0.00002	0.1	0.000002
2,3,3',4,4',5-HexaCB (#156)	<	0.01	0.19	—	U	0.00031	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.01	—	—		0.00002	0.0005	0.000000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.01	—	0.07	U	0.0001	0.00001	0.000000001
3,3',4,4',5,5'-HexaCB (#169)	<	0.02	—	—		0.00003	0.01	0.0000003
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.03	2.3	—	U	0.0037	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.02	0.46	—	U	0.00074	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.02	—	—		—	0.0001	
DecaCB (#209)	<	0.05	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.01	3.2	3.7	U	0.0060		
Total DiCB	<	0.02	58.3	—	U	0.0939		
Total TriCB	M	0.009	147	147		0.473		
Total TetraCB	M	0.01	174	175		0.564		
Total PentaCB	M	0.01	46.2	81.8		0.263		
Total HexaCB	<	0.008	10.6	11.5	U	0.0185		
Total HeptaCB	<	0.02	3.8	4.5	U	0.0072		
Total OctaCB	<	0.04	1.1	—	U	0.0018		
Total NonaCB	<	0.05	—	—		0.00008		
DecaCB (#209)	<	0.05	—	—		—		
Homologue Groups Sum			**443**			**1.4**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040021B	**Prevailing Wind Direction**	SSW
Project Number	50754	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	53.6
Station	21 New Bedford Welding	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	48.5
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.03	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		—		
2,3,3',4,4'-PentaCB (#105)	M	0.02	—	0.4	J	—		
2,3,4,4',5-PentaCB (#114)	<	0.02	—	—		—		
2,3',4,4',5-PentaCB (#118)	=	0.02	0.82	—		—		
2',3,4,4',5-PentaCB (#123)	<	0.01	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.03	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	=	0.04	0.63	—		—		
2,3,3',4,4',5'-HexaCB (#157)	=	0.04	0.23	—	J	—		
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	0.15	—	J	—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.06	2.3	—		—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.04	2.6	—		—		
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.05	0.21	—	J	—		
DecaCB (#209)	<	0.1	—	—		—		
PCB Homologue Groups								
Total MonoCB	=	0.01	1.5	—		—		
Total DiCB	M	0.02	19.4	20.9		—		
Total TriCB	M	0.02	27	27.2		—		
Total TetraCB	M	0.02	8.6	9		—		
Total PentaCB	M	0.02	1.8	2.7		—		
Total HexaCB	M	0.02	4	4.2		—		
Total HeptaCB	M	0.05	7.8	7.9		—		
Total OctaCB	M	0.1	2.2	3.9		—		
Total NonaCB	=	0.1	0.40	—		—		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			77.7					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040022	**Prevailing Wind Direction**	WNW
Project Number	50754	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	51.8
Station	22 Woodlawn Park	**Run Time (hours)**	23.95	**Average Solar Radiation (w•m²)**	72.7
Sample Type	Normal Sample	**Sample Volume (m³)**	323.325	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	M	0.02	—	0.21	J	0.0006	0.0001	0.00000006
3,4,5,4'-TetraCB (#81)	<	0.02	—	—		0.00003	0.0001	0.000000003
2,3,3',4,4'-PentaCB (#105)	<	0.02	0.37	—	U	0.00057	0.0001	0.00000006
2,3,4,4',5-PentaCB (#114)	=	0.02	0.52	—		0.0016	0.0005	0.0000008
2,3',4,4',5-PentaCB (#118)	<	0.02	2	—	U	0.0031	0.0001	0.0000003
2',3,4,4',5-PentaCB (#123)	=	0.01	0.050	—	J	0.00015	0.0001	0.00000002
3,3',4,4',5-PentaCB (#126)	<	0.03	—	—		0.00005	0.1	0.000005
2,3,3',4,4',5-HexaCB (#156)	<	0.03	—	0.09	U	0.0001	0.0005	0.00000007
2,3,3',4,4',5'-HexaCB (#157)	<	0.03	—	—		0.00005	0.0005	0.00000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.03	—	0.04	U	0.00006	0.00001	0.0000000006
3,3',4,4',5,5'-HexaCB (#169)	<	0.05	—	—		0.00008	0.01	0.0000008
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.06	0.14	—	U	0.00022	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	0.28	—	U	0.00043	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	<	0.008	2.4	—	U	0.0037		
Total DiCB	<	0.02	72.6	—	U	0.112		
Total TriCB	<	0.009	61.5	61.7	U	0.0954		
Total TetraCB	<	0.01	43.5	44	U	0.0680		
Total PentaCB	M	0.02	19.3	19.8		0.0612		
Total HexaCB	<	0.02	5.2	5.7	U	0.0088		
Total HeptaCB	<	0.05	2	2.2	U	0.0034		
Total OctaCB	<	0.1	0.20	0.44	U	0.00068		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**114**			**0.35**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040023	**Prevailing Wind Direction**	WNW
Project Number	50754	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	51.7
Station	23 Acushnet Substation	**Run Time (hours)**	23.9	**Average Solar Radiation (w•m²)**	92.5
Sample Type	Normal Sample	**Sample Volume (m³)**	322.65	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.4	—	—		0.0006	0.0001	0.00000006
3,4,5,4'-TetraCB (#81)	<	0.5	—	—		0.0008	0.0001	0.00000008
2,3,3',4,4'-PentaCB (#105)	M	0.5	—	2.8		0.009	0.0001	0.0000009
2,3,4,4',5-PentaCB (#114)	M	0.6	—	3.2		0.01	0.0005	0.000005
2,3',4,4',5-PentaCB (#118)	=	0.6	16.7	—		0.0518	0.0001	0.000005
2',3,4,4',5-PentaCB (#123)	<	0.4	—	—		0.0006	0.0001	0.00000006
3,3',4,4',5-PentaCB (#126)	<	0.9	—	—		0.001	0.1	0.0001
2,3,3',4,4',5-HexaCB (#156)	<	1	—	—		0.002	0.0005	0.0000008
2,3,3',4,4',5'-HexaCB (#157)	<	0.9	—	—		0.001	0.0005	0.0000007
2,3',4,4',5,5'-HexaCB (#167)	<	0.8	—	—		0.001	0.00001	0.00000001
3,3',4,4',5,5'-HexaCB (#169)	<	1.4	—	—		0.002	0.01	0.00002
2,2',3,3',4,4',5-HeptaCB (#170)	<	3.4	—	—		0.005	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	2.4	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	2.8	—	—		—	0.0001	
DecaCB (#209)	<	6.5	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.004	15.7	—		0.0487		
Total DiCB	=	0.005	175	—	E	0.542		
Total TriCB	M	0.4	4110	4120	E	12.8		
Total TetraCB	M	0.7	2120	2160	E	6.69		
Total PentaCB	M	1	389	438		1.36		
Total HexaCB	M	0.7	50.5	59.4		0.184		
Total HeptaCB	<	2.8	—	—	R	—		
Total OctaCB	<	4	—	—	R	—		
Total NonaCB	<	4.8	—	—		0.007		
DecaCB (#209)	<	6.5	—	—		—		
Homologue Groups Sum			**6970**			**22**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040024	**Prevailing Wind Direction**	WNW
Project Number	50754	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52
Station	24 Aerovox	**Run Time (hours)**	23.94	**Average Solar Radiation (w•m²)**	72.1
Sample Type	Normal Sample	**Sample Volume (m³)**	323.19	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	12.2	—		0.0377	0.0001	0.000004
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	=	0.02	32.1	—		0.0993	0.0001	0.00001
2,3,4,4',5-PentaCB (#114)	=	0.02	36.1	—		0.112	0.0005	0.00006
2,3',4,4',5-PentaCB (#118)	=	0.02	125	—	E	0.387	0.0001	0.00004
2',3,4,4',5-PentaCB (#123)	=	0.02	3.5	—		0.011	0.0001	0.000001
3,3',4,4',5-PentaCB (#126)	=	0.03	103	—	E	0.319	0.1	0.03
2,3,3',4,4',5-HexaCB (#156)	=	0.04	4.1	—		0.013	0.0005	0.000006
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	0.84	—	U	0.0013	0.0005	0.0000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.04	2	—		0.0062	0.00001	0.00000006
3,3',4,4',5,5'-HexaCB (#169)	=	0.06	158	—	E	0.489	0.01	0.005
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.06	3.5	—	U	0.0054	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	6.6	—	U	0.010	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	0.12	—	U	—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.0	71.9	—	QE	0.222		
Total DiCB	=	0.02	6160	—	QE	19.1		
Total TriCB	=	0.01	9240	—	E	28.6		
Total TetraCB	M	0.02	6290	6290	E	19.5		
Total PentaCB	M	0.02	1340	1340	E	4.15		
Total HexaCB	M	0.02	361	362	E	1.12		
Total HeptaCB	M	0.05	47.3	47.5		0.147		
Total OctaCB	<	0.1	3.6	4.7	U	0.0073		
Total NonaCB	<	0.2	0.24	—	U	0.00037		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**23500**			**73**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040025	**Prevailing Wind Direction**	WNW
Project Number	50754	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	52
Station	25 Cliftex	**Run Time (hours)**	23.96	**Average Solar Radiation (w•m²)**	72.1
Sample Type	Normal Sample	**Sample Volume (m³)**	323.46	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	1.3	—		0.0040	0.0001	0.0000004
3,4,5,4'-TetraCB (#81)	<	0.03	—	—		0.00005	0.0001	0.000000005
2,3,3',4,4'-PentaCB (#105)	<	0.02	1.6	—	U	0.0025	0.0001	0.0000002
2,3,4,4',5-PentaCB (#114)	=	0.02	3.2	—		0.0099	0.0005	0.000005
2,3',4,4',5-PentaCB (#118)	=	0.02	13	—		0.040	0.0001	0.000004
2',3,4,4',5-PentaCB (#123)	M	0.02	—	0.24	J	0.0007	0.0001	0.00000007
3,3',4,4',5-PentaCB (#126)	<	0.03	—	—		0.00005	0.1	0.000005
2,3,3',4,4',5-HexaCB (#156)	<	0.04	0.32	—	U	0.00049	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	—	0.04	U	0.00006	0.0005	0.00000003
2,3',4,4',5,5'-HexaCB (#167)	<	0.03	0.23	—	U	0.00036	0.00001	0.000000004
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.06	0.61	—	U	0.00094	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	1.4	—	U	0.0022	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	80.6	—	E	0.249		
Total DiCB	=	0.03	2460	—	E	7.61		
Total TriCB	=	0.01	1900	—	E	5.9		
Total TetraCB	M	0.02	950	951	E	2.9		
Total PentaCB	M	0.02	198	199		0.615		
Total HexaCB	M	0.02	34.7	35		0.108		
Total HeptaCB	<	0.05	9.6	9.8	U	0.015		
Total OctaCB	<	0.1	1.3	1.5	U	0.0023		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**5630**			**17**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/4/00	**Lab Sample Number**	04040026	**Prevailing Wind Direction**	WNW
Project Number	50754	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	51.7
Station	26 103 Sawyer St	**Run Time (hours)**	23.91	**Average Solar Radiation (w•m²)**	92.5
Sample Type	Normal Sample	**Sample Volume (m³)**	322.785	**Total Precipitation (inches H_2O)**	0.28

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	17	—		0.053	0.0001	0.000005
3,4,5,4'-TetraCB (#81)	<	0.04	—	—		0.00006	0.0001	0.000000006
2,3,3',4,4'-PentaCB (#105)	=	0.02	17	—		0.053	0.0001	0.000005
2,3,4,4',5-PentaCB (#114)	=	0.03	30.3	—		0.0939	0.0005	0.00005
2,3',4,4',5-PentaCB (#118)	=	0.03	153	—	E	0.474	0.0001	0.00005
2',3,4,4',5-PentaCB (#123)	=	0.02	3.1	—		0.0096	0.0001	0.000001
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	=	0.05	4	—		0.012	0.0005	0.000006
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	0.74	—	U	0.0011	0.0005	0.0000006
2,3',4,4',5,5'-HexaCB (#167)	=	0.04	2.4	—		0.0074	0.00001	0.00000007
3,3',4,4',5,5'-HexaCB (#169)	=	0.07	105	—	E	0.325	0.01	0.003
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.08	3.4	—	U	0.0053	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.06	5.5	—	U	0.0085	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.07	0.20	—	U	—	0.0001	
DecaCB (#209)	<	0.2	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.02	3220	—	SE	9.98		
Total DiCB	M	0.02	3390	16940	QSE	52.5		
Total TriCB	=	0.01	15440	—	QSE	47.83		
Total TetraCB	M	0.02	11350	11350	E	35.16		
Total PentaCB	M	0.03	2640	2650	E	8.21		
Total HexaCB	M	0.03	407	407	E	1.26		
Total HeptaCB	M	0.07	41.5	42		0.130		
Total OctaCB	<	0.2	3.3	—	U	0.0051		
Total NonaCB	<	0.2	—	0.23	U	0.0004		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**50100**			**160**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170021	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.7
Station	21 New Bedford Welding	**Run Time (hours)**	24.07	**Average Solar Radiation (w•m²)**	129
Sample Type	Normal Sample	**Sample Volume (m³)**	324.945	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	0.84	—		0.0026	0.0001	0.0000003
3,4,5,4'-TetraCB (#81)	=	0.03	0.14	—	J	0.00043	0.0001	0.00000004
2,3,3',4,4'-PentaCB (#105)	=	0.02	1.1	—	B	0.0034	0.0001	0.0000003
2,3,4,4',5-PentaCB (#114)	=	0.03	2.1	—		0.0065	0.0005	0.000003
2,3',4,4',5-PentaCB (#118)	=	0.03	9.7	—		0.030	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	=	0.02	0.16	—	J	0.00049	0.0001	0.00000005
3,3',4,4',5-PentaCB (#126)	<	0.04	—	—		0.00006	0.1	0.000006
2,3,3',4,4',5-HexaCB (#156)	M	0.04	—	0.16	JB	0.0005	0.0005	0.0000002
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	—	—		0.00006	0.0005	0.00000003
2,3',4,4',5,5'-HexaCB (#167)	=	0.03	0.15	—	JB	0.00046	0.00001	0.000000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.05	0.12	—	JB	0.00037	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	—	—		0.00006	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.04	—	—		—	0.0001	
DecaCB (#209)	<	0.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.02	8.6	—		0.026		
Total DiCB	=	0.02	572	—	E	1.76		
Total TriCB	=	0.01	1380	—	E	4.25		
Total TetraCB	M	0.02	809	810	E	2.49		
Total PentaCB	M	0.02	145	146		0.449		
Total HexaCB	M	0.02	21.4	21.6		0.0665		
Total HeptaCB	M	0.04	1.9	2.4		0.0074		
Total OctaCB	<	0.1	—	—		0.0002		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**2940**			**9**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170022	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.5
Station	22 Woodlawn Park	**Run Time (hours)**	23.98	**Average Solar Radiation (w•m²)**	109
Sample Type	Normal Sample	**Sample Volume (m³)**	323.73	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	0.16	—	J	0.00049	0.0001	0.00000005
3,4,5,4'-TetraCB (#81)	<	0.02	—	—		0.00003	0.0001	0.000000003
2,3,3',4,4'-PentaCB (#105)	<	0.02	0.28	—	U	0.00043	0.0001	0.00000004
2,3,4,4',5-PentaCB (#114)	=	0.02	0.39	—	JB	0.0012	0.0005	0.0000006
2,3',4,4',5-PentaCB (#118)	<	0.02	1.5	—	U	0.0023	0.0001	0.0000002
2',3,4,4',5-PentaCB (#123)	<	0.01	—	—		0.00002	0.0001	0.000000002
3,3',4,4',5-PentaCB (#126)	<	0.03	—	—		0.00005	0.1	0.000005
2,3,3',4,4',5-HexaCB (#156)	<	0.03	0.080	—	U	0.00012	0.0005	0.00000006
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	—	—		0.00003	0.0005	0.00000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.02	—	—		0.00003	0.00001	0.0000000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.04	—	—		0.00006	0.01	0.0000006
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.04	0.12	—	JB	0.00037	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	M	0.03	—	0.23	JB	0.0007	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.03	—	—		—	0.0001	
DecaCB (#209)	<	0.08	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.01	2.9	—		0.0090		
Total DiCB	=	0.02	102	—	E	0.315		
Total TriCB	M	0.01	148	148		0.457		
Total TetraCB	M	0.02	85.9	86.3		0.267		
Total PentaCB	M	0.01	19.7	20.4		0.0630		
Total HexaCB	<	0.01	4.2	4.3	U	0.0066		
Total HeptaCB	<	0.03	0.52	1.2	U	0.0019		
Total OctaCB	<	0.08	—	0.18	U	0.0003		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**362**			**1.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170022SPIKE	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.5
Station	22 Woodlawn Park	**Run Time (hours)**	23.98	**Average Solar Radiation (w•m²)**	109
Sample Type	Field Spike	**Sample Volume (m³)**	323.73	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.01	8.1	—		0.025	0.0001	0.000003
3,4,5,4'-TetraCB (#81)	=	0.01	7.5	—		0.023	0.0001	0.000002
2,3,3',4,4'-PentaCB (#105)	=	0.008	7.2	—		0.022	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.009	10	—		0.031	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.008	11.2	—		0.0346	0.0001	0.000003
2',3,4,4',5-PentaCB (#123)	=	0.006	6	—		0.019	0.0001	0.000002
3,3',4,4',5-PentaCB (#126)	=	0.01	11.6	—		0.0358	0.1	0.004
2,3,3',4,4',5-HexaCB (#156)	=	0.01	8.2	—		0.025	0.0005	0.00001
2,3,3',4,4',5'-HexaCB (#157)	=	0.01	8.6	—		0.027	0.0005	0.00001
2,3',4,4',5,5'-HexaCB (#167)	=	0.01	7.3	—		0.023	0.00001	0.0000002
3,3',4,4',5,5'-HexaCB (#169)	=	0.02	8.9	—		0.027	0.01	0.0003
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.02	59.7	—		0.184	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.01	17.1	—	B	0.0528	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.02	8.7	—		—	0.0001	
DecaCB (#209)	=	0.04	16.2	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.007	5.2	—		0.016		
Total DiCB	=	0.01	151	—	E	0.466		
Total TriCB	M	0.006	251	251		0.775		
Total TetraCB	M	0.008	229	229		0.707		
Total PentaCB	M	0.008	92.7	93.6		0.289		
Total HexaCB	M	0.007	45.3	45.7		0.141		
Total HeptaCB	M	0.02	87.5	87.8		0.271		
Total OctaCB	=	0.04	14.4	—		0.0445		
Total NonaCB	M	0.05	20.7	20.8		0.0643		
DecaCB (#209)	=	0.04	16.2	—		—		
Homologue Groups Sum			**898**			**2.8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170023	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.5
Station	23 Acushnet Substation	**Run Time (hours)**	24.06	**Average Solar Radiation (w•m²)**	109
Sample Type	Normal Sample	**Sample Volume (m³)**	324.81	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.02	0.25	—	J	0.00077	0.0001	0.00000008
3,4,5,4'-TetraCB (#81)	<	0.02	—	—		0.00003	0.0001	0.000000003
2,3,3',4,4'-PentaCB (#105)	<	0.01	0.36	—	U	0.00055	0.0001	0.00000006
2,3,4,4',5-PentaCB (#114)	=	0.02	0.56	—	B	0.0017	0.0005	0.0000009
2,3',4,4',5-PentaCB (#118)	=	0.01	2.1	—	B	0.0065	0.0001	0.0000006
2',3,4,4',5-PentaCB (#123)	<	0.01	—	—		0.00002	0.0001	0.000000002
3,3',4,4',5-PentaCB (#126)	<	0.02	—	—		0.00003	0.1	0.000003
2,3,3',4,4',5-HexaCB (#156)	<	0.02	0.060	—	U	0.000092	0.0005	0.00000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	—	—		0.00003	0.0005	0.00000002
2,3',4,4',5,5'-HexaCB (#167)	<	0.02	0.030	—	U	0.000046	0.00001	0.0000000005
3,3',4,4',5,5'-HexaCB (#169)	<	0.03	—	—		0.00005	0.01	0.0000005
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.04	0.11	—	JB	0.00034	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.03	0.22	—	U	0.00034	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.03	—	—		—	0.0001	
DecaCB (#209)	<	0.08	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.008	1.7	—		0.0052		
Total DiCB	=	0.01	74.4	—	E	0.229		
Total TriCB	=	0.008	151	—		0.465		
Total TetraCB	M	0.01	103	103		0.317		
Total PentaCB	M	0.01	28.5	28.8		0.0887		
Total HexaCB	<	0.01	6.5	6.7	U	0.010		
Total HeptaCB	<	0.03	1.2	1.6	U	0.0025		
Total OctaCB	<	0.07	—	—		0.0001		
Total NonaCB	<	0.09	—	—		0.0001		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**363**			**1.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170023B	**Prevailing Wind Direction**	NE
Project Number	50865	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	45.7
Station	23 Acushnet Substation	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	142
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.10

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	<	0.04	—	—		—		
3,4,5,4'-TetraCB (#81)	<	0.04	—	—		—		
2,3,3',4,4'-PentaCB (#105)	<	0.03	—	—		—		
2,3,4,4',5-PentaCB (#114)	<	0.04	—	—		—		
2,3',4,4',5-PentaCB (#118)	M	0.03	—	0.25	JB	—		
2',3,4,4',5-PentaCB (#123)	<	0.03	—	—		—		
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		—		
2,3,3',4,4',5-HexaCB (#156)	<	0.05	—	—		—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.05	—	—		—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.04	—	—		—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.07	—	—		—		
2,2',3,3',4,4',5-HeptaCB (#170)	M	0.07	—	0.39	JB	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.05	0.42	—	JB	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.06	—	—		—		
DecaCB (#209)	<	0.2	—	—		—		
PCB Homologue Groups								
Total MonoCB	<	0.05	—	—		—		
Total DiCB	=	0.07	4.6	—		—		
Total TriCB	M	0.03	4.8	5		—		
Total TetraCB	M	0.03	4.3	4.6		—		
Total PentaCB	M	0.03	0.35	1.3		—		
Total HexaCB	M	0.02	0.78	0.89		—		
Total HeptaCB	M	0.06	0.55	1.1		—		
Total OctaCB	=	0.2	0.43	—		—		
Total NonaCB	<	0.2	—	—		—		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			18					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170024	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.5
Station	24 Aerovox	**Run Time (hours)**	24.02	**Average Solar Radiation (w•m²)**	109
Sample Type	Normal Sample	**Sample Volume (m³)**	324.27	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.01	5.3	—		0.016	0.0001	0.000002
3,4,5,4'-TetraCB (#81)	<	0.01	—	—		0.00002	0.0001	0.000000002
2,3,3',4,4'-PentaCB (#105)	=	0.01	8	—		0.025	0.0001	0.000002
2,3,4,4',5-PentaCB (#114)	=	0.01	14.6	—		0.0450	0.0005	0.00002
2,3',4,4',5-PentaCB (#118)	=	0.01	60.7	—		0.187	0.0001	0.00002
2',3,4,4',5-PentaCB (#123)	=	0.009	1.2	—		0.0037	0.0001	0.0000004
3,3',4,4',5-PentaCB (#126)	<	0.02	—	—		0.00003	0.1	0.000003
2,3,3',4,4',5-HexaCB (#156)	<	0.02	1	—	U	0.0015	0.0005	0.0000008
2,3,3',4,4',5'-HexaCB (#157)	<	0.02	0.18	—	U	0.00028	0.0005	0.0000001
2,3',4,4',5,5'-HexaCB (#167)	=	0.01	0.86	—	B	0.0027	0.00001	0.00000003
3,3',4,4',5,5'-HexaCB (#169)	<	0.02	—	—		0.00003	0.01	0.0000003
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.02	0.85	—	B	0.0026	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.02	1.6	—	U	0.0025	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.02	—	—		—	0.0001	
DecaCB (#209)	<	0.05	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.009	121	—	E	0.373		
Total DiCB	=	0.01	5290	—	E	16.3		
Total TriCB	=	0.006	7460	—	E	23		
Total TetraCB	M	0.009	4590	4590	E	14.2		
Total PentaCB	M	0.009	956	956	E	2.95		
Total HexaCB	M	0.009	152	152		0.469		
Total HeptaCB	M	0.02	15.9	16.8		0.0518		
Total OctaCB	<	0.05	1.1	—	U	0.0017		
Total NonaCB	<	0.06	—	—		0.00009		
DecaCB (#209)	<	0.05	—	—		—		
Homologue Groups Sum			**18600**			**57**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170025	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.8
Station	25 Cliftex	**Run Time (hours)**	24.12	**Average Solar Radiation (w•m²)**	128
Sample Type	Normal Sample	**Sample Volume (m³)**	325.62	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.03	2.1	—		0.0064	0.0001	0.0000006
3,4,5,4'-TetraCB (#81)	=	0.03	0.37	—	J	0.0011	0.0001	0.0000001
2,3,3',4,4'-PentaCB (#105)	=	0.03	2.4	—		0.0074	0.0001	0.0000007
2,3,4,4',5-PentaCB (#114)	=	0.03	6.3	—		0.019	0.0005	0.00001
2,3',4,4',5-PentaCB (#118)	=	0.03	25.9	—		0.0795	0.0001	0.000008
2',3,4,4',5-PentaCB (#123)	=	0.02	0.51	—		0.0016	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	<	0.04	0.56	—	U	0.00086	0.0005	0.0000004
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	0.11	—	U	0.00017	0.0005	0.00000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.04	0.44	—	U	0.00068	0.00001	0.000000007
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—		0.00009	0.01	0.0000009
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.05	—	1.2	U	0.002	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	1.7	—	U	0.0026	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.04	0.070	—	JB	—	0.0001	
DecaCB (#209)	<	0.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	33	—	E	0.10		
Total DiCB	=	0.04	2050	—	E	6.3		
Total TriCB	M	0.02	3970	3970	E	12.2		
Total TetraCB	M	0.02	2240	2250	E	6.91		
Total PentaCB	M	0.02	414	415		1.27		
Total HexaCB	M	0.02	68.3	68.6		0.211		
Total HeptaCB	<	0.04	9.3	10.6	U	0.016		
Total OctaCB	<	0.1	1.8	2.7	U	0.0041		
Total NonaCB	<	0.1	0.24	—	U	0.00037		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**8790**			**27**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	4/17/00	**Lab Sample Number**	04170026	**Prevailing Wind Direction**	ENE
Project Number	50865	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	43.7
Station	26 103 Sawyer St	**Run Time (hours)**	24.09	**Average Solar Radiation (w•m²)**	129
Sample Type	Normal Sample	**Sample Volume (m³)**	325.215	**Total Precipitation (inches H_2O)**	0.11

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	2.4	—		0.0074	0.0001	0.0000007
3,4,5,4'-TetraCB (#81)	M	0.04	—	0.26	J	0.0008	0.0001	0.00000008
2,3,3',4,4'-PentaCB (#105)	=	0.03	2.5	—		0.0077	0.0001	0.0000008
2,3,4,4',5-PentaCB (#114)	=	0.03	5.2	—		0.016	0.0005	0.000008
2,3',4,4',5-PentaCB (#118)	=	0.03	24.6	—		0.0756	0.0001	0.000008
2',3,4,4',5-PentaCB (#123)	=	0.02	0.49	—	J	0.0015	0.0001	0.0000002
3,3',4,4',5-PentaCB (#126)	<	0.05	—	—		0.00008	0.1	0.000008
2,3,3',4,4',5-HexaCB (#156)	<	0.05	0.59	—	U	0.00091	0.0005	0.0000005
2,3,3',4,4',5'-HexaCB (#157)	<	0.04	0.11	—	U	0.00017	0.0005	0.00000008
2,3',4,4',5,5'-HexaCB (#167)	<	0.04	0.44	—	U	0.00068	0.00001	0.000000007
3,3',4,4',5,5'-HexaCB (#169)	<	0.07	—	—		0.0001	0.01	0.000001
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.06	0.82	—	U	0.0013	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.04	1.2	—	U	0.0018	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.05	—	—		—	0.0001	
DecaCB (#209)	<	0.1	—	—		—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	37.2	—	E	0.114		
Total DiCB	=	0.04	1980	—	E	6.09		
Total TriCB	=	0.02	3090	—	E	9.5		
Total TetraCB	M	0.03	1850	1850	E	5.69		
Total PentaCB	M	0.03	382	383		1.18		
Total HexaCB	M	0.02	61.4	61.5		0.189		
Total HeptaCB	<	0.05	7.4	8.3	U	0.013		
Total OctaCB	<	0.1	1.2	1.5	U	0.0023		
Total NonaCB	<	0.2	—	—		0.0003		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**7410**			**23**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080021	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.1
Station	21 New Bedford Welding	**Run Time (hours)**	24.08	**Average Solar Radiation (w•m²)**	277
Sample Type	Normal Sample	**Sample Volume (m³)**	325.08	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	5.7	—		0.018		
Total DiCB	=	0.02	502	—	E	1.54		
Total TriCB	=	0.01	1730	—	E	5.32		
Total TetraCB	M	0.02	1290	1290	E	3.97		
Total PentaCB	=	0.01	352	—		1.08		
Total HexaCB	M	0.02	80.9	81.6		0.251		
Total HeptaCB	M	0.04	13.8	14.4		0.0443		
Total OctaCB	M	0.1	2.5	2.7		0.0083		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**3980**			**12**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080022	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.1
Station	22 Woodlawn Park	**Run Time (hours)**	23.96	**Average Solar Radiation (w•m²)**	277
Sample Type	Normal Sample	**Sample Volume (m³)**	323.46	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	9.7	—		0.030		
Total DiCB	=	0.02	575	—	E	1.78		
Total TriCB	=	0.01	1360	—	E	4.2		
Total TetraCB	M	0.01	876	877	E	2.71		
Total PentaCB	M	0.01	188	189		0.584		
Total HexaCB	M	0.01	49.3	50		0.155		
Total HeptaCB	M	0.03	12.4	12.5		0.0386		
Total OctaCB	M	0.09	2.8	3.6		0.011		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**3080**			**9.5**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080023	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.1
Station	23 Acushnet Substation	**Run Time (hours)**	24.12	**Average Solar Radiation (w•m²)**	277
Sample Type	Normal Sample	**Sample Volume (m³)**	325.62	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	22	—		0.068		
Total DiCB	=	0.02	1790	—	E	5.5		
Total TriCB	=	0.01	3180	—	E	9.77		
Total TetraCB	M	0.01	2380	2390	E	7.34		
Total PentaCB	M	0.01	634	635	E	1.95		
Total HexaCB	M	0.01	165	166		0.510		
Total HeptaCB	M	0.03	25.9	26		0.0798		
Total OctaCB	M	0.1	4.5	4.8		0.015		
Total NonaCB	=	0.1	0.42	—		0.0013		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**8210**			**25**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080024	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.1
Station	24 Aerovox	**Run Time (hours)**	23.96	**Average Solar Radiation (w•m²)**	277
Sample Type	Normal Sample	**Sample Volume (m³)**	323.46	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	119	—	QE	0.368		
Total DiCB	M	0.02	3440	6700	QSE	20.7		
Total TriCB	=	0.01	9040	—	QSE	27.9		
Total TetraCB	M	0.02	12690	12700	QSE	39.26		
Total PentaCB	M	0.02	4140	4150	E	12.8		
Total HexaCB	M	0.03	1040	1040	E	3.22		
Total HeptaCB	M	0.08	161	161		0.498		
Total OctaCB	=	0.2	19.4	—		0.0600		
Total NonaCB	=	0.3	2.2	—		0.0068		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**33900**			**100**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080025	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72.1
Station	25 Cliftex	**Run Time (hours)**	23.96	**Average Solar Radiation (w•m²)**	277
Sample Type	Normal Sample	**Sample Volume (m³)**	323.46	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	60.7	—	E	0.188		
Total DiCB	=	0.02	4330	—	E	13.4		
Total TriCB	=	0.01	6650	—	SE	20.6		
Total TetraCB	M	0.02	4870	4870	E	15.1		
Total PentaCB	M	0.02	996	997	E	3.08		
Total HexaCB	M	0.02	219	234		0.723		
Total HeptaCB	M	0.06	38.6	39.1		0.121		
Total OctaCB	=	0.2	6.8	—		0.021		
Total NonaCB	M	0.2	0.18	0.9		0.0028		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**17200**			**53**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080025B	**Prevailing Wind Direction**	W
Project Number	51004	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	75.4
Station	25 Cliftex	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	251
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	=	0.01	0.16	—		—		
Total DiCB	=	0.02	14.1	—		—		
Total TriCB	=	0.01	19.6	—		—		
Total TetraCB	=	0.02	10.1	—		—		
Total PentaCB	=	0.01	2.5	—		—		
Total HexaCB	M	0.02	1.5	1.7		—		
Total HeptaCB	M	0.04	0.40	0.96		—		
Total OctaCB	<	0.1	—	—		—		
Total NonaCB	<	0.1	—	—		—		
DecaCB (#209)	<	0.08	—	—		—		
Homologue Groups Sum			**49.2**					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/8/00	**Lab Sample Number**	05080026	**Prevailing Wind Direction**	SSE
Project Number	51004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	72
Station	26 103 Sawyer St	**Run Time (hours)**	24.31	**Average Solar Radiation (w•m²)**	281
Sample Type	Normal Sample	**Sample Volume (m³)**	328.185	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.009	111	—	E	0.338		
Total DiCB	M	0.04	11530	17690	SE	53.9		
Total TriCB	=	0.007	6830	—	SE	20.8		
Total TetraCB	M	0.01	5810	5810	E	17.7		
Total PentaCB	M	0.01	1600	1600	E	4.9		
Total HexaCB	M	0.01	366	367	E	1.12		
Total HeptaCB	M	0.03	46.4	46.6		0.142		
Total OctaCB	M	0.09	3.4	5.3		0.016		
Total NonaCB	M	0.1	0.62	0.82		0.0025		
DecaCB (#209)	<	0.09	—	—		—		
Homologue Groups Sum			**32500**			**99**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300021	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.2
Station	21 New Bedford Welding	**Run Time (hours)**	24.01	**Average Solar Radiation (w•m²)**	256
Sample Type	Normal Sample	**Sample Volume (m³)**	324.135	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.006	9.3	—	Q	0.029		
Total DiCB	=	0.007	974	—	E	3		
Total TriCB	M	0.005	2510	2510	E	7.74		
Total TetraCB	M	0.007	1390	1390	E	4.29		
Total PentaCB	M	0.02	379	380		1.17		
Total HexaCB	M	0.008	46	46.3		0.14		
Total HeptaCB	M	0.02	6.4	6.4		0.020		
Total OctaCB	M	0.04	0.28	0.34		0.0010		
Total NonaCB	<	0.05	—	—		0.00008		
DecaCB (#209)	<	0.09	—	—		—		
Homologue Groups Sum			**5320**			**16**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300022	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	22 Woodlawn Park	**Run Time (hours)**	24	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	324	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	14.8	—		0.0457		
Total DiCB	=	0.01	715	—	E	2.21		
Total TriCB	=	0.006	1320	—	E	4.07		
Total TetraCB	M	0.01	708	711	E	2.19		
Total PentaCB	M	0.02	162	162		0.500		
Total HexaCB	M	0.01	23.6	23.7		0.0731		
Total HeptaCB	M	0.02	4.4	4.5		0.014		
Total OctaCB	M	0.05	0.41	0.52		0.0016		
Total NonaCB	<	0.06	—	—		0.00009		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**2950**			**9.1**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300023	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	23 Acushnet Substation	**Run Time (hours)**	24.12	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	325.62	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.008	10.3	—	Q	0.0316		
Total DiCB	=	0.01	575	—	E	1.77		
Total TriCB	=	0.007	1190	—	E	3.65		
Total TetraCB	M	0.01	620	621	E	1.9		
Total PentaCB	M	0.03	167	170		0.522		
Total HexaCB	M	0.01	24.6	25.2		0.0774		
Total HeptaCB	M	0.03	4.2	4.4		0.014		
Total OctaCB	=	0.04	0.22	—		0.00068		
Total NonaCB	<	0.06	—	—		0.00009		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**2600**			**8**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300024	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	24 Aerovox	**Run Time (hours)**	24.01	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	324.135	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	368	—	QE	1.14		
Total DiCB	M	0.02	2350	7240	SE	22.3		
Total TriCB	=	0.01	7730	—	SE	23.8		
Total TetraCB	M	0.02	8580	8600	E	26.5		
Total PentaCB	M	0.05	3900	3900	E	12		
Total HexaCB	M	0.02	448	448	E	1.38		
Total HeptaCB	M	0.06	54.1	54.3		0.168		
Total OctaCB	M	0.1	2	2.2		0.0068		
Total NonaCB	=	0.1	0.23	—		0.00071		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**28300**			**87**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300024D	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	24D Aerovox Duplicate	**Run Time (hours)**	24.01	**Average Solar Radiation (w•m²)**	280
Sample Type	Field Duplicate	**Sample Volume (m³)**	324.135	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.02	229	—	QE	0.706		
Total DiCB	M	0.02	3570	7100	SE	21.9		
Total TriCB	M	0.01	9000	9000	SE	28		
Total TetraCB	M	0.02	9070	9070	E	28		
Total PentaCB	M	0.05	3950	3950	E	12.2		
Total HexaCB	M	0.02	444	445	E	1.37		
Total HeptaCB	=	0.05	55.1	—		0.170		
Total OctaCB	M	0.1	2.1	2.3		0.0071		
Total NonaCB	=	0.1	0.26	—		0.00080		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**29900**			**92**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300025	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	25 Cliftex	**Run Time (hours)**	24.03	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	324.405	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.006	44.9	—	QE	0.138		
Total DiCB	=	0.007	2930	—	E	9.03		
Total TriCB	M	0.005	5470	5470	QSE	16.9		
Total TetraCB	M	0.01	4150	4150	E	12.8		
Total PentaCB	M	0.03	1290	1300	E	4.01		
Total HexaCB	M	0.01	159	160		0.493		
Total HeptaCB	M	0.03	21.8	22.5		0.0694		
Total OctaCB	M	0.05	1.1	1.1		0.0034		
Total NonaCB	<	0.06	—	—		0.00009		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			**14100**			**43**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300026	**Prevailing Wind Direction**	SE
Project Number		**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	56.5
Station	26 103 Sawyer St	**Run Time (hours)**	24.12	**Average Solar Radiation (w•m²)**	280
Sample Type	Normal Sample	**Sample Volume (m³)**	325.62	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Homologue Groups								
Total MonoCB	=	0.01	26.5	—	Q	0.0814		
Total DiCB	=	0.01	1830	—	E	5.62		
Total TriCB	=	0.01	4650	—	E	14.3		
Total TetraCB	M	0.02	2640	2640	E	8.11		
Total PentaCB	M	0.05	820	821	E	2.5		
Total HexaCB	=	0.02	101	—		0.310		
Total HeptaCB	M	0.05	14.4	14.4		0.0442		
Total OctaCB	M	0.08	0.30	0.75		0.0023		
Total NonaCB	<	0.1	—	—		0.0002		
DecaCB (#209)	<	0.2	—	—		—		
Homologue Groups Sum			**10100**			**31**		

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	5/30/00	**Lab Sample Number**	05300026B	**Prevailing Wind Direction**	NNE
Project Number		**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	55.1
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	232
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Homologue Groups								
Total MonoCB	M	0.009	—	0.09		—		
Total DiCB	M	0.01	3.5	3.9		—		
Total TriCB	M	0.01	5.7	5.8		—		
Total TetraCB	M	0.02	2.4	2.5		—		
Total PentaCB	=	0.05	0.070	—		—		
Total HexaCB	M	0.01	0.20	0.29		—		
Total HeptaCB	<	0.03	—	—		—		
Total OctaCB	<	0.05	—	—		—		
Total NonaCB	<	0.06	—	—		—		
DecaCB (#209)	<	0.1	—	—		—		
Homologue Groups Sum			12.7					

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Appendix C

Appendix C: Analyte Data Summary Reports

The information contained in this section includes summary reports, by sample site and sample event date, of the concentration results of each PCB congener and meteorological data. The meteorological data contained in this section are based on the earliest start and latest end times for all the sampling stations. The meteorological station takes readings every 5 minutes and averages these 5-minute readings at the end of every hour, as contained in Appendix G. For example, the sample at site 21 on 4 June 1999 started at 08:44 a.m. (earliest start time) and the sample at site 22 ended at 11:12 a.m. on 5 June 1999 (latest end time). Therefore, the average temperature, average solar radiation, and total precipitation are calculated based on the 4 June 1999 09:00 a.m. data through 5 June 1999 12:00 p.m. data.

3,3',4,4'-TetraCB (#77) Concentrations by Site and Meteorological Data

Sample Event Date			Daily Meterological Data: Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	3,3',4,4'-TetraCB (#77) Concentration (ng/m^3): 21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.0087	0.0073	0.012	0.14	—	0.028	—
10	Jun	99	ENE	65	470	0.00	0.011	***0.0010***	0.010	0.074	0.073	0.036	—
16	Jun	99	ENE	65	270	0.010	0.012	0.0021	0.0056	0.084	—	0.028	—
22	Jun	99	SSW	76	380	0.00	0.010	0.0031	0.011	0.13	0.15	0.036	0.025
06	Jul	99	WNW	86	370	0.00	0.013	0.0027	0.036	0.24	0.25	0.018	0.12
10	Jul	99	NW	73	240	0.00	***0.0015***	***0.0013***	0.026	0.085	—	***0.0024***	0.042
16	Jul	99	WSW	84	320	0.00	***0.0039***	***0.0010***	0.026	0.13	—	0.012	0.095
22	Jul	99	SW	77	280	0.00	***0.0031***	***0.0016***	0.023	0.14	—	0.011	0.016
28	Jul	99	WNW	83	360	0.00	0.015	***0.0023***	0.025	0.20	0.20	0.040	0.20
03	Aug	99	S	76	290	0.00	0.0087	***0.0025***	0.012	0.090	—	0.025	0.031
09	Aug	99	NNW	69	330	0.00	***0.0044***	***0.0015***	0.041	0.11	0.096	0.024	0.12
15	Aug	99	NNE	67	96	0.20	0.014	***0.0012***	0.012	0.14	—	0.021	0.036
21	Aug	99	N	65	60	0.00	***0.0040***	***0.0019***	0.010	0.084	0.082	0.017	0.026
27	Aug	99	SSE	76	160	0.00	***0.0078***	—	***0.0058***	—	—	0.027	***0.012***
08	Oct	99	SSW	62	130	0.00	—	—	—	0.039	—	—	—
15	Mar	00	SSW	52	220	0.00	0.00061	0.00059	0.011	0.021	***0.000046***	0.0062	0.016
04	Apr	00	WNW	52	91	0.28	0.0016	0.00065	***0.00062***	0.038	—	0.0040	0.053
17	Apr	00	ENE	44	130	0.11	0.0026	0.00049	0.00077	0.016	—	0.0064	0.0074
			3,3',4,4'-TetraCB (#77) Site Average				0.0072	0.0020	0.016	0.10	0.12	0.020	0.057
			3,3',4,4'-TetraCB (#77) Site Maximum				0.015	0.0073	0.041	0.24	0.25	0.040	0.20

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

3,4,5,4'-TetraCB (#81) Concentrations by Site and Meteorological Data

Daily Meterological Data							3,4,5,4'-TetraCB (#81) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	***0.00047***	***0.00033***	***0.00064***	0.023	—	0.0048	—
10	Jun	99	ENE	65	470	0.00	0.0014	***0.00030***	0.0011	0.011	0.011	0.0048	—
16	Jun	99	ENE	65	270	0.010	0.0016	***0.00031***	***0.00033***	0.014	—	0.0049	—
22	Jun	99	SSW	76	380	0.00	0.0016	0.00047	0.0013	0.019	0.024	0.0040	0.0026
06	Jul	99	WNW	86	370	0.00	0.0019	0.00042	0.0031	0.037	0.038	0.0017	0.0066
10	Jul	99	NW	73	240	0.00	0.00081	***0.000076***	0.0028	0.015	—	0.00076	0.0024
16	Jul	99	WSW	84	320	0.00	0.0012	0.00021	0.0024	0.019	—	0.0012	0.0055
22	Jul	99	SW	77	280	0.00	***0.00047***	***0.00016***	0.0019	0.021	—	0.0010	0.0013
28	Jul	99	WNW	83	360	0.00	0.0017	***0.000088***	0.0026	0.029	0.029	0.0041	0.013
03	Aug	99	S	76	290	0.00	0.00090	***0.000047***	0.00084	0.012	—	0.0025	0.0025
09	Aug	99	NNW	69	330	0.00	0.0010	0.00027	0.0037	0.014	0.012	0.0028	0.0073
15	Aug	99	NNE	67	96	0.20	0.0017	0.00012	0.0014	0.022	—	0.0028	0.0031
21	Aug	99	N	65	60	0.00	0.0011	***0.00015***	0.0012	0.010	0.0096	0.0023	0.0023
27	Aug	99	SSE	76	160	0.00	0.0018	—	0.0012	—	—	0.0027	0.0023
15	Mar	00	SSW	52	220	0.00	***0.000046***	***0.000046***	0.0014	0.0037	***0.000046***	***0.000046***	0.0014
04	Apr	00	WNW	52	91	0.28	***0.000016***	***0.000031***	***0.00077***	***0.000046***	—	***0.000046***	***0.000062***
17	Apr	00	ENE	44	130	0.11	0.00043	***0.000031***	***0.000031***	***0.000015***	—	0.0011	0.00080
					3,4,5,4'-TetraCB (#81) Site Average		0.0011	0.00019	0.0016	0.016	0.018	0.0024	0.0036
					3,4,5,4'-TetraCB (#81) Site Maximum		0.0019	0.00047	0.0037	0.037	0.038	0.0049	0.013

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3,3',4,4'-PentaCB (#105) Concentrations by Site and Meteorological Data

Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	2,3,3',4,4'-PentaCB (#105) Concentration (ng/m^3)						
					21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04 Jun 99	NNE	69	370	0.00	0.024	0.016	0.015	0.27	—	0.037	—
10 Jun 99	ENE	65	470	0.00	0.019	***0.0020***	0.015	0.13	0.13	0.043	—
16 Jun 99	ENE	65	270	0.010	0.023	0.0049	0.0076	0.16	—	0.043	—
22 Jun 99	SSW	76	380	0.00	0.030	0.0065	0.017	0.28	0.33	0.050	0.028
06 Jul 99	WNW	86	370	0.00	0.051	0.0091	0.046	0.77	0.84	0.030	0.055
10 Jul 99	NW	73	240	0.00	0.013	0.0034	0.026	0.23	—	0.0061	0.026
16 Jul 99	WSW	84	320	0.00	0.039	0.0064	0.044	0.62	—	0.023	0.057
22 Jul 99	SW	77	280	0.00	***0.00062***	***0.00031***	0.036	0.55	—	0.020	0.020
28 Jul 99	WNW	83	360	0.00	0.051	***0.00012***	0.039	0.62	0.70	0.056	0.11
03 Aug 99	S	76	290	0.00	0.030	***0.000093***	0.018	0.25	—	0.038	0.039
09 Aug 99	NNW	69	330	0.00	0.022	0.0064	0.049	0.24	0.22	0.036	0.10
15 Aug 99	NNE	67	96	0.20	0.041	0.0037	0.020	0.26	—	0.023	0.024
21 Aug 99	N	65	60	0.00	0.016	***0.00031***	0.016	0.19	0.18	0.027	0.030
27 Aug 99	SSE	76	160	0.00	0.040	—	0.022	—	—	0.042	0.036
08 Oct 99	SSW	62	130	0.00	—	—	—	0.13	—	—	—
15 Mar 00	SSW	52	220	0.00	***0.0015***	***0.00097***	0.020	0.068	0.071	0.0096	0.021
04 Apr 00	WNW	52	91	0.28	***0.0016***	***0.00057***	0.0087	0.099	—	***0.0025***	0.053
17 Apr 00	ENE	44	130	0.11	0.0034	***0.00043***	***0.00055***	0.025	—	0.0074	0.0077
				2,3,3',4,4'-PentaCB (#105) Site Average	0.024	0.0038	0.024	0.29	0.35	0.029	0.044
				2,3,3',4,4'-PentaCB (#105) Site Maximum	0.051	0.016	0.049	0.77	0.84	0.056	0.11

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3,4,4',5-PentaCB (#114) Concentrations by Site and Meteorological Data

Sample Event Date			Daily Meterological Data: Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	2,3,4,4',5-PentaCB (#114) Concentration (ng/m^3): 21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.015	0.0043	0.011	0.20	—	0.032	—
10	Jun	99	ENE	65	470	0.00	0.012	***0.0012***	0.010	0.098	0.11	0.035	—
16	Jun	99	ENE	65	270	0.010	0.017	0.0025	0.0096	0.14	—	0.043	—
22	Jun	99	SSW	76	380	0.00	0.015	0.0040	0.015	0.22	0.26	0.053	0.025
06	Jul	99	WNW	86	370	0.00	0.018	0.0048	0.032	0.32	0.37	0.019	0.046
10	Jul	99	NW	73	240	0.00	0.0056	0.0014	0.030	0.11	—	0.0058	0.024
16	Jul	99	WSW	84	320	0.00	0.025	***0.000092***	0.043	0.30	—	0.024	0.055
22	Jul	99	SW	77	280	0.00	***0.00047***	***0.00031***	0.032	0.29	—	0.016	0.014
28	Jul	99	WNW	83	360	0.00	0.025	***0.000088***	0.035	0.38	0.41	0.063	0.13
03	Aug	99	S	76	290	0.00	0.023	0.020	0.030	0.0081	—	0.053	0.046
09	Aug	99	NNW	69	330	0.00	0.015	0.0037	0.071	0.20	0.19	0.037	0.098
15	Aug	99	NNE	67	96	0.20	0.028	***0.00093***	0.022	0.20	—	0.025	0.035
21	Aug	99	N	65	60	0.00	0.014	***0.00031***	0.021	0.13	0.13	0.036	0.027
27	Aug	99	SSE	76	160	0.00	0.035	—	0.031	—	—	0.057	0.031
08	Oct	99	SSW	62	130	0.00	—	—	—	0.24	—	—	—
15	Mar	00	SSW	52	220	0.00	0.0026	0.0022	0.031	0.068	0.073	0.015	0.038
04	Apr	00	WNW	52	91	0.28	0.0027	0.0016	0.0099	0.11	—	0.0099	0.094
17	Apr	00	ENE	44	130	0.11	0.0065	0.0012	0.0017	0.045	—	0.019	0.016
			2,3,4,4',5-PentaCB (#114) Site Average				0.015	0.0030	0.026	0.18	0.22	0.032	0.048
			2,3,4,4',5-PentaCB (#114) Site Maximum				0.035	0.020	0.071	0.38	0.41	0.063	0.13

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3',4,4',5-PentaCB (#118) Concentrations by Site and Meteorological Data

Daily Meterological Data							2,3',4,4',5-PentaCB (#118) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.11	0.039	0.11	1.5	—	0.31	—
10	Jun	99	ENE	65	470	0.00	0.092	0.013	0.073	0.77	0.77	0.30	—
16	Jun	99	ENE	65	270	0.010	0.12	0.014	0.055	0.94	—	0.29	—
22	Jun	99	SSW	76	380	0.00	0.11	0.026	0.10	1.5	1.7	0.37	0.16
06	Jul	99	WNW	86	370	0.00	0.14	0.031	0.27	2.3	2.6	0.15	0.39
10	Jul	99	NW	73	240	0.00	0.033	0.0098	0.23	0.65	—	0.038	0.16
16	Jul	99	WSW	84	320	0.00	0.099	0.018	0.29	1.8	—	0.11	0.39
22	Jul	99	SW	77	280	0.00	0.043	0.016	0.24	1.6	—	0.11	0.094
28	Jul	99	WNW	83	360	0.00	0.18	0.027	0.26	2.3	2.5	0.48	0.85
03	Aug	99	S	76	290	0.00	0.096	0.031	0.11	1.3	—	0.28	0.24
09	Aug	99	NNW	69	330	0.00	0.10	***0.011***	0.58	1.1	1	0.27	0.63
15	Aug	99	NNE	67	96	0.20	0.17	***0.0051***	0.15	1.1	—	0.18	0.18
21	Aug	99	N	65	60	0.00	0.086	***0.0059***	0.14	0.77	0.76	0.21	0.19
27	Aug	99	SSE	76	160	0.00	0.19	—	0.13	—	—	0.31	0.24
08	Oct	99	SSW	62	130	0.00	—	—	—	0.60	—	—	—
15	Mar	00	SSW	52	220	0.00	0.012	0.0093	0.16	0.29	0.31	0.079	0.20
04	Apr	00	WNW	52	91	0.28	***0.0053***	***0.0031***	0.052	0.39	—	0.040	0.47
17	Apr	00	ENE	44	130	0.11	0.030	***0.0023***	0.0065	0.19	—	0.080	0.076
						2,3',4,4',5-PentaCB (#118) Site Average	0.095	0.016	0.17	1.1	1.4	0.21	0.31
						2,3',4,4',5-PentaCB (#118) Site Maximum	0.19	0.039	0.58	2.3	2.6	0.48	0.85

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2',3,4,4',5-PentaCB (#123) Concentrations by Site and Meteorological Data

Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
	Daily Meterological Data				2',3,4,4',5-PentaCB (#123) Concentration (ng/m^3)						
04 Jun 99	NNE	69	370	0.00	0.0029	0.0017	0.0025	0.038	—	0.0065	—
10 Jun 99	ENE	65	470	0.00	0.0022	*0.00015*	0.0020	0.018	0.018	0.0069	—
16 Jun 99	ENE	65	270	0.010	0.0035	*0.00031*	0.0016	0.023	—	0.0067	—
22 Jun 99	SSW	76	380	0.00	0.0021	0.00084	0.0021	0.041	0.045	0.0071	0.0037
06 Jul 99	WNW	86	370	0.00	0.0038	0.0011	0.0068	0.080	0.087	0.0037	0.0098
10 Jul 99	NW	73	240	0.00	0.0012	*0.000061*	0.0064	0.023	—	*0.000091*	*0.00011*
16 Jul 99	WSW	84	320	0.00	*0.000099*	*0.00011*	0.0070	0.061	—	*0.00015*	0.0089
22 Jul 99	SW	77	280	0.00	*0.00047*	*0.00031*	*0.00077*	0.054	—	*0.00031*	*0.00031*
28 Jul 99	WNW	83	360	0.00	0.0059	*0.00012*	0.0071	0.071	0.080	0.012	0.023
03 Aug 99	S	76	290	0.00	*0.00011*	*0.000078*	*0.00016*	0.032	—	*0.00062*	*0.00031*
09 Aug 99	NNW	69	330	0.00	0.0022	*0.000046*	0.014	0.033	0.029	0.0070	0.014
15 Aug 99	NNE	67	96	0.20	0.0062	*0.0012*	0.0040	0.032	—	0.0045	0.0052
21 Aug 99	N	65	60	0.00	*0.00015*	*0.00031*	0.0033	0.022	0.026	0.0059	*0.0022*
27 Aug 99	SSE	76	160	0.00	0.0061	—	0.0039	—	—	0.0076	0.0069
08 Oct 99	SSW	62	130	0.00	—	—	—	0.015	—	—	—
15 Mar 00	SSW	52	220	0.00	*0.000031*	*0.000062*	0.0030	0.0080	0.0077	0.0017	0.0040
04 Apr 00	WNW	52	91	0.28	*0.0000097*	0.00015	*0.00062*	0.011	—	0.00074	0.0096
17 Apr 00	ENE	44	130	0.11	0.00049	*0.000015*	*0.000015*	0.0037	—	0.0016	0.0015
	2',3,4,4',5-PentaCB (#123) Site Average				0.0022	0.00041	0.0039	0.033	0.042	0.0043	0.0064
	2',3,4,4',5-PentaCB (#123) Site Maximum				0.0062	0.0017	0.014	0.080	0.087	0.012	0.023

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

3,3',4,4',5-PentaCB (#126) Concentrations by Site and Meteorological Data

Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
	Daily Meterological Data				3,3',4,4',5-PentaCB (#126) Concentration (ng/m^3)						
04 Jun 99	NNE	69	370	0.00	*0.00047*	*0.00033*	*0.00064*	0.0037	—	*0.00034*	—
10 Jun 99	ENE	65	470	0.00	*0.00014*	*0.00015*	*0.00011*	0.0017	0.0022	0.0012	—
16 Jun 99	ENE	65	270	0.010	*0.00032*	*0.00031*	*0.00033*	0.0020	—	*0.00031*	—
22 Jun 99	SSW	76	380	0.00	0.00085	*0.00016*	*0.00046*	0.0040	0.0044	0.0011	0.00087
06 Jul 99	WNW	86	370	0.00	0.0012	0.0011	0.0013	0.0085	0.0076	0.00086	0.0050
10 Jul 99	NW	73	240	0.00	*0.000062*	*0.000076*	*0.00011*	*0.00015*	—	*0.00012*	*0.00012*
16 Jul 99	WSW	84	320	0.00	*0.00011*	*0.00012*	*0.00015*	0.0082	—	*0.00015*	0.013
22 Jul 99	SW	77	280	0.00	*0.00062*	*0.00031*	*0.00077*	0.021	—	*0.00031*	*0.00031*
28 Jul 99	WNW	83	360	0.00	*0.000073*	*0.00012*	0.22	0.24	*0.00029*	0.060	0.19
03 Aug 99	S	76	290	0.00	0.093	*0.000093*	*0.00016*	*0.00011*	—	*0.00078*	*0.00031*
09 Aug 99	NNW	69	330	0.00	*0.000076*	*0.000046*	*0.000061*	*0.000015*	0.0029	*0.000030*	0.010
15 Aug 99	NNE	67	96	0.20	*0.000062*	*0.0012*	*0.00031*	*0.11*	—	*0.068*	*0.053*
21 Aug 99	N	65	60	0.00	0.13	0.27	0.19	0.28	1.1	0.35	0.36
27 Aug 99	SSE	76	160	0.00	*0.0020*	—	0.029	—	—	*0.0026*	*0.00031*
08 Oct 99	SSW	62	130	0.00	—	—	—	*0.0017*	—	—	—
15 Mar 00	SSW	52	220	0.00	*0.000061*	*0.000077*	*0.000062*	*0.000077*	*0.000093*	*0.000093*	*0.000076*
04 Apr 00	WNW	52	91	0.28	*0.000016*	*0.000046*	*0.0014*	0.32	—	*0.000046*	*0.000062*
17 Apr 00	ENE	44	130	0.11	*0.000062*	*0.000046*	*0.000031*	*0.000031*	—	*0.000077*	*0.000077*
	3,3',4,4',5-PentaCB (#126) Site Average				0.013	0.017	0.026	0.059	0.15	0.029	0.045
	3,3',4,4',5-PentaCB (#126) Site Maximum				0.13	0.27	0.22	0.32	1.1	0.35	0.36

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3,3',4,4',5-HexaCB (#156) Concentrations by Site and Meteorological Data

Daily Meterological Data							2,3,3',4,4',5-HexaCB (#156) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.0041	0.0014	0.0029	0.028	—	0.0055	—
10	Jun	99	ENE	65	470	0.00	0.0028	0.00088	0.0017	0.017	0.018	0.0063	—
16	Jun	99	ENE	65	270	0.010	0.0032	0.00043	0.0010	0.018	—	0.0052	—
22	Jun	99	SSW	76	380	0.00	0.0060	***0.00014***	0.0021	0.042	0.046	0.0071	0.0031
06	Jul	99	WNW	86	370	0.00	0.010	0.0020	0.0065	0.10	0.10	0.0049	0.0076
10	Jul	99	NW	73	240	0.00	0.0020	***0.00015***	0.0067	0.028	—	0.0014	0.0037
16	Jul	99	WSW	84	320	0.00	0.0076	0.0015	0.0067	0.095	—	0.0038	0.0095
22	Jul	99	SW	77	280	0.00	0.0043	***0.00031***	0.0053	0.081	—	0.0031	0.0031
28	Jul	99	WNW	83	360	0.00	0.0088	***0.00088***	0.0065	0.067	0.064	0.0094	0.012
03	Aug	99	S	76	290	0.00	***0.0030***	***0.0017***	***0.0023***	0.030	—	0.0071	***0.0029***
09	Aug	99	NNW	69	330	0.00	***0.0014***	***0.00046***	0.0092	0.049	0.015	0.0061	0.0091
15	Aug	99	NNE	67	96	0.20	***0.0022***	***0.00093***	***0.0014***	0.020	—	***0.0023***	***0.0022***
21	Aug	99	N	65	60	0.00	0.0091	0.0056	0.0056	0.025	0.024	0.0096	0.010
27	Aug	99	SSE	76	160	0.00	***0.0025***	—	***0.0018***	—	—	***0.0037***	***0.0025***
08	Oct	99	SSW	62	130	0.00	—	—	—	0.020	—	—	—
15	Mar	00	SSW	52	220	0.00	***0.00032***	***0.00015***	***0.0015***	0.0065	0.0071	***0.00069***	0.0040
04	Apr	00	WNW	52	91	0.28	***0.00031***	***0.00014***	***0.0015***	0.013	—	***0.00049***	0.012
17	Apr	00	ENE	44	130	0.11	0.00049	***0.00012***	***0.000092***	***0.0015***	—	***0.00086***	***0.00091***
					2,3,3',4,4',5-HexaCB (#156) Site Average		0.0040	0.0011	0.0037	0.038	0.039	0.0046	0.0059
					2,3,3',4,4',5-HexaCB (#156) Site Maximum		0.010	0.0056	0.0092	0.10	0.10	0.0096	0.012

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3,3',4,4',5'-HexaCB (#157) Concentrations by Site and Meteorological Data

Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	2,3,3',4,4',5'-HexaCB (#157) Concentration (ng/m^3)						
					21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04 Jun 99	NNE	69	370	0.00	*0.00062*	*0.00033*	*0.00064*	0.0037	—	*0.00034*	—
10 Jun 99	ENE	65	470	0.00	0.00059	*0.00015*	*0.00011*	0.0029	0.0029	0.0010	—
16 Jun 99	ENE	65	270	0.010	0.00095	*0.00031*	*0.00033*	0.0020	—	0.00055	—
22 Jun 99	SSW	76	380	0.00	0.00076	*0.00012*	*0.00031*	0.0068	0.0074	0.0013	0.00068
06 Jul 99	WNW	86	370	0.00	0.0019	0.00036	0.00074	0.017	0.017	0.00061	0.00085
10 Jul 99	NW	73	240	0.00	0.00043	0.00092	0.00091	0.0043	—	*0.00012*	*0.00015*
16 Jul 99	WSW	84	320	0.00	0.0013	0.0055	0.0012	0.011	—	0.00029	0.0021
22 Jul 99	SW	77	280	0.00	0.0012	*0.00031*	0.0015	0.015	—	0.0016	0.0019
28 Jul 99	WNW	83	360	0.00	*0.0016*	*0.00015*	*0.0028*	0.011	0.013	*0.00088*	*0.0010*
03 Aug 99	S	76	290	0.00	*0.00062*	*0.0047*	*0.0019*	*0.0037*	—	*0.0011*	*0.0014*
09 Aug 99	NNW	69	330	0.00	*0.00076*	*0.00061*	*0.0012*	0.0079	*0.00076*	*0.00091*	*0.0011*
15 Aug 99	NNE	67	96	0.20	*0.00047*	*0.00093*	*0.00077*	*0.0020*	—	*0.0015*	*0.0020*
21 Aug 99	N	65	60	0.00	*0.00015*	*0.00031*	*0.00030*	*0.0015*	*0.0016*	*0.00046*	*0.0024*
27 Aug 99	SSE	76	160	0.00	*0.0018*	—	0.0051	—	—	0.0064	0.0059
08 Oct 99	SSW	62	130	0.00	—	—	—	—	—	—	—
15 Mar 00	SSW	52	220	0.00	*0.000031*	*0.000062*	0.00090	0.0015	0.0016	0.00049	0.0010
04 Apr 00	WNW	52	91	0.28	*0.000016*	*0.000046*	*0.0014*	*0.0013*	—	*0.000062*	*0.0011*
17 Apr 00	ENE	44	130	0.11	*0.000062*	*0.000031*	*0.000031*	*0.00028*	—	*0.00017*	*0.00017*
2,3,3',4,4',5'-HexaCB (#157) Site Average					0.00079	0.00093	0.0012	0.0058	0.0064	0.0010	0.0016
2,3,3',4,4',5'-HexaCB (#157) Site Maximum					0.0019	0.0055	0.0051	0.017	0.017	0.0064	0.0059

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3',4,4',5,5'-HexaCB (#167) Concentrations by Site and Meteorological Data

Sample Event Date	Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
	Daily Meterological Data				2,3',4,4',5,5'-HexaCB (#167) Concentration (ng/m^3)						
04 Jun 99	NNE	69	370	0.00	0.0022	***0.00033***	0.0021	0.019	—	0.0055	—
10 Jun 99	ENE	65	470	0.00	0.0017	***0.00015***	0.0015	0.013	0.013	0.0057	—
16 Jun 99	ENE	65	270	0.010	0.0021	***0.00031***	0.00090	0.014	—	0.0043	—
22 Jun 99	SSW	76	380	0.00	0.0029	0.00062	0.0018	0.030	0.031	0.0065	0.0027
06 Jul 99	WNW	86	370	0.00	0.0048	0.00079	0.0053	0.048	0.053	0.0034	0.0079
10 Jul 99	NW	73	240	0.00	0.00087	***0.00015***	0.0052	0.012	—	0.00076	***0.00015***
16 Jul 99	WSW	84	320	0.00	0.0033	0.00092	0.0058	0.037	—	0.0026	0.010
22 Jul 99	SW	77	280	0.00	0.0016	***0.00031***	0.0037	0.034	—	0.0022	0.0019
28 Jul 99	WNW	83	360	0.00	***0.0021***	***0.00029***	***0.0032***	0.036	0.038	0.011	***0.0076***
03 Aug 99	S	76	290	0.00	0.0025	0.0022	0.0040	0.022	—	0.0056	0.0050
09 Aug 99	NNW	69	330	0.00	0.0015	0.00061	0.0067	0.029	0.0088	***0.0024***	0.0097
15 Aug 99	NNE	67	96	0.20	0.0025	***0.00093***	0.0022	0.011	—	0.0024	0.0025
21 Aug 99	N	65	60	0.00	0.0043	0.0019	0.0045	0.015	0.015	0.0046	0.0061
27 Aug 99	SSE	76	160	0.00	0.0033	—	0.0018	—	—	0.0064	0.0053
08 Oct 99	SSW	62	130	0.00	—	—	—	0.0097	—	—	—
15 Mar 00	SSW	52	220	0.00	***0.00012***	***0.000062***	0.0021	0.0031	0.0034	0.00099	0.0025
04 Apr 00	WNW	52	91	0.28	***0.00011***	***0.000062***	***0.0012***	0.0062	—	***0.00036***	0.0074
17 Apr 00	ENE	44	130	0.11	0.00046	***0.000031***	***0.000046***	0.0027	—	***0.00068***	***0.00068***
	2,3',4,4',5,5'-HexaCB (#167) Site Average				0.0021	0.00060	0.0031	0.020	0.023	0.0039	0.0050
	2,3',4,4',5,5'-HexaCB (#167) Site Maximum				0.0048	0.0022	0.0067	0.048	0.053	0.011	0.010

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

3,3',4,4',5,5'-HexaCB (#169) Concentrations by Site and Meteorological Data

Daily Meterological Data							3,3',4,4',5,5'-HexaCB (#169) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	*0.00078*	*0.00050*	*0.00080*	*0.00050*	—	*0.00051*	—
10	Jun	99	ENE	65	470	0.00	*0.00015*	*0.00030*	*0.00015*	*0.00076*	*0.00060*	*0.00045*	—
16	Jun	99	ENE	65	270	0.010	*0.00047*	*0.00031*	*0.00033*	*0.00050*	—	*0.00046*	—
22	Jun	99	SSW	76	380	0.00	*0.00016*	*0.00016*	*0.00031*	*0.00014*	*0.00018*	*0.00015*	*0.00011*
06	Jul	99	WNW	86	370	0.00	*0.00016*	*0.00012*	*0.000093*	*0.00013*	*0.00016*	*0.00012*	*0.000094*
10	Jul	99	NW	73	240	0.00	*0.000093*	—	—	—	—	*0.00015*	—
16	Jul	99	WSW	84	320	0.00	—	—	—	—	—	—	—
22	Jul	99	SW	77	280	0.00	—	—	—	—	—	—	—
28	Jul	99	WNW	83	360	0.00	—	—	—	—	—	—	—
03	Aug	99	S	76	290	0.00	—	—	—	—	—	—	—
09	Aug	99	NNW	69	330	0.00	—	—	—	*0.000091*	—	*0.000030*	—
15	Aug	99	NNE	67	96	0.20	—	—	—	—	—	—	—
21	Aug	99	N	65	60	0.00	—	—	—	—	—	—	—
27	Aug	99	SSE	76	160	0.00	—	—	—	—	—	—	—
08	Oct	99	SSW	62	130	0.00	—	—	—	—	—	—	—
15	Mar	00	SSW	52	220	0.00	*0.000046*	*0.000077*	*0.000047*	*0.000062*	*0.000062*	*0.000062*	*0.000046*
04	Apr	00	WNW	52	91	0.28	*0.000032*	*0.000077*	*0.0022*	0.49	—	*0.000093*	0.33
17	Apr	00	ENE	44	130	0.11	*0.000092*	*0.000062*	*0.000046*	*0.000031*	—	*0.000092*	*0.00011*
						3,3',4,4',5,5'-HexaCB (#169) Site Average	0.00022	0.00020	0.00049	0.055	0.00025	0.00021	0.065
						3,3',4,4',5,5'-HexaCB (#169) Site Maximum	0.00078	0.00050	0.0022	0.49	0.00060	0.00051	0.33

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,2',3,3',4,4',5-HeptaCB (#170) Concentrations by Site and Meteorological Data

Daily Meterological Data							2,2',3,3',4,4',5-HeptaCB (#170) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation (w•m^2)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.010	0.0043	0.0038	0.031	—	0.017	—
10	Jun	99	ENE	65	470	0.00	0.0081	0.0070	0.0092	0.017	0.015	0.019	—
16	Jun	99	ENE	65	270	0.010	0.0051	*0.00061*	*0.00083*	0.024	—	0.0064	—
22	Jun	99	SSW	76	380	0.00	0.0063	0.0020	0.0040	0.044	0.041	0.010	0.0050
06	Jul	99	WNW	86	370	0.00	0.011	0.0042	0.011	0.12	0.14	0.010	0.013
10	Jul	99	NW	73	240	0.00	—	—	—	—	—	—	—
16	Jul	99	WSW	84	320	0.00	—	—	—	—	—	*0.0044*	—
22	Jul	99	SW	77	280	0.00	—	—	—	—	—	—	—
28	Jul	99	WNW	83	360	0.00	—	—	—	—	—	—	—
03	Aug	99	S	76	290	0.00	*0.016*	—	—	—	—	—	—
09	Aug	99	NNW	69	330	0.00	—	—	—	—	—	—	—
15	Aug	99	NNE	67	96	0.20	—	—	—	—	—	—	—
21	Aug	99	N	65	60	0.00	—	—	—	—	—	—	—
27	Aug	99	SSE	76	160	0.00	—	—	—	—	—	—	—
08	Oct	99	SSW	62	130	0.00	—	—	—	0.014	—	—	—
15	Mar	00	SSW	52	220	0.00	*0.00092*	*0.00031*	*0.0022*	*0.0035*	*0.0036*	*0.00091*	*0.0034*
04	Apr	00	WNW	52	91	0.28	*0.0037*	*0.00022*	*0.0053*	*0.0054*	—	*0.00094*	*0.0053*
17	Apr	00	ENE	44	130	0.11	0.00037	0.00037	0.00034	0.0026	—	*0.0018*	*0.0013*
			2,2',3,3',4,4',5-HeptaCB (#170) Site Average				0.0068	0.0024	0.0046	0.030	0.050	0.0079	0.0055
			2,2',3,3',4,4',5-HeptaCB (#170) Site Maximum				0.016	0.0070	0.011	0.12	0.14	0.019	0.013

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,2',3,4,4',5,5'-HeptaCB (#180) Concentrations by Site and Meteorological Data

Daily Meterological Data							2,2',3,4,4',5,5'-HeptaCB (#180) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation (w•m^2)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	0.0075	0.0057	0.0051	0.041	—	0.017	—
10	Jun	99	ENE	65	470	0.00	0.0056	0.0033	0.0061	0.028	0.025	0.014	—
16	Jun	99	ENE	65	270	0.010	0.0051	0.0021	0.0037	0.027	—	0.0098	—
22	Jun	99	SSW	76	380	0.00	0.0076	0.0034	0.0055	0.055	0.054	0.014	0.0062
06	Jul	99	WNW	86	370	0.00	0.014	0.0057	0.014	0.16	0.18	0.015	0.017
10	Jul	99	NW	73	240	0.00	0.0046	0.0025	0.010	0.050	—	0.0076	0.0052
16	Jul	99	WSW	84	320	0.00	0.0099	0.0040	0.011	0.13	—	0.012	0.015
22	Jul	99	SW	77	280	0.00	0.0062	*0.0013*	0.0096	0.098	—	0.0096	0.0056
28	Jul	99	WNW	83	360	0.00	0.010	0.0047	*0.0035*	0.066	0.057	0.017	0.014
03	Aug	99	S	76	290	0.00	*0.0034*	*0.0016*	*0.0025*	0.039	—	*0.0048*	*0.0033*
09	Aug	99	NNW	69	330	0.00	*0.0023*	*0.00092*	0.016	0.023	0.021	0.012	0.025
15	Aug	99	NNE	67	96	0.20	0.0084	*0.00076*	*0.0026*	0.028	—	0.0061	*0.0025*
21	Aug	99	N	65	60	0.00	*0.0017*	*0.00067*	0.0051	0.022	*0.011*	*0.0049*	*0.0039*
27	Aug	99	SSE	76	160	0.00	*0.0041*	—	*0.0024*	—	—	0.0095	*0.0028*
08	Oct	99	SSW	62	130	0.00	—	—	—	0.023	—	—	—
15	Mar	00	SSW	52	220	0.00	*0.0011*	*0.00052*	*0.0034*	*0.0062*	*0.0062*	*0.0015*	*0.0047*
04	Apr	00	WNW	52	91	0.28	*0.00074*	*0.00043*	—	*0.010*	—	*0.0022*	*0.0085*
17	Apr	00	ENE	44	130	0.11	*0.000062*	0.00071	*0.00034*	*0.0025*	—	*0.0026*	*0.0018*
			2,2',3,4,4',5,5'-HeptaCB (#180) Site Average				0.0054	0.0024	0.0063	0.048	0.051	0.0094	0.0082
			2,2',3,4,4',5,5'-HeptaCB (#180) Site Maximum				0.014	0.0057	0.016	0.16	0.18	0.017	0.025

Measurements in italics were not detected. The values shown are based on ½ the detection limit.

2,3,3',4,4',5,5'-HeptaCB (#189) Concentrations by Site and Meteorological Data

Daily Meterological Data							2,3,3',4,4',5,5'-HeptaCB (#189) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation ($w \cdot m^2$)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	—	—	—	—	—	—	—
10	Jun	99	ENE	65	470	0.00	—	—	—	—	—	—	—
16	Jun	99	ENE	65	270	0.010	—	—	—	—	—	—	—
22	Jun	99	SSW	76	380	0.00	—	—	—	—	—	—	—
06	Jul	99	WNW	86	370	0.00	—	—	—	—	—	—	
10	Jul	99	NW	73	240	0.00	—	—	—	—	—	—	—
16	Jul	99	WSW	84	320	0.00	—	—	—	—	—	—	—
22	Jul	99	SW	77	280	0.00	—	—	—	—	—	—	—
28	Jul	99	WNW	83	360	0.00	—	—	—	—	—	—	—
03	Aug	99	S	76	290	0.00	—	—	—	—	—	—	—
09	Aug	99	NNW	69	330	0.00	—	—	—	—	—	—	—
15	Aug	99	NNE	67	96	0.20	—	—	—	—	—	—	—
21	Aug	99	N	65	60	0.00	—	—	—	—	—	—	—
27	Aug	99	SSE	76	160	0.00	—	—	—	—	—	—	—
08	Oct	99	SSW	62	130	0.00	—	—	—	—	—	—	—
15	Mar	00	SSW	52	220	0.00	—	—	—	—	—	—	—
04	Apr	00	WNW	52	91	0.28	—	—	—	—	—	—	—
17	Apr	00	ENE	44	130	0.11	—	—	—	—	—	—	—
						2,3,3',4,4',5,5'-HeptaCB (#189) Site Average	—	—	—	—	—	—	—
						2,3,3',4,4',5,5'-HeptaCB (#189) Site Maximum	—	—	—	—	—	—	—

Measurements not detected are disregarded.

DecaCB (#209) Concentrations by Site and Meteorological Data

Daily Meterological Data							DecaCB (#209) Concentration (ng/m^3)						
Sample Event Date			Prevailing Wind Direction	Avg. Temp. (°F)	Avg. Solar Radiation (w•m^2)	Total Precipitation (inches H_2O)	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
04	Jun	99	NNE	69	370	0.00	—	—	—	—	—	—	—
10	Jun	99	ENE	65	470	0.00	—	—	—	—	—	—	—
16	Jun	99	ENE	65	270	0.010	—	—	—	—	—	—	—
22	Jun	99	SSW	76	380	0.00	—	—	—	—	—	—	—
06	Jul	99	WNW	86	370	0.00	—	—	—	—	—	—	—
10	Jul	99	NW	73	240	0.00	—	—	—	—	—	—	—
16	Jul	99	WSW	84	320	0.00	—	—	—	—	—	—	—
22	Jul	99	SW	77	280	0.00	—	—	—	—	—	—	—
28	Jul	99	WNW	83	360	0.00	—	—	—	—	—	—	—
03	Aug	99	S	76	290	0.00	—	—	—	—	—	—	—
09	Aug	99	NNW	69	330	0.00	—	—	—	—	—	—	—
15	Aug	99	NNE	67	96	0.20	—	—	—	—	—	—	—
21	Aug	99	N	65	60	0.00	—	—	—	—	—	—	—
27	Aug	99	SSE	76	160	0.00	—	—	—	—	—	—	—
09	Sep	99	SSW	76	99	0.00	—	—	—	—	—	—	—
22	Sep	99	NW	59	88	0.010	—	—	—	—	—	—	—
08	Oct	99	SSW	63	150	0.00	—	—	—	—	—	—	—
25	Oct	99	NW	50	180	0.010	—	—	—	—	—	—	—
15	Nov	99	WNW	40	99	0.00	—	—	—	—	—	—	—
16	Dec	99	WSW	45	57	0.00	—	—	—	—	—	—	—
14	Jan	00	NW	12	110	0.00	—	—	—	—	—	—	—
17	Feb	00	NNW	29	160	0.00	—	—	—	—	—	—	—
15	Mar	00	SSW	52	220	0.00	—	—	—	—	—	—	—
04	Apr	00	WNW	52	91	0.28	—	—	—	—	—	—	—
17	Apr	00	ENE	44	130	0.11	—	—	—	—	—	—	—
08	May	00	SSE	73	300	0.00	—	—	—	—	—	—	—
30	May	00	SE	57	280	0.00	—	—	—	—	—	—	—
					DecaCB (#209) Site Average		—	—	—	—	—	—	—
					DecaCB (#209) Site Maximum		—	—	—	—	—	—	—

Measurements not detected are disregarded.

Appendix D

Appendix D: Average/Maximum Total PCB Concentrations

The information contained in this section includes the average and maximum total PCB concentrations, by sampling site, for each month in each quarter and for the year. The report also includes a cumulative average to-date and highest concentration value recorded to-date.

Average Total PCB Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Site ID	Station Name	June	July	August	June to August	6/1/99 to 8/31/99
21	New Bedford Welding	16	7.5	14	12	12
22	Woodlawn Park	2.2	2	2	2.1	2.1
23	Acushnet Substation	20	41	33	31	31
24	Aerovox	150	120	110	130	130
24D	Aerovox Duplicate	140	160	100	140	140
25	Cliftex	64	25	50	46	46
26	103 Sawyer St	28	35	35	33	33

Average Total PCB Concentrations (ng/m^3)
Reporting Period: 9/1/99 to 11/30/99

Site ID	Station Name	September	October	November	September to November	6/1/99 to 11/30/99
21	New Bedford Welding	5.3	11	1.4	5.9	9.1
22	Woodlawn Park	4.8	2.7	0.84	2.8	2.4
23	Acushnet Substation	31	27	14	24	28
24	Aerovox	81	68	52	67	97
24D	Aerovox Duplicate	110	—	46	76	110
25	Cliftex	33	30	3	22	34
26	103 Sawyer St	24	36	70	43	38

Average Total PCB Concentrations (ng/m^3)
Reporting Period: 12/1/99 to 2/29/00

Site ID	Station Name	December	January	February	December to February	6/1/99 to 2/29/00
21	New Bedford Welding	4.1	0.094	6.2	3.4	7.2
22	Woodlawn Park	4.3	0.077	—	2.2	2.4
23	Acushnet Substation	7.4	8.8	13	9.9	22
24	Aerovox	44	29	22	32	75
24D	Aerovox Duplicate	—	15	—	15	95
25	Cliftex	2.3	0.51	6.9	3.2	24
26	103 Sawyer St	96	87	84	89	55

Average Total PCB Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Site ID	Station Name	March	April	May	March to May	6/1/99 to 5/31/00
21	New Bedford Welding	0.87	5.2	14	6.8	7.1
22	Woodlawn Park	0.57	0.74	9.3	3.5	2.7
23	Acushnet Substation	58	11	17	29	24
24	Aerovox	68	65	96	76	75
24D	Aerovox Duplicate	70	—	92	81	92
25	Cliftex	34	22	48	35	27
26	103 Sawyer St	28	89	65	61	56

Average Total PCB Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Site ID	Station Name	June	July	August	September	October	November	December	January	February	March	April	May	June to May	6/1/99 to 5/31/00
21	New Bedford Welding	16	7.5	14	5.3	11	1.4	4.1	0.094	6.2	0.87	5.2	14	7.1	7.1
22	Woodlawn Park	2.2	2	2	4.8	2.7	0.84	4.3	0.077	—	0.57	0.74	9.3	2.7	2.7
23	Acushnet Substation	20	41	33	31	27	14	7.4	8.8	13	58	11	17	24	24
24	Aerovox	150	120	110	81	68	52	44	29	22	68	65	96	75	75
24D	Aerovox Duplicate	140	160	100	110	—	46	—	15	—	70	—	92	92	92
25	Cliftex	64	25	50	33	30	3	2.3	0.51	6.9	34	22	48	27	27
26	103 Sawyer St	28	35	35	24	36	70	96	87	84	28	89	65	56	56

Maximum Total PCB Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Site ID	Station Name	June	July	August	June to August	6/1/99 to 8/31/99
21	New Bedford Welding	19	19	20	20	20
22	Woodlawn Park	3.1	4.3	4	4.3	4.3
23	Acushnet Substation	27	42	54	54	54
24	Aerovox	230	160	130	230	230
24D	Aerovox Duplicate	170	170	110	170	170
25	Cliftex	70	66	58	70	70
26	103 Sawyer St	28	69	45	69	69

Maximum Total PCB Concentrations (ng/m^3)
Reporting Period: 9/1/99 to 11/30/99

Site ID	Station Name	September	October	November	September to November	6/1/99 to 11/30/99
21	New Bedford Welding	8.1	19	1.4	19	20
22	Woodlawn Park	8.9	4.2	0.84	8.9	8.9
23	Acushnet Substation	39	28	14	39	54
24	Aerovox	110	74	52	110	230
24D	Aerovox Duplicate	110	—	46	110	170
25	Cliftex	53	42	3	53	70
26	103 Sawyer St	27	65	70	70	70

Maximum Total PCB Concentrations (ng/m^3)
Reporting Period: 12/1/99 to 2/29/00

Site ID	Station Name	December	January	February	December to February	6/1/99 to 2/29/00
21	New Bedford Welding	4.1	0.094	6.2	6.2	20
22	Woodlawn Park	4.3	0.077	—	4.3	8.9
23	Acushnet Substation	7.4	8.8	13	13	54
24	Aerovox	44	29	22	44	230
24D	Aerovox Duplicate	—	15	—	15	170
25	Cliftex	2.3	0.51	6.9	6.9	70
26	103 Sawyer St	96	87	84	96	96

Maximum Total PCB Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Site ID	Station Name	March	April	May	March to May	6/1/99 to 5/31/00
21	New Bedford Welding	0.87	9	16	16	20
22	Woodlawn Park	0.57	1.1	9.5	9.5	9.5
23	Acushnet Substation	58	22	25	58	58
24	Aerovox	68	73	100	100	230
24D	Aerovox Duplicate	70	—	92	92	170
25	Cliftex	34	27	53	53	70
26	103 Sawyer St	28	160	99	160	160

Maximum Total PCB Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Site ID	Station Name	June	July	August	September	October	November	December	January	February	March	April	May	June to May	6/1/99 to 5/31/00
21	New Bedford Welding	19	19	20	8.1	19	1.4	4.1	0.094	6.2	0.87	9	16	20	20
22	Woodlawn Park	3.1	4.3	4	8.9	4.2	0.84	4.3	0.077	—	0.57	1.1	9.5	9.5	9.5
23	Acushnet Substation	27	42	54	39	28	14	7.4	8.8	13	58	22	25	58	58
24	Aerovox	230	160	130	110	74	52	44	29	22	68	73	100	230	230
24D	Aerovox Duplicate	170	170	110	110	—	46	—	15	—	70	—	92	170	170
25	Cliftex	70	66	58	53	42	3	2.3	0.51	6.9	34	27	53	70	70
26	103 Sawyer St	28	69	45	27	65	70	96	87	84	28	160	99	160	160

Appendix E

Appendix E: Average/Maximum PCB Congener Concentrations

The information contained in this section includes the average and maximum congener PCB concentrations, by sampling site, for each month in each quarter and for the year.

Average PCB Congeners Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.0084	0.0023	0.018	0.13	0.14	0.023	0.066
3,4,5,4'-TetraCB (#81)	0.0013	0.00023	0.0017	0.019	0.021	0.0029	0.0044
2,3,3',4,4'-PentaCB (#105)	0.029	0.0046	0.027	0.35	0.40	0.034	0.048
2,3,4,4',5-PentaCB (#114)	0.018	0.0033	0.028	0.20	0.24	0.036	0.048
2,3',4,4',5-PentaCB (#118)	0.11	0.019	0.20	1.3	1.6	0.24	0.32
2',3,4,4',5-PentaCB (#123)	0.0026	0.00048	0.0044	0.041	0.048	0.0049	0.0068
3,3',4,4',5-PentaCB (#126)	0.016	0.021	0.032	0.053	0.18	0.035	0.058
2,3,3',4,4',5-HexaCB (#156)	0.0048	0.0013	0.0043	0.046	0.045	0.0054	0.0060
2,3,3',4,4',5'-HexaCB (#157)	0.00095	0.0011	0.0013	0.0068	0.0071	0.0012	0.0018
2,3',4,4',5,5'-HexaCB (#167)	0.0025	0.00073	0.0035	0.025	0.027	0.0046	0.0054
3,3',4,4',5,5'-HexaCB (#169)	0.00030	0.00028	0.00034	0.00035	0.00032	0.00027	0.00010
2,2',3,3',4,4',5-HeptaCB (#170)	0.0094	0.0036	0.0059	0.048	0.066	0.011	0.0088
2,2',3,4,4',5,5'-HeptaCB (#180)	0.0064	0.0028	0.0069	0.059	0.058	0.011	0.0091
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Congeners Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.0016	0.00058	0.0042	0.025	0.000046	0.0055	0.025
3,4,5,4'-TetraCB (#81)	0.00016	0.000036	0.00072	0.0013	0.000046	0.00041	0.00076
2,3,3',4,4'-PentaCB (#105)	0.0022	0.00066	0.0097	0.064	0.071	0.0065	0.027
2,3,4,4',5-PentaCB (#114)	0.0039	0.0017	0.014	0.075	0.073	0.015	0.049
2,3',4,4',5-PentaCB (#118)	0.016	0.0049	0.074	0.29	0.31	0.066	0.25
2',3,4,4',5-PentaCB (#123)	0.00018	0.000077	0.0012	0.0075	0.0077	0.0013	0.0050
3,3',4,4',5-PentaCB (#126)	0.000046	0.000057	0.00050	0.11	0.000093	0.000072	0.000072
2,3,3',4,4',5-HexaCB (#156)	0.00037	0.00014	0.0010	0.0069	0.0071	0.00068	0.0058
2,3,3',4,4',5'-HexaCB (#157)	0.000036	0.000046	0.00078	0.0010	0.0016	0.00024	0.00079
2,3',4,4',5,5'-HexaCB (#167)	0.00023	0.000051	0.0011	0.0040	0.0034	0.00067	0.0035
3,3',4,4',5,5'-HexaCB (#169)	0.000057	0.000072	0.00075	0.16	0.000062	0.000082	0.11
2,2',3,3',4,4',5-HeptaCB (#170)	0.0017	0.00030	0.0026	0.0039	0.0036	0.0012	0.0033
2,2',3,4,4',5,5'-HeptaCB (#180)	0.00063	0.00056	0.0019	0.0063	0.0062	0.0021	0.0050
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Congeners Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.0072	0.0020	0.016	0.10	0.12	0.020	0.057
3,4,5,4'-TetraCB (#81)	0.0011	0.00019	0.0016	0.016	0.018	0.0024	0.0036
2,3,3',4,4'-PentaCB (#105)	0.024	0.0038	0.024	0.29	0.35	0.029	0.044
2,3,4,4',5-PentaCB (#114)	0.015	0.0030	0.026	0.18	0.22	0.032	0.048
2,3',4,4',5-PentaCB (#118)	0.095	0.016	0.17	1.1	1.4	0.21	0.31
2',3,4,4',5-PentaCB (#123)	0.0022	0.00041	0.0039	0.033	0.042	0.0043	0.0064
3,3',4,4',5-PentaCB (#126)	0.013	0.017	0.026	0.059	0.15	0.029	0.045
2,3,3',4,4',5-HexaCB (#156)	0.0040	0.0011	0.0037	0.038	0.039	0.0046	0.0059
2,3,3',4,4',5'-HexaCB (#157)	0.00079	0.00093	0.0012	0.0058	0.0064	0.0010	0.0016
2,3',4,4',5,5'-HexaCB (#167)	0.0021	0.00060	0.0031	0.020	0.023	0.0039	0.0050
3,3',4,4',5,5'-HexaCB (#169)	0.00022	0.00020	0.00049	0.055	0.00025	0.00021	0.065
2,2',3,3',4,4',5-HeptaCB (#170)	0.0068	0.0024	0.0046	0.030	0.050	0.0079	0.0055
2,2',3,4,4',5,5'-HeptaCB (#180)	0.0054	0.0024	0.0063	0.048	0.051	0.0094	0.0082
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Congeners Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.015	0.0073	0.041	0.24	0.25	0.040	0.20
3,4,5,4'-TetraCB (#81)	0.0019	0.00047	0.0037	0.037	0.038	0.0049	0.013
2,3,3',4,4'-PentaCB (#105)	0.051	0.016	0.049	0.77	0.84	0.056	0.11
2,3,4,4',5-PentaCB (#114)	0.035	0.020	0.071	0.38	0.41	0.063	0.13
2,3',4,4',5-PentaCB (#118)	0.19	0.039	0.58	2.3	2.6	0.48	0.85
2',3,4,4',5-PentaCB (#123)	0.0062	0.0017	0.014	0.080	0.087	0.012	0.023
3,3',4,4',5-PentaCB (#126)	0.13	0.27	0.22	0.28	1.1	0.35	0.36
2,3,3',4,4',5-HexaCB (#156)	0.010	0.0056	0.0092	0.10	0.10	0.0096	0.012
2,3,3',4,4',5'-HexaCB (#157)	0.0019	0.0055	0.0051	0.017	0.017	0.0064	0.0059
2,3',4,4',5,5'-HexaCB (#167)	0.0048	0.0022	0.0067	0.048	0.053	0.011	0.010
3,3',4,4',5,5'-HexaCB (#169)	0.00078	0.00050	0.00080	0.00076	0.00060	0.00051	0.00011
2,2',3,3',4,4',5-HeptaCB (#170)	0.016	0.0070	0.011	0.12	0.14	0.019	0.013
2,2',3,4,4',5,5'-HeptaCB (#180)	0.014	0.0057	0.016	0.16	0.18	0.017	0.025
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Congeners Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.0026	0.00065	0.011	0.038	0.000046	0.0064	0.053
3,4,5,4'-TetraCB (#81)	0.00043	0.000046	0.0014	0.0037	0.000046	0.0011	0.0014
2,3,3',4,4'-PentaCB (#105)	0.0034	0.00097	0.020	0.099	0.071	0.0096	0.053
2,3,4,4',5-PentaCB (#114)	0.0065	0.0022	0.031	0.11	0.073	0.019	0.094
2,3',4,4',5-PentaCB (#118)	0.030	0.0093	0.16	0.39	0.31	0.080	0.47
2',3,4,4',5-PentaCB (#123)	0.00049	0.00015	0.0030	0.011	0.0077	0.0017	0.0096
3,3',4,4',5-PentaCB (#126)	0.000062	0.000077	0.0014	0.32	0.000093	0.000093	0.000077
2,3,3',4,4',5-HexaCB (#156)	0.00049	0.00015	0.0015	0.013	0.0071	0.00086	0.012
2,3,3',4,4',5'-HexaCB (#157)	0.000062	0.000062	0.0014	0.0015	0.0016	0.00049	0.0011
2,3',4,4',5,5'-HexaCB (#167)	0.00046	0.000062	0.0021	0.0062	0.0034	0.00099	0.0074
3,3',4,4',5,5'-HexaCB (#169)	0.000092	0.000077	0.0022	0.49	0.000062	0.000093	0.33
2,2',3,3',4,4',5-HeptaCB (#170)	0.0037	0.00037	0.0053	0.0054	0.0036	0.0018	0.0053
2,2',3,4,4',5,5'-HeptaCB (#180)	0.0011	0.00071	0.0034	0.010	0.0062	0.0026	0.0085
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Congeners Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
3,3',4,4'-TetraCB (#77)	0.015	0.0073	0.041	0.24	0.25	0.040	0.20
3,4,5,4'-TetraCB (#81)	0.0019	0.00047	0.0037	0.037	0.038	0.0049	0.013
2,3,3',4,4'-PentaCB (#105)	0.051	0.016	0.049	0.77	0.84	0.056	0.11
2,3,4,4',5-PentaCB (#114)	0.035	0.020	0.071	0.38	0.41	0.063	0.13
2,3',4,4',5-PentaCB (#118)	0.19	0.039	0.58	2.3	2.6	0.48	0.85
2',3,4,4',5-PentaCB (#123)	0.0062	0.0017	0.014	0.080	0.087	0.012	0.023
3,3',4,4',5-PentaCB (#126)	0.13	0.27	0.22	0.32	1.1	0.35	0.36
2,3,3',4,4',5-HexaCB (#156)	0.010	0.0056	0.0092	0.10	0.10	0.0096	0.012
2,3,3',4,4',5'-HexaCB (#157)	0.0019	0.0055	0.0051	0.017	0.017	0.0064	0.0059
2,3',4,4',5,5'-HexaCB (#167)	0.0048	0.0022	0.0067	0.048	0.053	0.011	0.010
3,3',4,4',5,5'-HexaCB (#169)	0.00078	0.00050	0.0022	0.49	0.00060	0.00051	0.33
2,2',3,3',4,4',5-HeptaCB (#170)	0.016	0.0070	0.011	0.12	0.14	0.019	0.013
2,2',3,4,4',5,5'-HeptaCB (#180)	0.014	0.0057	0.016	0.16	0.18	0.017	0.025
2,3,3',4,4',5,5'-HeptaCB (#189)	—	—	—	—	—	—	—
DecaCB (#209)	—	—	—	—	—	—	—

Appendix F

Appendix F: Average/Maximum PCB Homologue Concentrations

The information contained in this section includes the average and maximum homologue PCB concentrations, by sampling site, for each month in each quarter and for the year.

Average PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.041	0.014	0.21	1.4	1.8	0.22	0.22
Total DiCB	1.8	0.32	6.8	22	23	10	6.4
Total TriCB	4.8	0.72	13	38	38	17	13
Total TetraCB	3.8	0.56	9.3	46	51	13	11
Total PentaCB	1.2	0.33	2.4	16	17	3.5	3.4
Total HexaCB	0.29	0.047	0.54	3.5	3.9	0.70	0.85
Total HeptaCB	0.045	0.036	0.056	0.33	0.38	0.073	0.060
Total OctaCB	0.019	0.024	0.025	0.052	0.046	0.022	0.026
Total NonaCB	0.0018	0.0010	0.0022	0.0029	0.0049	0.0025	0.0023
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 9/1/99 to 11/30/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.011	0.015	0.092	0.69	1.2	0.16	1.1
Total DiCB	1.9	0.66	7.6	16	17	6.9	12
Total TriCB	2.3	1.1	9.9	19	17	8.2	11
Total TetraCB	1.6	0.70	6.8	26	30	7.5	10
Total PentaCB	0.75	0.53	1.3	7	8.5	2.3	2.8
Total HexaCB	0.091	0.071	0.33	1.6	2	0.32	0.54
Total HeptaCB	0.055	0.052	0.054	0.13	0.19	0.16	0.068
Total OctaCB	0.058	0.039	0.036	0.062	0.062	0.14	0.054
Total NonaCB	0.0021	0.0017	0.0028	0.0034	0.0068	0.010	0.014
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 12/1/99 to 2/29/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.032	0.0040	0.060	0.28	0.000047	0.027	3.6
Total DiCB	0.92	0.20	4.5	17	8.8	1	57
Total TriCB	0.90	0.026	3	6.5	2.9	1.2	16
Total TetraCB	0.34	0.035	1.4	4.9	2.4	0.64	9
Total PentaCB	1.1	1.9	0.83	2.3	0.88	0.26	2.9
Total HexaCB	0.060	0.0092	0.060	0.24	0.24	0.021	0.28
Total HeptaCB	0.012	0.00097	0.016	0.018	0.015	0.0039	0.038
Total OctaCB	0.036	0.0012	0.039	0.0032	0.0020	0.0012	0.060
Total NonaCB	0.0092	0.00047	0.0011	0.00057	0.00047	0.00025	0.00087
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.017	0.019	0.32	0.46	0.48	0.31	2.2
Total DiCB	1.3	0.91	5.5	19	20	9.7	25
Total TriCB	3.6	1.8	9.7	26	29	14	21
Total TetraCB	2.3	1.1	5.7	23	23	8.8	15
Total PentaCB	0.62	0.26	1.4	7.2	8.3	2.1	3.9
Total HexaCB	0.099	0.051	0.23	1.4	1	0.34	0.66
Total HeptaCB	0.017	0.012	0.029	0.19	0.12	0.046	0.071
Total OctaCB	0.0024	0.0029	0.0046	0.016	0.0055	0.0064	0.0062
Total NonaCB	0.00011	0.00014	0.0018	0.0016	0.00048	0.00071	0.00084
DecaCB (#209)	—	—	—	—	—	—	—

Average PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.031	0.015	0.19	0.97	1.3	0.20	1.2
Total DiCB	1.7	0.50	6.5	20	20	8.5	18
Total TriCB	3.7	0.96	11	28	29	13	14
Total TetraCB	2.7	0.65	7.3	33	38	9.8	11
Total PentaCB	0.98	0.48	1.8	11	13	2.7	3.3
Total HexaCB	0.19	0.049	0.39	2.3	2.7	0.49	0.67
Total HeptaCB	0.038	0.032	0.047	0.23	0.27	0.077	0.061
Total OctaCB	0.025	0.021	0.026	0.042	0.038	0.040	0.032
Total NonaCB	0.0024	0.00096	0.0021	0.0025	0.0040	0.0033	0.0043
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 8/31/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.16	0.035	0.61	6.7	6.2	0.58	0.39
Total DiCB	4.1	0.71	11	38	36	19	12
Total TriCB	8.4	1.7	18	120	45	26	22
Total TetraCB	6.1	1.4	18	71	75	21	23
Total PentaCB	2.2	0.74	6.7	24	24	5.7	9.5
Total HexaCB	0.53	0.11	1.1	6.1	6.9	1.3	2.1
Total HeptaCB	0.082	0.075	0.11	0.87	1	0.13	0.11
Total OctaCB	0.069	0.074	0.095	0.15	0.095	0.056	0.056
Total NonaCB	0.0084	0.0030	0.0064	0.0088	0.014	0.011	0.011
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 9/1/99 to 11/30/99

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.022	0.054	0.13	1.8	2	0.39	3.4
Total DiCB	7.7	1.9	13	19	18	14	26
Total TriCB	6.5	3.8	14	23	21	18	18
Total TetraCB	3.8	2.5	9.7	46	46	16	19
Total PentaCB	1.2	0.64	1.9	17	16	3.8	5.6
Total HexaCB	0.18	0.22	0.47	3.3	3.2	0.69	0.95
Total HeptaCB	0.10	0.086	0.092	0.26	0.26	0.32	0.11
Total OctaCB	0.17	0.060	0.068	0.16	0.10	0.33	0.099
Total NonaCB	0.0049	0.0066	0.0071	0.011	0.012	0.024	0.062
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 12/1/99 to 2/29/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.088	0.0059	0.090	0.42	0.000047	0.041	4.3
Total DiCB	2.3	0.33	7	24	8.8	1.5	77
Total TriCB	2.6	0.050	6.7	9.5	2.9	3.3	33
Total TetraCB	0.91	0.068	2.6	7.7	2.4	1.6	16
Total PentaCB	3.2	3.8	1.8	4.7	0.88	0.40	4.6
Total HexaCB	0.14	0.017	0.072	0.27	0.24	0.045	0.51
Total HeptaCB	0.029	0.0017	0.034	0.023	0.015	0.0080	0.056
Total OctaCB	0.11	0.0022	0.12	0.0044	0.0020	0.0022	0.17
Total NonaCB	0.027	0.00062	0.0026	0.0014	0.00047	0.00031	0.0021
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 3/1/00 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.029	0.046	1.4	1.1	0.71	0.86	10
Total DiCB	3	2.2	20	22	22	13	54
Total TriCB	7.7	4.2	22	29	29	21	48
Total TetraCB	4.3	2.7	12	39	28	15	35
Total PentaCB	1.2	0.58	2.8	13	12	4	8.2
Total HexaCB	0.25	0.15	0.51	3.2	1.4	0.72	1.3
Total HeptaCB	0.044	0.039	0.080	0.50	0.17	0.12	0.14
Total OctaCB	0.0083	0.011	0.015	0.060	0.0071	0.021	0.016
Total NonaCB	0.00015	0.00015	0.0074	0.0068	0.00080	0.0028	0.0025
DecaCB (#209)	—	—	—	—	—	—	—

Maximum PCB Homologue Groups Concentrations (ng/m^3)
Reporting Period: 6/1/99 to 5/31/00

Analyte	21 New Bedford Welding	22 Woodlawn Park	23 Acushnet Substation	24 Aerovox	24D Aerovox Duplicate	25 Cliftex	26 103 Sawyer St
Total MonoCB	0.16	0.054	1.4	6.7	6.2	0.86	10
Total DiCB	7.7	2.2	20	38	36	19	77
Total TriCB	8.4	4.2	22	120	45	26	48
Total TetraCB	6.1	2.7	18	71	75	21	35
Total PentaCB	3.2	3.8	6.7	24	24	5.7	9.5
Total HexaCB	0.53	0.22	1.1	6.1	6.9	1.3	2.1
Total HeptaCB	0.10	0.086	0.11	0.87	1	0.32	0.14
Total OctaCB	0.17	0.074	0.12	0.16	0.10	0.33	0.17
Total NonaCB	0.027	0.0066	0.0074	0.011	0.014	0.024	0.062
DecaCB (#209)	—	—	—	—	—	—	—

Appendix G

Appendix G: Meteorological Data

The information contained in this section includes the hourly summary of the wind direction and speed, temperature, solar radiation, barometric pressure, relative humidity, and precipitation. The report also contains the windrose graphic for individual sampling event dates.

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New Bedford Harbor

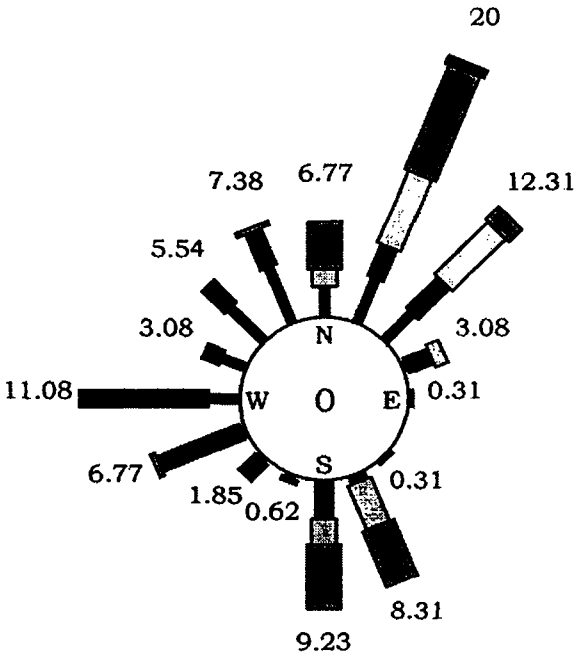
Meteorological Data

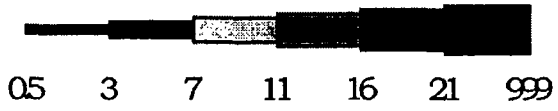
Hourly Summary
4 Jun - 5 Jun, 99 (0900 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
06/04	900	14.61	349.06	N	18.99	69.76	70.3	-0.54	753.89	13.42	29	58	0
06/04	1000	14.26	6.57	N	16.82	71.38	72.25	-0.87	857.91	13.4	29	56	0
06/04	1100	14.27	17.23	NNE	12.54	72.86	74.03	-1.17	858.09	13.38	29.95	54.93	0
06/04	1200	12.31	18.82	NNE	14.73	74.36	75.67	-1.31	939.91	13.37	29.95	53.87	0
06/04	1300	11.23	20.66	NNE	15.21	73.71	74.83	-1.13	690.29	13.37	29.96	53.87	0
06/04	1400	10.49	20.46	NNE	15.36	75.27	76	-0.73	650.94	13.36	29.97	52.59	0
06/04	1500	7.28	26.69	NNE	16.19	75.09	75.39	-0.3	390.15	13.36	29.98	53.38	0
06/04	1600	8.63	39.59	NE	9.58	73.03	73.7	-0.67	196.47	13.36	30	55.95	0
06/04	1700	8.19	53.71	NE	10.21	72.92	73.62	-0.71	211.7	13.37	30.02	55.89	0
06/04	1800	6.89	139.13	SE	11.89	71.18	71.55	-0.37	122.99	13.38	30.05	58.14	0
06/04	1900	5.06	214.01	SW	16.47	68.26	68.34	-0.08	37.85	13.42	30.06	61.33	0
06/04	2000	5.61	253.89	WSW	12.88	65.18	65.14	0.05	0.21	13.48	30.07	64.11	0
06/04	2100	5.11	263.52	W	11.48	64.01	63.86	0.15	0.01	13.51	30.09	66.02	0
06/04	2200	4.66	270.99	W	13.59	62.92	62.67	0.26	0.03	13.55	30.09	69	0
06/04	2300	2.98	279.54	W	29.91	62.46	62.22	0.24	0.01	13.57	30.1	71.52	0
06/05	2400	2.47	294.19	WNW	31.44	61.83	61.63	0.19	0.01	13.6	30.11	76.1	0
06/05	100	2.16	333.6	NNW	28.26	60.91	60.53	0.37	0.03	13.62	30.11	78.5	0
06/05	200	3.07	329.41	NNW	12.01	59.49	59.29	0.2	0	13.64	30.13	79.95	0
06/05	300	2.14	339.58	NNW	17.7	59.05	58.74	0.32	-0.02	13.65	30.14	80.87	0
06/05	400	2.87	21.21	NNE	15.73	57.07	56.86	0.21	1.61	13.67	30.16	84	0
06/05	500	3.6	25.54	NNE	10.59	58.43	58.28	0.15	63.89	13.67	30.19	84.18	0
06/05	600	2.53	36.31	NE	12.27	62.91	62.41	0.5	175.24	13.62	30.22	79.02	0
06/05	700	2.91	354.83	N	22.94	67.58	67.43	0.15	338.4	13.55	30.25	72.91	0
06/05	800	3.87	271.54	W	35.69	73.26	73.42	-0.16	546.33	13.44	30.28	62.52	0
06/05	900	7.12	177.07	S	16.47	73.92	74.68	-0.76	673.76	13.37	30.29	58.46	0
06/05	1000	11.3	163.6	SSE	7.41	73.89	74.77	-0.89	834.37	13.34	30.29	57.96	0
06/05	1100	12.5	172.45	S	10.85	73.77	75.07	-1.3	922.89	13.34	30	52	0
06/05	1200	12.58	171.9	S	10.88	74.14	75.45	-1.31	992.28	13.35	30	50	0
Average		7.17			16.36	68.16	68.51	-0.34	366.4	13.47	30.02	64.32	0
Minimum		2.14			7.41	57.07	56.86	-1.31	-0.02	13.34	29	50	0
Maximum		14.61			35.69	75.27	76	0.5	992.28	13.67	30.29	84.18	0
Total													0

New Bedford Harbor

4 Jun - 5 Jun, 99 (0900 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	2.15	0	1.23	3.38	0	0
NNE	3.38	2.46	5.54	8	0.62	0
NE	2.77	3.08	5.23	1.23	0	0
ENE	0.31	1.85	0.92	0	0	0
E	0	0.31	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0.31	0	0	0	0
SSE	0	0.62	3.38	4.31	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	2.77	1.85	4.62	0	0
SSW	0.31	0.31	0	0	0	0
SW	0.31	1.54	0	0	0	0
WSW	0.31	6.15	0.31	0	0	0
W	2.15	8.92	0	0	0	0
WNW	1.85	1.23	0	0	0	0
NW	3.38	2.15	0	0	0	0
NNW	4.31	2.77	0	0.31	0	0

New Bedford Harbor

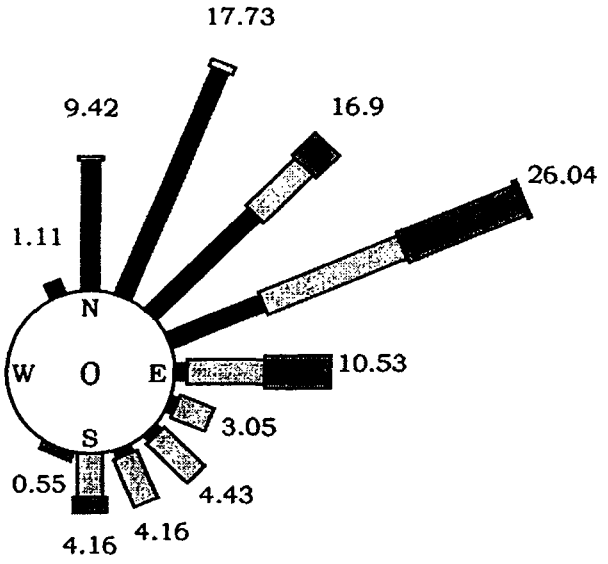
Meteorological Data

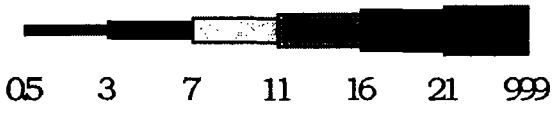
Hourly Summary
10 Jun - 11 Jun, 99 (1000 EST - 1600 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w*m^2	vdc	in. Hg	%RH	in. H_2O
06/10	1000	12.35	61.76	ENE	13.51	68	70.2	-2.2	890.71	13.41	30	61	0
06/10	1100	13.95	67.98	ENE	12.72	68.27	70.61	-2.34	974.78	13.41	30	59	0
06/10	1200	13.89	69.02	ENE	14.88	67.94	70.35	-2.41	994.26	13.43	30	60	0
06/10	1300	13.93	74.57	ENE	15.03	67.25	69.43	-2.17	962.87	13.45	30	61	0
06/10	1400	13.14	78.26	ENE	13.44	67.02	68.95	-1.93	884.13	13.45	30	61	0
06/10	1500	10.77	78.88	E	12.56	68.01	69.17	-1.16	748	13.44	30.28	61.33	0
06/10	1600	8.98	67.22	ENE	14.84	69.06	70.06	-1	576.07	13.41	30.27	59.96	0
06/10	1700	8.95	65.04	ENE	11.59	67.64	68.79	-1.16	380.71	13.41	30.27	63.15	0
06/10	1800	9.74	70.15	ENE	9.28	65.4	66.05	-0.65	183.57	13.43	30.27	66.7	0
06/10	1900	7.93	78.45	ENE	7.56	61.96	62.46	-0.5	37.3	13.48	30.27	71.52	0
06/10	2000	5.79	64.74	ENE	7.78	58.55	58.91	-0.36	0.55	13.56	30.27	78.35	0
06/10	2100	5.36	53.3	NE	7.31	56.66	56.92	-0.26	0.01	13.61	30.28	82.97	0
06/10	2200	5.04	48.31	NE	6.95	55.48	55.67	-0.19	0.01	13.66	30.27	85.56	0
06/10	2300	5.88	33.87	NE	6.99	54.67	54.89	-0.22	-0.01	13.68	30.28	87.9	0
06/11	2400	5.4	23.1	NNE	7.68	53.96	54.02	-0.06	-0.03	13.69	30.27	89.13	0
06/11	100	4.84	19.02	NNE	12.62	54.35	54.34	0.01	-0.02	13.7	30.27	89.57	0
06/11	200	5.23	4.65	N	13.77	53.28	53.32	-0.04	-0.04	13.71	30.26	90.14	0
06/11	300	5.66	8.94	N	10.86	52.46	52.54	-0.08	-0.04	13.72	30.26	91.06	0
06/11	400	5.24	12.94	NNE	11.28	52.44	52.5	-0.06	1.99	13.73	30.28	91.63	0
06/11	500	5.13	7.25	N	13.27	54.2	54.02	0.18	61.88	13.72	30.29	90.32	0
06/11	600	5.55	24.71	NNE	9.35	58.74	58.56	0.19	216.54	13.68	30.3	86.49	0
06/11	700	8.18	46.26	NE	10.72	62.22	63.58	-1.36	406.6	13.6	30.32	80.74	0
06/11	800	6.38	38.34	NE	15.1	65.29	66.62	-1.33	497.05	13.52	30.33	76.39	0
06/11	900	5.48	17.4	NNE	17.79	69.65	70.47	-0.82	714.24	13.45	30.33	71.57	0
06/11	1000	5.68	20.64	NNE	25.8	72.74	73.95	-1.2	851.22	13.38	30.33	66.26	0
06/11	1100	8.62	97.24	E	20.08	73.85	75.52	-1.67	981.57	13.36	30.32	61.46	0
06/11	1200	7.94	102.35	ESE	18.63	75	76.69	-1.7	1005.1	13.37	30.3	58.48	0
06/11	1300	8.49	136.74	SE	14.76	74.78	76.28	-1.5	968.37	13.37	30.29	60.04	0
06/11	1400	9.17	161.72	SSE	15.93	74.34	75.25	-0.92	886.72	13.37	30.28	62.09	0
06/11	1500	10.86	177.18	S	10.9	72.28	72.76	-0.48	747.33	13.36	30	68	0
06/11	1600	9.91	153.92	SSE	10.47	71.45	72.02	-0.56	575.25	13.36	30	67	0
Average		8.18			12.69	64.1	65	-0.9	469.25	13.51	30.22	72.9	0
Minimum		4.84			6.95	52.44	52.5	-2.41	-0.04	13.36	30	58.48	0
Maximum		13.95			25.8	75	76.69	0.19	1005.1	13.73	30.33	91.63	0
Total													0

New Bedford Harbor

10 Jun - 11 Jun, 99 (1000 EST - 1600 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	9.14	0.28	0	0	0
NNE	0	17.17	0.55	0	0	0
NE	0	9.97	4.71	2.22	0	0
ENE	0	6.93	10.25	8.59	0.28	0
E	0	0.83	5.26	4.43	0	0
ESE	0	0.55	2.49	0	0	0
SE	0	0.55	3.88	0	0	0
SSE	0	0.55	3.6	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	3.05	1.11	0	0
SSW	0	0	0	0.55	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	1.11	0	0	0	0

New Bedford Harbor

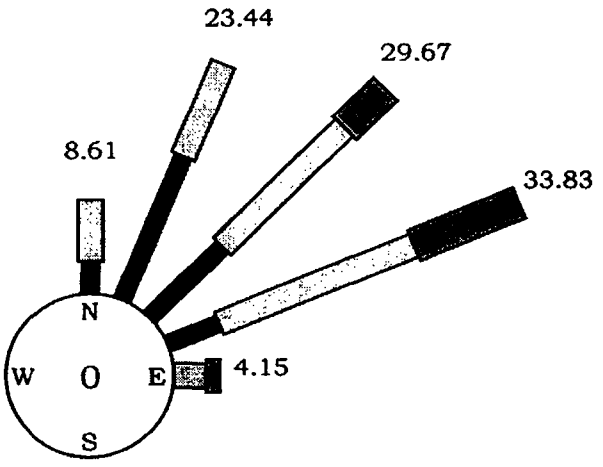
Meteorological Data

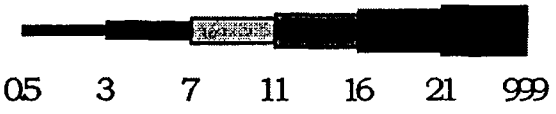
Hourly Summary
16 Jun - 17 Jun, 99 (0800 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
06/16	800	12.27	43.81	NE	10.64	64.83	66.27	-1.44	474.2	13.51	30	65	0
06/16	900	13.84	58.22	ENE	10.94	66.71	68.42	-1.71	736.47	13.46	30	61	0
06/16	1000	12.63	57.37	ENE	11.24	68.6	70.35	-1.74	878.56	13.43	30	61	0
06/16	1100	11.69	68.86	ENE	15.91	70.39	72.11	-1.72	913.16	13.4	30.11	59.45	0
06/16	1200	10.55	65.53	ENE	15.84	71.51	72.97	-1.45	961.11	13.41	30.11	57.75	0
06/16	1300	10.76	73.71	ENE	11.54	71.13	72.43	-1.3	805.18	13.41	30.09	57.33	0
06/16	1400	10.4	66.94	ENE	13.31	70.94	72.13	-1.19	672.91	13.4	30.08	57.73	0
06/16	1500	10.15	66.21	ENE	12.07	70.79	72.01	-1.22	586.8	13.38	30.07	58.85	0
06/16	1600	10.52	66.99	ENE	9.46	67.39	68.63	-1.23	221.47	13.41	30.06	62.11	0
06/16	1700	10.83	70.06	ENE	8.95	65.89	66.87	-0.98	154.63	13.44	30.05	64.71	0
06/16	1800	10.81	61.69	ENE	8.22	63.43	64.42	-0.99	51.89	13.48	30.04	68.45	0
06/16	1900	8	57.99	ENE	11.05	62.21	63.04	-0.83	14.13	13.51	30.03	72.2	0
06/16	2000	7.28	54.03	NE	10.09	61.65	62.37	-0.73	0.54	13.54	30.02	73.52	0
06/16	2100	5.73	58.21	ENE	11.66	61.38	61.9	-0.52	0.07	13.56	30.02	72.71	0
06/16	2200	5.7	40.87	NE	12.39	60.94	61.41	-0.47	0.05	13.57	30.01	73.54	0
06/16	2300	6.04	22.95	NNE	9.79	60.35	60.59	-0.24	0.05	13.58	30	75.05	0
06/17	2400	6.98	8.23	N	12.44	60.57	60.71	-0.14	0.05	13.59	30	75.52	0
06/17	100	7.48	10.6	N	10.32	60.65	60.82	-0.17	0.04	13.59	29.98	76.43	0
06/17	200	7.03	15.02	NNE	11.8	60.83	61.03	-0.2	0.05	13.59	29.98	77.15	0
06/17	300	7.22	17.94	NNE	10.89	60.37	60.67	-0.3	0.03	13.59	29.98	77.77	0
06/17	400	8.06	18.15	NNE	9.52	59.5	59.86	-0.36	0.57	13.6	29.99	79.79	0
06/17	500	7.19	18.27	NNE	10.4	59.36	59.61	-0.25	12.95	13.6	29.99	82.6	0
06/17	600	6.05	26.24	NNE	10.61	59.75	60.06	-0.31	34.26	13.6	30	83.67	0
06/17	700	6.23	31.21	NNE	9.04	59.34	59.87	-0.53	92.17	13.6	30.02	84.15	0
06/17	800	6.51	39.35	NE	11.48	60.48	61.03	-0.55	178.85	13.59	30.03	84.47	0
06/17	900	8.32	56.4	ENE	10.16	62.9	63.62	-0.71	281.4	13.57	30.03	79.87	0
06/17	1000	8.49	51.09	NE	10.62	62.75	63.65	-0.89	311.07	13.55	30.04	77.72	0
06/17	1100	7.92	50.18	NE	8.68	63.33	64.16	-0.83	260.79	13.54	30	75	0
06/17	1200	7.44	52.53	NE	9.9	60.25	61.19	-0.94	216.65	13.55	30	80	0.01
Average		8.69			11	63.73	64.56	-0.83	271.04	13.52	30.03	71.54	0
Minimum		5.7			8.22	59.34	59.61	-1.74	0.03	13.38	29.98	57.33	0
Maximum		13.84			15.91	71.51	72.97	-0.14	961.11	13.6	30.11	84.47	0.01
Total													0.01

New Bedford Harbor

16 Jun - 17 Jun, 99 (0800 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	2.97	5.64	0	0	0
NNE	0	14.24	9.2	0	0	0
NE	0	9.2	15.43	5.04	0	0
ENE	0	5.04	18.69	10.09	0	0
E	0	0	2.97	1.19	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

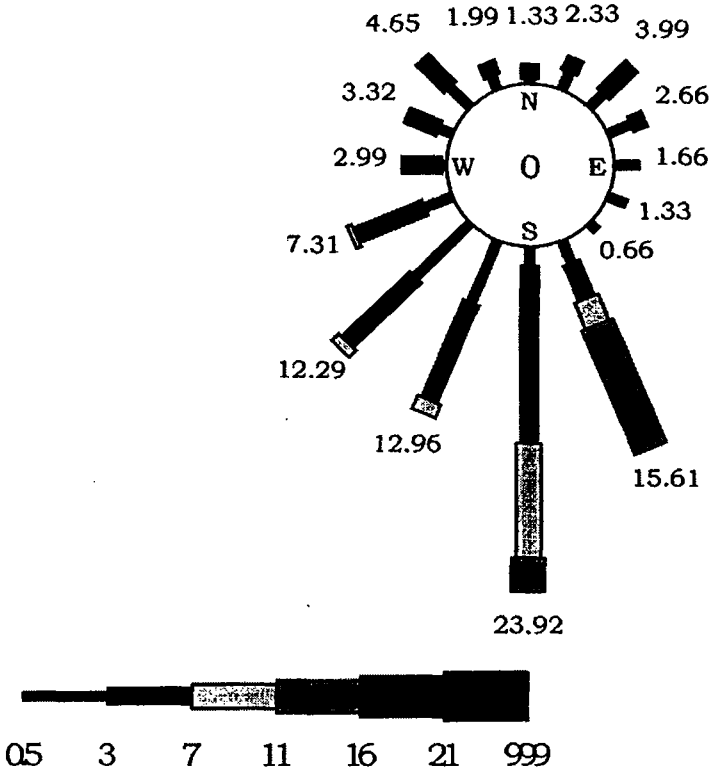
Meteorological Data

Hourly Summary
22 Jun - 23 Jun, 99 (1100 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
06/22	1100	11.28	162.77	SSE	7.27	76.62	77.82	-1.19	949.85	13.28	30.12	66.52	0
06/22	1200	12.4	167	SSE	8	76.93	78.2	-1.28	972.81	13.3	30.11	66.06	0
06/22	1300	11.78	163.15	SSE	10.7	78.4	79.41	-1.01	938.42	13.3	30.09	65.29	0
06/22	1400	9.64	175.48	S	20.78	81.74	82.29	-0.55	865.5	13.28	30.08	62.19	0
06/22	1500	10.34	173.45	S	11.65	81.06	81.36	-0.3	709.58	13.26	30.07	62.25	0
06/22	1600	7.4	184.12	S	16.09	82.64	82.85	-0.21	524	13.23	30.06	58.37	0
06/22	1700	6.42	225.9	SW	19.45	81.75	82.32	-0.57	356.96	13.22	30.05	57.39	0
06/22	1800	5.38	236.52	WSW	21.83	79.71	80.06	-0.35	180.16	13.24	30.05	57.85	0
06/22	1900	4.76	255.38	WSW	17.11	76.42	76.39	0.02	33.8	13.28	30.05	59	0
06/22	2000	2.97	224.87	SW	27.34	73.9	73.68	0.22	0.61	13.35	30.05	63.03	0
06/22	2100	3.12	204.8	SSW	16.66	72.66	72.33	0.33	0.17	13.39	30.05	67.34	0
06/22	2200	3.74	194.51	SSW	15.2	71.2	70.93	0.28	0.18	13.43	30.05	71.71	0
06/22	2300	2.01	193.75	SSW	25.78	70.2	69.73	0.47	0.17	13.45	30.03	74.19	0
06/23	2400	1.77	86.17	E	30.4	68.92	68.12	0.8	0.16	13.48	30.02	79.93	0
06/23	100	3.59	159.1	SSE	28.49	68.45	68.04	0.41	0.13	13.5	30.02	78.88	0
06/23	200	4.69	198.49	SSW	12.56	66.82	66.67	0.15	0.11	13.51	30.02	79.27	0
06/23	300	3.19	206.31	SSW	18.51	66.75	66.56	0.2	0.11	13.52	30.01	81.24	0
06/23	400	2.69	207.21	SSW	18.26	66.17	66.04	0.13	1.75	13.53	30.02	82.79	0
06/23	500	2.59	275.43	W	23.23	68.27	67.83	0.43	47.29	13.52	30.02	80.32	0
06/23	600	3.89	308.13	NW	18.19	71.16	70.46	0.7	184.03	13.48	30.05	76.3	0
06/23	700	2.84	320.94	NW	19.14	77.25	76.82	0.43	370.37	13.39	30.06	69.35	0
06/23	800	3.47	32.25	NNE	17.47	82.61	82.76	-0.15	554.02	13.3	30.07	63.24	0
06/23	900	4.16	47.22	NE	9.74	85.09	85.85	-0.76	583.18	13.23	30.07	59.78	0
06/23	1000	4.65	160.66	SSE	14.31	86.47	87.11	-0.64	754.25	13.19	30.07	60.88	0
06/23	1100	6.97	182.11	S	13.4	87.01	88.38	-1.36	932.3	13.16	30	60	0
06/23	1200	9.73	173.97	S	10.49	84.99	86.04	-1.05	946.43	13.18	30	60	0
Average		5.6			17.39	76.28	76.46	-0.19	381.01	13.35	30.05	67.81	0
Minimum		1.77			7.27	66.17	66.04	-1.36	0.11	13.16	30	57.39	0
Maximum		12.4			30.4	87.01	88.38	0.8	972.81	13.53	30.12	82.79	0
Total													0

New Bedford Harbor

22 Jun - 23 Jun, 99 (1100 EST - 1200 EST)



Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0.33	1	0	0	0	0
NNE	1.33	1	0	0	0	0
NE	1.33	2.66	0	0	0	0
ENE	1.66	1	0	0	0	0
E	1.66	0	0	0	0	0
ESE	1.33	0	0	0	0	0
SE	0.66	0	0	0	0	0
SSE	1.66	2.66	1.99	9.3	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	1.33	12.29	7.97	2.33	0	0
SSW	4.65	7.31	1	0	0	0
SW	5.32	6.31	0.66	0	0	0
WSW	1.99	4.98	0.33	0	0	0
W	0.33	2.66	0	0	0	0
WNW	1	2.33	0	0	0	0
NW	1.99	2.66	0	0	0	0
NNW	1	1	0	0	0	0

New Bedford Harbor

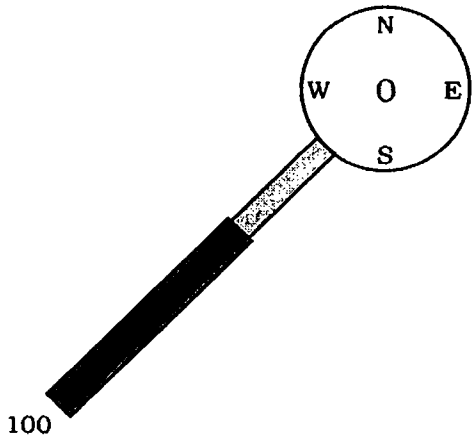
Meteorological Data

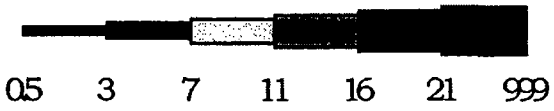
Hourly Summary
28 Jun - 29 Jun, 99 (0900 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w*m^2	vdc	in. Hg	%RH	in. H_2O
06/28	900	12.3	225	SW	16.51	74.28	75	-0.72	245	13.4	29.78	91	—
06/28	1000	10.8	227	SW	19.26	78.43	79.32	-0.89	478	13.3	29.78	84	—
06/28	1100	14.3	229	SW	15.68	79.91	81.06	-1.15	781	13.3	29.77	80	0
06/28	1200	12.2	214	SW	21.85	81.92	83.36	-1.44	953	13.3	29.76	75	0
06/28	1300	12.8	214	SW	22.21	81.47	82.93	-1.46	846	13.2	29.74	75	0
06/28	1400	14.1	216	SW	21.09	81.45	82.57	-1.13	835	13.3	29.72	75	0
06/28	1500	15.5	219	SW	21.16	80.17	81.17	-1	702	13.2	29.71	75	0
06/28	1600	15.4	223	SW	19.05	78.59	79.53	-0.94	453	13.2	29.69	77	0
06/28	1700	15.3	220	SW	19.78	75.85	76.69	-0.84	164	13.3	29.67	81	0
06/28	1800	14.4	225	SW	18.6	74.38	74.95	-0.58	38	13.3	29.67	85	0
06/28	1900	13.7	225	SW	17.82	73.21	73.77	-0.56	9	13.3	29.68	87	0
06/28	2000	13	226	SW	17.57	72.76	73.21	-0.46	0	13.4	29.67	90	0
06/28	2100	13	226	SW	16.73	73.25	73.69	-0.44	0	13.4	29.67	89	0
06/28	2200	12.5	222	SW	17.86	73.07	73.53	-0.46	0	13.4	29.66	89	0
06/28	2300	11.5	225	SW	17.64	73	73.42	-0.41	0	13.4	29.67	89	0
06/29	2400	10.7	225	SW	17.54	72.89	73.3	-0.41	0	13.4	29.66	89	0
06/29	100	10.2	216	SW	21.48	71.85	72.32	-0.47	0	13.4	29.64	91	0
06/29	200	9.6	215	SW	22.37	72.07	72.52	-0.45	0	13.4	29.61	91	0
06/29	300	11.7	227	SW	16.77	72.21	72.64	-0.44	0	13.4	29.6	91	0
06/29	400	10.2	225	SW	17.52	72.4	72.79	-0.39	0	13.4	29.6	91	0
06/29	500	9.8	220	SW	20.75	72.37	72.77	-0.4	14	13.4	29.59	91	0
06/29	600	10	226	SW	17.84	72.46	72.9	-0.44	51	13.4	29.6	91	0
06/29	700	10.4	224	SW	18.42	73.02	73.54	-0.52	107	13.4	29.61	90	0
06/29	800	10.5	226	SW	17.28	74.16	74.78	-0.62	214	13.4	29.61	87	0
06/29	900	11.2	222	SW	19.29	75.74	76.47	-0.73	349	13.3	29.61	85	0
06/29	1000	12.4	225	SW	17.87	77.8	78.87	-1.07	555	13.3	29.61	82	0
06/29	1100	11.2	220	SW	23.49	78.48	79.77	-1.29	552	13.3	29.61	80	—
06/29	1200	11.8	214	SW	20.72	77.49	78.47	-0.98	403	13.3	29.6	81	—
Average		12.16			19.08	75.52	76.26	-0.74	276.75	13.34	29.66	85.07	0
Minimum		9.6			15.68	71.85	72.32	-1.46	0	13.2	29.59	75	0
Maximum		15.5			23.49	81.92	83.36	-0.39	953	13.4	29.78	91	0
Total													0

New Bedford Harbor

28 Jun - 29 Jun, 99 (0900 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	32.14	67.86	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

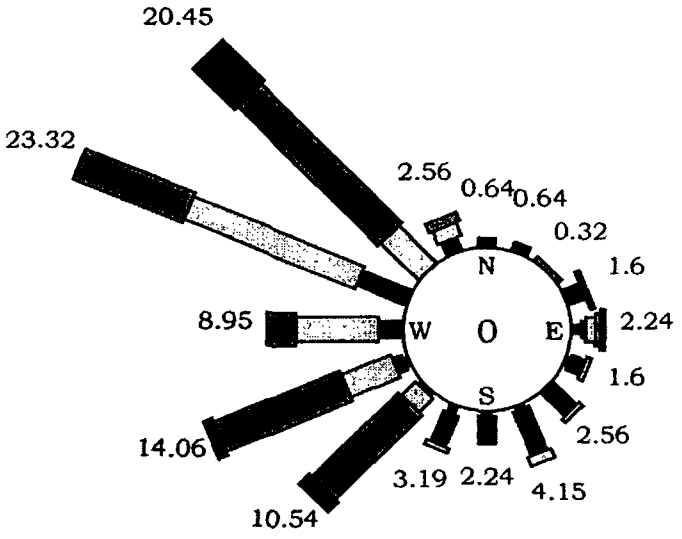
Meteorological Data

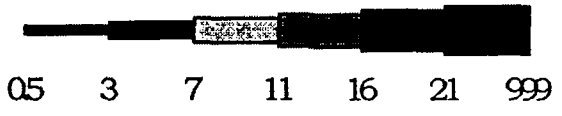
Hourly Summary
6 Jul - 7 Jul, 99 (0800 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
07/06	800	9.32	279.01	W	13.04	90.56	90.97	-0.41	529.87	13.15	29	67	0
07/06	900	10.7	282	WNW	13	92.6	93.3	-0.71	664	13.09	29.79	64	0
07/06	1000	10.9	288	WNW	14.1	94.5	95.3	-0.71	839	13.07	29.78	62	0
07/06	1100	9.5	275	W	21.8	96.8	97.9	-1.07	920	13.05	29.76	59	0
07/06	1200	9.5	274	W	20.5	97.8	98.8	-0.96	892	13.04	29.74	58	0
07/06	1300	12.2	232	SW	18.6	97.9	99.2	-1.29	929	13.04	29.72	57	0
07/06	1400	13.8	239	WSW	17.9	96.4	97.4	-1	829	13.04	29.7	57	0
07/06	1500	14.5	232	SW	17.3	95.4	96.2	-0.86	695	13.05	29.69	57	0
07/06	1600	11.8	242	WSW	18.4	94.8	95.5	-0.67	516	13.05	29.68	58	0
07/06	1700	11.9	244	WSW	18.4	93.2	93.8	-0.58	314	13.06	29.68	61	0
07/06	1800	10.9	234	SW	16.5	90.9	91.4	-0.45	143	13.08	29.7	62	0
07/06	1900	10	84	E	20.9	85.8	86.2	-0.41	29	13.13	29.72	65	0
07/06	2000	6.3	140	SE	14.8	81.6	81.9	-0.27	0	13.2	29.71	69	0
07/06	2100	5.6	149	SSE	8.3	81	81.2	-0.22	0	13.24	29.71	73	0
07/06	2200	7	190	S	24.5	79.8	80	-0.21	0	13.27	29.7	78	0
07/06	2300	7.9	341	NNW	12.9	80.3	80.3	0.05	0	13.28	29.73	75	0
07/07	2400	3.6	103	ESE	15.9	78.6	78.4	0.2	0	13.31	29.69	78	0
07/07	100	3.9	248	WSW	16.5	78.9	78.6	0.3	0	13.33	29.69	78	0
07/07	200	7	290	WNW	14.6	77	77	0.09	0	13.34	29.71	80	0
07/07	300	7.4	293	WNW	11.1	76.6	76.5	0.12	0	13.35	29.71	80	0
07/07	400	9.4	302	WNW	10.7	76.6	76.4	0.16	1	13.35	29.73	79	0
07/07	500	11.5	304	NW	10.9	77	76.9	0.16	31	13.34	29.74	75	0
07/07	600	13.5	307	NW	11.6	77.4	77.2	0.19	115	13.34	29.76	66	0
07/07	700	12.8	303	WNW	11.8	77.6	77.4	0.12	237	13.33	29.77	60	0
07/07	800	14.9	312	NW	12.2	80.1	80.3	-0.17	592	13.28	29.78	55	0
07/07	900	16	318.16	NW	12.15	81.69	82.11	-0.43	766.96	13.25	29	52	0
07/07	1000	14.03	314.34	NW	13.43	83.85	84.36	-0.51	896.69	13.21	29	50	0
Average		10.22			15.25	85.73	86.09	-0.35	368.13	13.19	29.64	65.74	0
Minimum		3.6			8.3	76.6	76.4	-1.29	0	13.04	29	50	0
Maximum		16			24.5	97.9	99.2	0.3	929	13.35	29.79	80	0
Total													0

New Bedford Harbor

6 Jul - 7 Jul, 99 (0800 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0.64	0	0	0	0
NNE	0	0.64	0	0	0	0
NE	0	0	0	0.32	0	0
ENE	0	1.28	0	0	0.32	0
E	0.64	0.32	0.64	0.32	0.32	0
ESE	0.32	0.96	0.32	0	0	0
SE	0	2.24	0.32	0	0	0
SSE	0.32	3.19	0.64	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0.32	1.92	0	0	0	0
SSW	0.64	2.24	0.32	0	0	0
SW	0	0.32	1.28	7.99	0.96	0
WSW	0.32	0.64	3.51	8.95	0.64	0
W	0	1.6	5.43	1.92	0	0
WNW	0	3.51	12.14	7.67	0	0
NW	0	0	3.51	13.1	3.83	0
NNW	0	0.96	0.96	0.64	0	0

New Bedford Harbor

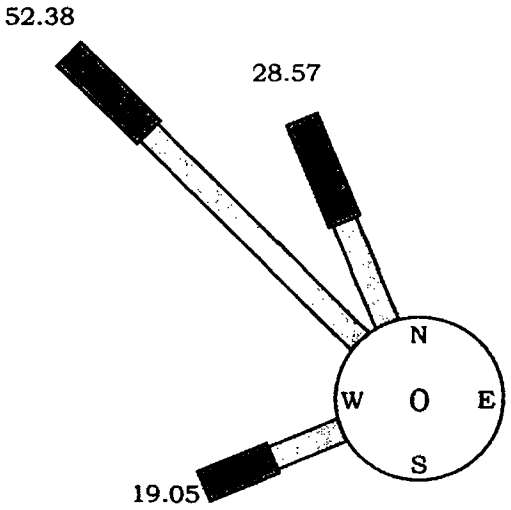
Meteorological Data

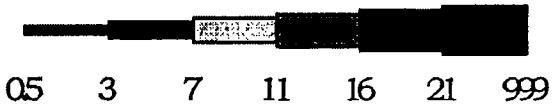
Hourly Summary
10 Jul - 11 Jul, 99 (1500 EST - 1100 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
07/10	1500	11.1	240	WSW	19.54	83.01	83.78	-0.76	449	13.2	29.67	67	0
07/10	1600	11.4	237	WSW	19	82.71	83.37	-0.67	448	13.2	29.67	66	0
07/10	1700	10.5	242	WSW	18.32	83.59	84.28	-0.69	345	13.2	29.68	65	0
07/10	1800	8.7	246	WSW	17.85	79.48	79.84	-0.36	92	13.2	29.7	70	0
07/10	1900	11.5	307	NW	13	78.9	78.98	-0.08	13	13.3	29.73	65	0
07/10	2000	12.2	316	NW	9.99	77.76	77.69	0.07	1	13.3	29.77	57	0
07/10	2100	11.4	322	NW	10.66	76.29	76.2	0.09	0	13.3	29.81	58	0
07/10	2200	13.5	329	NNW	11.37	73.87	73.86	0.01	0	13.4	29.83	60	0
07/10	2300	12.1	338	NNW	12.99	71.32	71.35	-0.03	0	13.4	29.85	61	0
07/11	2400	9.8	337	NNW	12.48	69.19	69.12	0.07	0	13.4	29.86	62	0
07/11	100	8.8	336	NNW	11.79	66.95	66.86	0.09	0	13.5	29.88	65	0
07/11	200	7.3	323	NW	9.18	64.85	64.73	0.12	0	13.5	29.89	67	0
07/11	300	7.6	322	NW	8.45	62.81	62.66	0.15	0	13.5	29.89	69	0
07/11	400	8.1	307	NW	8.59	61.73	61.67	0.06	1	13.6	29.9	72	0
07/11	500	8.6	313	NW	9.51	61.89	61.76	0.13	28	13.6	29.92	73	0
07/11	600	8.7	309	NW	9.74	64.21	63.85	0.36	146	13.6	29.94	71	0
07/11	700	9.6	321	NW	10.87	68.77	68.59	0.18	387	13.5	29.98	66	0
07/11	800	11.3	330	NNW	14.98	72.01	72.43	-0.42	588	13.4	29.99	61	0
07/11	900	10.6	329	NNW	15.76	74.49	75.11	-0.62	755	13.4	30.01	57	—
07/11	1000	9.9	318	NW	19.12	77.1	77.83	-0.73	868	13.3	30.02	53	—
07/11	1100	9.6	309	NW	23.6	78.94	79.63	-0.69	953	13.3	30.02	50	—
Average		10.11			13.66	72.85	73.03	-0.18	241.62	13.39	29.86	63.57	0
Minimum		7.3			8.45	61.73	61.67	-0.76	0	13.2	29.67	50	0
Maximum		13.5			23.6	83.59	84.28	0.36	953	13.6	30.02	73	0
Total													0

New Bedford Harbor

10 Jul - 11 Jul, 99 (1500 EST - 1100 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	9.52	9.52	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	38.1	14.29	0	0
NNW	0	0	14.29	14.29	0	0

New Bedford Harbor

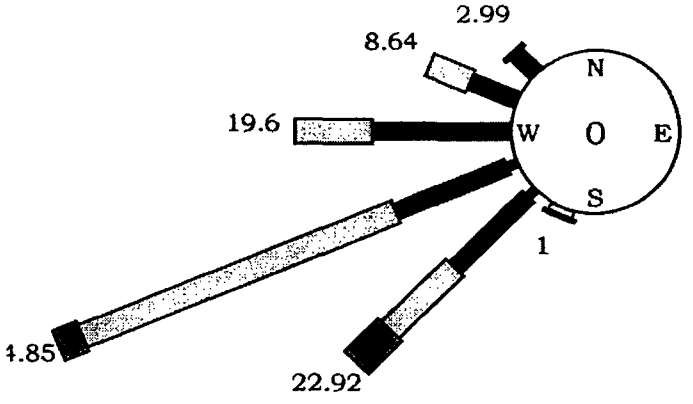
Meteorological Data

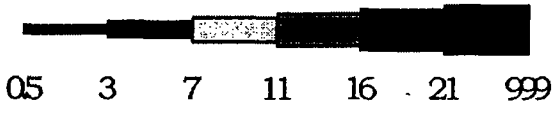
Hourly Summary
16 Jul - 17 Jul, 99 (0800 EST - 0900 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
07/16	800	5	279.55	W	21.39	84.16	84.63	-0.47	503.74	13.26	30	65	0
07/16	900	5.8	292	WNW	19.2	87.8	88.3	-0.44	638	13.19	30.06	61	0
07/16	1000	6	290	WNW	20	91.5	92	-0.52	801	13.13	30.07	56	0
07/16	1100	6.5	290	WNW	26.1	93.9	94.5	-0.63	856	13.1	30.06	53	0
07/16	1200	8.3	280	W	21.2	94.7	95.7	-0.97	922	13.09	30.06	52	0
07/16	1300	9.1	246	WSW	22.7	95.3	96.5	-1.14	892	13.08	30.04	51	0
07/16	1400	10.8	227	SW	19	94.1	95	-0.93	774	13.08	30.04	52	0
07/16	1500	10.3	229	SW	20.5	92.6	93.5	-0.82	618	13.08	30.04	52	0
07/16	1600	11.3	237	WSW	18.7	90.5	91.1	-0.66	451	13.09	30.04	54	0
07/16	1700	10.8	233	SW	16.5	86.4	86.9	-0.44	170	13.13	30.03	57	0
07/16	1800	8.7	241	WSW	18.4	85	85.4	-0.37	140	13.16	30.03	60	0
07/16	1900	9	253	WSW	14.7	82.4	82.6	-0.17	24	13.21	30.03	65	0
07/16	2000	7.9	254	WSW	15.4	80.1	80.2	-0.09	1	13.25	30.04	71	0
07/16	2100	7.7	255	WSW	14.8	79.1	79.1	-0.03	0	13.29	30.04	74	0
07/16	2200	7.5	253	WSW	15.6	78.4	78.5	-0.05	0	13.31	30.04	75	0
07/16	2300	8.5	252	WSW	15.7	76.9	77	-0.08	0	13.32	30.04	75	0
07/17	2400	8.7	253	WSW	15.1	75.7	75.8	-0.08	0	13.34	30.04	74	0
07/17	100	7.5	261	W	16.9	74.7	74.7	-0.01	0	13.36	30.04	74	0
07/17	200	5.9	266	W	18.8	74.7	74.7	0.07	0	13.37	30.03	74	0
07/17	300	3.7	249	WSW	31.1	74.9	74.8	0.08	0	13.38	30.03	74	0
07/17	400	3.9	254	WSW	27.1	75.2	75	0.12	0	13.39	30.03	73	0
07/17	500	3.7	245	WSW	30.5	75.6	75.5	0.11	26	13.39	30.04	73	0
07/17	600	4.5	232	SW	21.3	77.3	77.3	0.01	128	13.37	30.05	72	0
07/17	700	5.4	225	SW	18.6	80.2	80.6	-0.44	290	13.32	30.05	71	0
07/17	800	5.8	254	WSW	20.8	84.3	85	-0.67	478	13.25	30.06	68	0
07/17	900	6.71	265.76	W	20.04	89.03	89.87	-0.83	661.57	13.17	30	64	0
Average		7.27			20	83.63	84.01	-0.36	322.09	13.24	30.04	65	0
Minimum		3.7			14.7	74.7	74.7	-1.14	0	13.08	30	51	0
Maximum		11.3			31.1	95.3	96.5	0.12	922	13.39	30.07	75	0
Total													0

New Bedford Harbor

16 Jul - 17 Jul, 99 (0800 EST - 0900 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0.66	0.33	0	0
SW	1	9.3	8.31	4.32	0	0
WSW	1	10.96	30.56	2.33	0	0
W	0	12.62	6.98	0	0	0
WNW	0	4.65	3.99	0	0	0
NW	0	2.66	0.33	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

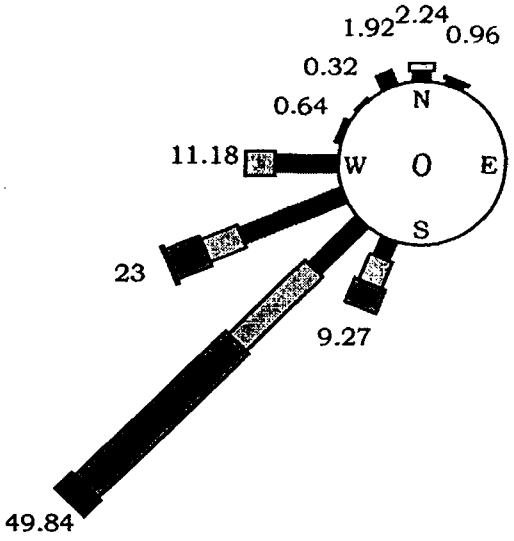
Meteorological Data

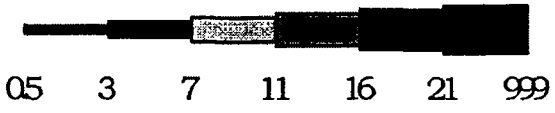
Hourly Summary
22 Jul - 23 Jul, 99 (0800 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
07/22	800	9.43	218.17	SW	20.48	78.72	79.44	-0.72	357.65	13.32	30	76	0
07/22	900	10.99	221.69	SW	19.38	79.9	80.76	-0.86	451.86	13.28	30	74	0
07/22	1000	12.31	226.18	SW	20.36	80.65	81.59	-0.94	563	13.27	30.01	72.99	0
07/22	1100	12.88	230.67	SW	20.23	81.63	82.55	-0.92	568.08	13.24	30.01	70.71	0
07/22	1200	13.26	226.82	SW	21.06	82.93	84.04	-1.11	718.91	13.23	30	68.99	0
07/22	1300	14.52	229.83	SW	20.18	82.87	84.01	-1.14	715.86	13.23	29.99	68.66	0
07/22	1400	14.15	219.06	SW	22.61	82.96	84.04	-1.08	748.48	13.23	29.98	67.83	0
07/22	1500	14.26	226.99	SW	20.85	82.74	83.69	-0.95	659.72	13.22	29.96	67.43	0
07/22	1600	13.9	221.82	SW	20.7	81.65	82.51	-0.85	502.39	13.22	29.94	67.99	0
07/22	1700	12.7	215.59	SW	20.6	79.71	80.47	-0.76	232.12	13.23	29.93	69.66	0
07/22	1800	13.53	223.62	SW	18.42	76.87	77.4	-0.53	85.16	13.28	29.93	74.33	0
07/22	1900	11.05	245.77	WSW	17.71	74.61	74.91	-0.3	23.72	13.32	29.93	77.07	0
07/22	2000	8.32	226.63	SW	19.08	72.85	73.08	-0.23	0.4	13.36	29.93	79.3	0
07/22	2100	8.28	222.94	SW	19.18	72.57	72.82	-0.26	0.29	13.38	29.93	82.93	0
07/22	2200	7.41	216.23	SW	21.71	72.69	72.97	-0.28	0.28	13.4	29.93	84.02	0
07/22	2300	6.82	230.43	SW	18.4	72.24	72.45	-0.21	0.26	13.4	29.92	84.03	0
07/23	2400	5.35	244.83	WSW	19.48	71.53	71.65	-0.12	0.24	13.41	29.91	84.68	0
07/23	100	4.96	253.3	WSW	15.7	70.37	70.39	-0.02	0.23	13.44	29.9	86.67	0
07/23	200	5.33	275.15	W	18.32	69.99	70.04	-0.06	0.19	13.45	29.88	87.36	0
07/23	300	6.34	6.33	N	13.33	70.64	70.78	-0.14	0.19	13.44	29.89	86.47	0
07/23	400	5.9	286.38	WNW	13.63	70.88	70.93	-0.06	0.27	13.44	29.86	84.65	0
07/23	500	7.46	266.58	W	14.62	70.57	70.59	-0.02	25.24	13.44	29.84	85.31	0
07/23	600	5.91	262.29	W	18.41	73.29	73.42	-0.13	141.1	13.42	29.86	82.65	0
07/23	700	6.8	252.53	WSW	18.03	75.75	76.24	-0.49	291.79	13.37	29.87	79.8	0
07/23	800	6.83	244.48	WSW	23.07	77.62	78.46	-0.84	427.19	13.32	29.88	78.26	0
07/23	900	6.65	223.42	SW	24.2	79.46	80.34	-0.88	430.96	13.28	29.88	76.09	0
07/23	1000	6.89	219.4	SW	22.91	81.32	82.67	-1.35	686.85	13.24	29	73	0
Average		9.34			19.36	76.56	77.12	-0.57	282.68	13.33	29.89	77.44	0
Minimum		4.96			13.33	69.99	70.04	-1.35	0.19	13.22	29	67.43	0
Maximum		14.52			24.2	82.96	84.04	-0.02	748.48	13.45	30.01	87.36	0
Total													0

New Bedford Harbor

22 Jul - 23 Jul, 99 (0800 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	1.28	0.96	0	0	0
NNE	0	0.64	0.32	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	2.56	3.51	3.19	0	0
SW	0	8.31	13.1	25.56	2.88	0
WSW	0	13.42	4.79	4.47	0.32	0
W	0	7.67	3.51	0	0	0
WNW	0	0.32	0.32	0	0	0
NW	0	0.32	0	0	0	0
NNW	0	1.92	0	0	0	0

New Bedford Harbor

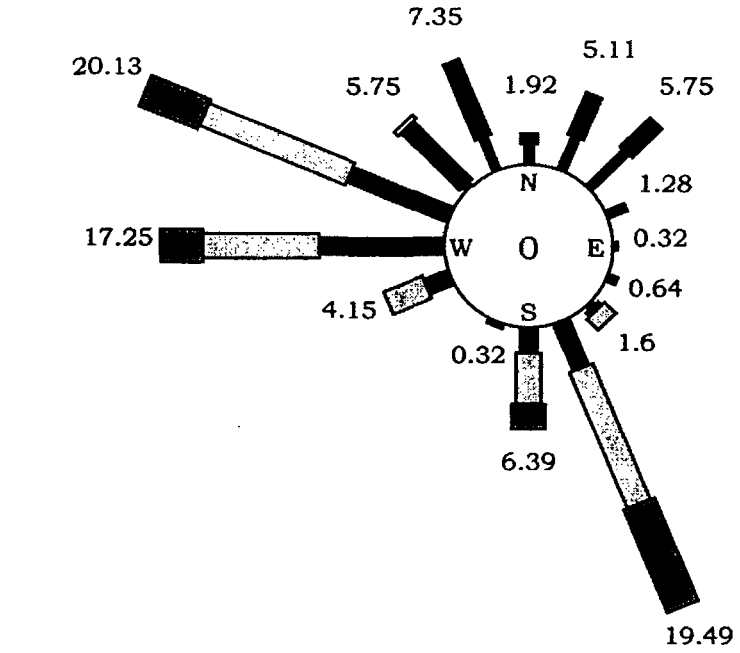
Meteorological Data

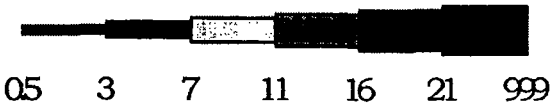
Hourly Summary
28 Jul - 29 Jul, 99 (1300 EST - 1500 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
07/28	1300	12.86	293.46	WNW	16.6	90.5	91.31	-0.8	920.27	13.14	29.73	44.42	0
07/28	1400	11.75	287.13	WNW	16.58	90.9	91.39	-0.49	783.19	13.14	29.71	40.9	0
07/28	1500	9.85	278.44	W	21.94	91.35	91.69	-0.34	662.6	13.13	29.7	40.6	0
07/28	1600	10.58	290.85	WNW	15.13	90.95	90.99	-0.04	508.36	13.12	29.69	37.79	0
07/28	1700	9.64	271.9	W	15.93	90.12	90.32	-0.19	325.98	13.12	29.69	39.38	0
07/28	1800	9.04	264.81	W	15.89	87.97	88	-0.02	127.71	13.14	29.7	44.72	0
07/28	1900	7.01	259	W	14.05	85.02	84.93	0.08	23.26	13.18	29.7	49.25	0
07/28	2000	5.64	269.93	W	13.41	82.49	82.16	0.32	0.29	13.23	29.71	52.5	0
07/28	2100	7.09	284.73	WNW	10.9	80.97	80.64	0.33	0.24	13.27	29.73	54.61	0
07/28	2200	6.68	299.88	WNW	7.38	78.62	78.18	0.44	0.22	13.3	29.72	58.37	0
07/28	2300	5.49	292.29	WNW	10.54	77.52	77.02	0.5	0.2	13.33	29.72	59.58	0
07/29	2400	6.43	287.4	WNW	8.29	76.57	76.2	0.37	0.19	13.35	29.71	60.63	0
07/29	100	4.15	314.5	NW	11.26	74.43	73.86	0.57	0.18	13.38	29.7	65.19	0
07/29	200	3.42	343.67	NNW	19.44	73.4	72.72	0.67	0.21	13.41	29.69	68.62	0
07/29	300	3.27	333.93	NNW	12.77	72.2	71.61	0.58	0.25	13.43	29.68	71.85	0
07/29	400	2.38	18.16	NNE	15.61	71.3	70.79	0.51	0.26	13.45	29.68	75.05	0
07/29	500	2.91	30.51	NNE	11.15	70.74	70.39	0.36	26.8	13.46	29.67	79.05	0
07/29	600	1.79	28.65	NNE	16.79	76.96	75.64	1.32	147.96	13.43	29.69	74.17	0
07/29	700	3.76	13.85	NNE	13.34	81.12	81.18	-0.06	335.85	13.34	29.71	66.12	0
07/29	800	3.33	57.18	ENE	19.33	83.46	83.98	-0.51	431.59	13.27	29.71	62.19	0
07/29	900	7.35	165.87	SSE	9.01	83.98	84.78	-0.8	567.97	13.22	29.71	61.14	0
07/29	1000	9.28	163.54	SSE	7.84	85.06	85.99	-0.93	832.92	13.17	29.71	60.45	0
07/29	1100	6.48	159.15	SSE	18.45	89.92	90.96	-1.04	950.26	13.15	29.69	54.42	0
07/29	1200	8.32	160.37	SSE	10.13	91.72	92.77	-1.05	966.03	13.13	29.68	51.08	0
07/29	1300	12.22	161.34	SSE	6.42	87.5	88.93	-1.43	849.42	13.14	29	56	0
07/29	1400	13.1	158.78	SSE	6.31	86.61	88.49	-1.89	752.57	13.13	29	61	0
07/29	1500	11.13	173.99	S	10.8	86.61	87.45	-0.84	587.33	13.15	29	66	0
Average		7.22			13.16	82.89	83.05	-0.16	363.04	13.25	29.62	57.6	0
Minimum		1.79			6.31	70.74	70.39	-1.89	0.18	13.12	29	37.79	0
Maximum		13.1			21.94	91.72	92.77	1.32	966.03	13.46	29.73	79.05	0
Total													0

New Bedford Harbor

28 Jul - 29 Jul, 99 (1300 EST - 1500 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	1.28	0.64	0	0	0	0
NNE	2.24	2.88	0	0	0	0
NE	3.19	2.56	0	0	0	0
ENE	1.28	0	0	0	0	0
E	0.32	0	0	0	0	0
ESE	0.64	0	0	0	0	0
SE	0.32	0.32	0.96	0	0	0
SSE	0	3.19	9.27	7.03	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	1.6	3.19	1.6	0	0
SSW	0	0.32	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	1.6	2.56	0	0	0
W	0	7.67	7.03	2.56	0	0
WNW	0	6.71	9.58	3.83	0	0
NW	0.32	5.11	0.32	0	0	0
NNW	2.24	5.11	0	0	0	0

New Bedford Harbor

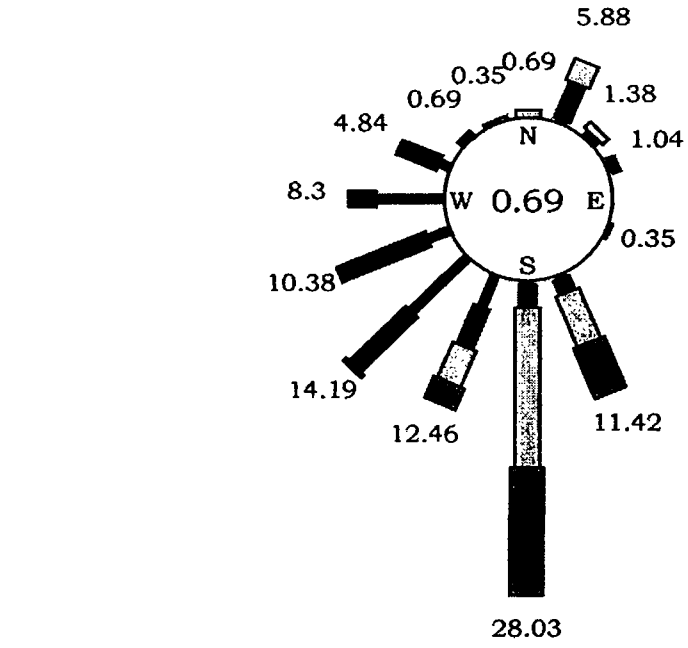
Meteorological Data

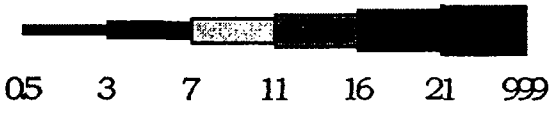
Hourly Summary
3 Aug - 4 Aug, 99 (0800 EST - 0800 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
08/03	800	9.23	11.99	NNE	13.57	74.13	75.05	-0.92	435.23	13.38	30	65	0
08/03	900	7.1	20	NNE	14.7	77.3	78.8	-1.45	563	13.32	30.05	60	0
08/03	1000	5.7	36	NE	23.9	80.6	82.1	-1.47	738	13.28	30.05	55	0
08/03	1100	5	199	SSW	29.4	81.7	82.7	-0.95	718	13.25	30.04	52	0
08/03	1200	7	177	S	27	83.2	84.5	-1.28	945	13.23	30.03	54	0
08/03	1300	10.3	173	S	12.7	80	81.1	-1.17	593	13.24	30.01	58	0
08/03	1400	10.4	168	SSE	9	80	80.8	-0.78	583	13.25	30	58	0
08/03	1500	10.9	167	SSE	7.6	80.6	81.4	-0.77	658	13.24	30	58	0
08/03	1600	9.4	173	S	12.1	80.8	81.3	-0.53	517	13.23	30.01	58	0
08/03	1700	11.2	173	S	10.6	78.2	79.1	-0.97	321	13.24	30.01	60	0
08/03	1800	11.7	188	S	11.5	75.6	76.1	-0.48	137	13.27	30.02	67	0
08/03	1900	11.9	176	S	11.5	72.9	73.5	-0.61	15	13.33	30.02	75	0
08/03	2000	11.3	177	S	12.6	71.8	72.3	-0.46	0	13.37	30.02	80	0
08/03	2100	10.3	182	S	13	72.1	72.4	-0.26	0	13.4	30.02	81	0
08/03	2200	7.3	197	SSW	14.3	72.3	72.3	-0.06	0	13.41	30.02	81	0
08/03	2300	3.9	222	SW	20.7	71.7	71.6	0.06	0	13.43	30.02	83	0
08/04	2400	3.4	227	SW	20.1	71.4	71.2	0.16	0	13.45	30.01	83	0
08/04	100	3.1	232	SW	20.8	70.6	70.5	0.18	0	13.46	30.01	83	0
08/04	200	2.6	258	WSW	22.6	69.9	69.6	0.24	0	13.47	29.99	85	0
08/04	300	3	258	WSW	19.6	69.5	69.2	0.23	0	13.49	29.99	86	0
08/04	400	2.1	264	W	20.9	69.1	68.9	0.25	0	13.49	29.99	87	0
08/04	500	1.7	239	WSW	28.3	70.4	70	0.35	22	13.5	30	85	0
08/04	600	2.9	248	WSW	20.2	75.4	74.5	0.85	138	13.46	30.01	80	0
08/04	700	5.1	247	WSW	21.7	77.6	78	-0.37	316	13.37	30.02	74	0
08/04	800	5.9	235	SW	27.5	79.5	80.4	-0.96	511	13.3	30.02	70	0
Average		6.9			17.83	75.45	75.89	-0.45	288.41	13.35	30.01	71.12	0
Minimum		1.7			7.6	69.1	68.9	-1.47	0	13.23	29.99	52	0
Maximum		11.9			29.4	83.2	84.5	0.85	945	13.5	30.05	87	0
Total													0

New Bedford Harbor

3 Aug - 4 Aug, 99 (0800 EST - 0800 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0.69	0	0	0
NNE	0.35	3.46	2.08	0	0	0
NE	0	0.69	0.69	0	0	0
ENE	0.35	0.69	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0.35	0	0	0	0
SE	0	0	0	0	0	0
SSE	0.35	1.38	4.84	4.84	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0.35	2.08	14.19	11.42	0	0
SSW	3.11	3.81	3.46	2.08	0	0
SW	6.92	6.92	0.35	0	0	0
WSW	2.08	8.3	0	0	0	0
W	5.88	2.42	0	0	0	0
WNW	1.04	3.81	0	0	0	0
NW	0	0.69	0	0	0	0
NNW	0	0	0.35	0	0	0

New Bedford Harbor

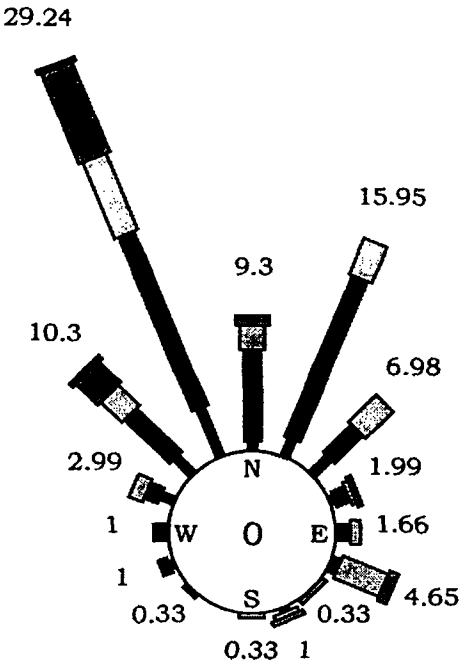
Meteorological Data

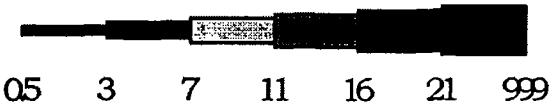
Hourly Summary
9 Aug - 10 Aug. 99 (1100 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
08/09	1100	12.24	331.98	NNW	19.91	74.21	74.72	-0.51	833.71	13.36	29	51	0
08/09	1200	14.18	326.95	NNW	19.21	75.29	75.93	-0.64	966.93	13.36	29.7	48.1	0
08/09	1300	13.96	336.94	NNW	18.54	76.54	77.17	-0.63	924.47	13.36	29.7	45.33	0
08/09	1400	10.58	333.87	NNW	28.3	78.18	78.44	-0.25	834.25	13.35	29.7	43.47	0
08/09	1500	8.82	348.87	N	20.31	79.49	79.57	-0.08	711.13	13.32	29.7	43.33	0
08/09	1600	7.49	353.11	N	26.52	79.13	78.92	0.21	460.19	13.3	29.7	42.99	0
08/09	1700	8.34	39.96	NE	12.57	77.79	78.28	-0.49	330.17	13.29	29.72	44.67	0
08/09	1800	10.08	100.57	E	13.99	73.36	74.05	-0.69	128.76	13.32	29.73	54.99	0
08/09	1900	6.34	100.01	E	10.65	69.92	70.27	-0.35	11.55	13.38	29.76	59.1	0
08/09	2000	3.84	30.19	NNE	11.9	67.57	67.08	0.49	0.11	13.45	29.79	61.99	0
08/09	2100	3.13	35.53	NE	14.64	65.95	65.5	0.45	0.12	13.5	29.8	68.06	0
08/09	2200	3.67	7.26	N	11.79	64.08	63.51	0.56	0.15	13.54	29.79	71.29	0
08/09	2300	4.21	12.89	NNE	12.35	62.39	61.9	0.49	0.15	13.57	29.79	74.4	0
08/10	2400	4.04	7.02	N	12.71	60.46	59.93	0.53	0.12	13.6	29.79	75.81	0
08/10	100	3.6	352.02	N	13.4	59.85	59.34	0.51	0.09	13.63	29.78	76.78	0
08/10	200	2.39	353.83	N	18.6	59.66	59.22	0.44	0.09	13.64	29.79	76.55	0
08/10	300	3.09	336.23	NNW	11.66	59.07	58.67	0.4	0.09	13.66	29.79	76.25	0
08/10	400	2.88	336.65	NNW	16.12	59.27	58.88	0.4	0.09	13.66	29.79	76.36	0
08/10	500	3.43	335.05	NNW	15.72	59.38	59.01	0.37	6.26	13.65	29.79	74.49	0
08/10	600	3.94	346.69	NNW	13.73	60.27	60.04	0.24	57.48	13.65	29.81	71.75	0
08/10	700	5	351.4	N	12.8	63.14	62.99	0.16	142.35	13.61	29.83	68.44	0
08/10	800	6.74	340.79	NNW	12.08	66.19	66.28	-0.09	341.76	13.56	29.83	62.72	0
08/10	900	8.59	349.95	N	14.27	69.99	70.45	-0.46	505.18	13.48	29.86	56.61	0
08/10	1000	6.45	348.15	NNW	32.63	72.02	72.41	-0.39	596.12	13.43	29.86	53.87	0
08/10	1100	5.31	299.55	WNW	38.61	75.56	76.13	-0.57	874.76	13.35	29.85	48.58	0
08/10	1200	6.8	260.43	W	36.59	76.62	77.7	-1.08	956.58	13.36	29	47	0
Average		6.51			18.06	68.67	68.71	-0.04	333.95	13.48	29.72	60.54	0
Minimum		2.39			10.65	59.07	58.67	-1.08	0.09	13.29	29	42.99	0
Maximum		14.18			38.61	79.49	79.57	0.56	966.93	13.66	29.86	76.78	0
Total													0

New Bedford Harbor

9 Aug - 10 Aug, 99 (1100 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0.66	6.31	1.66	0.66	0	0
NNE	1.33	11.96	2.66	0	0	0
NE	1.66	2.66	2.66	0	0	0
ENE	0.33	1	0.33	0.33	0	0
E	0	1	0.66	0	0	0
ESE	0	0.66	3.32	0.66	0	0
SE	0	0	0	0.33	0	0
SSE	0.33	0	0.33	0.33	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0.33	0	0	0
SSW	0	0	0	0	0	0
SW	0	0.33	0	0	0	0
WSW	0.33	0.66	0	0	0	0
W	0	1	0	0	0	0
WNW	1	1	1	0	0	0
NW	1.66	4.32	1.99	1.99	0.33	0
NNW	3.65	12.96	5.65	6.64	0.33	0

New Bedford Harbor

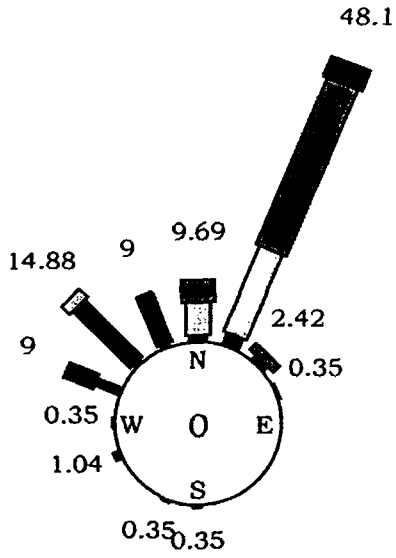
Meteorological Data

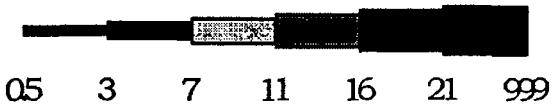
Hourly Summary
15 Aug - 16 Aug, 99 (0800 EST - 0800 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
08/15	800	10.84	28.64	NNE	7.91	65.69	66.44	-0.75	62.97	13.46	29.91	94.31	0.2
08/15	900	12.76	21.68	NNE	9.74	65.44	66.04	-0.6	59.83	13.48	29.93	93.79	0
08/15	1000	15.26	14.67	NNE	11.79	65.74	66.24	-0.51	109.02	13.49	29.95	91.86	0
08/15	1100	14.23	16.4	NNE	10.42	64.46	65.15	-0.68	104.84	13.5	29.97	92.16	0
08/15	1200	15.43	16.92	NNE	9.71	64.72	65.45	-0.73	173.66	13.51	29.96	90.87	0
08/15	1300	13.6	23.76	NNE	9.17	66.02	66.94	-0.92	263.79	13.49	29.96	88.45	0
08/15	1400	13.79	27.33	NNE	10.42	67.5	68.79	-1.29	334.4	13.47	29.96	84.98	0
08/15	1500	14.55	20.65	NNE	10.23	67.06	68.19	-1.13	216.34	13.46	29.97	83.86	0
08/15	1600	12.85	15.58	NNE	10.9	66.21	66.97	-0.75	106.69	13.47	29.98	85.09	0
08/15	1700	9.35	14.61	NNE	11.69	66.35	66.76	-0.41	46.24	13.48	29.99	85.75	0
08/15	1800	11.22	17.47	NNE	9.44	65.99	66.43	-0.44	21.05	13.49	29.99	86.14	0
08/15	1900	10.6	10.34	N	11.86	65.65	65.94	-0.29	2.09	13.5	30.02	86.77	0
08/15	2000	8.91	14.28	NNE	11.03	65.55	65.79	-0.25	0.14	13.5	30.05	87.64	0
08/15	2100	9.3	15.62	NNE	10.13	65.26	65.58	-0.32	0.12	13.51	30.07	87.76	0
08/15	2200	6.9	1.88	N	13.51	65.93	66	-0.06	0.13	13.51	30.07	87.15	0
08/15	2300	5.57	336.38	NNW	12.07	66.23	66.17	0.06	0.13	13.51	30.08	86.35	0
08/16	2400	5.49	327.85	NNW	9.66	65.92	65.88	0.05	0.13	13.51	30.08	86.89	0
08/16	100	5.92	306.16	NW	8.73	65.84	65.8	0.04	0.13	13.51	30.09	88	0
08/16	200	5.29	310.66	NW	8.97	65.35	65.25	0.1	0.13	13.52	30.09	89.39	0
08/16	300	2.64	270.37	W	17.68	65.12	64.92	0.2	0.12	13.54	30.09	89.55	0
08/16	400	2.12	290.87	WNW	13.26	65.82	65.76	0.05	0.12	13.54	30.1	88.18	0
08/16	500	3.73	315.78	NW	8.34	64.24	64.03	0.21	6.8	13.55	30.12	89.64	0
08/16	600	5.71	325.11	NW	8.83	66.21	65.66	0.55	108.57	13.54	30.14	88.28	0
08/16	700	4.15	340.54	NNW	15.34	70.25	70.08	0.17	283.49	13.47	30.16	82.36	0
08/16	800	3.65	23.9	NNE	22.78	74.47	75.25	-0.78	492.11	13.38	30	73	0
Average		8.95			11.34	66.28	66.62	-0.34	95.72	13.5	30.03	87.53	0.01
Minimum		2.12			7.91	64.24	64.03	-1.29	0.12	13.38	29.91	73	0
Maximum		15.43			22.78	74.47	75.25	0.55	492.11	13.55	30.16	94.31	0.2
Total													0.2

New Bedford Harbor

15 Aug - 16 Aug, 99 (0800 EST - 0800 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0.35	0.69	5.19	3.46	0	0
NNE	0	2.08	14.53	28.03	3.46	0
NE	0.35	0.69	0	1.38	0	0
ENE	0	0.35	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0.35	0	0	0	0	0
SSW	0.35	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	1.04	0	0	0	0	0
W	0.35	0	0	0	0	0
WNW	4.15	4.84	0	0	0	0
NW	0.69	12.46	1.73	0	0	0
NNW	0.69	8.3	0	0	0	0

New Bedford Harbor

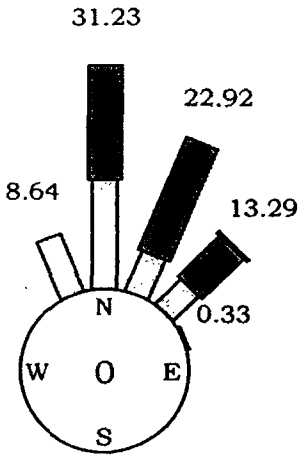
Meteorological Data

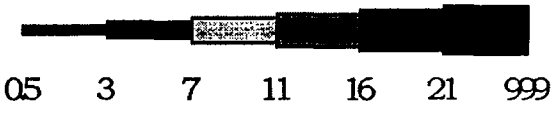
Hourly Summary
21 Aug - 22 Aug, 99 (0800 EST - 0900 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w*m^2	vdc	in. Hg	%RH	in. H_2O
08/21	800	9.49	44.49	NE	8.95	65.08	65.86	-0.78	117.07	13.46	29.97	85.39	0
08/21	900	11.08	49.31	NE	9.48	66.44	67.36	-0.92	142.87	13.44	29.97	84.86	0
08/21	1000	11.43	44.31	NE	9.1	66.56	67.49	-0.93	98.44	13.42	29.95	84.86	0
08/21	1100	9.71	32.4	NNE	8.22	64.87	65.78	-0.9	130.77	13.43	29.94	89.13	0
08/21	1200	10.64	31.36	NNE	9	65.37	66.5	-1.13	173.98	13.43	29.92	90.65	0
08/21	1300	12.26	31.59	NNE	8.52	65.08	66.22	-1.14	149.28	13.43	29.91	91.2	0
08/21	1400	14.44	33.93	NE	9.61	65.02	66.54	-1.52	139.34	13.44	29.9	89.38	0
08/21	1500	14.04	30.78	NNE	9.13	65.36	66.65	-1.29	122.96	13.43	29.89	87.49	0
08/21	1600	11.38	17.82	NNE	10.22	65.17	66.06	-0.89	77.57	13.43	29.89	88.28	0
08/21	1700	10.09	5.5	N	13.4	65.88	66.26	-0.39	35.75	13.43	29.88	88.24	0
08/21	1800	10.88	4.22	N	13.7	65.61	66.04	-0.43	10.71	13.44	29.87	89.02	0
08/21	1900	8.99	357.6	N	14.62	64.86	65.19	-0.33	0.52	13.45	29.87	91.01	0
08/21	2000	9.41	6.38	N	12.67	65.08	65.43	-0.35	0.13	13.45	29.87	90.94	0
08/21	2100	8.32	340.03	NNW	11.75	64.91	65.1	-0.19	0.12	13.45	29.87	91.69	0
08/21	2200	8.17	336.67	NNW	10.17	64.56	64.69	-0.13	0.06	13.46	29.86	92.5	0
08/21	2300	8.52	354.97	N	14.08	64.92	65.14	-0.22	0.06	13.46	29.85	92.29	0
08/22	2400	11.15	10.78	N	10.44	64.77	65.24	-0.47	0.09	13.46	29.84	91.37	0
08/22	100	12.14	0.65	N	14.6	64.21	64.59	-0.38	0.12	13.47	29.84	90.24	0
08/22	200	12.64	356.36	N	16.87	62.41	62.83	-0.42	0.13	13.48	29.85	91.6	0
08/22	300	11.98	358.92	N	15.67	61.62	62.06	-0.44	0.16	13.49	29.85	91.02	0
08/22	400	11.31	356.58	N	16.21	61.27	61.62	-0.35	0.16	13.5	29.86	90.57	0
08/22	500	11.02	354.35	N	17.53	60.67	61.02	-0.35	1.3	13.51	29.88	91.85	0
08/22	600	11.64	357.31	N	15.94	60.72	61.12	-0.4	16.42	13.52	29.9	91.41	0
08/22	700	12.12	0.45	N	15.19	61.06	61.52	-0.46	51.62	13.52	29.9	90.26	0
08/22	800	12.77	5.14	N	13.07	61.76	62.42	-0.66	116.24	13.51	29	89	0
08/22	900	12.93	13.01	NNE	11.51	62.61	63.5	-0.9	182.94	13.49	29	88	0
Average		11.1			12.29	64.07	64.7	-0.63	60.34	13.46	29.82	89.7	0
Minimum		8.17			8.22	60.67	61.02	-1.52	0.06	13.42	29	84.86	0
Maximum		14.44			17.53	66.56	67.49	-0.13	182.94	13.52	29.97	92.5	0
Total													0

New Bedford Harbor

21 Aug - 22 Aug, 99 (0800 EST - 0900 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	15.28	15.95	0	0
NNE	0	0	5.98	16.94	0	0
NE	0	0	4.98	7.97	0.33	0
ENE	0	0	0.33	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	8.64	0	0	0

New Bedford Harbor

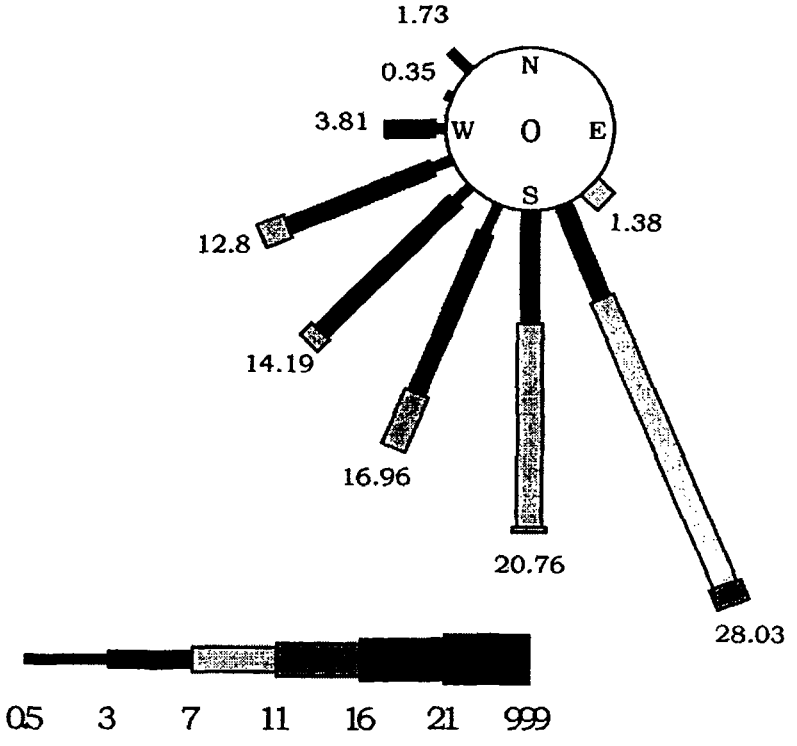
Meteorological Data

Hourly Summary
27 Aug - 28 Aug, 99 (1100 EST - 1100 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
08/27	1100	8.18	128.2	SE	10.41	75.04	75.93	-0.88	335.05	13.37	29.91	88.05	0
08/27	1200	9.34	158.69	SSE	9.83	78.23	79.25	-1.02	567.65	13.31	29.92	80.53	0
08/27	1300	9.42	164.88	SSE	7.93	79.94	80.99	-1.04	653.19	13.27	29.91	76.29	0
08/27	1400	8.38	160.89	SSE	7.29	79.27	80.09	-0.81	289.27	13.25	29.9	75.72	0
08/27	1500	7.5	167.56	SSE	8.1	75.43	76.13	-0.69	204.19	13.28	29.89	82.32	0
08/27	1600	8.96	162.52	SSE	7.76	76.64	77.17	-0.53	236.35	13.31	29.88	85.71	0
08/27	1700	9.83	165.05	SSE	8.89	75.78	76.53	-0.75	238.29	13.31	29.87	85.93	0
08/27	1800	7.53	167.18	SSE	7.8	75.72	76.25	-0.53	132.39	13.32	29.85	84.21	0
08/27	1900	6.24	165.8	SSE	8.21	75.81	76.2	-0.39	62.34	13.33	29.85	85.08	0
08/27	2000	6.1	165.87	SSE	9.14	75.47	75.78	-0.31	3.98	13.34	29.84	87.65	0
08/27	2100	8.06	173.56	S	10.03	75.19	75.53	-0.35	0.23	13.35	29.86	89.31	0
08/27	2200	7.43	185.13	S	12.89	75.04	75.33	-0.3	0.23	13.35	29.86	89.44	0
08/27	2300	7.72	192.96	SSW	12.75	74.02	74.2	-0.18	0.22	13.36	29.85	90.36	0
08/28	2400	4.45	196.18	SSW	16.45	75.01	75.1	-0.09	0.21	13.37	29.84	88.89	0
08/28	100	3.63	216.31	SW	19.27	74.74	74.77	-0.03	0.21	13.38	29.83	88.74	0
08/28	200	4.49	200.86	SSW	16.3	74.01	74.04	-0.03	0.2	13.39	29.82	89.72	0
08/28	300	4.58	201.02	SSW	15.45	74.37	74.41	-0.04	0.2	13.39	29.82	89.94	0
08/28	400	4.32	258	WSW	19.81	74.57	74.56	0.01	0.2	13.38	29.81	88.5	0
08/28	500	2.65	275.87	W	19.03	74.69	74.63	0.06	0.2	13.39	29.8	87.59	0
08/28	600	3.25	227.69	SW	20.86	73.73	73.69	0.04	0.34	13.39	29.79	88.2	0
08/28	700	3.91	245.81	WSW	17.91	72.85	72.76	0.09	27.08	13.41	29.79	89.06	0
08/28	800	5.42	252.78	WSW	15.89	74.63	74.61	0.01	144.61	13.39	29.8	87.56	0
08/28	900	6.83	245.61	WSW	17.94	76.82	77.22	-0.4	255.07	13.34	29.81	83.56	0
08/28	1000	6.23	207.92	SSW	18.87	78.86	79.29	-0.44	339.51	13.32	29.8	79.96	0
08/28	1100	6.56	214.69	SW	23.67	80.67	81.6	-0.93	529.07	13.27	29	77	0
Average		6.44			13.7	75.86	76.24	-0.38	160.81	13.34	29.81	85.57	0
Minimum		2.65			7.29	72.85	72.76	-1.04	0.2	13.25	29	75.72	0
Maximum		9.83			23.67	80.67	81.6	0.09	653.19	13.41	29.92	90.36	0
Total													0

New Bedford Harbor

27 Aug - 28 Aug, 99 (1100 EST - 1100 EST)



Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	1.38	0	0	0
SSE	0	6.57	20.07	1.38	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	7.27	13.15	0.35	0	0
SSW	2.08	11.07	3.81	0	0	0
SW	1.38	11.76	1.04	0	0	0
WSW	1.38	9.69	1.73	0	0	0
W	0.69	3.11	0	0	0	0
WNW	0.35	0	0	0	0	0
NW	1.73	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

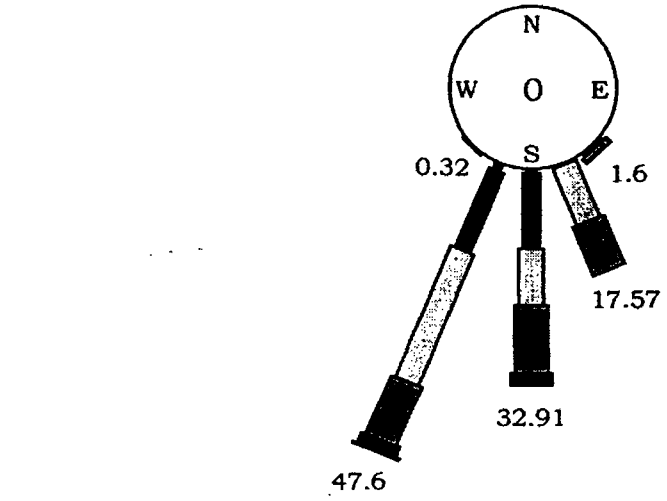
Meteorological Data

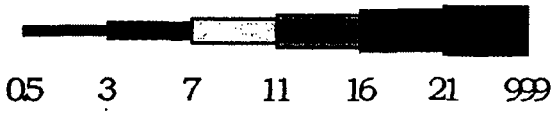
Hourly Summary
9 Sep - 10 Sep, 99 (1000 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
09/09	1000	6.73	190.29	S	15.52	74.08	74.44	-0.36	111.1	13.37	29	88	0
09/09	1100	5.56	191.71	SSW	16.31	75.51	75.88	-0.37	196.75	13.35	29.87	87.77	0
09/09	1200	6.22	175.1	S	11.28	74.96	75.14	-0.17	209.06	13.35	29.86	90.17	0
09/09	1300	9.54	193.95	SSW	13.66	78.16	78.76	-0.6	350.02	13.33	29.86	85.62	0
09/09	1400	12.25	193.71	SSW	13.61	78.97	79.89	-0.92	416.59	13.3	29.85	83.21	0
09/09	1500	14.89	193.46	SSW	11.76	78.83	79.91	-1.08	327.39	13.28	29.85	82.7	0
09/09	1600	11.84	196.96	SSW	16.95	78.61	79.24	-0.62	255.59	13.28	29.85	84.04	0
09/09	1700	9.37	203.62	SSW	19.5	78.16	78.53	-0.37	144.73	13.28	29.85	84.92	0
09/09	1800	9.52	194.49	SSW	15.16	77.33	77.68	-0.35	78	13.3	29.85	85.76	0
09/09	1900	8.9	195.16	SSW	14.84	76.28	76.56	-0.28	14.61	13.31	29.86	87.16	0
09/09	2000	9.17	194.38	SSW	11.22	75.34	75.64	-0.29	0.31	13.33	29.87	89.58	0
09/09	2100	7.2	197.6	SSW	16.15	75.21	75.48	-0.26	0.23	13.34	29.88	90.48	0
09/09	2200	5.88	196.01	SSW	16.4	75.54	75.74	-0.2	0.22	13.35	29.88	90.69	0
09/09	2300	5.65	192.5	SSW	14.06	75.94	76.17	-0.22	0.21	13.35	29.89	90.3	0
09/10	2400	6.09	191.44	SSW	14.72	75.75	76	-0.24	0.21	13.35	29.89	90.59	0
09/10	100	6.7	193.18	SSW	13.77	75.39	75.67	-0.28	0.21	13.35	29.88	90.68	0
09/10	200	4.99	185.31	S	13.97	74.36	74.67	-0.31	0.21	13.35	29.88	92.5	0
09/10	300	6.88	186.76	S	13.66	73.96	74.22	-0.26	0.2	13.36	29.87	93.67	0
09/10	400	7.71	176.96	S	11.88	73.95	74.18	-0.23	0.19	13.37	29.86	94.51	0
09/10	500	10.65	160.58	SSE	8.12	73.85	74.26	-0.41	0.18	13.36	29.85	94.86	0
09/10	600	9.74	150.81	SSE	7.89	74.32	74.7	-0.39	0.2	13.37	29.84	93.26	0
09/10	700	11.94	147.59	SSE	7.7	73.79	74.48	-0.69	18.42	13.36	29.84	92.44	0
09/10	800	12.37	152.05	SSE	7.8	71.45	72.07	-0.63	27.96	13.37	29.83	93.29	0
09/10	900	12.17	172.26	S	11.07	71.5	71.92	-0.42	32.44	13.38	29.83	95.67	0
09/10	1000	12.45	176.26	S	12.02	72.57	72.95	-0.37	136.19	13.38	29.83	95.27	0
09/10	1100	15.3	174.48	S	11.09	73.64	74.3	-0.66	175.1	13.37	29	92	0
09/10	1200	14.47	180.91	S	13.13	71.41	71.73	-0.32	173.58	13.37	29	94	0
Average		9.41			13.08	75.14	75.56	-0.42	98.89	13.34	29.76	90.12	0
Minimum		4.99			7.7	71.41	71.73	-1.08	0.18	13.28	29	82.7	0
Maximum		15.3			19.5	78.97	79.91	-0.17	416.59	13.38	29.89	95.67	0
Total													0

New Bedford Harbor

9 Sep - 10 Sep, 99 (1000 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0.64	0.96	0	0
SSE	0	0.32	9.27	7.99	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0.64	11.5	8.63	10.22	1.92	0
SSW	1.28	13.1	21.73	9.58	1.6	0.32
SW	0	0	0.32	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

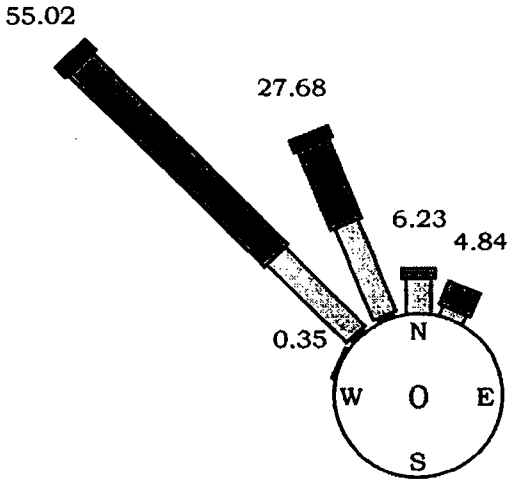
Meteorological Data

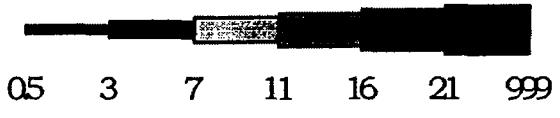
Hourly Summary
22 Sep - 23 Sep, 99 (1000 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
09/22	1000	10.38	2.81	N	15.04	63.35	63.84	-0.48	177.67	13.54	29.6	91.75	0.01
09/22	1100	10.94	11.58	NNE	12.88	64.38	65.24	-0.85	221.9	13.53	29.6	88.8	0
09/22	1200	10.39	4.14	N	15.05	64.15	64.81	-0.65	136.43	13.52	29.59	88.14	0
09/22	1300	9.88	0.86	N	14.89	63.97	64.58	-0.6	181.21	13.52	29.56	89.85	0
09/22	1400	9.13	351.84	N	16.1	64.32	64.72	-0.4	166.43	13.52	29.55	90.02	0
09/22	1500	9.53	354.32	N	16.71	65.68	66.03	-0.35	169.45	13.52	29.54	86.89	0
09/22	1600	9.39	333.46	NNW	14.75	64.75	65.08	-0.34	106.18	13.51	29.53	87.37	0
09/22	1700	9.11	317.64	NW	13.25	63.48	63.94	-0.46	70.17	13.51	29.51	89.39	0
09/22	1800	8.84	321.24	NW	12.92	62.32	62.68	-0.37	27.72	13.53	29.52	91.54	0
09/22	1900	10.56	316.75	NW	10.6	60.27	60.52	-0.25	15.6	13.56	29.52	90.45	0
09/22	2000	10.48	317	NW	10.48	59.33	59.59	-0.26	0	13.59	29.51	88.46	0
09/22	2100	10.23	324.3	NW	12.89	57.77	58	-0.23	-0.03	13.6	29.5	86.93	0
09/22	2200	9.69	332.28	NNW	12.41	56.97	57.12	-0.15	-0.02	13.62	29.5	85.93	0
09/22	2300	11.9	329.75	NNW	11.96	56.13	56.33	-0.2	-0.02	13.63	29.48	86.52	0
09/23	2400	12.3	326.34	NNW	12.49	54.99	55.31	-0.32	-0.03	13.65	29.49	87.22	0
09/23	100	14.55	328.04	NNW	12.61	54.15	54.46	-0.3	0	13.66	29.48	85.89	0
09/23	200	15.23	327.32	NNW	11.8	53.26	53.56	-0.3	0	13.67	29.46	85.94	0
09/23	300	12.74	320.34	NW	12.27	53.69	53.96	-0.26	-0.02	13.68	29.47	84.41	0
09/23	400	14.25	320.74	NW	12.2	53.57	53.83	-0.26	-0.01	13.69	29.46	82.05	0
09/23	500	14.09	323.48	NW	10.69	52.67	52.8	-0.14	-0.01	13.7	29.47	81.42	0
09/23	600	12.84	317.1	NW	11.22	53.36	53.57	-0.21	-0.01	13.7	29.49	79.95	0
09/23	700	12.55	313.18	NW	13.62	53.52	53.75	-0.23	3.81	13.69	29.53	78.26	0
09/23	800	14.8	317.52	NW	13.38	53.68	53.84	-0.16	110.24	13.69	29.57	73.07	0
09/23	900	13.83	320.39	NW	14.63	56.21	56.4	-0.18	304.75	13.64	29.61	64.22	0
09/23	1000	13.84	323.48	NW	14.19	59.32	59.9	-0.57	496.45	13.58	29	56	0
Average		11.66			13.16	58.61	58.95	-0.34	87.51	13.6	29.5	84.02	0
Minimum		8.84			10.48	52.67	52.8	-0.85	-0.03	13.51	29	56	0
Maximum		15.23			16.71	65.68	66.03	-0.14	496.45	13.7	29.61	91.75	0.01
Total													0.01

New Bedford Harbor

22 Sep - 23 Sep, 99 (1000 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	4.84	1.38	0	0
NNE	0	0	1.38	3.46	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0.35	0	0
NW	0	0.69	15.22	37.02	2.08	0
NNW	0	0.69	13.49	11.76	1.73	0

New Bedford Harbor

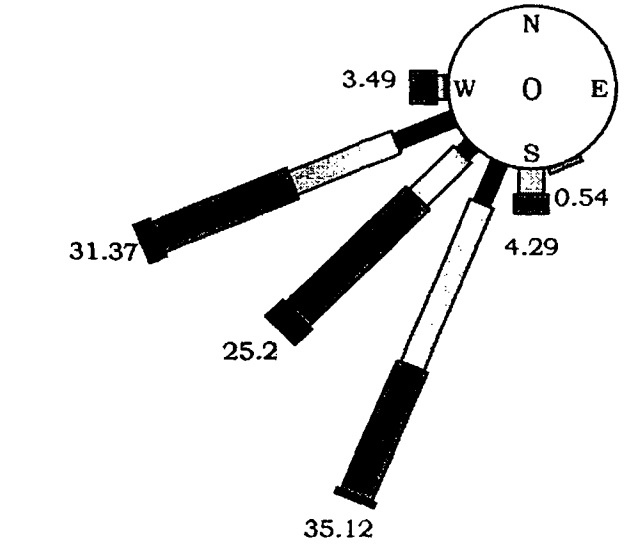
Meteorological Data

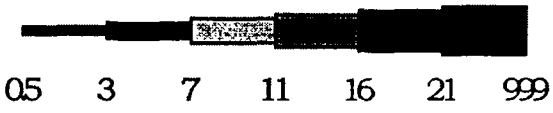
Hourly Summary
8 Oct - 9 Oct, 99 (1300 EST - 2000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
10/08	1300	10.97	161.44	SSE	10.1	57.22	58.3	-1.08	681.21	13.6	30.43	59.25	0
10/08	1400	10.05	189.86	S	20.07	58.96	59.81	-0.84	652.45	13.58	30.42	56.45	0
10/08	1500	10.6	191.68	SSW	17.4	59.65	60.28	-0.62	577.32	13.57	30.4	55.17	0
10/08	1600	11.59	195.43	SSW	15.75	59.36	60.01	-0.65	444.44	13.57	30.38	57.4	0
10/08	1700	11.18	202.26	SSW	19	59.14	59.44	-0.3	271.26	13.57	30.37	60.14	0
10/08	1800	8.54	199.94	SSW	18.07	57.3	57.39	-0.09	43.47	13.6	30.35	64.83	0
10/08	1900	9.9	193.78	SSW	10.64	57.58	57.7	-0.12	1.22	13.62	30.33	68.31	0
10/08	2000	9.51	194.34	SSW	12.07	58.06	58.14	-0.08	-0.03	13.62	30.33	69.15	0
10/08	2100	5.39	206.85	SSW	22.68	58.4	58.31	0.1	-0.03	13.64	30.32	69.69	0
10/08	2200	9.52	199.43	SSW	17.88	59.61	59.69	-0.08	-0.03	13.62	30.3	69.48	0
10/08	2300	10.3	196.37	SSW	16.56	60.23	60.29	-0.05	-0.02	13.61	30.28	70.16	0
10/09	2400	11.59	197.73	SSW	18.26	61	61.13	-0.12	0	13.6	30.25	70.39	0
10/09	100	11.22	200.96	SSW	20.02	61.93	62.03	-0.1	0.03	13.58	30.23	70.8	0
10/09	200	12.34	204.53	SSW	19.5	62.71	62.88	-0.17	0.03	13.56	30.2	72.82	0
10/09	300	13.02	221.82	SW	19.36	63.85	63.91	-0.06	0.05	13.55	30.18	73.66	0
10/09	400	13.48	227.24	SW	17.58	64.31	64.41	-0.1	0.05	13.53	30.17	73.55	0
10/09	500	13.24	227.34	SW	17.32	64.09	64.17	-0.08	0.04	13.53	30.15	75.45	0
10/09	600	15.07	227.01	SW	17.73	64.34	64.43	-0.08	0.06	13.52	30.13	74.21	0
10/09	700	14.96	241.77	WSW	17.04	63.81	64.01	-0.2	0.27	13.52	30.15	75.32	0
10/09	800	11.76	242.54	WSW	16.22	61.72	61.84	-0.11	6.68	13.56	30.14	79.74	0
10/09	900	10.45	232.81	SW	17.71	63.33	63.38	-0.05	39.23	13.55	30.13	78.34	0
10/09	1000	14.35	233.55	SW	17.52	64.49	64.56	-0.06	132.54	13.54	30.12	79.37	0
10/09	1100	12.17	240.88	WSW	19.44	66.18	66.35	-0.17	147.71	13.51	30.12	76.42	0
10/09	1200	13.6	248.12	WSW	17.61	67.05	67.24	-0.19	164.81	13.49	30.11	76.75	0
10/09	1300	11.62	262.75	W	15.31	67.76	67.98	-0.22	201.02	13.47	30	74	0
10/09	1400	12.12	249.73	WSW	16.83	70.1	70.73	-0.63	596.57	13.43	30	70	0
10/09	1500	10.28	248.37	WSW	17.17	71.54	72.1	-0.56	493.73	13.4	30	68	0
10/09	1600	9.91	240.71	WSW	17.34	69.55	69.98	-0.42	290.44	13.4	30	71	0
10/09	1700	7.72	244.85	WSW	17.83	67.61	67.78	-0.17	117.72	13.43	30	74	0
10/09	1800	6.82	239.1	WSW	16.75	66.32	66.38	-0.06	37.51	13.46	30	76	0
10/09	1900	7.31	254.77	WSW	15.03	64.88	64.83	0.05	1.04	13.49	30	78	0
10/09	2000	4.8	248.4	WSW	16.78	64.08	63.95	0.13	0.04	13.52	30	79	0
Average		10.79			17.14	63.01	63.23	-0.23	153.15	13.54	30.19	70.84	0
Minimum		4.8			10.1	57.22	57.39	-1.08	-0.03	13.4	30	55.17	0
Maximum		15.07			22.68	71.54	72.1	0.13	681.21	13.64	30.43	79.74	0
Total													0

New Bedford Harbor

8 Oct - 9 Oc, 99 (1300 EST - 2000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0.54	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	2.41	1.88	0	0
SSW	0	4.29	16.89	13.4	0.54	0
SW	0	1.34	5.9	15.82	2.14	0
WSW	0	5.9	10.46	13.4	1.61	0
W	0	0.27	0.8	2.41	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

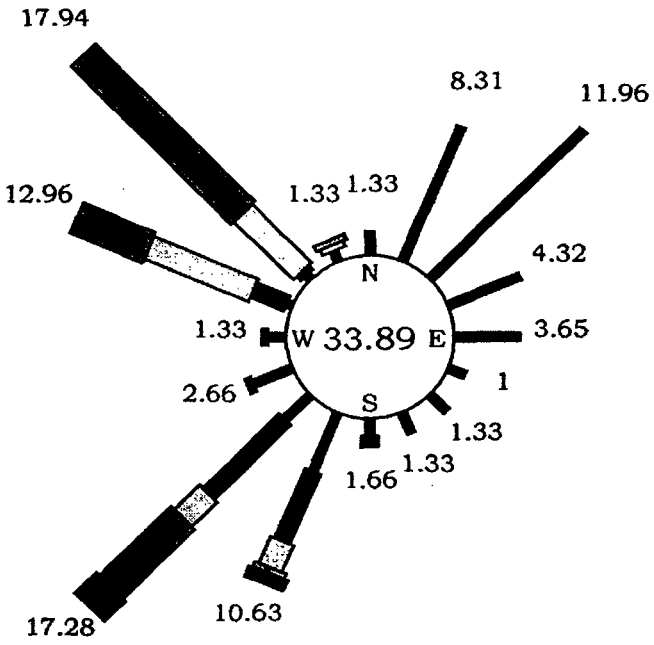
Meteorological Data

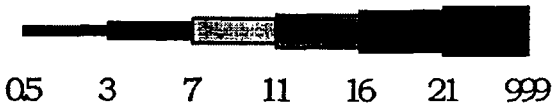
Hourly Summary
25 Oct - 26 Oct, 99 (1000 EST - 1100 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
10/25	1000	10.98	316.45	NW	12.91	46.79	47.25	-0.46	355.89	13.79	30.02	63.08	0
10/25	1100	12.46	311.04	NW	14.75	48.47	49.35	-0.88	497.48	13.69	30.02	57.76	0
10/25	1200	11.1	315.55	NW	18.33	50.63	51.44	-0.81	583.94	13.68	30.02	53.43	0
10/25	1300	11.56	301.14	WNW	16.52	52.5	53.67	-1.17	611.46	13.66	30	50.76	0
10/25	1400	11.8	306.71	NW	15.7	54.22	55.13	-0.91	584.73	13.64	29.99	49.43	0
10/25	1500	13.39	308.62	NW	15.33	55.46	55.99	-0.53	501.27	13.63	29.99	48.46	0
10/25	1600	10.23	302.21	WNW	14.42	55.95	56.46	-0.51	363.81	13.63	29.99	48.32	0
10/25	1700	8.93	299.49	WNW	15.69	55.96	56.02	-0.06	189.22	13.63	30	48.88	0
10/25	1800	4.62	285.1	WNW	14.9	54.29	53.97	0.32	34.21	13.66	30.01	50.88	0
10/25	1900	0.52	229.97	SW	19.78	51.82	51.3	0.52	-0.05	13.72	30.03	56.14	0
10/25	2000	0.5	79.79	E	24.69	47.81	47.12	0.69	-0.11	13.78	30.03	71.12	0
10/25	2100	0.79	13.11	NNE	30.04	46.86	45.67	1.19	-0.2	13.83	30.04	77.3	0
10/25	2200	0.51	31.76	NNE	14.18	44.6	44.15	0.46	-0.21	13.86	30.04	80.95	0
10/25	2300	0.5	35.1	NE	8.6	42.54	42.27	0.27	-0.2	13.89	30.05	83.34	0
10/26	2400	0.5	36.06	NE	10.06	41.76	41.42	0.34	-0.19	13.91	30.04	85.83	0
10/26	100	0.5	27.93	NNE	13.61	41.56	41.16	0.4	-0.19	13.92	30.04	86.71	0
10/26	200	0.5	51	NE	8.81	41.16	41.04	0.12	-0.17	13.93	30.04	87.41	0
10/26	300	0.54	105.81	ESE	14.23	42.2	40.94	1.26	-0.21	13.94	30.03	87.85	0
10/26	400	1.26	133.44	SE	21.16	43.95	41.41	2.54	-0.2	13.94	30.02	88.59	0
10/26	500	1.87	195.79	SSW	29.44	45.73	42.96	2.77	-0.23	13.94	30.01	89.01	0
10/26	600	5.57	218.48	SW	16.5	49.99	49.44	0.55	-0.24	13.88	30.02	83.41	0
10/26	700	5.16	216.15	SW	19.13	51.48	51.05	0.43	-0.01	13.84	30.02	80.83	0
10/26	800	4.55	199.11	SSW	20.41	53.74	53.43	0.31	33.67	13.8	30.01	79.06	0
10/26	900	8.85	208.94	SSW	18.73	59.04	59.08	-0.04	190.19	13.69	30.03	73.62	0.01
10/26	1000	14.09	216.41	SW	21.06	61.41	61.81	-0.4	371.49	13.6	30	69	0
10/26	1100	15.9	221.09	SW	18.19	61.48	61.87	-0.39	285.48	13.52	30	68	0
Average		6.05			17.2	50.05	49.82	0.23	176.95	13.77	30.02	69.97	0
Minimum		0.5			8.6	41.16	40.94	-1.17	-0.24	13.52	29.99	48.32	0
Maximum		15.9			30.04	61.48	61.87	2.77	611.46	13.94	30.05	89.01	0.01
Total													0.01

New Bedford Harbor

25 Oct - 26 Oct, 99 (1000 EST - 1100 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	1.33	0	0	0	0	0
NNE	8.31	0	0	0	0	0
NE	11.96	0	0	0	0	0
ENE	4.32	0	0	0	0	0
E	3.65	0	0	0	0	0
ESE	1	0	0	0	0	0
SE	1.33	0	0	0	0	0
SSE	1.33	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	1	0.66	0	0	0	0
SSW	3.65	4.32	1.66	0.33	0.66	0
SW	1.99	5.98	1.99	5.65	1.66	0
WSW	2.33	0.33	0	0	0	0
W	1	0.33	0	0	0	0
WNW	0.33	1.99	6.31	4.32	0	0
NW	0.33	0.33	4.65	12.62	0	0
NNW	0.66	0	0.33	0.33	0	0

New Bedford Harbor

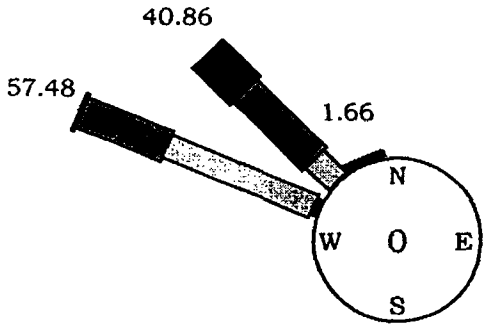
Meteorological Data

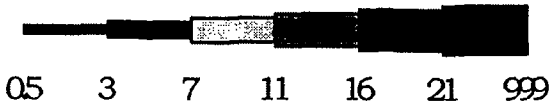
Hourly Summary
15 Nov - 16 Nov, 99 (0900 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
11/15	900	15.62	313.43	NW	13.22	43.33	43.68	-0.35	233.55	13.84	29.46	65.05	0
11/15	1000	16.34	318.51	NW	14.1	44.62	45.12	-0.5	277.57	13.81	29.44	60.64	0
11/15	1100	15.96	318.77	NW	15.93	46	46.78	-0.79	382.82	13.8	29.43	56.62	0
11/15	1200	17.19	316.04	NW	14.47	46.47	47.45	-0.98	364.16	13.77	29.4	53.53	0
11/15	1300	14.92	308.54	NW	15.9	46.51	47.56	-1.05	337.53	13.78	29.39	53.52	0
11/15	1400	15.01	307.71	NW	14.04	45.1	45.77	-0.68	115.39	13.79	29.38	53.28	0
11/15	1500	12.02	311.86	NW	16.38	45.22	45.83	-0.6	129.85	13.81	29.38	52.69	0
11/15	1600	14.75	314.3	NW	13.64	44.15	44.58	-0.43	45.12	13.82	29.38	52.52	0
11/15	1700	15.83	307.08	NW	14.5	42.58	42.89	-0.31	3.92	13.84	29.38	53.1	0
11/15	1800	11.3	306.12	NW	12.92	40.51	40.58	-0.07	-0.21	13.88	29.38	54.71	0
11/15	1900	11.88	308.93	NW	13.56	39.26	39.31	-0.05	-0.23	13.91	29.38	56.48	0
11/15	2000	8.84	302.8	WNW	14.55	38.35	38.39	-0.04	-0.25	13.94	29.38	57.71	0
11/15	2100	8.11	297.04	WNW	14.7	38.08	38.22	-0.14	-0.27	13.95	29.37	59.26	0
11/15	2200	9.49	298.6	WNW	15.86	37.67	37.77	-0.1	-0.26	13.96	29.35	59.43	0
11/15	2300	9.53	300.72	WNW	14.49	37.37	37.52	-0.15	-0.26	13.97	29.33	59.5	0
11/16	2400	10.03	301.54	WNW	14.85	36.47	36.57	-0.1	-0.28	13.98	29.31	60.22	0
11/16	100	9.28	298.48	WNW	15.33	35.4	35.45	-0.04	-0.27	13.99	29.3	61.82	0
11/16	200	9.01	300.52	WNW	14.6	34.66	34.73	-0.07	-0.24	14	29.3	63.37	0
11/16	300	9.91	299.4	WNW	13.16	34.18	34.24	-0.06	-0.23	14.01	29.3	64.68	0
11/16	400	10.15	299.34	WNW	14.44	33.57	33.65	-0.07	-0.21	14.02	29.29	65.14	0
11/16	500	10.68	300.44	WNW	14.7	33.26	33.37	-0.11	-0.21	14.02	29.29	65.01	0
11/16	600	11.35	299.24	WNW	15.71	33.63	33.8	-0.17	-0.23	14.02	29.29	63.54	0
11/16	700	10.25	298.82	WNW	16.35	33.07	33.17	-0.1	8.97	14.03	29.29	63.62	0
11/16	800	10.94	299.1	WNW	15.56	34.6	34.95	-0.35	82.26	14	29.3	62.49	0
11/16	900	12.94	299.17	WNW	16.91	36.58	37.12	-0.54	230.83	13.95	29	60	0
11/16	1000	14.94	303.28	WNW	15.06	38.65	39.48	-0.83	357.76	13.9	29	58	0
Average		12.16			14.81	39.2	39.54	-0.33	98.71	13.91	29.33	59.07	0
Minimum		8.11			12.92	33.07	33.17	-1.05	-0.28	13.77	29	52.52	0
Maximum		17.19			16.91	46.51	47.56	-0.04	382.82	14.03	29.46	65.14	0
Total													0

New Bedford Harbor

15 Nov - 16 Nov, 99 (0900 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	1.66	34.88	20.27	0.66	0
NW	0	0.33	7.31	21.59	11.63	0
NNW	0	0	0	0.33	1.33	0

New Bedford Harbor

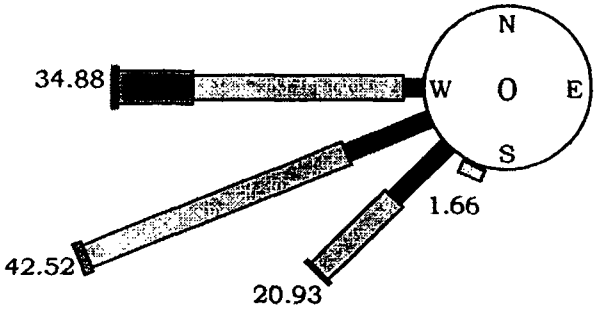
Meteorological Data

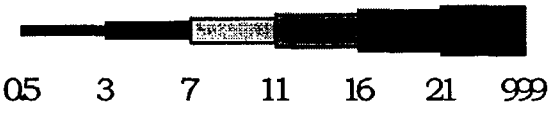
Hourly Summary
16 Dec - 17 Dec, 99 (0900 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
12/16	900	3.14	216.33	SW	15.81	50.81	51.59	-0.79	34.48	13.76	29.79	89.15	0
12/16	1000	5.39	233.73	SW	15.82	52.04	53.06	-1.02	119.77	13.73	29.8	86.92	0
12/16	1100	4.59	231.57	SW	17.3	52.25	53.34	-1.09	148.09	13.71	29.78	85.09	0
12/16	1200	6.67	230.78	SW	17.55	52.43	53.22	-0.8	110.25	13.69	29.74	82.53	0
12/16	1300	8.45	235.31	SW	16.6	53.63	55.12	-1.49	333.04	13.66	29.71	77.02	0
12/16	1400	8.98	235.39	SW	18.68	52.92	53.81	-0.89	133.22	13.66	29.69	75.24	0
12/16	1500	8.71	227.33	SW	16.21	51.63	52.48	-0.85	132.23	13.68	29.68	76.93	0
12/16	1600	9.11	219.27	SW	16.4	49.53	49.94	-0.41	43.44	13.71	29.68	75.13	0
12/16	1700	9.17	230.08	SW	16.12	47.24	47.23	0.01	3.36	13.75	29.69	67.08	0
12/16	1800	8.08	241.45	WSW	13.3	46.1	46.12	-0.02	-0.16	13.79	29.7	68.11	0
12/16	1900	8	247.43	WSW	13.8	45.81	45.81	0	-0.21	13.81	29.72	66.33	0
12/16	2000	11.77	257.82	WSW	14.82	45.49	45.52	-0.03	-0.2	13.82	29.75	60.67	0
12/16	2100	12.78	265.81	W	13.02	44.54	44.46	0.08	-0.19	13.83	29.77	58.49	0
12/16	2200	13.38	264.28	W	13.81	42.86	42.68	0.17	-0.2	13.85	29.79	61.2	0
12/16	2300	10.29	266.5	W	12.39	41.43	41.27	0.17	-0.2	13.88	29.8	65.02	0
12/17	2400	8.88	266.04	W	14.15	40.52	40.35	0.17	-0.21	13.9	29.81	67.55	0
12/17	100	8.02	251.64	WSW	13.53	39.8	39.71	0.09	-0.25	13.92	29.82	68.29	0
12/17	200	7.2	246.17	WSW	14.13	38.68	38.67	0.01	-0.23	13.93	29.83	69.45	0
12/17	300	7.58	248.02	WSW	14.61	37.9	37.88	0.02	-0.2	13.95	29.86	70.82	0
12/17	400	7.02	253.49	WSW	13.87	37.74	37.68	0.07	-0.19	13.96	29.86	71.28	0
12/17	500	8.23	246.5	WSW	14.42	37.1	37.12	-0.02	-0.16	13.96	29.89	72.62	0
12/17	600	8.41	249.56	WSW	13.5	36.96	36.94	0.02	-0.12	13.98	29.92	73.07	0
12/17	700	7.83	264.48	W	11.14	37.02	36.88	0.14	0.23	13.98	29.93	72.67	0
12/17	800	7.41	264.87	W	11.24	37.35	37.54	-0.19	28.01	13.97	29.93	72.08	0
12/17	900	8.59	263.68	W	14.13	39.17	39.61	-0.44	132.77	13.91	29	70	0
12/17	1000	9.78	269.88	W	12.57	41.14	41.75	-0.6	259.51	13.86	29	67	0
Average		8.36			14.57	44.31	44.61	-0.3	56.77	13.83	29.73	71.91	0
Minimum		3.14			11.14	36.96	36.88	-1.49	-0.25	13.66	29	58.49	0
Maximum		13.38			18.68	53.63	55.12	0.17	333.04	13.98	29.93	89.15	0
Total													0

New Bedford Harbor

16 Dec - 17 Dec, 99 (0900 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0.33	1.33	0	0	0
SW	0.33	8.31	11.96	0.33	0	0
WSW	0	10.3	31.23	1	0	0
W	0	2.33	23.59	8.31	0.66	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

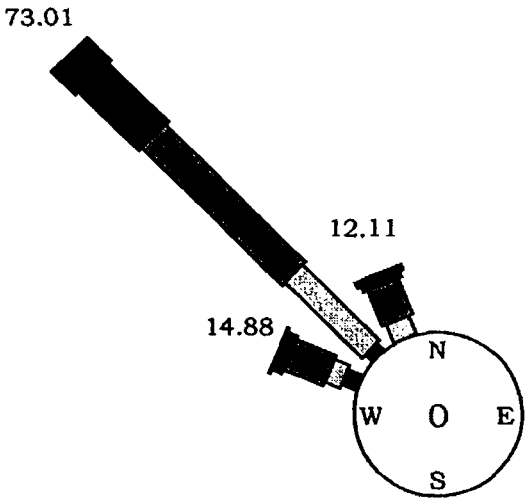
Meteorological Data

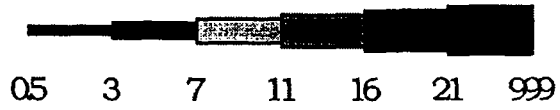
Hourly Summary
14 Jan - 15 Jan, 2000 (1000 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
01/14	1000	19.8	321.66	NW	15.87	13.61	13.92	-0.31	279.81	14.24	30.11	56.13	0
01/14	1100	21.36	321.63	NW	13.19	14.73	15.48	-0.75	390.2	14.23	30.11	54.73	0
01/14	1200	19.34	316.25	NW	13.8	16.61	17.69	-1.08	448.82	14.2	30.12	51.54	0
01/14	1300	20.07	318.79	NW	14.39	17.54	18.73	-1.19	447.37	14.19	30.1	47.11	0
01/14	1400	18.78	308.42	NW	13.83	18.73	20.28	-1.55	389.82	14.18	30.1	43.43	0
01/14	1500	16.66	303.66	WNW	15.15	19.05	20.6	-1.56	282.79	14.18	30.12	42.51	0
01/14	1600	16.17	310.35	NW	15.34	18.65	19.77	-1.12	136.78	14.19	30.15	42.86	0
01/14	1700	14.28	301.74	WNW	14	16.23	16.08	0.14	10.34	14.21	30.18	45.74	0
01/14	1800	11.38	307.09	NW	12.22	15.03	15.01	0.01	0.24	14.24	30.22	48.44	0
01/14	1900	9.15	309.12	NW	12.44	14.44	14.47	-0.03	0.17	14.26	30.24	50.19	0
01/14	2000	7.19	303.64	WNW	14	13.35	13.45	-0.1	0.17	14.27	30.26	53.38	0
01/14	2100	7.46	302.15	WNW	15.95	12.8	12.89	-0.08	0.17	14.29	30.28	55.28	0
01/14	2200	11.55	310.09	NW	13.37	12.1	12.17	-0.07	0.17	14.29	30.29	55.07	0
01/14	2300	14.99	311.91	NW	13.51	11.04	11.13	-0.09	0.17	14.3	30.3	52.29	0
01/15	2400	14.41	316.16	NW	12.87	9.82	9.92	-0.1	0.16	14.3	30.31	51.61	0
01/15	100	14.2	314.7	NW	13.1	8.85	8.96	-0.11	0.17	14.32	30.33	52.59	0
01/15	200	14.35	316.89	NW	13.52	8.25	8.35	-0.1	0.18	14.32	30.34	53.1	0
01/15	300	12.87	316.63	NW	13.91	7.64	7.77	-0.13	0.22	14.33	30.37	54.02	0
01/15	400	11.71	319.36	NW	13.7	7.07	7.2	-0.13	0.19	14.34	30.38	54.81	0
01/15	500	11.71	322.98	NW	12.93	6.82	6.95	-0.14	0.23	14.34	30.4	55.03	0
01/15	600	10.92	325.4	NW	13.57	6.41	6.55	-0.14	0.24	14.35	30.41	55.12	0
01/15	700	11.33	321.15	NW	13.28	6.14	6.29	-0.15	0.44	14.35	30.45	55.21	0
01/15	800	9.94	329.9	NNW	13.86	6.45	6.81	-0.36	26.41	14.35	30.48	55.34	0
01/15	900	11.68	325.14	NW	15.03	8.41	8.85	-0.44	139.67	14.32	30.5	54.26	0
01/15	1000	11.88	324.81	NW	15.13	10.83	11.32	-0.49	280.87	14.28	30	52	0
Average		13.73			13.92	12.02	12.43	-0.4	113.43	14.28	30.26	51.67	0
Minimum		7.19			12.22	6.14	6.29	-1.56	0.16	14.18	30	42.51	0
Maximum		21.36			15.95	19.05	20.6	0.14	448.82	14.35	30.5	56.13	0
Total													0

New Bedford Harbor

14 Jan - 15 Jan, 2000 (1000 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	2.77	2.77	7.27	1.73	0.35
NW	0	1.73	18.34	33.22	14.19	5.54
NNW	0	0	3.46	6.57	1.04	1.04

New Bedford Harbor

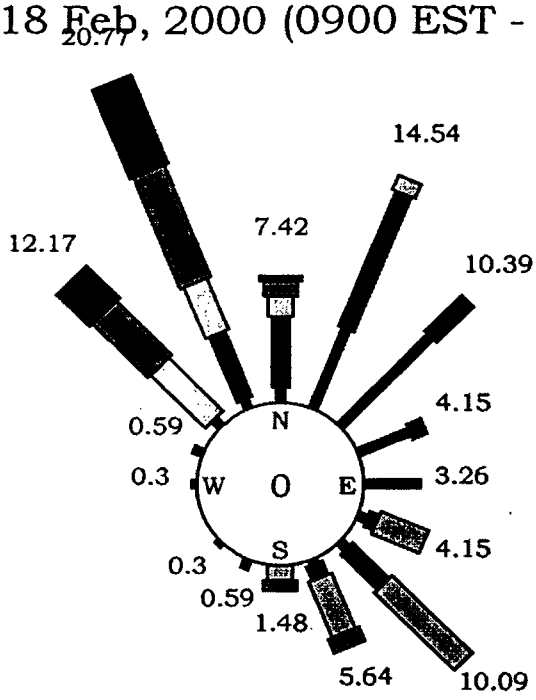
Meteorological Data

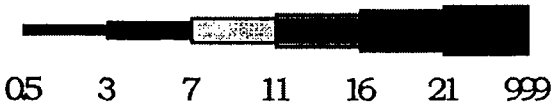
Hourly Summary
17 Feb - 18 Feb, 2000 (0900 EST - 1300 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
02/17	900	18.68	329.55	NNW	14.79	29.38	29.59	-0.21	248.51	14	30.27	50.51	0
02/17	1000	18.16	332.4	NNW	18.1	28.91	29.05	-0.14	409.6	14.01	30.3	45.6	0
02/17	1100	16.97	325.8	NW	16.25	29.56	30.06	-0.51	533.86	14	30.32	42.83	0
02/17	1200	15.32	329.37	NNW	16.34	30.69	31.73	-1.04	598.82	13.99	30.34	41.15	0
02/17	1300	15.56	337.17	NNW	16.99	31.37	32.88	-1.5	610.56	13.98	30.34	39.82	0
02/17	1400	13.12	340.56	NNW	19.28	32.57	34.28	-1.71	562.73	13.98	30.34	38.37	0
02/17	1500	12.76	335.5	NNW	16.19	33.34	34.83	-1.49	455.53	13.98	30.36	36.25	0
02/17	1600	10.15	342.41	NNW	20.75	33.63	35.44	-1.81	302.2	13.98	30.38	35.11	0
02/17	1700	10.15	319.54	NW	14.39	32.8	34.05	-1.25	128.03	13.98	30.4	34.46	0
02/17	1800	7.88	333.03	NNW	13.74	30.63	30.7	-0.07	7.58	14.02	30.42	35.17	0
02/17	1900	7.04	8.3	N	9.61	29.05	28.69	0.36	0.05	14.06	30.43	38.87	0
02/17	2000	5.18	23.04	NNE	9.38	27.1	26.87	0.23	0.14	14.1	30.46	41.02	0
02/17	2100	5.33	14.2	NNE	11.14	25.72	25.51	0.21	0.24	14.13	30.47	42.95	0
02/17	2200	4.47	8.3	N	15.72	24.63	24.59	0.04	0.27	14.15	30.49	44.37	0
02/17	2300	3.99	15	NNE	15.32	23.3	23.36	-0.05	0.26	14.17	30.49	48.32	0
02/18	2400	2.44	16.28	NNE	29.67	22.72	22.93	-0.21	0.26	14.19	30.49	53.13	0
02/18	100	2.2	9.76	N	14.97	22.34	22.65	-0.31	0.26	14.2	30.51	57.71	0
02/18	200	1.82	85	E	26.65	22.13	22.63	-0.51	0.26	14.21	30.5	62.93	0
02/18	300	2.72	19.67	NNE	27.28	21.84	22.18	-0.34	0.23	14.21	30.5	68.54	0
02/18	400	2.26	31.17	NNE	28.76	21.65	22.48	-0.82	0.23	14.2	30.49	70.48	0
02/18	500	1.93	44.06	NE	15.51	23.03	24.19	-1.16	0.25	14.19	30.49	68.19	0
02/18	600	3.07	24.79	NNE	9.71	23.49	24.39	-0.9	0.23	14.18	30.48	65.45	0
02/18	700	2.44	80.71	E	16.26	24.71	25.86	-1.15	1.86	14.17	30.47	65.25	0
02/18	800	3.76	105.56	ESE	13.39	27.58	28.65	-1.07	33.69	14.14	30.48	65.93	0
02/18	900	6.94	144.63	SE	8.44	30.82	31.48	-0.66	79.88	14.09	30	62	0
02/18	1000	8.05	132.21	SE	10.29	31.76	32.28	-0.52	113.53	14.06	30	60	0
02/18	1100	8.73	121.42	ESE	10.36	32.54	33.17	-0.63	128.99	14.03	30	61	0
02/18	1200	9.97	153.65	SSE	9.77	33.46	34.16	-0.7	153.49	14.01	30	62	0
02/18	1300	9.56	147.35	SSE	13.23	32.63	33.6	-0.98	129.02	14	30	67	0
Average		7.95			15.94	28.05	28.7	-0.65	155.19	14.08	30.35	51.88	0
Minimum		1.82			8.44	21.65	22.18	-1.81	0.05	13.98	30	34.46	0
Maximum		18.68			29.67	33.63	35.44	0.36	610.56	14.21	30.51	70.48	0
Total													0

New Bedford Harbor

17 Feb - 18 Feb, 2000 (0900 EST - 1300 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0.89	4.15	1.19	0.89	0.3	0
NNE	5.04	8.61	0.89	0	0	0
NE	7.42	2.97	0	0	0	0
ENE	3.26	0.89	0	0	0	0
E	3.26	0	0	0	0	0
ESE	0.59	0.59	2.97	0	0	0
SE	0.59	2.97	6.53	0	0	0
SSE	0.3	0.89	3.56	0.89	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0.89	0.59	0	0
SSW	0.59	0	0	0	0	0
SW	0.3	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0.3	0	0	0	0	0
WNW	0.59	0	0	0	0	0
NW	0.59	0	4.45	4.45	2.67	0
NNW	0.59	4.15	3.26	7.12	5.64	0

New Bedford Harbor

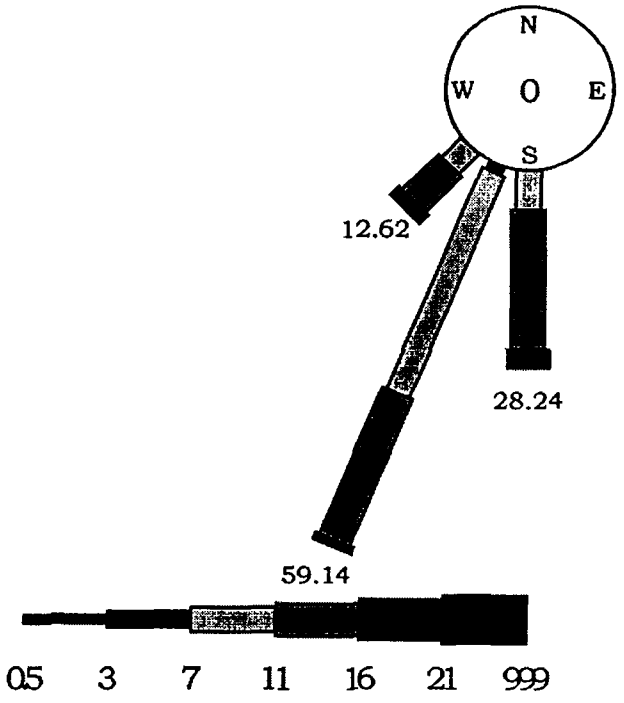
Meteorological Data

Hourly Summary
15 Mar - 16 Mar, 2000 (1000 EST - 1100 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
03/15	1000	11.45	217.13	SW	20.21	52.21	52.85	-0.64	538.78	13.68	30.22	65.57	0
03/15	1100	11.94	213.1	SSW	18.78	52.75	53.81	-1.06	517.59	13.65	30.21	63.71	0
03/15	1200	11.94	195.75	SSW	18.67	52.86	54.56	-1.69	586.48	13.64	30.2	62.13	0
03/15	1300	13.87	192.01	SSW	15.54	52.77	55.31	-2.54	738.31	13.62	30.19	59.86	0
03/15	1400	13.73	195.13	SSW	18.62	53.21	55.38	-2.17	637.14	13.63	30.17	58.76	0
03/15	1500	15.02	209.76	SSW	19.02	53.45	55.23	-1.79	506.81	13.64	30.15	59.1	0
03/15	1600	14.44	212.17	SSW	17.66	53.77	55.18	-1.41	317.45	13.62	30.15	59.5	0
03/15	1700	12.42	210.49	SSW	19.29	53.29	54.31	-1.03	163.75	13.64	30.14	63.06	0
03/15	1800	11.16	203.94	SSW	20.79	50.48	50.73	-0.25	32.15	13.68	30.13	73.26	0
03/15	1900	9.34	199.39	SSW	20.59	48.78	48.91	-0.14	0.08	13.72	30.14	79.5	0
03/15	2000	8.66	192.59	SSW	19.98	48.23	48.16	0.07	-0.13	13.76	30.14	81.49	0
03/15	2100	10.56	201.4	SSW	21.23	51.29	51.06	0.23	-0.14	13.75	30.14	75.15	0
03/15	2200	13.26	189.24	S	16.76	50.21	49.98	0.23	-0.14	13.75	30.14	79.07	0
03/15	2300	13.91	186.48	S	14.51	49.37	49.02	0.35	-0.16	13.75	30.12	81.12	0
03/16	2400	13.74	186.62	S	13.44	49.65	49.43	0.22	-0.17	13.75	30.11	78.82	0
03/16	100	15.07	185.35	S	12.24	50.41	50.25	0.17	-0.17	13.74	30.09	79.5	0
03/16	200	10.72	189.71	S	17.8	51.42	51.3	0.11	-0.16	13.73	30.08	82.53	0
03/16	300	8.29	206.92	SSW	20.36	51.86	52.33	-0.47	-0.14	13.72	30.06	84.6	0
03/16	400	8.75	196.85	SSW	19.22	50.75	51.29	-0.55	-0.12	13.71	30.03	86.59	0
03/16	500	10.89	215.72	SW	16.3	49.73	50.16	-0.43	-0.07	13.72	30.02	92.11	0
03/16	600	9.04	209.62	SSW	19.05	49.18	49.67	-0.49	0.27	13.73	30.01	94.46	0
03/16	700	8.35	204.31	SSW	21.62	48.5	48.9	-0.39	37.1	13.75	30.02	94.12	0
03/16	800	8.29	205.67	SSW	21.19	51.1	51.62	-0.52	183.82	13.73	30.01	89.7	0
03/16	900	10.6	205.96	SSW	18.31	52.96	53.77	-0.82	332.61	13.67	30.02	82.69	0
03/16	1000	10.82	211.17	SSW	17.93	55.66	56.4	-0.74	508.38	13.63	30.01	76.49	0
03/16	1100	12.74	208.68	SSW	18.29	60.37	61.51	-1.14	662.27	13.55	29.99	64.64	0
Average		11.5			18.36	51.7	52.35	-0.65	221.6	13.69	30.1	75.67	0
Minimum		8.29			12.24	48.23	48.16	-2.54	-0.17	13.55	29.99	58.76	0
Maximum		15.07			21.62	60.37	61.51	0.35	738.31	13.76	30.22	94.46	0
Total													0

New Bedford Harbor

15 Mar - 16 Mar, 2000 (1000 EST - 1100 EST)



Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	5.65	19.93	2.66	0
SSW	0	1.33	34.22	22.59	1	0
SW	0	0	3.99	6.98	1.66	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

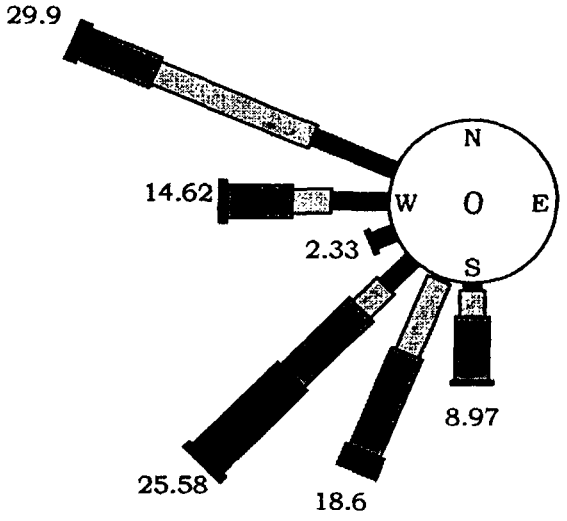
Meteorological Data

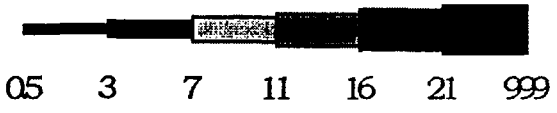
Hourly Summary
4 Apr - 5 Apr, 2000 (0900 EST - 1000 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
04/04	900	19.03	211.85	SSW	18.95	57.01	56.86	0.14	56.82	13.62	29.48	87.78	0
04/04	1000	17.9	217.01	SW	16.59	56.7	56.73	-0.03	108.17	13.61	29.48	88.02	0
04/04	1100	19.32	214.31	SW	17.75	56.67	56.87	-0.2	243.23	13.6	29.48	86.24	0
04/04	1200	17.1	214.61	SW	17.16	56.76	57.18	-0.42	270.76	13.6	29.48	86.34	0
04/04	1300	14.01	206.45	SSW	17.97	56.04	56.46	-0.42	118.03	13.6	29.45	85.9	0
04/04	1400	12.8	195.22	SSW	18.3	55.48	55.54	-0.06	142.59	13.61	29.42	88.93	0
04/04	1500	12.28	208.64	SSW	18.63	56.44	56.31	0.13	48.04	13.61	29.41	93.11	0.12
04/04	1600	13.85	216.5	SW	17.9	54.79	54.68	0.11	47.09	13.62	29.4	94.96	0.07
04/04	1700	11.74	220.87	SW	18.89	54.18	54.12	0.06	27.91	13.64	29.39	95.9	0.03
04/04	1800	10.73	190.83	S	15.67	53.09	52.96	0.13	14.96	13.65	29.36	95.87	0.02
04/04	1900	11.23	191.93	SSW	16.8	53.6	53.61	-0.01	0.53	13.66	29.37	95.62	0.01
04/04	2000	12.3	197.66	SSW	18.76	52.08	51.96	0.12	-0.11	13.68	29.37	94.39	0
04/04	2100	10.16	217.8	SW	18.21	51.91	52	-0.09	-0.08	13.69	29.37	93.94	0.01
04/04	2200	6.41	208.91	SSW	22.1	50.99	51.15	-0.17	-0.1	13.7	29.38	94.73	0.01
04/04	2300	5.49	252.49	WSW	23.22	51.19	51.62	-0.43	-0.11	13.71	29.37	93.44	0
04/05	2400	5.5	268.14	W	16.41	51.83	52.22	-0.38	-0.09	13.71	29.38	92.81	0
04/05	100	8.52	296.5	WNW	16.47	52.37	52.48	-0.11	-0.02	13.71	29.37	88.47	0
04/05	200	7.05	297.79	WNW	15.8	49.26	49.18	0.08	0.03	13.73	29.39	84.14	0.01
04/05	300	7.48	287.93	WNW	15.91	49.54	49.47	0.07	0.01	13.75	29.4	81.12	0
04/05	400	8.14	289.47	WNW	16.88	48.69	48.86	-0.18	-0.01	13.77	29.42	75.1	0
04/05	500	8.69	289.48	WNW	16.79	46.6	46.73	-0.13	-0.03	13.78	29.42	73.45	0
04/05	600	9.18	285.69	WNW	16.93	45.29	45.32	-0.03	12.6	13.8	29.44	71.73	0
04/05	700	10.47	286.19	WNW	17.96	45.06	45.34	-0.28	87.36	13.81	29.46	65.29	0
04/05	800	12.09	283.66	WNW	17.22	44.81	45.15	-0.34	196.79	13.81	29.47	60.89	0
04/05	900	12.82	277.8	W	16.34	46.37	46.86	-0.48	428.37	13.77	29.49	58.51	0
04/05	1000	14.85	282.8	WNW	17.32	47.85	48.5	-0.66	565.77	13.73	29.5	56.21	0
Average		11.51			17.73	51.71	51.85	-0.14	91.1	13.69	29.42	83.96	0.01
Minimum		5.49			15.67	44.81	45.15	-0.66	-0.11	13.6	29.36	56.21	0
Maximum		19.32			23.22	57.01	57.18	0.14	565.77	13.81	29.5	95.9	0.12
Total													0.28

New Bedford Harbor

4 Apr - 5 Apr, 2000 (0900 EST - 1000 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	0	0	0	0	0
NE	0	0	0	0	0	0
ENE	0	0	0	0	0	0
E	0	0	0	0	0	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0.66	2.33	5.65	0.33	0
SSW	0	0.33	6.98	9.3	1.99	0
SW	0	3.32	2.99	8.31	10.3	0.66
WSW	0	1.99	0.33	0	0	0
W	0	4.98	3.32	5.65	0.66	0
WNW	0	7.64	14.62	6.64	1	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

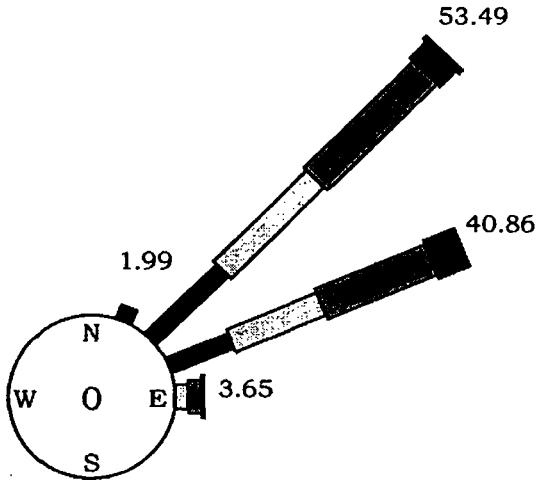
Meteorological Data

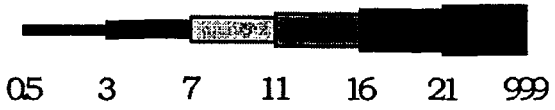
Hourly Summary
17 Apr - 18 Apr, 2000 (1100 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
04/17	1100	14.64	65.41	ENE	10.43	49.28	50.03	-0.75	580.92	13.73	30.17	63.56	0
04/17	1200	14.32	66.13	ENE	14.97	49.63	50.89	-1.26	629.14	13.7	30.17	61.58	0
04/17	1300	13.43	64.14	ENE	12.56	47.94	49.02	-1.08	421.88	13.71	30.17	61.78	0
04/17	1400	14.39	60.56	ENE	11.87	47.61	48.84	-1.23	471.38	13.72	30.16	61.99	0
04/17	1500	14.13	59.82	ENE	10.47	46.58	47.51	-0.92	332.74	13.73	30.15	63.38	0
04/17	1600	12.48	58.34	ENE	9.86	46.06	46.98	-0.92	237.58	13.74	30.15	64.55	0
04/17	1700	11.15	69.23	ENE	11.79	44.46	45.02	-0.56	73.12	13.77	30.16	67.82	0
04/17	1800	9.59	77.34	ENE	9.95	41.49	41.79	-0.3	20.49	13.82	30.16	74.56	0.01
04/17	1900	7.9	67.96	ENE	8.46	40.37	40.66	-0.3	2.18	13.86	30.16	81.59	0.01
04/17	2000	8.69	64.05	ENE	8.87	39.67	40.04	-0.38	-0.1	13.88	30.16	85.2	0.03
04/17	2100	7.28	47.82	NE	9.45	39.59	39.93	-0.35	-0.21	13.89	30.17	87.33	0.03
04/17	2200	5.74	35.15	NE	9.04	39.87	40.13	-0.27	-0.17	13.9	30.18	88.14	0.01
04/17	2300	4.92	52.58	NE	8.75	40.03	40.53	-0.5	-0.12	13.9	30.17	87.38	0
04/18	2400	5.29	53.18	NE	8.65	40.27	40.81	-0.54	-0.01	13.9	30	86	0
04/18	100	5.35	50.31	NE	9.55	40.02	40.52	-0.5	0.05	13.9	30.15	87.5	0.01
04/18	200	6.27	63.62	ENE	8.69	40.1	40.51	-0.41	0.02	13.9	30.14	87.31	0
04/18	300	6.92	58.04	ENE	8.35	39.94	40.31	-0.37	0	13.9	30.12	88.43	0.01
04/18	400	9.25	48.45	NE	8.46	40.58	40.83	-0.25	-0.01	13.9	30.11	87.51	0
04/18	500	10.55	37.6	NE	7.78	41.33	41.52	-0.19	0.06	13.9	30.1	85.64	0
04/18	600	10.22	45.2	NE	8.14	41.88	42.06	-0.18	3.27	13.9	30.1	81.82	0
04/18	700	9.29	45.24	NE	8.42	42.81	43.08	-0.27	21.28	13.87	30.13	80.27	0
04/18	800	12.71	51.65	NE	10.35	43.94	44.25	-0.32	76.54	13.84	30.13	79.5	0
04/18	900	13.75	51.57	NE	9.6	45.13	45.48	-0.35	127.28	13.83	30.13	78.23	0
04/18	1000	16.55	51.77	NE	10.16	45.51	45.9	-0.39	135.49	13.8	30.13	77.29	0
04/18	1100	16.31	56.43	ENE	10.87	45.59	45.93	-0.34	98.37	13.71	30	77	0
04/18	1200	17.17	60.61	ENE	9.98	45.05	45.28	-0.23	84.93	13.78	30	78	0
Average		10.7			9.83	43.26	43.76	-0.51	127.54	13.83	30.13	77.82	0
Minimum		4.92			7.78	39.59	39.93	-1.26	-0.21	13.7	30	61.58	0
Maximum		17.17			14.97	49.63	50.89	-0.18	629.14	13.9	30.18	88.43	0.03
Total													0.11

New Bedford Harbor

17 Apr - 18 Apr, 2000 (1100 EST - 1200 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0	0	0	0
NNE	0	1.99	0	0	0	0
NE	0	12.96	16.94	19.93	2.99	0.66
ENE	0	8.64	12.62	15.28	4.32	0
E	0	0	1.66	1.66	0.33	0
ESE	0	0	0	0	0	0
SE	0	0	0	0	0	0
SSE	0	0	0	0	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	0	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0	0	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

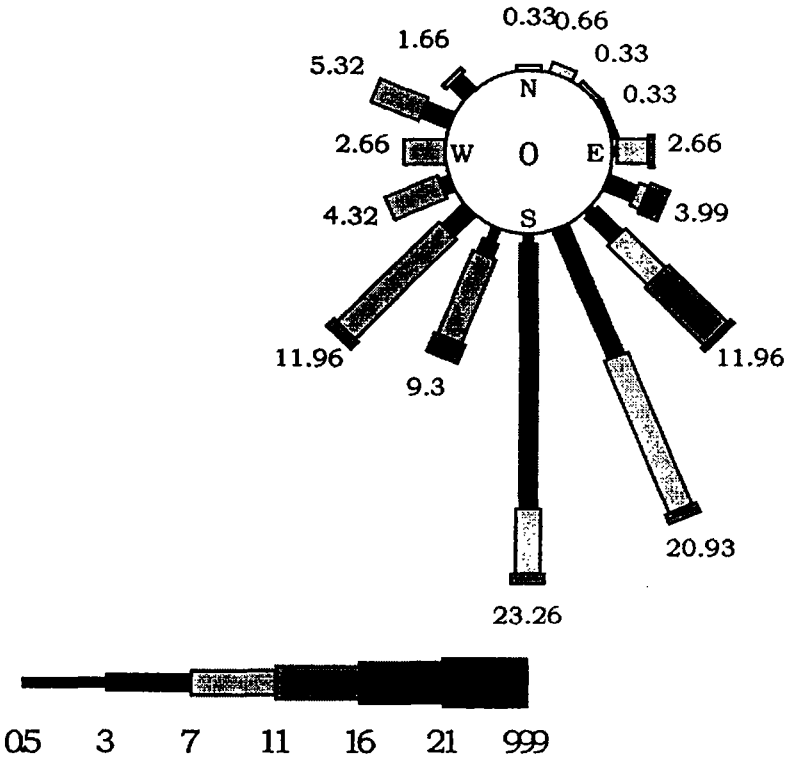
Meteorological Data

Hourly Summary
8 May - 9 May, 2000 (1100 EST - 1200 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
05/08	1100	7.02	273.7	W	21.25	86.13	87.1	-0.97	736.98	13.15	29.81	56.25	0
05/08	1200	7.27	293.53	WNW	23.72	88.69	89.6	-0.91	787.95	13.12	29.81	53.37	0
05/08	1300	8.45	275.85	W	21.2	89.44	91.17	-1.73	787.55	13.11	29.79	51.35	0
05/08	1400	8.22	267.92	W	29.28	90.44	92.66	-2.21	820.49	13.11	29.78	50.15	0
05/08	1500	11.27	202.08	SSW	20.37	89.28	91.57	-2.29	783.63	13.11	29.76	50.63	0
05/08	1600	11.86	88.64	E	24.71	82.82	83.27	-0.45	437.59	13.15	29.76	59.26	0
05/08	1700	10.18	133.51	SE	26.91	72.88	73.85	-0.97	178.95	13.23	29.76	65.32	0
05/08	1800	11.52	109.4	ESE	14.23	74.09	75.86	-1.77	366.31	13.27	29.76	66.11	0
05/08	1900	12.24	138.38	SE	9.73	70.11	71.21	-1.1	104.37	13.31	29.76	68.36	0
05/08	2000	6.62	176.04	S	11.94	65.45	66.05	-0.6	15.32	13.39	29.75	74.44	0
05/08	2100	4.76	131.14	SE	10.49	64.34	64.43	-0.09	0.21	13.45	29.74	80.02	0
05/08	2200	7.75	155.78	SSE	7.95	62.96	63.01	-0.05	0.08	13.49	29.75	81.4	0
05/08	2300	9.07	147.95	SSE	8.49	59.8	59.92	-0.12	0.09	13.53	29.74	83.8	0
05/09	2400	5.39	152.7	SSE	25.29	58.76	59.21	-0.45	0.07	13.56	29.72	86.08	0
05/09	100	8.24	165.06	SSE	7.54	58.88	59.3	-0.43	0.05	13.58	29.7	85.89	0
05/09	200	8.43	166.9	SSE	8.79	58.89	59.33	-0.44	0.04	13.58	29.67	85.85	0
05/09	300	6.2	184.32	S	13.39	59.87	60.47	-0.6	0.05	13.58	29.65	84.4	0
05/09	400	4.53	176.9	S	13.7	60.94	61.62	-0.67	0.07	13.57	29.63	83.28	0
05/09	500	4.04	181.62	S	15.44	62.26	62.9	-0.64	0.07	13.56	29.61	81.87	0
05/09	600	4.18	178.06	S	12.99	61.58	61.9	-0.32	4.93	13.56	29.61	83.14	0
05/09	700	4.72	167.6	SSE	10.5	62.79	63.3	-0.51	74.06	13.56	29.61	82.54	0
05/09	800	5.65	201.13	SSW	17.08	68.17	68.7	-0.53	215.65	13.5	29.62	78.85	0
05/09	900	8.06	232.95	SW	17.67	72.93	73.55	-0.62	325.73	13.41	29.63	74.12	0
05/09	1000	7.96	217.03	SW	18.37	78.45	79.25	-0.8	585.9	13.31	29.62	67.1	0
05/09	1100	8.33	217.24	SW	17.21	81.54	82.46	-0.92	706.63	13.24	29.62	62.76	0
05/09	1200	8.07	199.8	SSW	20.7	84.07	85.26	-1.19	826.27	13.19	29.62	60.37	0
Average		7.69			16.5	71.75	72.57	-0.82	298.42	13.37	29.7	71.41	0
Minimum		4.04			7.54	58.76	59.21	-2.29	0.04	13.11	29.61	50.15	0
Maximum		12.24			29.28	90.44	92.66	-0.05	826.27	13.58	29.81	86.08	0
Total													0

New Bedford Harbor

8 May - 9 May, 2000 (1100 EST - 1200 EST)



Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0	0	0.33	0	0	0
NNE	0	0	0.66	0	0	0
NE	0	0	0.33	0	0	0
ENE	0	0	0	0	0.33	0
E	0.33	0	1.99	0.33	0	0
ESE	0	1.99	0.66	1.33	0	0
SE	0.33	2.33	3.65	5.32	0.33	0
SSE	0	9.3	10.96	0.66	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0.66	17.61	4.32	0.66	0	0
SSW	1	1	5.98	1.33	0	0
SW	0	1.99	9.3	0.66	0	0
WSW	0	0.66	3.65	0	0	0
W	0	0	2.66	0	0	0
WNW	0	1.99	3.32	0	0	0
NW	0	1.33	0.33	0	0	0
NNW	0	0	0	0	0	0

New Bedford Harbor

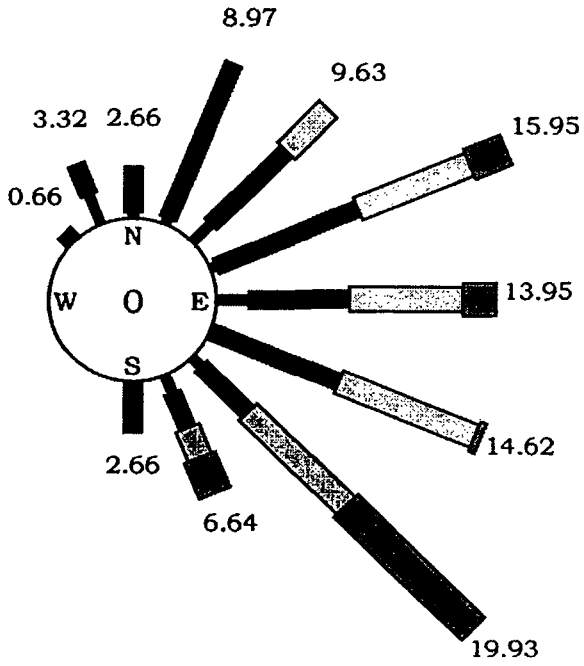
Meteorological Data

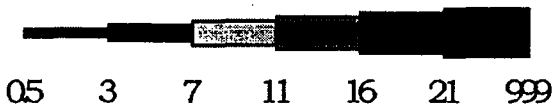
Hourly Summary
30 May - 31 May, 2000 (1000 EST - 1100 EST)

Date	Time	Wind Speed	Wind Direction		STD	Temp. (10m)	Temp. (2m)	Delta Temp	Solar Radiation	Batt.	Barr. Press.	Relative Humidity	Precip.
Mo. Day	EST	mph	deg	compass	deg	°F	°F	°F	w•m^2	vdc	in. Hg	%RH	in. H_2O
05/30	1000	9.38	40.64	NE	10.12	55.26	55.95	-0.69	192.63	13.67	30.24	79.41	0
05/30	1100	9.84	54.87	NE	12.32	56.92	57.85	-0.93	302.71	13.64	30.25	75.68	0
05/30	1200	10.48	77.38	ENE	14.91	58.5	59.42	-0.93	451.33	13.6	30.25	72.32	0
05/30	1300	9.64	69.19	ENE	14.14	61.04	62.51	-1.47	699.02	13.55	30.25	68.29	0
05/30	1400	9.68	83.08	E	15.96	62.58	64.87	-2.3	829.3	13.53	30.25	64.25	0
05/30	1500	9.43	97.97	E	16.84	63.37	65.63	-2.26	804.25	13.52	30.24	62.14	0
05/30	1600	12.77	140.84	SE	13.61	59.04	62.54	-3.51	726.31	13.51	30.23	66.28	0
05/30	1700	14.42	136.88	SE	10.31	55.76	59.41	-3.66	638.8	13.52	30.21	70.4	0
05/30	1800	11.62	140.6	SE	10.19	56.93	59.69	-2.76	464.78	13.53	30.21	72.7	0
05/30	1900	9.64	141.55	SE	10.73	57.66	58.92	-1.26	265.66	13.54	30.22	74.25	0
05/30	2000	6.44	133.84	SE	10.8	56.63	57.14	-0.51	59.73	13.58	30.23	75.76	0
05/30	2100	7.41	131.77	SE	8.44	54	54.19	-0.18	3.31	13.63	30.22	79.47	0
05/30	2200	7.53	111.58	ESE	9.86	52.47	52.66	-0.19	-0.2	13.68	30.21	82	0
05/30	2300	7.97	115.57	ESE	9.93	51.68	51.82	-0.14	-0.25	13.7	30.21	82.96	0
05/31	2400	4.47	103.18	ESE	11.59	51.42	51.67	-0.25	-0.29	13.72	30.21	84.23	0
05/31	100	3.07	81.79	E	22.7	51.66	52.27	-0.61	-0.27	13.73	30.21	85.25	0
05/31	200	5.17	13.12	NNE	6.09	50.48	50.84	-0.36	-0.29	13.74	30.21	87.01	0
05/31	300	5.59	16.28	NNE	9.02	50.76	51.2	-0.44	-0.27	13.74	30.2	87.31	0
05/31	400	4.34	63.15	ENE	8.82	51.1	51.82	-0.72	-0.27	13.73	30.18	86.95	0
05/31	500	4.95	75.04	ENE	11.22	51.55	52.33	-0.77	-0.25	13.73	30.18	87.01	0
05/31	600	5.1	55.22	NE	14.96	51.11	51.86	-0.75	6.46	13.73	30.18	88.08	0
05/31	700	4.7	64.86	ENE	19.25	50.88	51.8	-0.92	42.59	13.72	30.18	89.11	0
05/31	800	3.87	354.43	N	17.84	51.09	52.2	-1.11	81.56	13.72	30.2	89.25	0
05/31	900	3.14	8.03	N	18.11	52.8	54.3	-1.49	197.3	13.7	30.2	87.6	0
05/31	1000	2.45	120.22	ESE	41.74	59.44	61.25	-1.81	624.5	13.6	30.2	79.69	0
05/31	1100	5.42	170.07	S	16.09	63.54	64.94	-1.4	803.52	13.49	30.2	74.97	0
Average		7.25			14.06	55.29	56.5	-1.21	276.6	13.64	30.21	78.94	0
Minimum		2.45			6.09	50.48	50.84	-3.66	-0.29	13.49	30.18	62.14	0
Maximum		14.42			41.74	63.54	65.63	-0.14	829.3	13.74	30.25	89.25	0
Total													0

New Bedford Harbor

30 May - 31 May, 2000 (1000 EST - 1100 EST)





Scale (mph)

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
N	0.33	2.33	0	0	0	0
NNE	0.33	8.64	0	0	0	0
NE	1.33	5.32	2.99	0	0	0
ENE	0.33	7.64	5.98	1.99	0	0
E	1.66	4.98	5.65	1.66	0	0
ESE	0	6.98	7.31	0.33	0	0
SE	0.66	3.32	6.98	8.97	0	0
SSE	1	1.99	1.66	1.99	0	0

Wind Speed (mph) Percent Occurance

	0.5-3	3-7	7-11	11-16	16-21	>21
S	0	2.66	0	0	0	0
SSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
WSW	0	0	0	0	0	0
W	0	0	0	0	0	0
WNW	0	0	0	0	0	0
NW	0	0.66	0	0	0	0
NNW	1.66	1.66	0	0	0	0

Appendix H

Appendix H: Field Data Sheets and Chain of Custody Forms

The information contained in this section includes the field sample data report sheets and the chain of custody forms by sampling event date.

PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK Gouveia — Date: 06/04 – 06/05/99

Sample Date: 6-4-99 | Sample Type: PCB

Remote Start Time: 1000 | Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK Gouveia — Date: 06/05/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK Gouveia				Technician: MARK Gouveia				Technician: MARK Gouveia					
		Technician:				Technician:				Technician:					
		Date: 6-4-99				Date: 6-4-99				Date: 6-5-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~AM/PM~~ EST	Run (min.)
21	060499Z1	0844	375.88	29.5	MAG	1405	379.97	28.0	MAG	1025	399.61	30.0	MAG	1000	1423.8
25	060499Z5	0910	5769.06	29.0	MAG	1443	5773.72	29.0	MAG	1044	5790.77	29.0	MAG		1302.60
24	060499Z4	0930	590.46	29.0	MAG	1452	595.17	31.0	MAG	1058	612.48	34.0	MAG		1321.20
24D	060499Z10	0930	660.72	31.0	MAG	1452	665.43	33.5	MAG	1058	680.53	36.0	MAG		1188.60
22	060499Z2	0940	594.30	30.0	MAG	1501	599.54	41.0	MAG	1112	616.51	51.0	MAG		1332.60
23	060499Z3	1054	6109.77	28.0	MAG	—	—	—		1000	6132.87	28.0	MAG	↓	1386.0

1 Point Check
MAG. 1.7 + 1.7
MAG. 30.0
Temp 24.4
Press. 756.9
Orig. Flow Rate 226.3
1 Point Check Flow Rate 228.7

Good Calc.
Lock NOT on MAG Loss

TD99-051
03/23/99

PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK Gouveia — Date: 6/10 - 6/11/99

Sample Date: 6/10/99 — Sample Type: PCB

Remote Start Time: 1400 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK Gouveia. — Date: 6/11/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK Gouveia				Technician: MARK Gouveia				Technician: MARK Gouveia					
		Technician:				Technician:				Technician:					
		Date: 6-10-99				Date: 6-11-99				Date: 6-11-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
Z3	06109923	0930	6133.05	25.5	MAG	—	—	—	MAG	1400	6157.28	26.0	MAG	1400	1453.80
Z4	06109924	1200	0612.48	29.0	MAG	1054	0634.17	26.0	MAG	1430	0636.86	27.0	MAG		1468.80
Z4D	06109924D	1210	0680.53	30.5	MAG	1054	0702.25	29.0	MAG	1430	0705.03	28.0	MAG		1470.80
Z5	06109925	1225	0529.77	29	MAG	1106	5312.73	29.0	MAG	1505	0535.30	28.0	MAG		1471.80
Z2	06109922	1240	0616.68	30	MAG	1040	0638.14	26.0	MAG	1445	0641.15	27.0	MAG		1468.20
Z1	06109921	1300	0399.61	30	MAG	1030	0420.72	26.0	MAG	1535	0423.52	26.0	MAG		1434.60
Z6	—	—	—	—	MAG	—	—	—	MAG	—	—	—	MAG.		—

TD99-051
03/23/99

PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK GOUVEIA — Date: 6/16/99

Sample Date: 6/16/99 — Sample Type: PCB

Remote Start Time: 1000 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOUVEIA — Date: 6/17/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK GOUVEIA				Technician: MARK GOUVEIA				Technician: MARK GOUVEIA					
		Technician:				Technician:				Technician:					
		Date: 6/16/99				Date: 6/16/99				Date: 6/17/99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~(MST)~~ EST	Run (min.)
21	06169921	0830	00423.56	29.0	MAG	1506	00428.77	28	MAG	1020	0446.98	29	MAG	1000	1405.20
22	06169922	0755	00641.15	29.0	MAG	1448	00645.28	28	MAG	1035	06.6526	28	MAG	↓	1446.60
24	06169924	0810	00637.05	28	MAG	1442	00641.14	28	MAG	1045	065723	30	MAG		1330.80
24D	06169240	0810	00705.11	30	MAG	1442	00709.19	29	MAG	1048	072937	29	MAG		1455.60
25	06169925	0820	05315.33	28	MAG	1430	05319.42	28	MAG	1105	053956	29	MAG		1453.80
23	06169923	1350	06151.32	25	MAG	—	—	26	—	1130	06179.65	25	MAG	1350	1338.60

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03/23/99

PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK GOUVEIA. Date: 6-21-99

Sample Date: 6-22-99 Sample Type: PCB

Remote Start Time: 1000 Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOUVEIA Date: 6-23-99

ID Numbers	Installation	Flow Check	Removal	Sample Start/Run Time
	Technician: MARK Gouveia	Technician: MAG MARK Gouveia	Technician: MARK GOUVEIA	
	Technician:	Technician:	Technician:	
	Date: 6/21/99	Date: 6/22/99	Date: 6/23/99	

Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~(MST)~~ ESS	Run (min.)
21	06229921	1455	0447.01	29.0	MAG	1500 ~~0451.99~~	0451.99	29.0	MAG	1029	0470.51	27.5	MAG	1000	1410.00
22	06229922	1400	00665.29	29.0	MAG	1512	0669.11	28.0	MAG	1107	0689.17	28.5	MAG		1432.80
23	06229923	1000	06179.67	25.0	MAG	COVID COM.	NOT GET ELECTRIC.		MAG	1015	06203.80	25	MAG		1447.80
24	06229924	1430	0659.26	29.0	MAG	1525	0665.85	28.5	MAG	1125	0683.39	27.5	MAG		1447.80
24D	06229924D	1430	0729.41	30.0	MAG	NOT RUNNING RESTARTED UNIT.			MAG	1125	0849.55	30	MAG		1208.4
25	06229925	1440	05339.59	29.0	MAG	1538	05344.78	28.0	MAG	1140	05363.51	27	MAG		1435.20
26	06229926	1200	00006.42	32.0	MAG	1550	00012.19	32.0	MAG	1000	00030.28	30	MAG		1431.60

PCB Sample Data Sheet

Page 1 of ___

Prepared By: MARK GOUVEIA — Date:

Sample Date: 6-28-99 — Sample Type: PCB

Remote Start Time: — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: — Date:

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK GOUVEIA				Technician: MARK GOUVEIA				Technician: MARK GOUVEIA					
		Technician:				Technician:				Technician:					
		Date: 6-28-99				Date: 6-28-99				Date: 6-29-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~(MST)~~ LOCAL	Run (min.)
21	06289921	0810 0930	00470.52 30.41	29.5 32.0	MAG	1400	00693.78	30.0	MAG	1038 PARK	00491.98	29.0	MAG	1000	1467.60
22	06289922	0940	00689.38	30.0	MAG	1420	00491.67	27.0	MAG	1047	00714.54	30	MAG	1000	1518.6
23	06289923	0955	[illegible]	32.0	MAG	—	—	—	MAG	1000	06227.96	26.0	MAG	1000	1390.80
24	06289924	0900	00163.34	29.0	MAG	1415	00687.47	29.0	MAG	1110	00707.54	28.0	MAG	1000	1470.6
24D	06289924D	0900	00749.62	31.0	MAG	1415	00753.62	31.0	MAG	1110	00774.07	30.0	MAG	1000	1467
25	06289925	0830	00563.52	29.0	MAG	1430	00367.6	28.0	MAG		00538.29	28.0	MAG	1000	1456.2
26	06289926	0930	30.41	32	MAG	1508	[illegible]	31.0	MAG	1006	00497.06	30	MAG	1000	1000

1448.06

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PCB Sample Data Sheet

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Prepared By: M. Gouveia — Date: 7-6-99

Sample Date: 7-6-99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: — Date:

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Gouveia				Technician: M. Gouveia				Technician:					
		Technician:				Technician:				Technician:					
		Date: 7/6/99				Date:				Date: 7/7/99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	07068921	0745	00485.01	30.0	MAG					0825	00518.13	30.0	MAG	0800	1390.2
22	07068922	0805	00714.57	30.0	MAG					0838	00739.07	30.0	MAG	0800	1470.2
23	07068923	0830	00227.98	26.0	MAG					0908	00257.89	27.0	MAG	0800	1434.6
24	07068924	0800	00207.85	30.0	MAG					0855	00230.66	31.0	MAG	0800	1362.6
24D	07068924D	0800	00177.28	31.0	MAG					0855	00177.81	34.0	MAG	0800	1437
25	07068925	0755	05388.31	30.0	MAG					0845	05417.54	29.5	MAG	0800	1453.9
26	07068926	0840	00447.07	33.0	MAG					0810	00470.59	33.0	MAG	0800	1411.2

1470.0 on spreadsheet

1231.8 on spreadsheet

NOTE: DID NOT DO FLOW CHECK ON 7/6/99 DUE TO A PROBLEM ON-SITE THAT HAD TO BE ADDRESSED.

TD99-051
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PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK GOUVEIA. Date: 7-10-99

Sample Date: 7-10-99 Sample Type: PCB

Remote Start Time: 0800 Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOUVEIA Date: 7-11-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. GOUVEIA				Technician: M. GOUVEIA				Technician: M. GOUVEIA					
		Technician:				Technician:				Technician:					
		Date: 7/09/99				Date: 7/10/99				Date: 7/11/99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (~~MST~~ EST)	Run (min.)
21	07109921	1420	00518.28	29.0	MAG	1150	00523.47	28	MAG	0900	0542.19	29.0	MAG	0800	1434.6
22	07109922	1435	00739.18	30.0	MAG	1230	00744.05	29	MAG	0924	00763.39	29.0	MAG	0800	1452.6
23	07109923	1510	06251.95	25.0	MAG	150	06255.14	28	MAG	1000	06276.31	28.5	MAG	0800	1461.6
24	07109924	1459	00730.81	29.0	MAG	1210	00736.58	29	MAG	0945	00754.76	30.0	MAG	0800	1435.2
24D	07109924D	1459	00797.85	31.0	MAG	1210	00805.72	30	MAG	0945	00821.74	30.0	MAG	0800	1427.40
25	07109925	1450	05412.64	29.0	MAG	1200	05416.90	28	MAG	0938	05436.99	29.0	MAG	0800	1461.0
26	07109926	1400	70.72	32.0	MAG	1120	74.13	30	MAG	1015	95.02	31.0	MAG	0800	1458.0

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PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK Gouveia — Date: 7-16-99

Sample Date: 7-16-99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: MARK Gouveia — Date: 7-17-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK Gouveia				Technician:				Technician: MARK Gouveia					
		Technician:				Technician:				Technician:					
		Date: 7-16-99				Date:				Date: 7-17-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start	Run (min.)
21	07169921	0700	00543.49	29.0	MAG	1420	00549.42	29.0	MAG	0708	00554.75	30.5	MAG	0800	1353.6
22	07169922	0725	00763.40	30.0	MAG	1505	00770.87	29.5	MAG	0740	00777.61	31.0	MAG	0800	1454.40
23	07169923	735	06276.34	25.0	MAG	1520	06284.35	25.0	MAG	0755	06300.56	24.0	MAG	0800	1454.4
24	07169924	0715	00754.77	29.0	MAG	1450	00762.01	29.0	MAG	0730	00777.46	27.5	MAG	0800	1361.4
24D	07169958ICE	0715	00821.75	30.0	MAG	1450	00828.98	31.0	MAG	0730	00842.99	30.0	MAG	0800	1272.0
25	07169925	0705	00536.99	29.0	MAG	1435	00543.01	29.5	MAG	0718	00561.17	29.0	MAG	0800	1510.20
26	07169926	0750	00085.08	32.0	MAG	1400	00090.86	30.5	MAG	0820	00119.27	31.5	MAG	0800	1454.4

1274.4 on spreadsheet

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PCB Sample Data Sheet

Page 1 of 1

Prepared By: MARK GOUVEIA — Date: 7/22/99

Sample Date: 7/22/99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOUVEIA — Date: 7/23/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK GOUVEIA				Technician: MARK GOUVEIA				Technician: MARK GOUVEIA					
		Technician:				Technician:				Technician:					
		Date: 7/22/99				Date: 7/22/99				Date: 7/23/99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (~~MST~~ EST)	Run (min.)
21	07229921	0730	00564.85	29	MAG	1356	00569.99	28	MAG	0840	28	00588.74	MAG	0800	1433.4
22	07229922	0810	00787.71	29	MAG	1432	00793.04	20.5	MAG	0915	29	00811.80	MAG	0800	1427.4
23	07229923	0830	06309.56	25	MAG	1440	06314.09	26	MAG	0935	26	06329.48	MAG	0800	1435.2
24	07229924	0755	00771.55	29	MAG	1423	00782.85	29	MAG	0910	29	00801.35	MAG	0800	1428.0
240	07229924D	0755	00843.09	30	MAG	1423	00848.37	29	MAG	0910	29	00866.86	MAG	0800	1426.2
25	07229925	0745	05461.27	29	MAG	1410	05466.47	29	MAG	0850	29	05485.07	MAG	0800	1428.0
26	07229926	0710	00414.37	32	MAG	1500	00425.96	32	MAG	0830	30	00443.14	MAG	0800	1426.2

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PCB Sample Data Sheet

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Prepared By: MARK GOUVEIA | Date: 7/28/99

Sample Date: 7/28/99 | Sample Type: PCB

Remote Start Time: 1000 | Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOUVEIA | Date: 7/29/99

ID Numbers	Installation	Flow Check	Removal	Sample Start/Run Time
	Technician: MARK GOUVEIA	Technician: MARK GOUVEIA	Technician: MARK GOUVEIA	
	Technician:	Technician:	Technician:	
	Date: 7/28/99	Date: 7/28/99	Date: 7/29/99	

Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~(MST)~~ EST	Run (min.)
21	07289921	1220 ~~1200~~	00588.75 ~~00143.15~~	29.0 ~~32.0~~	MAG	1600	00592.81	28.5	MAG	1337	00603.98	30.0	MAG	1200	1513.80
22	07289922	1250	00811.53	30.0	MAG	1623	00815.63	31.0	MAG	1410	00836.76	30.0	MAG		1513.80
23	07289923	1305	06324.49	26.0	MAG	1701	06328.44	26.0	MAG	1420 *	06349.69	26.0	MAG		1512.00
24	07289924	1245	00801.39	29.0	MAG	1645	00804.61	29.0	MAG	1400	00826.57	28.0	MAG		1510.80
24D	07289924D	1245	00866.90	31.0	MAG	1645	00870.10	32.0	MAG	1400	00872.18	30.0	MAG		1510.80
25	07289925	1232	05485.07	29.0	MAG	1638	05489.12	29.0	MAG	1347	05570.29	24.5	MAG		1513.20
26	07289926	1200	00143.15	32.0	MAG	1540	00146.90	31.5	MAG	1330	168.49	32.5	MAG		1520.40

FIRE Near Site Heavy Smoke

* Heavy Equipment Running

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PCB Sample Data Sheet

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Prepared By: MARK GOVEIA — Date: 8/3/99

Sample Date: 8/3/99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK GOVEIA — Date: 8/4/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. GOVEIA				Technician: MARK GOVEIA				Technician: MARK GOVEIA					
		Technician:				Technician:				Technician:					
		Date: 8/3/99				Date: 8/3/99				Date: 8/4/99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST) (EST)	Run (min.)
Z1	08039921	0710	00614.10	29.0	MAG	1435	00621.52	28.5	MAG	0710	00637.93	28.0	MAG	0800	1429.80
Z2	08039922	0742	00836.87	29.0	MAG	1512	00843.69	29.0	MAG	0735	00860.71	29.0	MAG	0800	1430.40
* Z3	08039923	0758	00349.80	25.0	MAG	1531	00358.41	25.0	MAG	* 0745	00373.63	26.0	MAG	0800	1429.80
Z4	08039924	0730	00826.71	28.0	MAG	1456	00834.13	28.0	MAG	725	00850.53	28.0	MAG	0800	1429.20
Z4D	08039940	0730	00892.75	30.0	MAG	1456	00899.76	29.0	MAG	725	00916.04	29.0	MAG	0800	1427.40
Z5	08039925	0715	05510.41	29.0	MAG	1448	05518.22	29.0	MAG	0720	05534.25	29.0	MAG	0800	1430.40
Z6	08039926	0700	00168.58	32.0	MAG	1420	00176.08	30.5	MAG	0700	00192.44	31.0	MAG	0800	1431.60

* SITE GRADING D-4 DOZER

* SITE WORK HAS STARTED WITH DOZERS LOADERS, TRUCKS

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03/23/99

PCB Sample Data Sheet

Page 1 of ___

Prepared By: MARK GOUVEIA | Date: 8/9/99

Sample Date: 8/9/99 | Sample Type: PCB

Remote Start Time: 1100 | Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: MARK Gouveia | Date: 8/10/99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: MARK GOUVEIA				Technician: MARK GOUVEIA				Technician: MARK GOUVEIA					
		Technician:				Technician:				Technician:					
		Date:				Date:				Date:					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start ~~(MST)~~ ETI	Run (min.)
21	08099921	1017	00638.02	29.0	MAG	1525	00643.09	28.0	MAG	1050	00662.50	28.0	MAG	1100	1468.8
22	08099922	1053	00860.83	30.0	MAG	1550	00865.81	30.0	MAG	1117	00885.08	30.0	MAG		1455.0
23	08099923	1101	06373.71	25	MAG	1605	06378.84	26.5	MAG	1126	06377.78	26.0	MAG		1456.2
24	08099924	1042	00850.58	29.0	MAG	1540	00855.51	30.0	MAG	1112	00874.91	29.5	MAG		1459.8
24D	08099924D	1042	00916.14	30.0	MAG	1540	00921.10	28.0	MAG	1112	00940.42	27.0	MAG		1456.8
25	08099925	1028	05534.31	29.0	MAG	1532	05539.40	29.0	MAG	1102	05558.77	29.0	MAG		1467.6
26	08099926	1000	00192.61	32.0	MAG	1510	00197.74	31.5	MAG	1040	00217.05	32	MAG		1466.4

21 – Drilling within 20' of sample installing well

23 – Site work in progress installing repaired asphalt for haul road.

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PCB Sample Data Sheet

Page 1 of ___

Prepared By: MARK Gouveia | Date: 8-16-99

Sample Date: 08-15-99 | Sample Type: PCB

Remote Start Time: 0700 | Unit of Flow*: ☐ sccm ☐ in. water

Reclaimed By: MARK Gouveia | Date: 8-16-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Gouveia				Technician: M. Gouveia				Technician: M. Gouveia					
		Technician:				Technician:				Technician:					
		Date: 8-15-99				Date: 8-15-99				Date: 8-16-99					
Site ID	Sample No	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21		0700	00662.5	29	MAG	1435	00669.92	29.0	MAG	0700	00686.25	29.5	MAG ~~29.5~~	0700	
22		↓	00885.08	29	↓	1514	0088.28	29.0	↓	↓	00909.03	31.0	MAG ~~31.0~~	↓	
23		↓	06397.78	25	↓	1448	06405.89	25.5	↓	↓	06422.08	25.5	MAG ~~25.5~~	↓	
24		↓	00874.91	28	↓	1457	00882.90	28.0	↓	↓	00899.41	28.5	MAG ~~28.5~~	↓	
24D		↓	00940.42	30	↓	1457	00948.42	29.5	↓	↓	00964.97	30.0	MAG ~~30.0~~	↓	
25		↓	05558.77	28	↓	1530	05567.27	27.0	↓	↓	05582.64	27.5	MAG ~~27.5~~	↓	
26		↓	00217.6	31	↓	1420	00224.40	31.5	↓	↓	00241.04	31.0	MAG ~~31.0~~	↓	

PCB Sample Data Sheet

Page 1 of ___

Prepared By: M. Gavera | Date: 8/21/99

Sample Date: 8/21/99 | Sample Type: PCB

Remote Start Time: 0700 | Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: M. Gavera. | Date: 8-22-99

ID Numbers	Installation	Flow Check	Removal	Sample Start/Run Time
	Technician: MARK Gavera	Technician: M. Gavera	Technician: M. Gavera	
	Technician:	Technician:	Technician:	
	Date: 8/21/99	Date: 8/21/99	Date: 8/22/99	

Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21		0700	00686.25 ~~[illegible]~~	29.0	MAG	1125	00690.53	29.0	MAG	0800	00710.62 ~~[illegible]~~	28.0	MAG		1462.2
22		↓	00909.03 ~~[illegible]~~	29.0	↓	1205	00919.21	29.0	↓	↓	00932.34	29.5	↓		1434.6
23		↓	06422.08 ~~[illegible]~~	25.0	↓	1140	06426.63	25.5	↓	↓	06447.01	25.5	↓		1495.8
24		↓	00899.41 ~~[illegible]~~	28	↓	1147	00903.99	28.5	↓	↓	00923.54	28.9	↓		1447.8
24D		↓	00964.97 ~~[illegible]~~	30	↓	1147	00969.91	31.0	↓	↓	00988.22	30.1	↓		1395.0
25		↓	05582.69 ~~[illegible]~~	28	↓	1225	05588.23	28.0	↓	↓	05606.67	28.5	↓		1441.8
26		↓	00241.04	31.5	↓	1105	00245.13	31.5	↓	↓	00264.10	31.5	↓		1383.6

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PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 8-27-99

Sample Date: 8-27-99 — Sample Type: PCB

Remote Start Time: 1000 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzman — Date: 8-28-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel Guzman				Technician: Miguel Guzman				Technician: Miguel Guzman					
		Technician:				Technician:				Technician:					
		Date: 08-27-99				Date: 08-27-99				Date: 08-28-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	08279921	1000	00734.77	29.0	M.G.	1:55	00739.21	28.0		10:00	00753.87	30.0	M.G.		
22	08279922	1000	00932.94	29.0	M.G.	2:22	00936.85	28.0			00952.82	28.0	M.G.		
23	08279923	1000	06997.01	25.0	M.G.	2:34	06952.05	25.0			06967.57	26.0	M.G.		
24	08279924	1000	00924.45	29.0	M.G.	2:16	00928.58	29.0			00945.97	29.0	M.G.		
24D	08279924D	1000	00990.29	30.0	M.G.	2:15	00994.70	29.0			01013.80	30.0	M.G.		
25	08279925	1000	05606.67	29.0	M.G.	2:08	05640.04	26.0			05670.91	30.0	M.G.		
26	08279926	1000	00364.10	32.0	M.G.	1:51	00368.23	31.0			00387.97	33.0	M.G.		

BLANK 082799 24B Kevric

BLANK 082799 22B Coop.

TD99-051

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 9-9-99

Sample Date: 9-9-99 — Sample Type: PCB

Remote Start Time: 1000 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzman — Date: 9-10-99

ID Numbers	Installation	Flow Check	Removal	Sample Start/Run Time
	Technician: Miguel Guzman	Technician: Miguel Guzman	Technician: Miguel Guzman	
	Technician:	Technician:	Technician:	
	Date: 9-9-99	Date: 9-9-99	Date: 9-10-99	

Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	09099921	957	00781.99	29.0	M.G.	1416	00785.81	26	M.G.	1014	00805.80	26	M.G.	1000	1458.6
22	09099922	1023	00980.21	30.0	M.G.	1446	00984.55	29	M.G.	1047	01004.58	29	M.G.	1000	1462.2
23	09099923	1040	01445.93	25.0	M.G.	1457	01500.21	24	M.G.	1103	01520.34	25	M.G.	1000	1464.6
24	09099924	1016	00969.95	29.0	M.G.	1439	00974.22	28	M.G.	1037	00994.17	28	M.G.	1000	1453.2
24D	09099924D	1014	01157.05	31.0	M.G.	1438	01161.34	30	M.G.	1035	01181.29	29	M.G.	1000	1454.4
25	09099925	1007	05655.16	29.0	M.G.	1430	05659.53	29	M.G.	1026	05675.46	28	M.G.	1000	1458.0
26	09099926	945	00332.47	32.0	M.G.	1406	00338.04	32	M.G.	958	00357.90	33	M.G.	1000	1525.8

26 BLANK 09099926B M.G.

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman | Date: 9-23-99

Sample Date: 9-22-99 | Sample Type: PCB

Remote Start Time: 0900 | Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzman | Date: 9-23-99

ID Numbers	Installation	Flow Check	Removal	Sample Start/Run Time
	Technician:	Technician:	Technician:	
	Technician:	Technician:	Technician:	
	Date: 9-22-99	Date: 9-22-99	Date: 9-23-99	

Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	09229921	0900	00829.46	29.0	M.G.	1403 ~~0203~~ M.G.	00834.02	26.0	M.G.	0900	00851.27	31.0	M.G.	0900	1308.6
22	09229922	0900	01040.97	29.0	M.G.	1427 ~~0227~~ M.G.	01045.82	27.0	M.G.	0900	01065.11	28.0	M.G.		1471.2
23	09229923	0900	06557.83	25.0	M.G.	1441 ~~0241~~ M.G.	06563.76	26.0	M.G.	0900	06581.71	26.0	M.G.		1432.8
24	09229924	0900	01030.70	28.0	M.G.	1421 ~~0221~~ M.G.	01037.74	27.0	M.G.	0900	01054.51	28.0	M.G.		1428.6
24D	09229924D	0900	01189.58	30.0	M.G.	1420 ~~0220~~ M.G.	01197.85	28.0	M.G.	0900	01213.58	30.0	M.G.		1440.0
25	09229925	0900	05716.79	28.0	M.G.	1411 ~~0211~~ M.G.	05722.25	27.0	M.G.	0900	05740.64	31.0	M.G.		1431.0
26	09229926	0900	00371.24	32.0	M.G.	1441 ~~0141~~ M.G. 1341	00376.55	31.0	M.G.	0900	00394.95	33.0	M.G.		1422.6

09229922B BLANK
09229923B BLANK

TD99-031
03/23/99

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 10-08-99

Sample Date: 10-08-99 — Sample Type: PCB

Remote Start Time: 1200 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzman — Date: 10-09-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel Guzman				Technician: Miguel Guzman				Technician: Miguel Guzman					
		Technician:				Technician:				Technician:					
		Date: 10-08-99				Date: 10-09-99				Date: 10-09-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	100899921	1228	0089542	28.0	M.G.	0736	0091421	26.0	M.G.	1203	0094643	25.0	M.G.	1200	1380.6
22	100899922	1308	0111246	28.0	M.G.	0755	0113132	26.0	M.G.	1224	0113595	26.0	M.G.		1397.4
23	100899923	1325	0663955	23.0	M.G.	0814	0664815	23.0	M.G.	1237	0665962	23.0	M.G.		1384.2
24	100899924	1254	0107846	26.0	M.G.	0750	0109737	26.0	M.G.	1217	0105885	27.0	M.G.		1283.4
245	100899845	1249	0126471	30.0	M.G.	0749	0128066	29.0	M.G.	1215	0128267	31.0	M.G.		1357.6
25	100899925	1239	0583603	25.0	M.G.	0824	0584830	24.0	M.G.	1247	0585967	23.0	M.G.		1418.4
26	100899926	1213	0038525	31.0	M.G.	0720	0041649	29.0	M.G.	1149	0041860	30.0	M.G.		1401.0

Field Blank 100899925B

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzmán — Date: 10-26-99

Sample Date: 10-25-99 — Sample Type: PCB

Remote Start Time: 0900 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzmán — Date: 10-26-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel Guzmán				Technician: Miguel Guzman				Technician: Miguel Guzman					
		Technician:				Technician:				Technician:					
		Date: ~~10-24-99~~ MG 10-25-00				Date: 10-25-99				Date: ~~10-26-99~~ M-G ~~10-25-99~~ MG 10-26-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	10259921	0900	00918.14	29.0	M.G.	1454	00925.74	27.0	M.G.	0936	00941.44	30.0	M.G.	0900	1398.0
22	10259922	0900	01135.75	29.0	M.G.	1519	01143.30	26.0	M.G.	1004	01162.05	25.0	M.G.		1578.0
23	10259923	0900	06652.62	24.0	M.G.	1529	06660.22	27.0	M.G.	1015	06676.69	28.0	M.G.		1444.2 1444 MG
24	10259924	0900	01099.85	27.0	M.G.	1510	01102.74	25.0	M.G.	0955	01124.41	26.0	M.G.		1473.6
24D	MD 10259924D	0900	01282.67	30.0	M.G.	1518	01291.24	28.0	M.G.	0953	01306.76	30.0	M.G.		1445.4
25	10259925	0900	05859.65	25.0	M.G.	1506	05867.22	25.0	M.G.	0944	05884.50	25.0	M.G.		1491.0
26	10259926	0900	00418.60	31.0	M.G.	1422	00423.91	29.0	M.G.	1041	00442.50	29.0	M.G.		1437.6

Field Blanks 10259925B
10259926B

Foster Wheeler Environmental Corporation

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel GUZMAN — Date: 11-16-99

Sample Date: 11-16-00 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☒ In. water

Reclaimed By: Miguel GUZMAN — Date: 11-16-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel GUZMAN				Technician: Miguel GUZMAN				Technician: Miguel GUZMAN					
		Technician:				Technician:				Technician:					
		Date: 11-15-99				Date: 11-15-99				Date: 11-16-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
26	11169926	0827	00442.72	30.0	M.G.	1520	00449.65	30.0	M.G	0839	00456.57	30.0	M.G.	0800	1431.0
21	11169921	0839	00451.86	28.0	M.G	1414	00457.14	28.0	M.G.	0856	00463.41	29.0	M.G.		1311.0
25	11169925	0850	00584.59	25.0	M.G.	1422	00590.11	25.0	M.G.	0904	00598.24	25.0	M.G.		1419.0
24D	11169924D	0858	01306.58	29.0	M.G.	1427	01312.36	29.0	M.G.	0914	01327.64	30.0	M.G.		1245.6
24	11169924	0900	01124.57	26.0	M.G.	1428	01130.02	26.0	M.G.	0916	01147.13	27.0	M.G		1383.6
23	11169923	0932	06676.50	~~25.0~~ 23.0	M.G.	1446	06682.03	24.0	MG.	0938	06689.72	23.0	M.G		1375.2
22	11169922	0913	01162.16	~~23.0~~ 25.0	M.G.	1435	01167.51	24.0	M.G.	0943	01186.37	24.0	M.G.		1459.6

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments: Field Blanks 11169921B

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 12-16-99

Sample Date: 12-16-99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: Miguel Guzman — Date: 12-17-99

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel Guzman				Technician: Miguel Guzman				Technician: Miguel Guzman					
		Technician:				Technician:				Technician:					
		Date: 12-16-99				Date: 12-16-99				Date: 12-17-99					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	12169921	0820	00963.42	25.0	M.G.	1411	01969.26	28.0	M.G.	0804	00987.13	27.0	M.G.	0800	1422.6
22	12169922	0845	01186.32	28.0	M.G.	1441	01192.26	28.0	M.G.	0831	01210.10	30.0	M.G.	↓	1426.8
23	12169923	0901	06699.75	23.0	M.G.	1447	06705.57	23.0	M.G.	0847	06723.54	25.0	M.G.		1458.6
24	12169924	0836	01147.16	26.0	M.G.	1420	01152.90	27.0	M.G.	0823	01170.95	27.0	M.G.		1427.4
24D	12169924D	0834	01327.97	30.0	M.G.	1419	01333.73	29.0	M.G.	0821	01351.77	30.0	M.G.		1428.0
25	12169925	0845	05908.25	25.0	M.G.	1432	05913.04	25.0	M.G.	0824	05931.80	25.0	M.G.		1419.0
26	12169926	0823	00466.59	31.0	M.G.	1504	00472.26	31.0	M.G.	0936	00490.80	31.0	M.G.		1452.6

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments:
Field Blanks 12169923B
12169923B

Foster Wheeler Environmental Corporation

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 01-14-00

Sample Date: 01-14-00 — Sample Type: PCB

Remote Start Time: 0900 — Unit of Flow*: ☐ sccm ☑ ~~in. water~~

Reclaimed By: Miguel Guzman — Date: 01-15-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: Miguel Guzman Technician: Date: 01-14-00				Technician: Miguel Guzman Technician: Date: 01-14-00				Technician: Miguel Guzman Technician: Date: 01-15-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	01140021 01140021 M.G.	0915	00987.15	26.0	M.G.	1517	00993.17	25.0	M.G.	0852	01010.75	25.0	M.G.	0900	1416.0
25	01140025	0928	05931.91	23.0	M.G.	1526	05937.87	24.0	M.G.	0907	05955.55	24.0	M.G.		1418.4
24D	01140024D	0944	01351.61	27.0	M.G.	1537	01357.71	27.0	M.G.	0916	01375.35	28.0	M.G.		1424.4
24	01140024	0946	01170.97	24.0	M.G.	1538	01176.86	24.0	M.G.	0917	01194.58	25.0	M.G.		1411.8
22	01140022	0952	01210.11	26.0	M.G.	1543	01215.97	27.0	M.G.	0923	01233.64	27.0	M.G.		1411.8
23	01140023	1021	06723.57	21.0	M.G.	1552	06729.07	22.0	M.G.	0936	06746.80	23.0	M.G.		1393.8
26	01140026	1053	00490.81	28.0	M.G.	1603	00495.94	29.0	M.G.	0949	00513.72	28.0	M.G.	↓	1374.6

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments: Field Blank 01140023B

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 02-17-00

Sample Date: 02/17-00 — Sample Type: PCB

Remote Start Time: 0806 — Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: Miguel Guzman — Date: 02-18-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Guzman				Technician: M. Guzman				Technician: M. Guzman					
		Technician:				Technician:				Technician:					
		Date: 02-17-00				Date: 02-17-00				Date: 02-18-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	02170021	0830	00010.77	27.0	M.G.	1446	01012.00	26.0	M.G.	0842	01034.75	27.0	M.G.	0800	1450.8
25	02170025	0840	00955.67	24.0	M.G.	1456	00961.83	25.0	M.G.	0847	00979.78	26.0	M.G.		1460.6
24D	02170024D	0844	01375.38	28.0	M.G.	1501	01381.60	27.0	M.G.	0901	01399.60	27.0	M.G.		1453.2
24	02170024	0845	01194.55	25.0	M.G.	1502	01208.75	23.0	M.G.	0902	01218.74	23.0	M.G.		1451.4
22	02170022	0852	01433.66	27.0	M.G.	1507	01434.30	27.0	M.G.	0911	01234.37	27.0	M.G.		00 42.6 0.7 M.G.
23	02170023	0914	06746.82	22.0	M.G.	1519	06751.90	23.0	M.G.	0921	06770.92	23.0	M.G		1446.0
26	02170026	0927	00513.72	27.0	M.G.	1420	00518.59	27.0	M.G.	1211	00542.45	28.0	M.G.	↓	1603.8
					M.G.										

Meteorological System Check
Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments:
Field Blanks 02170018 B
02170023 B

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 03-15-00

Sample Date: 03-15-00 — Sample Type: PCB

Remote Start Time: 0900 — Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: Miguel Guzman — Date: 03-16-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. GUZMAN				Technician: M. GUZMAN				Technician: M. GUZMAN					
		Technician:				Technician:				Technician:					
		Date: 03-15-00				Date: 03-15-00				Date: 03-16-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
26	03150026	0946	00540.76	31.0	M.G.	1455	00545.91	31.0	M.G.	0958	00564.97	30.0	M.G.	0900	1452.6
21	03150021	0959	01036.32	28.0	M.G.	1507	01040.45	29.0	M.G.	1009	01059.46	29.0	M.G.		1448.4
25	03150025	1017	05980.26 06986.26	24.0	M.G.	1515	05985.22	24.0	M.G.	1018	06004.28	23.0	M.G.		1441.2
24D	03150024D	1023	04399.89	33.0	M.G.	1519	04404.82	32.0	M.G.	1023	04423.88	32.0	M.G.		1439.4
24	03150024	1024	01219.40	26.0	M.G.	1520	01224.12	25.0	M.G.	1025	01243.20	24.0	M.G.		1440.0
22	03150022	1030	01234.63	30.0	M.G.	1525	01239.56	31.0	M.G.	1030	01258.64	31.0	M.G.		1440.6
23	03150023	1047	06771.00	26.0	M.G.	1537	06775.97	26.0	M.G.	1040	06796.05	26.0	M.G.	↓	1432.8

Meteorological System Check
Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments:
Field Blank 031500263
03-15-00 wrong number entered M.G.

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzman — Date: 04-05-00

Sample Date: 04-04-00 — Sample Type: PCB

Remote Start Time: 0800 — Matrix: ☐ Soil ☑ Water

Reclaimed By: Miguel Guzman — Date: 04-05-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Guzman				Technician: M. Guzman				Technician: M. Guzman					
		Technician:				Technician:				Technician:					
		Date: 04-04-00				Date: 04-04-00				Date: 04-05-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
25	04040025	0842	01004.30	25.0	M.G.	1429	01009.99	26.0	M.G.	0844	01018.96	27.0	M.G.	0800	1437.6
24D	04040024D	0849	01423.92	34.0	M.G.	1435	01429.63	34.0	M.G.	0851	01447.87	35.0	M.G.	↓	1437.0
24	04040024	0851	01843.24	26.0	M.G.	1436	01848.92	28.0	M.G.	0852	01867.18	28.0	M.G.		1436.4
22	04040022	0901	01258.65	31.0	M.G.	1442	01264.32	30.0	M.G.	0858	01280.60	30.0	M.G.		1437.0
23	04040023	0916	00795.09	26.0	M.G.	1445	00800.73	26.0	M.G.	0909	00818.99	27.0	M.G.		1434.0
26	04040026	0940	00564.99	32.0	M.G.	1510	00570.49	31.0	M.G.	0935	00588.90	30.0	M.G.		1434.4
21	04040021	1020	01057.50	29.0	M.G.	1420	01063.50	28.0	M.G.	0919	01083.50	29.0	M.G.	↓	1380.0

Meteorological System Check
Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments: 04-04-00 (0830) No electrical power on sapling site #21.
04-04-00 (1000) Accompanied Greg Vohnotka (Upper Cape Electric) to site #21, after troubleshooting power was restored.

Field Blanks 040400 M.G
040400 24D M.G
040400 21B
040400 MW

* WRONG sample NUMBERS M.G.

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel Guzmán | Date: 04-17-00

Sample Date: 04-17-00 | Sample Type: PCB

Remote Start Time: 1000 | Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: Miguel Guzmán | Date: 04-18-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Guzmán				Technician: M. Guzmán				Technician: M. Guzmán					
		Technician:				Technician:				Technician:					
		Date: 04-17-00				Date: 04-17-00				Date: 04-18-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
26	04170026	1040	00588.41	30.0	M.G.	1424	00592.61	30.0	M.G.	1046	00613.00 ~~00612.00~~ MG	30.0	M.G.	1000	1445.4
21	04170021	1049	01082.52	28.0	M.G.	1434	01086.27	27.0	M.G.	1049	01106.59	27.0	M.G.	↓	1444.2
25	04170025	1057	06028.28	24.0	M.G.	1442	06031.99	25.0	M.G.	1106	06052.40	25.0	M.G.	↓	1447.2
24	04170024	1109	01267.19	25.0	M.G.	1446	01270.80	25.0	M.G.	1110	01291.21	25.0	M.G.	↓	1441.2
22	04170022	1117	01282.62	30.0	M.G.	1451	01286.17	30.0	M.G.	1116	01306.60	30.0	M.G.	↓	1435.8
22 Spike	04170022 spike	1119	01288.25	29.0	M.G.	1453	01291.79	28.0	M.G.	1118 ~~1115~~ MG.	01312.23	28.0	M.G.	↓	1438.8
23	04170023	1132	06818.99	25.0	M.G.	1506	06822.53	23.0	M.G.	1136	06843.05	23.0	M.G.	↓	1443.6

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments:

*Installed additional sampler at site 22 for spike sample only. No sample taken at site 24D.

* 04-18-00 WRONG ETI. ENTERED. M.G.

04-18-00 WRONG TIME ENTERED M.G.

Field Blank 04170023B

C:\WORDDOC\NEWBED\Attachments\OCP_SVOC Sample Data Sheet-Rev.doc

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel GUZMAN Date: 05-08-00

Sample Date: 05-08-00 Sample Type: PCB

Remote Start Time: 1000 Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: Miguel Guzman Date: 05-09-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: H. GUZMAN				Technician: H. GUZMAN				Technician: H. GUZMAN					
		Technician:				Technician:				Technician:					
		Date: 05-08-00				Date: 05-08-00				Date: 05-09-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	050800021	1053	01106.61	30.0	H.G.	1530	01111.26	31.0	H.G.	1057	01139.68	29.0	H.G.	1000	1444.8
22	050800022	1023	01306.65	30.0	H.G.	1510	01311.34	31.0	H.G.	1024	01339.87	30.0	H.G.		1437.6
23	050800023	1040	06843.05	27.0	H.G.	1519	06847.71	28.0	H.G.	1039	06867.47	27.0	H.G.		1447.2
24	050800024	1021	01291.23	27.0	H.G.	1505	01295.97	27.0	H.G.	1019	01315.19	26.0	H.G.		1437.6
24D	050800D10	1019	01447.88 01447.88	H.G. 35.0	H.G.	1504	01452.63	35.0	H.G.	1017	01471.83	34.0	H.G.		1437.0 1444.0 H.G.
25	050800025	1013	06052.41	26.0	H.G.	1458 H.G.	06067.16	26.0	H.G.	1011	06076.87	26.0	H.G.		1437.6
26	050800026	1100	00613.01	33.0	H.G.	1540	00617.67	32.0	H.G.	1122	00637.32	32.0	H.G.		1458.6 1458.6 H.G.

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☒	☐	Temp 2	☒	☐
WD	☒	☐	Barr Press	☒	☐
Temp 10	☒	☐	RH	☒	☐

Comments:

Field Blanks 050800021B
050800025B

* 05-08-00 Incorrect ETI. Entered H.G.
05-08-00 Incorrect Time
05-09-00 Incorrect sample run times.

PCB Sample Data Sheet

Page 1 of 1

Prepared By: Miguel GUZMAN Date: 05-30-00

Sample Date: 05-30-00 Sample Type: PCB

Remote Start Time: 1000 Unit of Flow*: ☐ sccm ☑ in. water

Reclaimed By: Miguel GUZMAN Date: 05-31-00

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: H. GUZMAN				Technician: H. GUZMAN				Technician: H. GUZMAN					
		Technician:				Technician:				Technician:					
		Date: 05-30-00				Date: 05-30-00				Date: ~~05-30~~ N.G. 05-31-00					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	05300021	0955	01133.24	28.0	H.G.	1422 H.G. N.G.	01137.67	27.0	H.G.	0957	01157.25	27.0	H.G.	1000	1440.6
25	05300025	1004	16076.57	24.0	H.G.	1363	06082.35	24.0	H.G.	1006	06100.60	24.0	H.G.		1441.8
24D	05300024D	1012	01471.97	33.0	H.G.	1356	01475.70	33.0	H.G.	1613	01495.98	32.0	H.G.		1440.6
24	05300024	1014	01315.29	26.0	H.G.	1357	01319.04	26.0	H.G.	1015	01339.30	26.0	H.G.		1440.6
22	05300022	1018	01330.75	30.0	H.G.	1403	01334.47	30.0	H.G.	1019	01354.75	29.0	H.G.		1440.0
23	05300023	1024	06167.32	26.0	H.G.	1412	06871.03	26.0	H.G.	1037	06891.44	26.0	H.G.		1447.3
26	05300026	1041	00637.45	31.0	H.G.	1432	00641.31	31.0	H.G.	1047	00661.57	29.0	H.G.		1447.2

Meteorological System Check

Check if DAS Display Matches Observed

	Yes	No		Yes	No
WS	☑	☐	Temp 2	☑	☐
WD	☑	☐	Barr Press	☑	☐
Temp 10	☑	☐	RH	☑	☐

Comments: Field Blank 05300026B

CLIENT CHAIN OF CUSTODY SAMPLER'S SIGNATURE _____ Quote 9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 6

Turn Around Time (In Calendar Days): AS Per Contract

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
060499 21	06/04/99	ICE	AIR	N/A	X					
060499 22	06/04/99	ICE	AIR	N/A	X					
060499 23	06/04/99	ICE	AIR	N/A	X					
060499 24	06/04/99	ICE	AIR	N/A	X					
060499 25	06/04/99	ICE	AIR	N/A	X					
060499 26	06/04/99	ICE	AIR	N/A	X					
				N						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	06/07/99 0700	FEDEX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7
As per Contract.

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
06109921	06/10/99	ICE	AIR	N/A	X	
06109922	↓	↓	↓	↓	↓	
06109923						
06109924						
06109924D						
06109925						
06109926B						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
	06/11/99 1600	FEDEX.			

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

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(1) Provide and/or correct client and project information.
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CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** _____ | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 6

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
061699 21	6/16/99	ICE	Air	N/A	X					
061699 22	6/16/99	↓	↓	↓	↓					
061699 23	↓	↓	↓	↓	↓					
061699 24	↓	↓	↓	↓	↓					
061699 25	↓	↓	↓	↓	↓					
061699 23B	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	6/17/99 1600	FEDEX.			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
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CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days): As Per Contract

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
062299 26	6/22/99	ICE	Air	N/A	X					
062299 25										
062299 24										
062299 24D										
062299 23										
062299 22										
062299 21										
062299 21B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
	6/23/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
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CLIENT CHAIN OF CUSTODY · **SAMPLER'S SIGNATURE** _____ · **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
062899 21	06/28/99	ICE	AIR	N/A	X					
062899 22										
062899 23										
062899 24										
062899 25										
062899 26										
062899 25 B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	6/29/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** _____ | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
07069921	07/06/99	ICE	AIR	N/A	✓					
07069922										
07069923										
07069924										
07069924D										
07069925										
07069926										
07069926B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	07/07/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
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CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** _____ **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
7109921	7/6/99	ICE	AIR	N/A	X					
7109922										
7109923										
7109924										
7109925										
7109926										
7109927B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	7/8/99 1600				

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** _____ | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
071699 21	7/16/99	ICE	AIR	N/A	X					
071699 22										
071699 23										
071699 24										
071699 SPIKE										
071699 25										
071699 26										
071699 26B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	7/19/99 1600	FEDEX.			

Received for Laboratory By/Signature	Date/Time
_____	14:10 7/21/99

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIE.. CHAIN OF CUSTODY SAMPLER'S SIGNATURE [signature] Quote 9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
07229921	7/22/99	ICE	AIR	N/A	X	
07229922						
07229923						
07229924						
07229925						
07229926						
07229921B						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	1600 7/26/99	FEDEX			

Received for Laboratory By/Signature: Bill Hunt

Date/Time: 7/27/99 1000

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
072899 21	7/28/99	ICG	AIR	N/A	X					
072899 22	↓	↓	↓	↓	↓					
072899 23										
072899 24										
072899 24D										
072899 25										
072899 26										
072899 21B	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** _____ **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
08039921	8/3/99	ICE	AIR	N/A	X					
08039922	↓	↓	↓	↓	↓					
08039923										
08039924										
08039925										
08039926										
08039943	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	8/3/99 1700	FEDEX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
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CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
08099921	8/9/99	ICE	AIR	NA	X					
08099922										
08099923										
08099924										
08099924D										
08099925										
08099926										
08099924B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
	08/10/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time
Bill Hunt	8/12/99 1000

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
08159921	8/15/99	ICE	AIR	N/A	X	
081599 22	↓	↓	↓	↓	↓	
081599 23						
081599 24						
081599 25						
081599 26						
08159923 B	↓	↓	↓	↓	↓	

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	8/16/99 1600	FEDEX			

Received for Laboratory By/Signature: Bill Hunt

Date/Time: 8/18/99 1000

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
08219921	8-21-99	ICE	Air	N/A	X					
08219922	"	"	"	"	"					
08219923	"	"	"	"	"					
08219924	"	"	"	"	"					
08219924D	"	"	"	"	"					
08219925	"	"	"	"	"					
08219926	"	"	"	"	"					
08219926B	"	"	"	"	"					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	8-23-99 1:00	FEDEX			

Received for Laboratory By/Signature [signature] **Date/Time** 8/24/99 9:30

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
08279921	8-27-99	ICE	AIR	NA	X					
08279922	↓	↓	↓	↓	↓					
08279923	↓	↓	↓	↓	↓					
08279924	↓	↓	↓	↓	↓					
08279925	↓	↓	↓	↓	↓					
08279926	↓	↓	↓	↓	↓					
08279924B	X	X	X	X	X					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	8-30-99 16:00				

Received for Laboratory By/Signature	Date/Time
[signature] Arizor Gotchetchiladze	08-31-99 10:00 am

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs | PCBs Totals only

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	PCBs Totals only				Remarks
090999 21	9-9-99	ICE	AIR	NA		X				
090999 22	↓	↓	↓	↓		↓				
090999 23	↓	↓	↓	↓		↓				
090999 24	↓	↓	↓	↓		↓				
090999 24D	↓	↓	↓	↓		↓				
090999 25	↓	↓	↓	↓		↓				
090999 26	↓	↓	↓	↓		↓				
090999 26B	↓	↓	↓	↓		↓				

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	9-10-99				

Received for Laboratory By/Signature	Date/Time	Send Samples to:
Bill Hunt	9/13/99 10:00	Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check appropriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2):

WHO PCBs	Total PCB's				

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
09229921	9-22-99	ICE	AIR	N/A		X				
09229922										
09229923										
09229924										
09229925										
09229926										
09229922B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	9-23-99				

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each.

CHAIN OF CUSTODY

SAMPLER'S SIGNATURE [signature]

Quote 9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2):

WHO PCBs	Tetra / PCB's				

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
10089921	10-08-99	ICE	Air	N/A		X				
10089922										
10089923										
10089924										
10089924 Spike										
10089925										
10089926										
10089925B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	10-9-99				

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY — SAMPLER'S SIGNATURE [signature] — Quote 9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs; Total PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.		X				Remarks
10259921	10-25-99	ICE	Air	N/A		X				
10259922	↓	↓	↓	↓						
10259923										
10259924										
10259925										
10259926										
~~10259926B~~	↓	↓	↓	↓						↓
10259925B										Label has been corrected to 10259925B

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	10-26-99	FED-EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Project/Quote 04959/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 508-910-9958
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): TO-14/TO-15

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	X					Remarks
1116992l	11-16-99	ICE	Air	N/A						
11169922										
11169923										
11169924										
11169924D										
11169925										
11169926										
1116992lB										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	11-16-99	FED EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs; TO-10A / PCBs

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
12169921	12-16-99	Ice	Air	N/A		X				
12169922										
12169923										
12169924										
12169925										
12169926										
~~12169927B~~ H.C										
12169928B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	12-17-99	Fed Ex			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 8011 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Project/Quote 05011/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

Contact: Mark Gouveia
Phone: 508-990-2550
Fax: 301-588-1777
P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): Total PCB

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	Total PCB					Remarks
01140021	01-14-00	ICE	Air	N/A	X					
01140022	↓	↓	↓	↓	↓					
01140023										
01140024										
01140025										
01140024D										
01140026										
01140023B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	01-15-00	Fed Ex			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 23	Sample Date: 01-14-00	Sample Number: 011400233

Installation Day Exposure

Name (print): Miguel Guzman	Name (signature):		
Date: 01-14-00	Time Start (MST): 1021	Time End (EST): 1024	Elapsed (min.): 3 MIN

Ambient Weather Conditions

Temperature (nearest 5°F): 10°F 10 HG	Wind Speed (nearest 5 mph): 15-20	Wind Direction N/A
Cloud Cover: ☑ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Removal Day Exposure

Name (print): Miguel Guzman	Name (signature):		
Date: 01-15-00	Time Start (MST): 0936	Time End (EST): 0939	Elapsed (min.): 3 MIN

Ambient Conditions

Temperature (nearest 5°F): 7°F	Wind Speed (nearest 5 mph): 5-10 MPH	Wind Direction N/A
Sky Coverage: ☑ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Total Elapsed Time: ☑ Minutes: 6 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Project/Quote 04959/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 508-910-9958
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): Total PCB's

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
02170021	02-17-00	Ice	Air	N/A	X					
02170022	↓	↓	↓	↓	↓					
02170023										
02170024										
02170025										
02170026										
02170021B	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	02-18-00	Fed EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 21	Sample Date: 02-17-00	Sample Number: 621700213

Installation Day Exposure

Name (print):	Name (signature):
Miguel Guzman	Miguel Guzman

Date:	Time Start (MST):	Time End (EST):	Elapsed (min.):
02-17-00	0828	0832	4 min

Ambient Weather Conditions

Temperature (nearest 5°F):	Wind Speed (nearest 5 mph):	Wind Direction
30°F	10-15 mph	N/A

Cloud Cover: ☒ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☒ None or ☐ Type and Severity:

Removal Day Exposure

Name (print):	Name (signature):
Miguel Guzman	Miguel Guzman

Date:	Time Start (MST):	Time End (EST):	Elapsed (min.):
02-18-00	0842	0845	3 min.

Ambient Conditions

Temperature (nearest 5°F):	Wind Speed (nearest 5 mph):	Wind Direction
27°F	5< mph	N/A

Sky Coverage: ☐ Clear ☒ Overcast or ☐ Percent Coverage:	Precipitation* ☒ None or ☐ Type and Severity:

Total Elapsed Time: ☒ Minutes: 7 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Project/Quote 0501 1/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Mark Gouveia
Phone: 508-990-2550
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): TO14A PCBS

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
03150021	03-15-00	ICE	AIR	N/A	X					
03150022										
03150023										
03150024										
03150024D										
03150025										
03150026										
03150026B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	03-18-00	Fed Ex			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 26	Sample Date: 03-15-00	Sample Number: 031500 26B

Installation Day Exposure

Name (print): Miguel Guzman	Name (signature): Miguel Guzman		
Date: 03-15-00	Time Start (MST): 0946	Time End (EST): 0949	Elapsed (min.): 3 min

Ambient Weather Conditions

Temperature (nearest 5°F): 53 F	Wind Speed (nearest 5 mph): 15-20 MPH	Wind Direction N/A
Cloud Cover: ☑ Clear ☐ Overcast *or* ☐ Percent Coverage:	Precipitation* ☑ None *or* ☐ Type and Severity:	

Removal Day Exposure

Name (print): Miguel Guzman	Name (signature): Miguel Guzman		
Date: 03-16-00	Time Start (MST): 0958	Time End (EST): 0956	Elapsed (min.): 2 min

Ambient Conditions

Temperature (nearest 5°F): 59 F	Wind Speed (nearest 5 mph): 5-10 MPH	Wind Direction N/A
Sky Coverage: ☑ Clear ☐ Overcast *or* ☐ Percent Coverage:	Precipitation* ☑ None *or* ☐ Type and Severity:	

Total Elapsed Time: ☑ Minutes: 5 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Project/Quote 04959/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 508-910-9958
Fax: 301-588-1777
P.O.# (1): contract

Project (1): New Bedford, MA Ambient Air

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): Total PCB's

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
040400 21	04-04-00	ICE	AIR	N/A	X					
040400 22	↓	↓	↓	↓	↓					
040400 23										
040400 24										
040400 25										
040400 26										
040400 21B	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	04-05-00	Fed Ex			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 21	Sample Date: 04-04-00	Sample Number: 040400218

Installation Day Exposure

Name (print): Miguel Guzman	Name (signature):		
Date: 04-04-00	Time Start (MST): 1080	Time End (EST): 1024	Elapsed (min.): 4 min

Ambient Weather Conditions

Temperature (nearest 5°F): 55 °F	Wind Speed (nearest 5 mph): 6-10 MPH	Wind Direction N/A
Cloud Cover: ☐ Clear ☑ Overcast or ☐ Percent Coverage:	Precipitation: ☑ None or ☐ Type and Severity:	

Removal Day Exposure

Name (print): Miguel Guzman	Name (signature):		
Date: 04-05-00	Time Start (MST): 0919	Time End (EST): 0923	Elapsed (min.): 4 min

Ambient Conditions

Temperature (nearest 5°F): 45 °F	Wind Speed (nearest 5 mph): 5-10 MPH	Wind Direction N/A
Sky Coverage: ☐ Clear ☑ Overcast or ☐ Percent Coverage:	Precipitation: ☑ None or ☐ Type and Severity:	

Total Elapsed Time: ☑ Minutes: 8 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Project/Quote 04900/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Mark Gouveia
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): TO-15 SIM

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
041700 21	04-17-00	ICE	AIR	N/A	X					
041700 22										
041700 22 SPIKE										
041700 23										
041700 24										
041700 25										
041700 26										
041700 23B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	04-18-00	FED - EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: B3	Sample Date: 04-17-00	Sample Number: 041700B3B

Installation Day Exposure

Name (print): Miguel Guzman		Name (signature): Miguel Guzman	
Date: 04-17-00	Time Start (MST): 1130	Time End (EST): 1134	Elapsed (min.): 4 MIN

Ambient Weather Conditions

Temperature (nearest 5°F): 45 °F	Wind Speed (nearest 5 mph): 10-20 MPH	Wind Direction N/A
Cloud Cover: ☐ Clear ☑ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Removal Day Exposure

Name (print): Miguel Guzman		Name (signature): Miguel Guzman	
Date: 04-18-00	Time Start (MST): 1133	Time End (EST): 1137	Elapsed (min.): 4 MIN

Ambient Conditions

Temperature (nearest 5°F): 46 °F	Wind Speed (nearest 5 mph): 15-20 MPH	Wind Direction N/A
Sky Coverage: ☐ Clear ☑ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Total Elapsed Time: ☑ Minutes: 8 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Project/Quote 04959/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 508-910-9958
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): TO14 PCBS

Total Number of Containers: 7

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
050800021	05-08-00	ICE	Air	N/A	X					
050800022	↓	↓	↓	↓	↓					
050800023										
050800024										
050800025										
050800026										
050800025B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	05-09-00 05-08HG.	FED-EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 25	Sample Date: 05-08-00	Sample Number: 05080025

Installation Day Exposure

Name (print): Miguel Guzmán	Name (signature): Miguel Guzmán		
Date: 05-09-00	Time Start (MST): 1013	Time End (EST): 1015	Elapsed (min.): 0 MIN

Ambient Weather Conditions

Temperature (nearest 5°F): 78°F	Wind Speed (nearest 5 mph): 5-8 MPH	Wind Direction N/A
Cloud Cover: ☑ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Removal Day Exposure

Name (print): Miguel Guzmán	Name (signature): Miguel Guzmán		
Date: 05-09-00	Time Start (MST): 1011	Time End (EST): 1014	Elapsed (min.): 3 MIN

Ambient Conditions

Temperature (nearest 5°F): 78°F	Wind Speed (nearest 5 mph): 0-5 MPH	Wind Direction N/A
Sky Coverage: ☑ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:	

Total Elapsed Time: ☑ Minutes: 5 ☐ Hours: ____

Comments:

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Project/Quote 04900/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Mark Gouveia
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): TOTAL PCBS

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
05300021	05-30-00	ICE	Air	N/A	X					
05300022										
05300023										
05300024										
05300024D										
05300025										
05300026										
05300026B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	05-31-00 1600	FED-EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Field Blank Sample Data Sheet

Page 1 of 1

Site Location: 24	Sample Date: 05-30-00	Sample Number: 053000246

Installation Day Exposure

Name (print): Miguel Guzman	Name (signature):

Date: 05-30-00	Time Start (MST): 1040	Time End (EST): 1043	Elapsed (min.): 3 MIN

Ambient Weather Conditions

Temperature (nearest 5°F): 57°F	Wind Speed (nearest 5 mph): 10-15 MPH	Wind Direction N/A

Cloud Cover: ☐ Clear ☑ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:

Removal Day Exposure

Name (print): Miguel Guzman	Name (signature):

Date: 5-31-00	Time Start (MST): 1045	Time End (EST): 1049	Elapsed (min.): 4 MIN

Ambient Conditions

Temperature (nearest 5°F): 67°F	Wind Speed (nearest 5 mph): 0-5 MPH	Wind Direction N/A

Sky Coverage: ☑ Clear ☐ Overcast or ☐ Percent Coverage:	Precipitation* ☑ None or ☐ Type and Severity:

Total Elapsed Time: ☑ Minutes: 7 ☐ Hours: ____

Comments:

Appendix I

Appendix I: 28 June 1999 Summary Reports

The information contained in this section the sample event summary for this sampling event date. The report details the PCB congeners and homologue results, quality flags, detection limits, meteorological data, and sampling information. Due to anomalies in this sample compared to all other sample events, this data is reported separately and not included in the preceding summary reports.

Sample Event Date	6/28/99	**Lab Sample Number**	06289921	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	21 New Bedford Welding	**Run Time (hours)**	24.46	**Average Solar Radiation (w•m²)**	272
Sample Type	Normal Sample	**Sample Volume (m³)**	330.21	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.06	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	=	—	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.07	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.05	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.06	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	=	0.07	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	=	0.08	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	=	0.05	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	M	0.05	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.09	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.07	—	—	R	—	0.0001	
DecaCB (#209)	<	0.2	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	=	0.06	—	—	R	—		
Total DiCB	=	0.05	—	—	R	—		
Total TriCB	=	0.03	—	—	R	—		
Total TetraCB	M	0.06	—	—	R	—		
Total PentaCB	M	0.07	—	—	R	—		
Total HexaCB	M	0.06	—	—	R	—		
Total HeptaCB	M	0.09	—	—	R	—		
Total OctaCB	=	0.1	—	—	R	—		
Total NonaCB	M	0.2	—	—	R	—		
DecaCB (#209)	<	0.2	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289922	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	22 Woodlawn Park	**Run Time (hours)**	25.31	**Average Solar Radiation (w•m²)**	273
Sample Type	Normal Sample	**Sample Volume (m³)**	341.685	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.1	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	=	—	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.1	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.09	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.1	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	=	0.1	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	=	0.09	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	<	0.08	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.08	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—	R	—	0.0001	
DecaCB (#209)	<	0.4	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	M	0.1	—	—	R	—		
Total DiCB	=	0.09	—	—	R	—		
Total TriCB	M	0.06	—	—	R	—		
Total TetraCB	M	0.1	—	—	R	—		
Total PentaCB	M	0.1	—	—	R	—		
Total HexaCB	M	0.1	—	—	R	—		
Total HeptaCB	M	0.2	—	—	R	—		
Total OctaCB	=	0.2	—	—	R	—		
Total NonaCB	<	0.3	—	—	R	—		
DecaCB (#209)	<	0.4	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289923	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	23 Acushnet Substation	**Run Time (hours)**	24.14	**Average Solar Radiation (w•m²)**	273
Sample Type	Normal Sample	**Sample Volume (m³)**	325.89	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.09	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	=	—	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.1	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.08	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.1	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	M	0.1	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	=	0.1	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	=	0.1	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	=	0.09	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	M	0.09	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.3	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.2	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—	R	—	0.0001	
DecaCB (#209)	<	0.5	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	=	0.08	—	—	R	—		
Total DiCB	=	0.09	—	—	R	—		
Total TriCB	M	0.05	—	—	R	—		
Total TetraCB	M	0.08	—	—	R	—		
Total PentaCB	M	0.1	—	—	R	—		
Total HexaCB	M	0.1	—	—	R	—		
Total HeptaCB	=	0.2	—	—	R	—		
Total OctaCB	=	0.3	—	—	R	—		
Total NonaCB	<	0.4	—	—	R	—		
DecaCB (#209)	<	0.5	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289924	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.3
Station	24 Aerovox	**Run Time (hours)**	24.51	**Average Solar Radiation (w•m²)**	278
Sample Type	Normal Sample	**Sample Volume (m³)**	330.885	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.2	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	<	0.2	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.2	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.1	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.2	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	<	0.2	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	<	0.2	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	=	0.2	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	<	0.1	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.1	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.2	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.4	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.3	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.2	—	—	R	—	0.0001	
DecaCB (#209)	<	0.7	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	=	0.2	—	—	R	—		
Total DiCB	M	0.2	—	—	R	—		
Total TriCB	M	0.1	—	—	R	—		
Total TetraCB	M	0.2	—	—	R	—		
Total PentaCB	M	0.2	—	—	R	—		
Total HexaCB	M	0.2	—	—	R	—		
Total HeptaCB	M	0.3	—	—	R	—		
Total OctaCB	=	0.4	—	—	R	—		
Total NonaCB	M	0.5	—	—	R	—		
DecaCB (#209)	<	0.7	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289925	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	75.9
Station	25 Cliftex	**Run Time (hours)**	24.77	**Average Solar Radiation (w•m²)**	250
Sample Type	Normal Sample	**Sample Volume (m³)**	334.395	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.07	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	=	—	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.08	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.06	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.07	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	=	0.07	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	=	0.09	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	M	0.07	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	=	0.06	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.06	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.08	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.2	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.1	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.08	—	—	R	—	0.0001	
DecaCB (#209)	<	0.3	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	=	0.07	—	—	R	—		
Total DiCB	=	0.06	—	—	R	—		
Total TriCB	=	0.04	—	—	R	—		
Total TetraCB	M	0.07	—	—	R	—		
Total PentaCB	M	0.08	—	—	R	—		
Total HexaCB	M	0.07	—	—	R	—		
Total HeptaCB	M	0.1	—	—	R	—		
Total OctaCB	=	0.2	—	—	R	—		
Total NonaCB	=	0.2	—	—	R	—		
DecaCB (#209)	<	0.3	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289925B	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	75.6
Station	25 Cliftex	**Run Time (hours)**	0	**Average Solar Radiation (w•m²)**	233
Sample Type	Field Blank	**Sample Volume (m³)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration ng	TEF	TEQ† ng
PCB Congeners								
3,3',4,4'-TetraCB (#77)	M	0.1	—	—	R	—		
3,4,5,4'-TetraCB (#81)	<	0.1	—	—	R	—		
2,3,3',4,4'-PentaCB (#105)	<	0.1	—	—	R	—		
2,3,4,4',5-PentaCB (#114)	<	0.08	—	—	R	—		
2,3',4,4',5-PentaCB (#118)	<	0.1	—	—	R	—		
2',3,4,4',5-PentaCB (#123)	<	0.1	—	—	R	—		
3,3',4,4',5-PentaCB (#126)	<	0.1	—	—	R	—		
2,3,3',4,4',5-HexaCB (#156)	<	0.09	—	—	R	—		
2,3,3',4,4',5'-HexaCB (#157)	<	0.08	—	—	R	—		
2,3',4,4',5,5'-HexaCB (#167)	<	0.08	—	—	R	—		
3,3',4,4',5,5'-HexaCB (#169)	<	0.1	—	—	R	—		
2,2',3,3',4,4',5-HeptaCB (#170)	<	0.2	—	—	R	—		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	0.2	—	—	R	—		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	0.1	—	—	R	—		
DecaCB (#209)	<	0.5	—	—	R	—		
PCB Homologue Groups								
Total MonoCB	=	0.09	—	—	R	—		
Total DiCB	M	0.09	—	—	R	—		
Total TriCB	=	0.07	—	—	R	—		
Total TetraCB	M	0.1	—	—	R	—		
Total PentaCB	M	0.2	—	—	R	—		
Total HexaCB	M	0.1	—	—	R	—		
Total HeptaCB	<	0.2	—	—	R	—		
Total OctaCB	<	0.2	—	—	R	—		
Total NonaCB	<	0.3	—	—	R	—		
DecaCB (#209)	<	0.5	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	6/28/99	**Lab Sample Number**	06289926	**Prevailing Wind Direction**	SW
Project Number	49004	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	76.2
Station	26 103 Sawyer St	**Run Time (hours)**	16.65	**Average Solar Radiation (w•m²)**	273
Sample Type	Normal Sample	**Sample Volume (m³)**	224.775	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Detection Limit (ng)	Mass (ng)	EMPC*	QFlag	Concentration (ng/m³)	TEF	TEQ† (ng/m³)
PCB Congeners								
3,3',4,4'-TetraCB (#77)	=	0.04	—	—	R	—	0.0001	
3,4,5,4'-TetraCB (#81)	=	—	—	—	R	—	0.0001	
2,3,3',4,4'-PentaCB (#105)	=	0.06	—	—	R	—	0.0001	
2,3,4,4',5-PentaCB (#114)	=	0.04	—	—	R	—	0.0005	
2,3',4,4',5-PentaCB (#118)	=	0.05	—	—	R	—	0.0001	
2',3,4,4',5-PentaCB (#123)	=	0.05	—	—	R	—	0.0001	
3,3',4,4',5-PentaCB (#126)	=	0.07	—	—	R	—	0.1	
2,3,3',4,4',5-HexaCB (#156)	=	0.05	—	—	R	—	0.0005	
2,3,3',4,4',5'-HexaCB (#157)	=	0.05	—	—	R	—	0.0005	
2,3',4,4',5,5'-HexaCB (#167)	=	0.05	—	—	R	—	0.00001	
3,3',4,4',5,5'-HexaCB (#169)	<	0.06	—	—	R	—	0.01	
2,2',3,3',4,4',5-HeptaCB (#170)	=	0.1	—	—	R	—	—	
2,2',3,4,4',5,5'-HeptaCB (#180)	=	0.09	—	—	R	—	—	
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.07	—	—	R	—	0.0001	
DecaCB (#209)	<	0.3	—	—	R	—	—	
PCB Homologue Groups								
Total MonoCB	=	0.03	—	—	R	—		
Total DiCB	=	0.04	—	—	R	—		
Total TriCB	=	0.02	—	—	R	—		
Total TetraCB	M	0.04	—	—	R	—		
Total PentaCB	M	0.05	—	—	R	—		
Total HexaCB	M	0.06	—	—	R	—		
Total HeptaCB	=	0.09	—	—	R	—		
Total OctaCB	=	0.2	—	—	R	—		
Total NonaCB	=	0.2	—	—	R	—		
DecaCB (#209)	<	0.3	—	—	R	—		
Homologue Groups Sum								

* M indicates all or a portion of the result has a calculated EMPC value.
† TEQ is the product of the concentration and its TEF value.

Appendix J

Appendix J: Field Audit Report and Response

The information contained in this section includes the field audit reports prepared by FWENC and subsequent responses from KEVRIC.

Copies to:
Jeff
Kevin Boyle
D. Allen
Olig. Contract File 8301

FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Memorandum

To: H. Douglas

From: M. Bilello

Date: 7/23/99

Subject: New Bedford Harbor – Task 17 Air Quality Program Performance Audit

---

On July 7, 1999 a performance audit was conducted at the subject project. The results of the audit are contained in the attached report.

Overall the audit results were acceptable, a few minor housekeeping / maintenance findings were noted. An audit exit interview was held with Mark Gouveia at the conclusion of the audit, and the findings of the audit were discussed.

The audit findings will need to be responded to in writing by August 6, 1999.

cc:
M. Gouveia (Kevric)
D. Allen (Kevric)
Project File

nbaudm1

New Bedford Harbor
Baseline Air Sampling Program
Task 17

July 7, 1999
Performance Audit Report

Prepared by

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

On July 7, 1999 a performance audit was conducted on the Air Sampling (PCB) Network for Task 17 in New Bedford MA. The Network consists of seven samplers at six locations around the harbor. The samplers were manufactured by Anderson - General Metal Works and are model PS1.

The samplers were audited using personnel and standards not utilized in the routine calibration or operation of the sampling network. The audit was conducted by Michael Bilello of Foster Wheeler Environmental Corporation who was accompanied by the network operator Mark Gouveia of Kevric. Mr. Gouveia provided the sampler responses during the audit.

The following table summarizes the results of the audit and a copy of the Audit Data Sheet and certification of the orifice used for the audit are attached to this report. The results of audit values Vs sampler flows were with in +/- 7% indicating that no action is required to determine the difference between the flow rates.

July 7, 1999 Performance Audit Report Summary

Sampler ID	Audit Flow (slpm)	Sampler Flow (slpm)	Percent Difference
21	213.6	223.9	4.8
22	209.9	221.8	5.7
23	215.4	226.6	5.2
24	212.9	222.7	4.6
24D	210.1	223.9	6.5
25	218.1	224.1	2.7
26	211.2	224.3	6.2

There were several minor maintenance and housekeeping items that require a response. These are:

July 7, 1999 Performance Audit - Action Items

Sampler ID	Action Item
21	Sampler Interior needs to be cleaned — cleaned Sampler needs new exhaust hose — hose attached
22	None
23	None
24	Sampler Platform needs Tie-downs — can be tied down
24D	Sampler Platform needs Tie-downs — b/c on RCRA cap asphalt
25	Sampler needs new exhaust hose — replaced
26	Bolt sampler to platform ✓ Sampler Platform needs Tie-downs

not done will finish before tomorrow

no penetrate possible

cleaned insides of all

hang cinder blocks from them

The results of the audit and the action items were discussed with Mark Gouveia during the exit interview with Michael Bilello. These action items should be addressed by August 6, 1999 and the deposition of the action items should be submitted in writing to:

Foster Wheeler Environmental Corporation
Attn: Michael Bilello
302 Research Drive
Norcross, GA 30092

Upon receipt of the written confirmation that the action items have been properly addressed this audit will be closed.

Attachments

Andersen Instruments, Inc.

Orifice Transfer Standard Certification Worksheet

AUDIT

Date: 04/29/1999 **Rootsmeter S/N:** 9736553 **Ta:** 21.00 C
Operator: S. LESTER **Calibrator S/N:** 1135 **Pa:** 745.7 mm Hg
Calibrator Model #: G40 (low flow) **Placed in service:**

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	6.216	3.92	2.00
2	3.00	4.00	1.00	3.841	10.09	5.50
3	5.00	6.00	1.00	3.051	15.69	8.50
4	7.00	8.00	1.00	2.612	20.93	11.50
5	9.00	10.00	1.00	2.296	26.53	14.50
6	11.00	12.00	1.00	2.143	30.08	16.50

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H(Ta / Pa)}$ (y-axis)
0.986	0.159	1.408	0.995	0.160	0.888
0.978	0.255	2.335	0.986	0.257	1.473
0.970	0.318	2.903	0.979	0.321	1.831
0.963	0.369	3.376	0.972	0.372	2.130
0.956	0.416	3.791	0.964	0.420	2.392
0.951	0.444	4.044	0.960	0.448	2.551
	m =	9.2081		m =	5.7580
	b =	-0.032334		b =	-0.020397
	r =	0.999859		r =	0.999859

Calculations

$$Vstd = \Delta Vol((Pa - \Delta P) / Pstd)(Tstd / Ta)$$

$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol((Pa - \Delta P) / Pa)$$

$$Qa = Va / \Delta Time$$

For subsequent flow rate calculations:

$$Qstd = 1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right)$$

$$Qa = 1/m\left(\left(\sqrt{\Delta H(Ta / Pa)}\right) - b\right)$$

Standard Conditions:

Tstd: 297.18 ° K

Pstd: 760 mm Hg

where:

ΔH: calibrator manometer reading (in H2O)

ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (° K)

Pa: actual barometric pressure (mm Hg)

b: intercept

m: slope

For additional information consult:

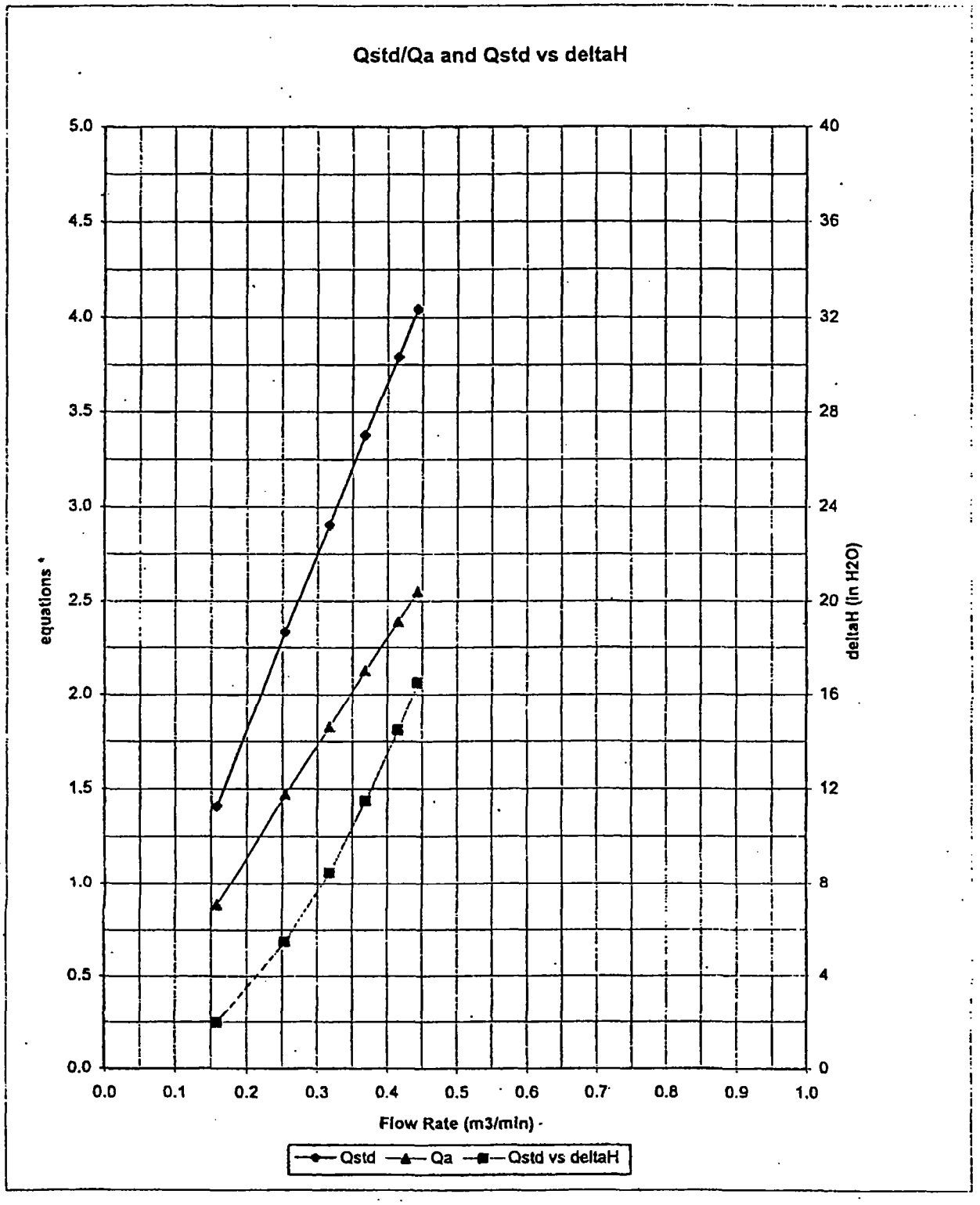
1. The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
2. Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
3. Andersen Instruments, Inc. Instruction Manual

Notes:

1. Copies of this calibration are not kept on file.
2. EPA recommends calibrators should be recalibrated after one year of use.

Andersen Instruments, Inc. Model:G40 SN:1135 page 2

Orifice Transfer Standard Certification



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

$\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project: New Bedford

Date: 07/07/99

Auditor: M. Bilello

Operator: M. Gouveja

Preliminary

Calibration Orifice ID: G40/1135

Orifice Data

Correlation Coef. (CC1)	0.999859
Slope (M1):	9.2081
Intercept (B1):	-0.032334

Sampler: 21

Ambient Temp:(°C)(Ta): 28.7

Amb. Press: (mmHg)(Pa): 758.0

STP: 0.9851

Previous Calibration Data

Slope (MP):	0.027582
Intercept (BP):	-0.785865
Date of Previous calibration:	06/03/99

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	29.5	1.93	5.39	213.6

NOTES: Sampler Interior needs to be cleaned, sampler needs new exhaust hose

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
223.9	-4.8

Sampler: 22

Ambient Temp:(°C)(Ta): 31.5

Amb. Press: (mmHg)(Pa): 758.0

STP: 0.9761

Previous Calibration Data

Slope (MP):	0.023487
Intercept (BP):	0.157119
Date of Previous calibration:	06/03/99

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.7	29.5	1.90	5.37	209.9

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
221.8	-5.7

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project: New Bedford

Date: 07/07/99

Sampler: 23
Ambient Temp:(°C)(Ta): 31.5
Amb. Press: (mmHg)(Pa): 758.0
STP: 0.9761

Previous Calibration Data
Slope (MP): 0.020704
Intercept (BP): 0.393680
Date of Previous calibration:

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.9	26.5	1.95	5.09	215.4

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
226.6	-5.2

Sampler: 24
Ambient Temp:(°C)(Ta): 30.8
Amb. Press: (mmHg)(Pa): 758.0
STP: 0.9783

Previous Calibration Data
Slope (MP): 0.025484
Intercept (BP): -0.349651
Date of Previous calibration:

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	29	1.93	5.33	212.9

NOTES: Sampler needs tie downs

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
222.7	-4.6

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Bedford

Date: 07/07/99

Sampler: 24D
Ambient Temp:(°C)(Ta): 30.8
Amb. Press: (mmHg)(Pa): 758.0
STP: 0.9783

Previous Calibration Data
Slope (MP): 0.024335
Intercept (BP): 0.059518
Date of Previous calibration:

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer, (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.7	31	1.90	5.51	210.1

NOTES: samplers needs tie downs

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
223.9	-6.5

Sampler: 25
Ambient Temp:(°C)(Ta): 31.4
Amb. Press: (mmHg)(Pa): 758.0
STP: 0.9764

Previous Calibration Data
Slope (MP): 0.021238
Intercept (BP): 0.607088
Date of Previous calibration:

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
4	29.5	1.98	5.37	218.1

NOTES: Sampler needs longer exhaust hose.

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
224.1	-2.7

08/02/99 MON 11:40 FAX 301 ...

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Bedford

Date: 07/07/99

Sampler:	26	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	27.6	Slope (MP):	0.025692
Amb. Press: (mmHg)(Pa):	758.0	Intercept (BP):	-0.094212
STP:	0.9887	Date of Previous calibration:	

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.7	32.5	1.91	5.67	211.2

NOTES: Bolt sampler to platform and tie down platform

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
224.3	-6.2

Sampler:		Previous Calibration Data	
Ambient Temp:(°C)(Ta):		Slope (MP):	
Amb. Press: (mmHg)(Pa):		Intercept (BP):	
STP:	0.0000	Date of Previous calibration:	

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
		0.00	0.00	3.5

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
#DIV/0!	#DIV/0!

KEVRIC

The KEVRIC Company, Inc.
Commerce Building, Suite 200
314 East Commerce Street
San Antonio, Texas 78205
(210) 212-6161 • Fax (210) 212-5432

August 12, 1999

Mr. Mike Bilello
Foster Wheeler Environmental Corporation
302 Research Drive
Norcross, GA 30092

Re: 6 August 1999 KEVRIC Letter, "New Bedford Harbor - Task 17 Air Quality Program Performance Audit"

Dear Mr. Bilello,

This letter is to confirm that items 2. and 4. of the subject letter have been completed as described. Sampler stations 24, 24D, and 26 have been secured. If you have any additional questions, please contact me at (210) 212-6161.

Sincerely,

Kevin M. Boyle
Manager
Environmental Management and
Engineering Services

KMB/trp

cc: David Allen
Mark Gouveia
file

AUDIT RESPONSES
sent by MARK GOUVEIA

FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Memorandum

To: H. Douglas

From: M. Bilello

Date: 11/15/99

Subject: New Bedford Harbor – Task 17 Air Quality Program Performance Audit

---

On October 27, 1999 a performance audit was conducted at the subject project. The results of the audit are contained in the attached report.

Overall the audit results were acceptable, one sampler was found to be have a difference greater than 7 % and a minor finding was noted. An audit exit interview was held with Miguel Guzman at the conclusion of the audit, and the findings of the audit were discussed.

The audit findings will need to be responded to in writing by November 26, 1999.

cc:
[redacted] (Kevric)
K. Boyle (Kevric)
D. Holmquist
Project File

NBAUDM3.DOC

On October 27, 1999 a performance audit was conducted on the Air Sampling (PCB) Network for Task 17 in New Bedford MA. The Network consists of seven samplers at six locations around the harbor. The samplers were manufactured by Anderson - General Metal Works and are model PS1.

The samplers were audited using personnel and standards not utilized in the routine calibration or operation of the sampling network. The audit was conducted by Michael Bilello of Foster Wheeler Environmental Corporation who was accompanied by the network operator Miguel Guzman of Kevric. Mr. Guzman provided the sampler responses during the audit.

The following table summarizes the results of the audit and a copy of the Audit Data Sheet and certification of the orifice used for the audit are attached to this report. The results of audit values Vs sampler flows were with in +/- 7% for all but one of the samplers, indicating that no action is required to determine the cause of the difference between the sampler and audit flow rates. The recommended action for the sampler with an error of -7.5 % is given in the Action Items table.

October 27, 1999 Performance Audit Report Summary

Sampler ID	Audit Flow (slpm)	Sampler Flow (slpm)	Percent Difference
21	214.8	223.5	-4.1
22	207.2	221.2	-6.8
23	211.0	224.2	-6.3
24	211.7	224.9	-6.2
24D	210.3	226	-7.5
25	218.9	220.8	-.09
26	215.1	226.2	-5.2

October 27, 1999 Performance Audit - Action Items

Sampler ID	Action Item
24D	Flow rate of sampler should be verified and / or re-calibrated
26	Sampler cover needs to be re-attached

11/24 Sampler 24D recalibrated -
245 PM
60°F

11/24 Sampler cover re-attached on sampler 26
100 PM.

The results of the audit and the action items were discussed with Miguel Guzman during the exit interview with Michael Bilello. These action items should be addressed by November 27, 1999 and the deposition of the action items should be submitted in writing to:

Foster Wheeler Environmental Corporation
Attn: Michael Bilello
302 Research Drive
Norcross, GA 30092

Upon receipt of the written confirmation that the action items have been properly addressed this audit will be closed.

FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Memorandum

To: D. Holmquist

From: M. Bilello

Date: 11/15/99

Subject: New Bedford Harbor – Task 21 Air Quality Program Performance Audit

---

On October 26, 1999 a performance audit was conducted at the subject project. The results of the audit are contained in the attached report.

Overall the audit results were acceptable, one sampler was found to be have a difference greater than 10 % and a few minor findings were noted. An audit exit interview was held with Miguel Guzman at the conclusion of the audit, and the findings of the audit were discussed.

The audit findings will need to be responded to in writing by November 26, 1999.

cc:
[redacted] (Kevric)
K. Boyle (Kevric)
H. Douglas
Project File

NBAUDM2.DOC

On October 26, 1999 a performance audit was conducted on the Air Sampling (PCB) Network for Task 21 in New Bedford MA. The Network consists of ten samplers at eight locations around the harbor. The samplers were manufactured by Anderson - General Metal Works and are model PS1.

The samplers were audited using personnel and standards not utilized in the routine calibration or operation of the sampling network. The audit was conducted by Michael Bilello of Foster Wheeler Environmental Corporation who was accompanied by the network operator Miguel Guzman of Kevric. Mr. Guzman provided the sampler responses during the audit.

The following table summarizes the results of the audit and a copy of the Audit Data Sheet and certification of the orifice used for the audit are attached to this report. The results of audit values Vs sampler flows were with in +/- 7% for all but one of the samplers, indicating that no action is required to determine the cause of the difference between the sampler and audit flow rates. The recommended action for the sampler with an error of –14.3 % is given in the Action Items table.

October 27, 1999 Performance Audit Report Summary

Sampler ID	Audit Flow (slpm)	Sampler Flow (slpm)	Percent Difference
3	203.8	216.7	-6.3
3C	197.7	225.9	-14.3
3D	218.4	223.1	-2.2
4	212.1	223.5	-5.3
5	211.9	222.0	-4.7
6	210.7	219.1	-4.0
7	210.2	221.3	-5.3
9	207.3	221.3	-6.8
17	210.2	224.4	-6.7

October 27, 1999 Performance Audit - Action Items

Sampler ID	Action Item
3C	Re-calibrated sampler
9	Safety Issue – nails protruding from platform present a tripping hazard.
9	Cam lock fitting is loose.

11/29 900 AM.

38°F Sampler 3C re-calibrated

Hammered nails into platform in sampling location 09

Cam lock replaced on sampler 09

The results of the audit and the action items were discussed with Miguel Guzman during the exit interview with Michael Bilello. These action items should be addressed by November 27, 1999 and the deposition of the action items should be submitted in writing to:

Foster Wheeler Environmental Corporation
Attn: Michael Bilello
302 Research Drive
Norcross, GA 30092

Upon receipt of the written confirmation that the action items have been properly addressed this audit will be closed.

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 11/24/99
Time: 0:00
Operator: MIGUEL

Sampler ID/SN:
Timer Model/ SN: 70/
ETI (Start): 1327.64
ETI (End): 1327.94

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 17.2
Amb. Press: (mmHg)(Pa): 764.5
STP: 1.0330

Previous Calibration Data

Slope (MP): 0.0277
Intercept (BP): -0.65044
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	30	1.82	5.57	225.7

NOTES:
Values b/c this sampler has been calibrated previously

Flow based on Previous calibration, slpm (X2)	Percent Difference (X1-X2)/X1*100
224.5	0.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 11/24/1999
Leak Test: 11/24/1999
GFI Tested: 11/24/1999
Notes: CALIBRATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D

Date: 11/24/99

Time: 0:00

Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 17.2

Amb. Press:(Pa) (mmHg): 764.5

STP: 1.0330

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, xlpm (X1)
1	6.70	70.0	2.63	8.50	329.7
2	6.00	60.0	2.49	7.87	311.6
3	5.00	50.0	2.27	7.19	283.8
4	4.20	40.0	2.08	6.43	259.6
5	3.20	30.0	1.82	5.57	225.7
6	2.20	20.0	1.51	4.55	185.9
7	1.70	15.0	1.33	3.94	162.6
	Regression of Y4 vs X1	Corr. Coef. 0.999680	Slope 0.0270	Intercept -0.49713	
	Sampler Set-Up	Target Flow(alpm)(XT) 225	Target magnehelic(SP) 30.2	Actual magnehelic	

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$

BP = Sampler Intercept from most recent calibration

MP = Sampler Slope from most recent calibration

XT = Target Flow (alpm)

SP = magnehelic Set Point
= $[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (alpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (alpm)
= (Y3-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE: 3C
Date: 11/29/99
Time: 0:00
Operator: MIGUEL

Sampler ID/SN: 3C
Timer Model/ SN:
ETI (Start): 1423.80
ETI (End): 1424.04

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1)	0.999993
Slope (M1):	7.8123
Intercept (B1):	0.055159

AS FOUND

Ambient Temp:(°C)(Ta):	23.3
Amb. Press: (mmHg)(Pa):	761.8
STP:	1.0082

Previous Calibration Data

Slope (MP):	0.0234
Intercept (BP):	0.18967
Date of Previous calibration:	10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (X1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, scfm (X1)
>	>	0.00	0.00	-7.1

NOTES:

blank b/c it is a new calibration

Flow based on Previous calibration, scfm (QP)	Percent Difference (X1-QP)/X1*100
-8.1	-14.8

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: na
magnehelic Zeroed: 11/29/1999
Leak Test: 11/29/1999
GFI Tested: 11/29/1999
Notes: CALIBRATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 3C
Date: 11/29/99
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 3.8
Amb. Press:(Pa) (mmHg): 765.5
STP: 1.0844

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer: inches (Y1)	Sampler magnehelic: inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	6.00	60.0	2.55	8.07	319.4
2	5.20	50.0	2.37	7.36	296.8
3	4.20	40.0	2.13	6.59	266.1
4	3.10	30.0	1.83	5.70	227.6
5	2.00	20.0	1.47	4.66	181.4
6	1.50	15.0	1.28	4.03	156.2
7	1.00	10.0	1.04	3.29	126.2
	Regression of Y4 vs X1	Corr. Coef. 0.999682	Slope 0.0242	Intercept 0.23905	
	Sampler Set-Up	Target Flow(slpm)(XT) 225	Target magnehelic(SP) 29.7	Actual magnehelic 30.0 ← this should be blank used for 1 pt Check	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 3C
Date: 11/29/99
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 3.8
Amb. Press:(Pa) (mmHg): 765.5
STP: 1.0844

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	6.00	60.0	2.55	8.07	319.4
2	5.20	50.0	2.37	7.36	296.9
3	4.20	40.0	2.13	6.59	266.1
4	3.10	30.0	1.83	5.70	227.6
5	2.00	20.0	1.47	4.66	181.4
6	1.50	15.0	1.28	4.03	156.2
7	1.00	10.0	1.04	3.29	126.2
Regression of Y4 vs X1	Corr. Coef.		Slope	Intercept	
	0.999682		0.0242	0.23905	
Sampler Set-Up	Target Flow(slpm)(XT)		Target magnehelic(SP)	Actual magnehelic	
	225		29.7		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

file copy

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 3C
Date: 11/29/99
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 3.8
Amb. Press:(Pa) (mmHg): 765.5
STP: 1.0844

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, alpm (X1)
1	6.00	60.0	2.55	8.07	319.4
2	5.20	50.0	2.37	7.36	296.9
3	4.20	40.0	2.13	6.59	266.1
4	3.10	30.0	1.83	5.70	227.6
5	2.00	20.0	1.47	4.66	181.4
6	1.50	15.0	1.26	4.03	156.2
7	1.00	10.0	1.04	3.29	126.2
Regression of Y4 vs X1		Corr. Coef. 0.999682	Slope 0.0242	Intercept 0.23905	
Sampler Set-Up		Target Flow(alpm)(XT) 225	Target magnehelic(SP) 29.7	Actual magnehelic	← Suppose to be blank

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (alpm)
SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (alpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP = $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (alpm)
$= (Y4-BP)/MP$

KEVRIC

The KEVRIC Company, Inc.
Commerce Building, Suite 200
314 East Commerce Street
San Antonio, Texas 78205
(210) 212-6161 • Fax (210) 212-5432

December 3, 1999

Mr. Michael Bilello
Foster Wheeler Environmental Corporation
302 Research Drive
Norcross, GA 30092

Re: New Bedford Harbor – Task 17 Air Quality Program Performance Audit Responses

Dear Mr. Bilello,

The KEVRIC Company, Inc. (KEVRIC) is pleased to submit the following responses to the 27 October 1999 performance audit findings of the above listed project.

1. Sampler ID 24D – the sampler has been recalibrated.

2. Sampler ID 26 – the sampler cover has been reattached.

If you have any questions regarding these actions, please contact me at (210) 212-6161.

Sincerely,

Kevin M. Boyle
Manager
Environmental and Engineering Services

KMB/clb

cc: David Allen, The KEVRIC Company, Inc.
Mark Gouveia, The KEVRIC Company, Inc.
Helen Douglas, Foster Wheeler Environmental Corporation
Dan Holmquist, Foster Wheeler Environmental Corporation

Enclosures: Field Calibration Data Sheet, Sampler ID 24D

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 11/24/99
Time: 0:00
Operator: MIGUEL

Sampler ID/SN:
Timer Model/ SN: 70/
ETI (Start): 1327.64
ETI (End): 1327.94

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 17.2
Amb. Press: (mmHg)(Pa): 764.5
STP: 1.0330

Previous Calibration Data

Slope (MP): 0.0277
Intercept (BP): -0.65044
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	30	1.82	5.57	225.7
NOTES:			Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*100
			224.5	0.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 11/24/1999
Leak Test: 11/24/1999
GFI Tested: 11/24/1999
Notes: CALIBRATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 11/24/99
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 17.2
Amb. Press:(Pa) (mmHg): 764.5
STP: 1.0330

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer Inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	6.70	70.0	2.63	8.50	329.7
2	6.00	60.0	2.49	7.87	311.6
3	5.00	50.0	2.27	7.19	283.8
4	4.20	40.0	2.08	6.43	259.6
5	3.20	30.0	1.82	5.57	225.7
6	2.20	20.0	1.51	4.55	185.9
7	1.70	15.0	1.33	3.94	162.6
Regression of Y4 vs X1		Corr. Coef.	Slope	Intercept	
		0.999680	0.0270	-0.49713	
Sampler Set-Up		Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	30.2		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
=$[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y3-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 11/24/99
Time: 0:00
Operator: MIGUEL

Sampler ID/SN:
Timer Model/ SN: 70/
ETI (Start): 1327.64
ETI (End): 1327.94

Calibration Orifice ID: G40/2006N

Orifice Data
Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND
Ambient Temp:(°C)(Ta): 17.2
Amb. Press: (mmHg)(Pa): 764.5
STP: 1.0330

Previous Calibration Data
Slope (MP): 0.0277
Intercept (BP): -0.65044
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (X1)	Sampler magnehelic, inches (X2)	Orifice manometer (X3)	Sampler magnehelic (X4)	Calculated value orifice flow, sfpm (X5)
3.2	30	1.82	5.57	225.7

NOTES:

Flow based on Previous calibration, sfpm (QP)	Percent Difference (QS-QP)/QS*100
224.5	0.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 11/24/1999
Leak Test: 11/24/1999
GFI Tested: 11/24/1999
Notes: CALIBRATION

12/03/1999 19:15 5089795027 FOSTER WHEELER ENV PAGE 02

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 11/24/99
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 17.2
Amb. Prese:(Pa) (mmHg): 764.5
STP: 1.0330

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	6.70	70.0	*2.63*	*8.50*	329.7
2	6.00	60.0	*2.49*	*7.87*	311.6
3	5.00	50.0	*2.27*	*7.19*	283.8
4	4.20	40.0	*2.08*	*6.43*	259.6
5	3.20	30.0	*1.82*	*5.57*	225.7
6	2.20	20.0	*1.51*	*4.55*	185.9
7	1.70	15.0	*1.33*	*3.94*	162.6

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
	0.999680	*0.0270*	*-0.49713*	
Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	30.2		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=\{[(XT*M2)+B2]^2\} / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
$= (Y3-BP)/MP$

nb0699.xls
Site 24D

12/03/1999 19:15 5089795027 FOSTER WHEELER ENV PAGE 03

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 3C
Date: 11/29/99
Time: 0:00
Operator: MIGUEL

Sampler ID/SN: 3C
Timer Model/ SN:
ETI (Start): 1423.80
ETI (End): 1424.04

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 23.3
Amb. Press: (mmHg)(Pa): 761.8
STP: 1.0082

Previous Calibration Data

Slope (MP): 0.0234
Intercept (BP): 0.18967
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (X2)	Sampler magnehelic (X4)	Calculated value orifice flow, scfm (X1)
		0.00	0.00	-7.1
NOTES:			Flow based on Previous calibration, scfm (QP)	Percent Difference (Q1-X6)/Q1*100
			-8.1	-14.8

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: na
magnehelic Zeroed: 11/29/1999
Leak Test: 11/29/1999
GFI Tested: 11/29/1999
Notes: CALIBRATION

12/03/1999 19:15 5089795027 FOSTER WHEELER ENV PAGE 04

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 3C
Date: 11/29/89
Time: 0:00
Operator: MIGUEL

AS LEFT

Ambient Temp:(°C): 3.8
Amb. Press:(Pa) (mmHg): 765.5
STP: 1.0844

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	6.00	60.0	2.55	8.07	319.4
2	5.20	50.0	2.37	7.36	296.9
3	4.20	40.0	2.13	6.59	266.1
4	3.10	30.0	1.83	5.70	227.6
5	2.00	20.0	1.47	4.66	181.4
6	1.50	15.0	1.26	4.03	156.2
7	1.00	10.0	1.04	3.29	126.2
	Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
		0.999682	0.0242	0.23905	
	Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	29.7		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qa) Intercept
M1 = Manuf.'s Calibration orifice (Qa) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

12/03/1999 19:15 5089795027 FOSTER WHEELER ENV PAGE 05

Recd 3/14/00
1030
1/8

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Correspondence

DATE: March 9, 2000

TO: H. Douglas
K. Boyle
M. Gouveia
M. Guzman

OFFICE LOCATION: Various

FROM: M. Bilello

OFFICE LOCATION: ATL

SUBJECT: TASK 17 AMBIENT AIR QUALITY MONITORING PERFORMANCE AUDIT

On March 1, 2000, a performance audit was conducted on the Air Sampling (PCB) Network for Task 17 in New Bedford MA. The Network consists of seven samplers at six locations around the harbor. The samplers were manufactured by Anderson - General Metal Works and are model PS1.

The samplers were audited using personnel and standards not utilized in the routine calibration or operation of the sampling network. The audit was conducted by Michael Bilello of Foster Wheeler Environmental Corporation who was accompanied by the Network operator Miguel Guzman of Kevric. Mr. Guzman provided the sampler responses during the audit.

The following table summarizes the results of the audit. A copy of the Audit Data Sheet and certification of the orifice used for the audit are attached to this report. The results of audit values versus sampler flows were with in +/- 7% for all samplers, indicating that the samplers were operating properly

March 1, 2000 Performance Audit Report Summary			
Sampler ID	Audit Flow (slpm)	Sampler Flow (slpm)	Percent Difference
21	213.4	221.4	-3.7
22	209.8	224.1	-6.8
23	212.8	228.5	-7.4
24	209.6	222.1	-5.9
24D	206.5	218.2	-5.6
25	216.1	229.4	-6.1
26	213.0	223.5	-4.9

It was noted that the calibrations for all the analyzers were last performed in October or November of 1999 indicating that the samplers were past due for calibration. Mark Gouveia said that he thought he did a calibration in December 1999 but could not locate any documentation in the logbook or the calibration data sheets.

March 3, 2000 Performance Audit - Action Items	
Sampler ID	**Action Item**
All Samplers	Perform past due calibration and maintenance.
22	Safety Issue – electrical plug was filled with water causing GFI to "trip". To extent possible electrical connections should be placed under the sampler.

The results of the audit and the action items were discussed with Mark Gouveia during the exit interview with Michael Bilello. The action items should be addressed by March 17, 2000 and the deposition of the action items should be submitted in writing to:

Foster Wheeler Environmental Corporation
Attn: Michael Bilello
302 Research Drive
Norcross, GA 30092

Upon receipt of the written confirmation that the action items have been properly addressed, this audit will be closed.

22 wrapped in plastic

Attachments

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 03/01/00

Task 17

Auditor M. Bilello

Operator M. Guizman

Calibration Orifice ID: G40/1135

Orifice Data

Correlation Coef. (CC1): 0.999859

Slope (M1): 9.2081

Intercept (B1): -0.032334

Sampler: 21

Ambient Temp:(°C)(Ta): 6.9

Amb. Press: (mmHg)(Pa): 762.0

STP: 1.0675

Previous Calibration Data

Slope (MP): 0.0274

Intercept (BP): -0.69273

Date of Previous calibration: 01/01/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.5	27	1.93	5.37	213.4

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
221.4	-3.7

Sampler: 22

Ambient Temp:(°C)(Ta): 8.6

Amb. Press: (mmHg)(Pa): 762.0

STP: 1.0610

Previous Calibration Data

Slope (MP): 0.0270

Intercept (BP): -0.63695

Date of Previous calibration: 10/01/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	27.5	1.90	5.40	209.8

NOTES: GFI tripped found water in plug from timer to extension cord.

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
224.1	-6.8

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 03/01/00

Task 17

Sampler:	23	**Previous Calibration Data**	
Ambient Temp:(°C)(Ta):	8.6	Slope (MP):	0.0224
Amb. Press: (mmHg)(Pa):	762.0	Intercept (BP):	-0.11856
STP:	1.0610	Date of Previous calibration:	

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.5	23.5	1.93	4.99	212.8

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
228.5	-7.4

Sampler:	24	**Previous Calibration Data**	
Ambient Temp:(°C)(Ta):	9.1	Slope (MP):	0.0281
Amb. Press: (mmHg)(Pa):	762.0	Intercept (BP):	-1.09264
STP:	1.0591	Date of Previous calibration:	10/01/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	25	1.90	5.15	209.6

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
222.1	-5.9

Sampler:	24D	**Previous Calibration Data**	
Ambient Temp:(°C)(Ta):	9.1	Slope (MP):	0.0270
Amb. Press: (mmHg)(Pa):	762.0	Intercept (BP):	-0.49713
STP:	1.0591	Date of Previous calibration:	11/24/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.3	27.5	1.87	5.40	206.5

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
218.2	-5.6

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 03/01/00

Task 17

Sampler:	25	**Previous Calibration Data**	
Ambient Temp:(°C)(Ta):	7.7	Slope (MP):	0.0225
Amb. Press: (mmHg)(Pa):	762.0	Intercept (BP):	0.05912
STP:	1.0644	Date of Previous calibration:	10/01/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.6	25.5	1.96	5.21	216.1

NOTES:

Flow based on Previous callbration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
229.4	-6.1

Sampler:	26	**Previous Calibration Data**	
Ambient Temp:(°C)(Ta):	7.7	Slope (MP):	0.0257
Amb. Press: (mmHg)(Pa):	761.0	Intercept (BP):	-0.09421
STP:	1.0630	Date of Previous calibration:	06/21/99

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.5	30	1.93	5.65	213.0

NOTES:

Flow based on Previous callbration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
223.5	-4.9

Andersen Instruments, Inc.

Orifice Transfer Standard Certification Worksheet

AUDIT

Date: 04/29/1999 Rootsmeter S/N: 9736553 Ta: 21.00 C

Operator: S. LESTER Calibrator S/N: 1135 Pa: 745.7 mm Hg

Calibrator Model #: G40 (low flow) Placed in service:

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	6.216	3.92	2.00
2	3.00	4.00	1.00	3.841	10.09	5.50
3	5.00	6.00	1.00	3.051	15.69	8.50
4	7.00	8.00	1.00	2.612	20.93	11.50
5	9.00	10.00	1.00	2.296	26.53	14.50
6	11.00	12.00	1.00	2.143	30.08	16.50

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\,(Ta / Pa)}$ (y-axis)
0.986	0.159	1.408	0.995	0.160	0.888
0.978	0.255	2.335	0.986	0.257	1.473
0.970	0.318	2.903	0.979	0.321	1.831
0.963	0.369	3.376	0.972	0.372	2.130
0.956	0.416	3.791	0.964	0.420	2.392
0.951	0.444	4.044	0.960	0.448	2.551
	m =	9.2081		m =	5.7580
	b =	-0.032334		b =	-0.020397
	r =	0.999859		r =	0.999859

Calculations

$$Vstd = \Delta Vol((Pa - \Delta P) / Pstd)(Tstd / Ta)$$

$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol((Pa - \Delta P) / Pa)$$

$$Qa = Va / \Delta Time$$

For subsequent flow rate calculations:

$$Qstd = 1 / m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right)$$

$$Qa = 1 / m\left(\left(\sqrt{\Delta H\,(Ta / Pa)}\right) - b\right)$$

Standard Conditions:

Tstd: 297.18 ° K

Pstd: 760 mm Hg

where:

ΔH: calibrator manometer reading (in H2O)

ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (° K)

Pa: actual barometric pressure (mm Hg)

b: intercept

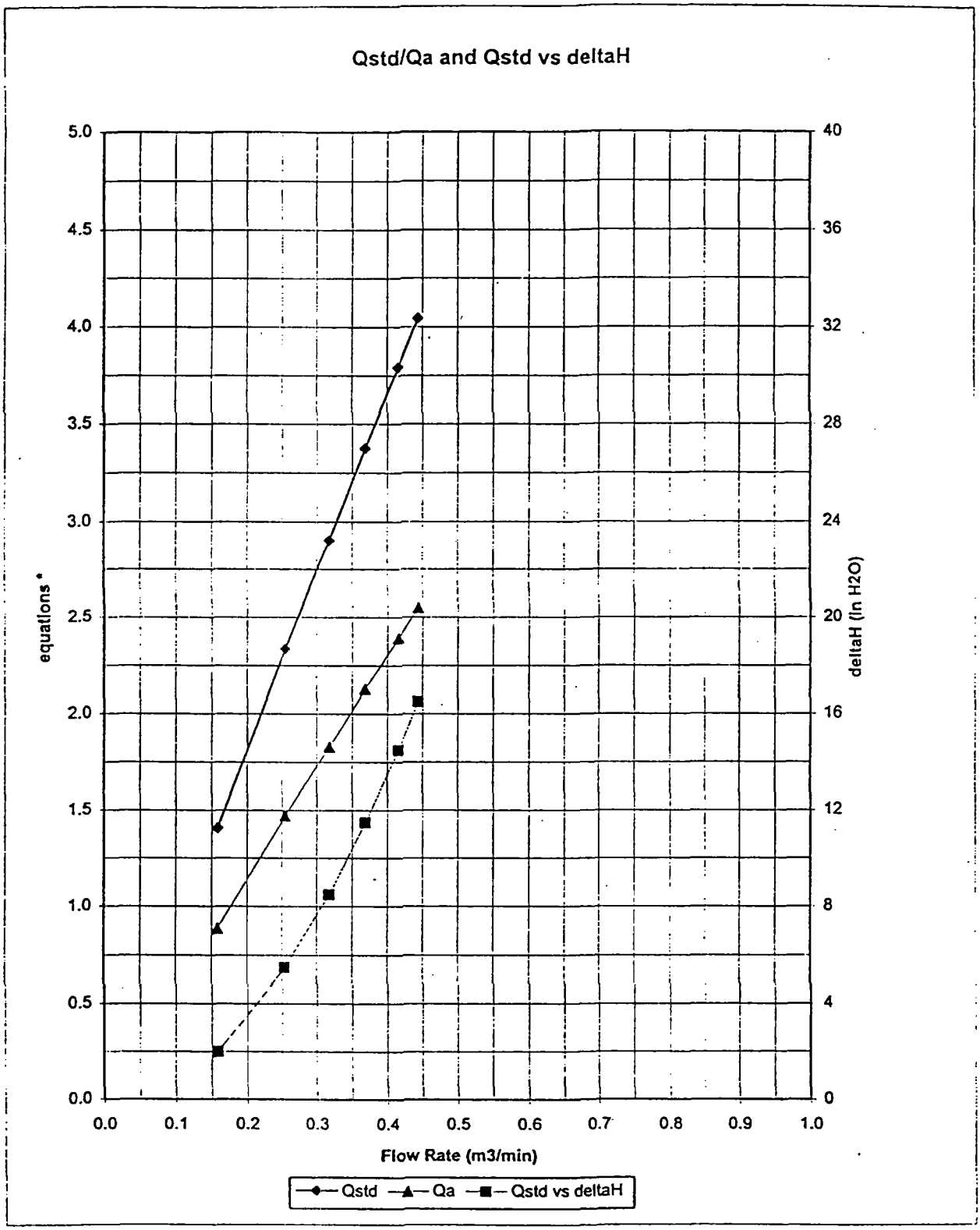
m: slope

For additional information consult:

1. The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
2. Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
3. Andersen Instruments, Inc. Instruction Manual

Notes:

1. Copies of this calibration are not kept on file.
2. EPA recommends calibrators should be recalibrated after one year of use.



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{P std}\right)\left(\frac{T std}{Ta}\right)}$

$\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 21
Date: 03/13/00
Time: 15:00
Operator: M.GUZMAN

Sampler ID/SN: 21/1686
Timer Model/ SN: BMPI-11/1686
ETI (Start): 1035.05
ETI (End): 1035.30

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 7.2
Amb. Press: (mmHg)(Pa): 764.7
STP: 1.0701

Previous Calibration Data

Slope (MP): 0.0274
Intercept (BP): -0.69273
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, elpm (X1)
9.4	29	1.91	5.57	237.1

NOTES:

Flow based on Previous calibration , elpm (XP)	Percent Difference (X1-XP)/X1*1000
228.8	3.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 5/99
magnehelic Zeroed: 03/13/2000
Leak Test:
GFI Tested: 03/13/2000
Notes: calibration check

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 21
Date: 03/13/00
Time: 15:00
Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2
Amb. Press:(Pa) (mmHg): 764.7
STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.35	40.0	*2.16*	*6.54*	269.1
2	3.75	35.0	*2.00*	*6.12*	249.4
3	3.30	30.0	*1.88*	*5.67*	233.5
4	2.80	25.0	*1.73*	*5.17*	214.5
5	2.30	20.0	*1.57*	*4.63*	193.8
6	1.80	15.0	*1.39*	*4.01*	170.6
7	1.30	10.0	*1.18*	*3.27*	143.9
Regression of Y4 vs X1		Corr. Coef. *0.999815*	Slope *0.0264*	Intercept *-0.49433*	
Sampler Set-Up		Target Flow(slpm)(XT) 225	Target magnehelic(SP) 27.6	Actual magnehelic 30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (slpm)
SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP = $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22
Date: 03/14/00
Time: 14:20
Operator: M.GUZMAN

Sampler ID/SN: 22/1689
Timer Model/ SN: #1689
ETI (Start): 1234.47
ETI (End): 1234.61

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0270
Intercept (BP): -0.63695
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.1	29	1.82	5.56	225.5

NOTES:

Flow based on Previous calibration ; slpm (XP)	Percent Difference (X1-XP)/X1*1000
229.8	-1.9

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: Calibration check

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22
Date: 03/14/00
Time: 14:20
Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4
Amb. Press:(Pa) (mmHg): 766.6
STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.09*	*6.53*	260.4
2	3.60	35.0	*1.86*	*6.10*	243.5
3	3.05	30.0	*1.80*	*5.65*	223.6
4	2.60	25.0	*1.66*	*5.16*	205.9
5	2.20	20.0	*1.53*	*4.61*	188.8
6	1.60	15.0	*1.31*	*4.00*	160.0
7	1.15	10.0	*1.11*	*3.26*	134.6
Regression of Y4 vs X1		Corr. Coef.	Slope	Intercept	
		0.999581	*0.0258*	*-0.20673*	
Sampler Set-Up		Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	29.8	30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

S

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 23
Date: 03/14/00
Time: 7:20
Operator: M.GUZMAN

Sampler ID/SN: 23/1507
Timer Model/ SN: #1507
ETI (Start): 6771.01
ETI (End): 6771.10

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0224
Intercept (BP): -0.11856
Date of Previous calibration: 10/01/00

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	25	1.85	5.16	229.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)X1*1000
235.9	-2.9

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: New Installation

S

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 23

Date: 03/14/00

Time: 7:20

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler, magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.70	40.0	*2.24*	*6.53*	279.2
2	4.15	35.0	*2.10*	*6.10*	262.0
3	3.65	30.0	*1.97*	*5.65*	245.2
4	3.10	25.0	*1.82*	*5.16*	225.5
5	2.45	20.0	*1.61*	*4.61*	199.7
6	1.85	15.0	*1.40*	*4.00*	172.6
7	1.35	10.0	*1.20*	*3.26*	146.4

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999676	*0.0241*	*-0.22753*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	25.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$=[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

Sampler ID/SN: 24/45195

Timer Model/ SN: #1688

ETI (Start): 1218.86

ETI (End): 1219.17

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4

Amb. Press: (mmHg)(Pa): 766.6

STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0281

Intercept (BP): -1.09264

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.90	5.56	236.5
NOTES:			Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
			236.7	-0.1

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 05/27/1999

magnehelic Zeroed: 03/14/2000

Leak Test: 03/14/2000

GFI Tested: 03/14/2000

Notes: Calibration check

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	40.0	*2.21*	*6.53*	276.2
2	4.00	35.0	*2.06*	*6.10*	257.1
3	3.50	30.0	*1.93*	*5.65*	240.0
4	3.10	25.0	*1.82*	*5.16*	225.5
5	2.50	20.0	*1.63*	*4.61*	201.8
6	2.00	15.0	*1.46*	*4.00*	179.7
7	1.50	10.0	*1.26*	*3.26*	154.7
	Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
		0.998583	*0.0270*	*-0.87288*	
	Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	25.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$

BP = Sampler Intercept from most recent calibration

MP = Sampler Slope from most recent calibration

XT= Target Flow (slpm)

SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE: 24D
Date: 03/14/00
Time: 0:00
Operator: M.GUZMAN

Sampler ID/SN: 24D/1690
Timer Model/ SN: BMPSI-11/#1690
ETI (Start): 1399.68
ETI (End): 1399.67

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0270
Intercept (BP): -0.49713
Date of Previous calibration: 11/24/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	30	1.65	5.65	229.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
227.6	0.7

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: CALIBRATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D

Date: 03/14/00

Time: 0:00

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	3.70	40.0	*1.98*	*6.53*	247.0
2	3.35	35.0	*1.89*	*6.10*	234.7
3	2.85	30.0	*1.74*	*5.65*	215.9
4	2.40	25.0	*1.60*	*5.16*	197.5
5	1.95	20.0	*1.44*	*4.61*	177.4
6	1.40	15.0	*1.22*	*4.00*	149.2
7	0.90	10.0	*0.98*	*3.26*	118.2
Regression of Y4 vs X1	Corr. Coef.		Slope	Intercept	
	0.999419		*0.0251*	*0.24276*	
Sampler Set-Up	Target Flow(slpm)(XT)		Target magnehelic(SP)	Actual magnehelic	
	225		32.6		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y3-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 25
Date: 03/13/00
Time:
Operator: M.GUZMAN

Sampler ID/SN: 25/2109
Timer Model/ SN: BMPSI-11/#2109
ETI (Start): 5979.89
ETI (End): 5980.24

Calibration Orifice ID: G40/2006N

Orifice Data
Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND
Ambient Temp:(°C)(Ta): 7.2
Amb. Press: (mmHg)(Pa): 764.7
STP: 1.0701

Previous Calibration Data
Slope (MP): 0.0225
Intercept (BP): 0.05912
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.91	5.57	237.1
NOTES:			Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
			245.4	-3.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/13/2000
Leak Test: 03/13/2000
GFI Tested: 03/13/2000
Notes: Calibration check

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 25

Date: 03/13/00

Time:

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2

Amb. Press:(Pa) (mmHg): 764.7

STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	5.45	40.0	*2.41*	*6.54*	302.1
2	4.50	35.0	*2.19*	*6.12*	273.8
3	3.90	30.0	*2.04*	*5.67*	254.4
4	3.40	25.0	*1.91*	*5.17*	237.1
5	2.55	20.0	*1.65*	*4.63*	204.4
6	1.75	15.0	*1.37*	*4.01*	168.1
7	1.10	10.0	*1.08*	*3.27*	131.8
	Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
		0.999000	*0.0104*	*0.70002*	
	Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	24.0		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 26
Date: 03/13/00
Time: 0:00
Operator: M.GUZMAN

Sampler ID/SN: 26/2109
Timer Model/ SN: GPSI-#2109
ETI (Start): 540.52
ETI (End): 540.74

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 7.2
Amb. Press: (mmHg)(Pa): 764.7
STP: 1.0701

Previous Calibration Data

Slope (MP): 0.2490
Intercept (BP): -0.01307
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
	55	0.00	7.67	-7.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
30.9	537.1

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: N/A
Change Brushes: N/A
magnehelic Zeroed: 03/13/2000
Leak Test:
GFI Tested: 03/13/2000
Notes: Calibration check

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 26

Date: 03/13/00

Time: 0:00

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2

Amb. Press:(Pa) (mmHg): 764.7

STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.08*	*6.54*	261.1
2	3.50	35.0	*1.94*	*6.12*	240.7
3	3.00	30.0	*1.79*	*5.67*	222.3
4	2.50	25.0	*1.64*	*5.17*	202.3
5	2.00	20.0	*1.46*	*4.63*	180.2
6	1.60	15.0	*1.31*	*4.01*	160.4
7	1.10	10.0	*1.08*	*3.27*	131.8

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999387	*0.0256*	*-0.05566*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	30.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$

BP = Sampler intercept from most recent calibration

MP = Sampler Slope from most recent calibration

XT = Target Flow (slpm)

SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 272))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

KEVRIC

The KEVRIC Company, Inc.
Commerce Building, Suite 200
314 East Commerce Street
San Antonio, Texas 78205
(210) 212-6161 • Fax (210) 212-5432

20 March 2000

Mr. Michael Bilello
Foster Wheeler Environmental Corporation
302 Research Drive
Norcross, GA 30092

Re: New Bedford Harbor – Task 17 Ambient Air Quality Monitoring Performance Audit Responses

Dear Mr. Bilello,

The KEVRIC Company, Inc. (KEVRIC) is pleased to submit the following responses to the 1 March 2000 performance audit findings of the above listed project.

1. Sampler ID 21, 22, 23, 24, 24D, 25, 26 – samplers have been recalibrated.
2. Sampler ID 22 – electrical connection wrapped in plastic to prevent water penetration.

If you have any questions regarding these actions, please contact me at (210) 212-6161.

Sincerely,

Kevin M. Boyle
Manager
Environmental Management and Engineering Services

KMB/clb

cc: David Allen, The KEVRIC Company, Inc.
Mark Gouveia, The KEVRIC Company, Inc.
Helen Douglas, Foster Wheeler Environmental Corporation
Dan Holmquist, Foster Wheeler Environmental Corporation
File

Enclosures: Field Calibration Data Sheet, Sampler ID 21, 22, 23, 24, 24D, 25, 26

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POSTER WHEELER
POSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 21

Date: 03/13/00

Time: 15:00

Operator: M.GUZMAN

Sampler ID/SN: 21/1686

Timer Model/ SN: BMPI-11/1686

ETI (Start): 1035.05

ETI (End): 1035.30

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 7.2

Amb. Press: (mmHg)(Pa): 764.7

STP: 1.0701

Previous Calibration Data

Slope (MP): 0.0274

Intercept (BP): -0.69273

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.91	5.57	237.1

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
228.8	3.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 5/99

magnehelic Zeroed: 03/13/2000

Leak Test:

GFI Tested: 03/13/2000

Notes: calibration check

POSTER WHEELER
POSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 21

Date: 03/13/00

Time: 15:00

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2

Amb. Press:(Pa) (mmHg): 764.7

STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.35	40.0	*2.16*	*6.54*	269.1
2	3.75	35.0	*2.00*	*6.12*	249.4
3	3.30	30.0	*1.88*	*5.67*	233.5
4	2.80	25.0	*1.73*	*5.17*	214.5
5	2.30	20.0	*1.57*	*4.63*	193.8
6	1.80	15.0	*1.39*	*4.01*	170.6
7	1.30	10.0	*1.18*	*3.27*	143.9
	Regression of Y4 vs X1	Corr. Coef. *0.999815*	Slope *0.0264*	Intercept *-0.49433*	
	Sampler Set-Up	Target Flow(slpm)(XT) 225	Target magnehelic(SP) 27.6	Actual magnehelic 30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (slpm)
SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22

Date: 03/14/00

Time: 14:20

Operator: M.GUZMAN

Sampler ID/SN: 22/1689

Timer Model/ SN: #1689

ETI (Start): 1234.47

ETI (End): 1234.61

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4

Amb. Press: (mmHg)(Pa): 766.6

STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0270

Intercept (BP): -0.63695

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.1	29	1.82	5.56	225.5

NOTES:

Flow based on Previous calibration ; slpm (XP)	Percent Difference (X1-XP)/X1*1000
229.8	-1.9

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 05/27/1999

magnehelic Zeroed: 03/14/2000

Leak Test: 03/14/2000

GFI Tested: 03/14/2000

Notes: Calibration check

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22
Date: 03/14/00
Time: 14:20
Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4
Amb. Press:(Pa) (mmHg): 766.6
STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.09*	*6.53*	260.4
2	3.60	35.0	*1.86*	*6.10*	243.5
3	3.05	30.0	*1.80*	*5.65*	223.6
4	2.60	25.0	*1.66*	*5.16*	205.9
5	2.20	20.0	*1.53*	*4.61*	188.8
6	1.60	15.0	*1.31*	*4.00*	160.0
7	1.15	10.0	*1.11*	*3.26*	134.6
Regression of Y4 vs X1		Corr. Coef. *0.999581*	Slope *0.0259*	Intercept *-0.20673*	
Sampler Set-Up		Target Flow(slpm)(XT) 225	Target magnehelic(SP) 29.8	Actual magnehelic 30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$=[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

S

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 23
Date: 03/14/00
Time: 7:20
Operator: M.GUZMAN

Sampler ID/SN: 23/1507
Timer Model/ SN: #1507
ETI (Start): 6771.01
ETI (End): 6771.10

Calibration Orifice ID: G40/2006N

Orifice Data
Correlation Coef. (CC1) 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND
Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data
Slope (MP): 0.0224
Intercept (BP): -0.11856
Date of Previous calibration: 10/01/00

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	25	1.85	5.16	229.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
235.9	-2.9

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: New Installation

S

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 23

Date: 03/14/00

Time: 7:20

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.70	40.0	*2.24*	*6.53*	279.2
2	4.15	35.0	*2.10*	*6.10*	262.0
3	3.65	30.0	*1.97*	*5.65*	245.2
4	3.10	25.0	*1.82*	*5.16*	225.5
5	2.45	20.0	*1.61*	*4.61*	199.7
6	1.85	15.0	*1.40*	*4.00*	172.6
7	1.35	10.0	*1.20*	*3.26*	146.4
	Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
		0.999676	*0.0241*	*-0.22753*	
	Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	25.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$

BP = Sampler Intercept from most recent calibration

MP = Sampler Slope from most recent calibration

XT= Target Flow (slpm)

SP= magnehelic Set Point
= $\{[(XT*M2)+B2]^2\}$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

Sampler ID/SN: 24/45195

Timer Model/ SN: #1688

ETI (Start): 1218.86

ETI (End): 1219.17

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4

Amb. Press: (mmHg)(Pa): 766.6

STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0281

Intercept (BP): -1.09264

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.90	5.56	236.5

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
236.7	-0.1

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 05/27/1999

magnehelic Zeroed: 03/14/2000

Leak Test: 03/14/2000

GFI Tested: 03/14/2000

Notes: Calibration check

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	40.0	2.21	6.53	276.2
2	4.00	35.0	2.06	6.10	257.1
3	3.50	30.0	1.93	5.65	240.0
4	3.10	25.0	1.82	5.16	225.5
5	2.50	20.0	1.63	4.61	201.8
6	2.00	15.0	1.46	4.00	179.7
7	1.50	10.0	1.26	3.26	154.7

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
	0.999593	0.0270	-0.87288	
Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	25.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$

BP = Sampler Intercept from most recent calibration

MP = Sampler Slope from most recent calibration

XT = Target Flow (slpm)

SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D
Date: 03/14/00
Time: 0:00
Operator: M.GUZMAN

Sampler ID/SN: 24D/1690
Timer Model/ SN: BMPSI-11/#1690
ETI (Start): 1399.68
ETI (End): 1399.67

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0270
Intercept (BP): -0.49713
Date of Previous calibration: 11/24/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.2	30	1.85	5.85	229.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)X1*1000
227.6	0.7

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: CALIBRATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24D

Date: 03/14/00

Time: 0:00

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	3.70	40.0	*1.98*	*6.53*	247.0
2	3.35	35.0	*1.88*	*6.10*	234.7
3	2.85	30.0	*1.74*	*5.65*	215.9
4	2.40	25.0	*1.60*	*5.16*	197.5
5	1.95	20.0	*1.44*	*4.61*	177.4
6	1.40	15.0	*1.22*	*4.00*	149.2
7	0.90	10.0	*0.98*	*3.26*	118.2

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999419	*0.0251*	*0.24276*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	32.6		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=\{((XT*M2)+B2)^2\}$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_A = Barometric pressure actual, mm Hg
T_A = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y3-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 25

Date: 03/13/00

Time:

Operator: M.GUZMAN

Sampler ID/SN: 25/2109

Timer Model/ SN: BMPSI-11/#2109

ETI (Start): 5979.89

ETI (End): 5980.24

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 7.2

Amb. Press: (mmHg)(Pa): 764.7

STP: 1.0701

Previous Calibration Data

Slope (MP): 0.0225

Intercept (BP): 0.05912

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.91	5.57	237.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
245.4	-3.5

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 05/27/1999

magnehelic Zeroed: 03/13/2000

Leak Test: 03/13/2000

GFI Tested: 03/13/2000

Notes: Calibration check

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 25
Date: 03/13/00
Time:
Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2
Amb. Press:(Pa) (mmHg): 764.7
STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	5.45	40.0	2.41	6.54	302.1
2	4.50	35.0	2.19	6.12	273.8
3	3.90	30.0	2.04	5.67	254.4
4	3.40	25.0	1.91	5.17	237.1
5	2.55	20.0	1.65	4.63	204.4
6	1.75	15.0	1.37	4.01	168.1
7	1.10	10.0	1.08	3.27	131.8
Regression of Y4 vs X1		Corr. Coef. 0.999000	Slope 0.0194	Intercept 0.70002	
Sampler Set-Up		Target Flow(slpm)(XT) 225	Target magnehelic(SP) 24.0	Actual magnehelic	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (slpm)
SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP = (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE: 26
Date: 03/13/00
Time: 0:00
Operator: M.GUZMAN

Sampler ID/SN: 26/2109
Timer Model/ SN: GPSI-#2109
ETI (Start): 540.52
ETI (End): 540.74

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 7.2
Amb. Press: (mmHg)(Pa): 764.7
STP: 1.0701

Previous Calibration Data

Slope (MP): 0.2490
Intercept (BP): -0.01307
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
	55	0.00	7.67	-7.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
30.9	537.1

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: N/A
Change Brushes: N/A
magnehelic Zeroed: 03/13/2000
Leak Test:
GFI Tested: 03/13/2000
Notes: Calibration check

FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 26

Date: 03/13/00

Time: 0:00

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 7.2

Amb. Press:(Pa) (mmHg): 764.7

STP: 1.0701

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.09*	*6.54*	261.1
2	3.50	35.0	*1.94*	*6.12*	240.7
3	3.00	30.0	*1.79*	*5.67*	222.3
4	2.50	25.0	*1.64*	*5.17*	202.3
5	2.00	20.0	*1.46*	*4.63*	180.2
6	1.60	15.0	*1.31*	*4.01*	160.4
7	1.10	10.0	*1.08*	*3.27*	131.8

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999397	*0.0256*	*-0.05566*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	30.4		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (slpm)
SP= magnehelic Set Point
$= ((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Correspondence

DATE: June 9, 2000

TO: H. Douglas
K. Boyle
M. Gouveia
M. Guzman

OFFICE LOCATION: Various

FROM: M. Bilello

OFFICE LOCATION: ATL

SUBJECT: TASK 17 AMBIENT AIR QUALITY MONITORING PERFORMANCE AUDIT

On May 24, 2000, a performance audit was conducted on the Air Sampling (PCB) Network for Task 17 in New Bedford MA. The Network consists of seven samplers at six locations around the harbor. The samplers were manufactured by Anderson - General Metal Works and are model PS1.

The samplers were audited using personnel and standards not utilized in the routine calibration or operation of the sampling network. The audit was conducted by Michael Bilello of Foster Wheeler Environmental Corporation who was accompanied by the Network operator Miguel Guzman of Kevric. Mr. Guzman provided the sampler responses during the audit.

The following table summarizes the results of the audit. A copy of the Audit Data Sheet and certification of the orifice used for the audit are attached to this report. The results of audit values versus sampler flows were with in +/- 7% for all samplers, indicating that the samplers were operating properly.

May 24, 2000 Performance Audit Report Summary			
Sampler ID	Audit Flow (slpm)	Sampler Flow (slpm)	Percent Difference
21	218.1	225.9	-3.6
22	218.2	222.0	-1.8
23	218.1	223.8	-2.6
24	221.1	224.0	-1.3
24D	218.2	222.6	-2.0
25	218.3	220.0	-0.8
26	215.3	226.3	-5.1

There were no conditions that require any actions and no response to this audit is required.

FOSTER WHEELER
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Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 05/24/00

Task 17

Auditor M. Bilello

Operator M. Guizman

Calibration Orifice ID: G40/1135

Orifice Data

Correlation Coef. (CC1) 0.999859

Slope (M1): 9.2081

Intercept (B1): -0.032334

Sampler: 21

Ambient Temp:(°C)(Ta): 13.2

Amb. Press: (mmHg)(Pa): 750.1

STP: 1.0277

Previous Calibration Data

Slope (MP): 0.0264

Intercept (BP): -0.49435

Date of Previous calibration: 03/13/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	29	1.98	5.46	218.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
225.9	-3.6

Sampler: 22

Ambient Temp:(°C)(Ta): 13.4

Amb. Press: (mmHg)(Pa): 751.0

STP: 1.0282

Previous Calibration Data

Slope (MP): 0.0259

Intercept (BP): -0.20672

Date of Previous calibration: 03/14/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	30	1.98	5.55	218.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
222.0	-1.8

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 05/24/00

Task 17

Sampler:	23	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	13.7	Slope (MP):	0.0241
Amb. Press: (mmHg)(Pa):	751.0	Intercept (BP):	-0.22751
STP:	1.0271	Date of Previous calibration:	03/14/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	26	1.98	5.17	218.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
223.8	-2.6

Sampler:	24	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	13.2	Slope (MP):	0.0270
Amb. Press: (mmHg)(Pa):	751.0	Intercept (BP):	-0.87285
STP:	1.0289	Date of Previous calibration:	03/14/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.9	26	2.00	5.17	221.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
224.0	-1.3

Sampler:	24D	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	13.2	Slope (MP):	0.0251
Amb. Press: (mmHg)(Pa):	751.0	Intercept (BP):	0.24276
STP:	1.0289	Date of Previous calibration:	03/14/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	33	1.98	5.83	218.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
222.6	-2.0

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Audit Data Sheet
PS1 Sampler

Project New Beddford Harbor

Date: 05/24/00

Task 17

Sampler:	25	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	13.1	Slope (MP):	0.0194
Amb. Press: (mmHg)(Pa):	751.0	Intercept (BP):	0.70003
STP:	1.0293	Date of Previous calibration:	03/13/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.8	24	1.98	4.97	218.3

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
220.0	-0.8

Sampler:	26	Previous Calibration Data	
Ambient Temp:(°C)(Ta):	13.0	Slope (MP):	0.0256
Amb. Press: (mmHg)(Pa):	750.0	Intercept (BP):	-0.05566
STP:	1.0282	Date of Previous calibration:	03/13/00

Actual Values from As Found		Calculated Values		
Orifice Manometer, Inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.7	32	1.95	5.74	215.3

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
226.3	-5.1

Andersen Instruments, Inc.

Orifice Transfer Standard Certification Worksheet

AUDIT

Date: 04/29/1999 Rootsmeter S/N: 9736553 Ta: 21.00 C

Operator: S. LESTER Calibrator S/N: 1135 Pa: 745.7 mm Hg

Calibrator Model #: G40 (low flow) Placed in service:

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	6.216	3.92	2.00
2	3.00	4.00	1.00	3.841	10.09	5.50
3	5.00	6.00	1.00	3.051	15.69	8.50
4	7.00	8.00	1.00	2.612	20.93	11.50
5	9.00	10.00	1.00	2.296	26.53	14.50
6	11.00	12.00	1.00	2.143	30.08	16.50

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H(Ta / Pa)}$ (y-axis)
0.986	0.159	1.408	0.995	0.160	0.888
0.978	0.255	2.335	0.986	0.257	1.473
0.970	0.318	2.903	0.979	0.321	1.831
0.963	0.369	3.376	0.972	0.372	2.130
0.956	0.416	3.791	0.964	0.420	2.392
0.951	0.444	4.044	0.960	0.448	2.551
	m =	9.2081		m =	5.7580
	b =	-0.032334		b =	-0.020397
	r =	0.999859		r =	0.999859

Calculations

$$Vstd = \Delta Vol((Pa - \Delta P) / Pstd)(Tstd / Ta)$$

$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol((Pa - \Delta P) / Pa)$$

$$Qa = Va / \Delta Time$$

For subsequent flow rate calculations:

$$Qstd = 1 / m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right)$$

$$Qa = 1 / m\left(\left(\sqrt{\Delta H(Ta / Pa)}\right) - b\right)$$

Standard Conditions:

Tstd: 297.18 ° K

Pstd: 760 mm Hg

where:

ΔH: calibrator manometer reading (in H2O)

ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (° K)

Pa: actual barometric pressure (mm Hg)

b: intercept

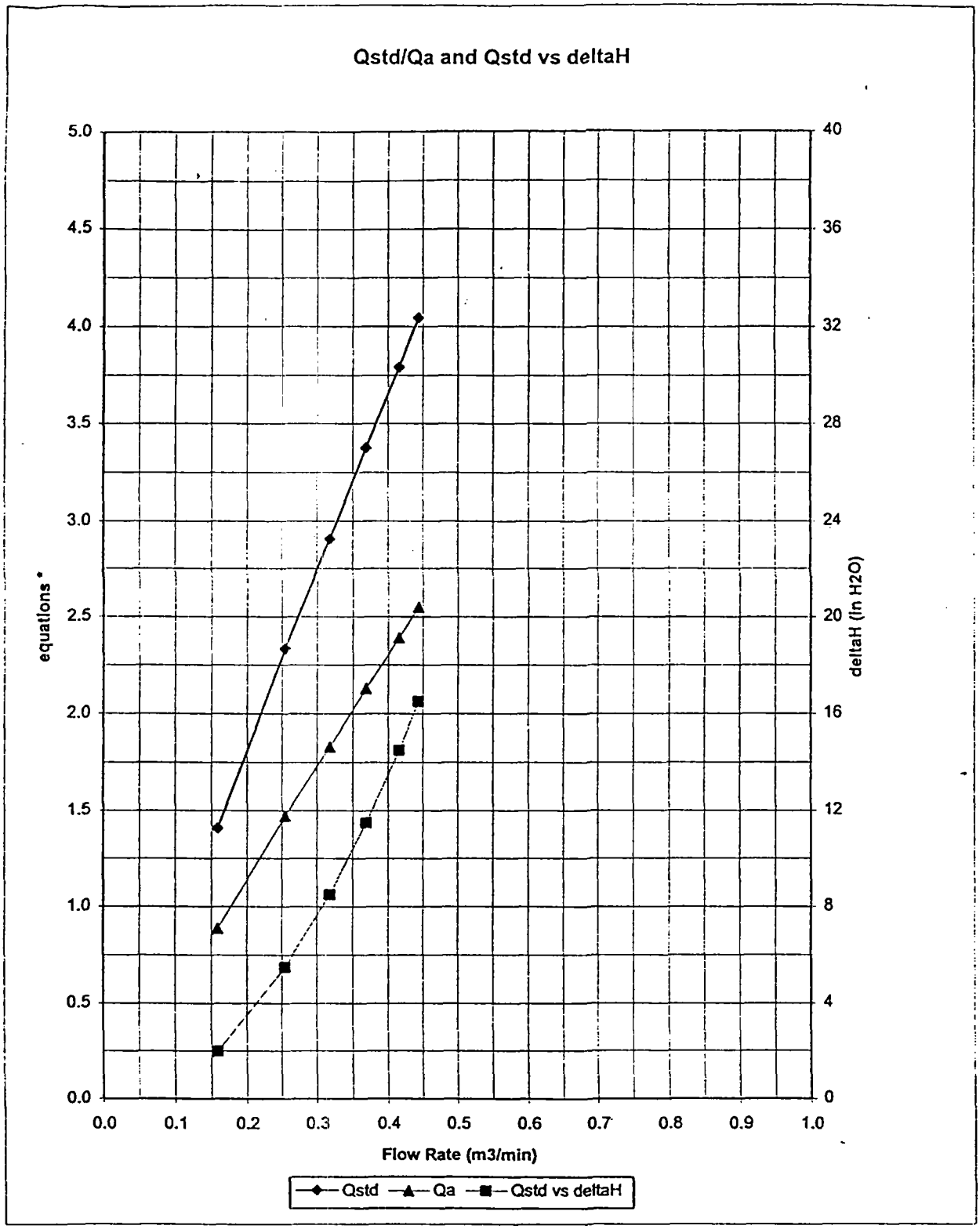
m: slope

For additional information consult:

1. The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
2. Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
3. Andersen Instruments, Inc. Instruction Manual

Notes:

1. Copies of this calibration are not kept on file.
2. EPA recommends calibrators should be recalibrated after one year of use.



*** y-axis equations:**

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{P std}\right)\left(\frac{T std}{Ta}\right)}$

$\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

Recd 20 Mar 2000

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Interoffice Correspondence

DATE: March 17, 2000

TO: H. Douglas
K. Boyle
M. Gouveia

OFFICE LOCATION: Various

FROM M. Bilello

OFFICE LOCATION: ATL

SUBJECT: NEW BEDFORD HARBOR - TASK SYSTEMS AUDIT

A systems audit was conducted on the Task 17 air monitoring program being conducted at the New Bedford Harbor Superfund Site. This audit was conducted to evaluate the Kevric's compliance with the Statement of Work (SOW), Sampling and Analysis Plan (SAP), Quality Assurance Program Plan (QAPP) and General Good Management Practices (GMP) for data handling.

The basis of the systems audit was a General Program checklist. In addition to the checklist, the site and office personnel were interviewed regarding their roles in data collection and handling. During the interview process, the personnel discussed their roles in the project and specific activities. In addition to specific issues on the checklist, general review of the project files was performed.

Kevric personnel participating in the audit were:

Mark Gouveia – New Bedford
Miguel Guzman – New Bedford
Kevin Boyle – San Antonio
Chari Bryan – San Antonio

Michael Bilello of Foster Wheeler Environmental Corporation conducted the audit.

AUDIT RESULTS

Based on the results of this systems audit, the program appears to be adequate but has areas which required improvement to ensure continued collection of quality data.

There were several minor findings that will require corrective actions and major finding.

Minor Findings:

Finding (Check List Item number)	*Comments*
No Organization Chart (1,2,3)	A data flow diagram was available, but given the continuing changes in personnel on this task, an organization chart of personnel should be available. (GMP)
No Spare Parts Inventory (21)	A current spare parts inventory should be maintained to prevent loss of data due to equipment failures. The inventory should include a minimum quantity level. (GMP)
Corrections not dated and initialed (42)	One instance of an entry being overwritten was noticed on the 8/27/99 PCB Sample Data Sheet. This was during the training of M. Guzman, there were no other instances noted. (QAPP), (GMP)
Blanks on forms were not completed. (43)	All blanks should be filled in with either data or a dash indicating that the person completing the form did not have any information to enter. (GMP)
Data Consistency Check (44)	A tracking system is in place, but there was no documentation that the data received from the field was checked for consistency. There was also no indication of who logged the information into the tracking system. At a minimum, the field data should be checked for correct sample date, flow rates (+/- 10%), total elapsed time, valid calibration and form completeness. (QAPP), (GMP)

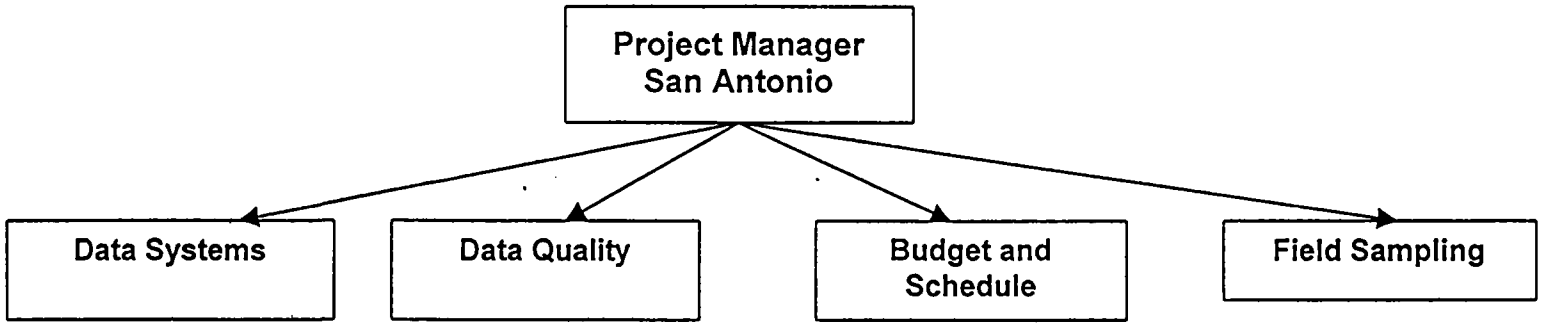
Major Finding

The major finding of the systems audit was the lack of current calibration (or documentation) for all of the samplers for the samples collected in January and February 2000. Mark Gouveia indicated that he may have calibrated the samplers in December of 1999 but there was no indication of this activity in the logbook or any calibration data sheets in the field files or central project files in San Antonio.

This type of oversight can be avoided in the future through the implementation of a calibration schedule and through the data consistency check which should identify this situation the first time a sample is collected using a sampler with an expired calibration.

The performance audit conducted on March 3, 2000 provided an independent verification that the samplers were operating within the +/- 10% flow tolerance required for valid samples, therefore the samples collected while the calibrations were expired should provide data with quality consistent with the project requirements.

Responses to the audit findings are due two weeks from receipt of this audit report. The response should present corrective actions completed or provide a corrective action plan for Items that can not be corrected in the two-week timeframe.



Maintain Database
Program/Import Data
Program Reports
- Air
- Meteorological

Identify/Map Data Elements
QC Sample Data
Design Reports

Lab Subcontract
Sampling Schedule
Budget

Data Collection
Sample Documentation
On-site Record Maintenance

Electronic and Hard Copy Tracking for New Bedford Harbor Project
Task 17 Air Quality Program - Baseline Air Sampling and Analysis - KEVRIC 8301

	TLI Proj. No.	Sample Event Date	No. of Samp.	Sampling Stations								TLI Case Narratives									
												Original Package		Revision Date			Suppl./ Missing Info Date		Revisions/ Suppl. Mailed to		
				21	22	23	24	24D	25	26	Blank Station	Date	Mailed to	1	2 (PCB#81)	3	M1	M2	A	B	C
1	48858	06/04/99	6	x	x	x	x	†	x	‡	21	07/13/99	C, D*	10/18/99	11/24/99	✣			1, 2	2	2
2	48894	06/10/99	7	x	x	x	x	x	x	‡	26	07/24/99	C, D*	10/19/99	12/09/99	✣			1, 2	2	2
3	48944	06/16/99	6	x	x	x	x	†	x	‡	23	07/21/99	C, D*		12/09/99	✣			2	2	2
4	48964	06/22/99	8	x	x	x	x	x	x	x	21	07/26/99	C, D*	10/19/99	11/24/99	✣	12/30/99	11/24/99	1, 2, M1, M2	2, M1, M2	2, M1, M2
5	49004	06/28/99	7	x	x	x	x	†	x	x	25	07/27/99	C, D*	10/19/99	12/03/99	✣			1, 2	2	2
6	49048	07/06/99	8	x	x	x	x	x	x	x	26	07/28/99	C, D*	10/19/99	12/10/99	✣	12/22/99			2, M1	2, M1
7	49076	07/10/99	7	x	x	x	x	†	x	x	21	10/20/99	A, C, D*	10/19/99	12/13/99	✣			1, 2	1, 2	1, 2
8	49130	07/16/99	8	x	x	x	x	S	x	x	26	09/28/99	A, C, D*	02/11/00	12/23/99				1, 2	1, 2	1, 2
9	49159	07/22/99	7	x	x	x	x	†	x	x	21	09/22/99	A, C, D*		12/23/99	10/20/99✣			2, 3	2, 3	2, 3
10	49201	07/28/99	8	x	x	x	x	x	x	x	21	09/29/99	A, C, D*		12/19/99				2	2	2
11	49236	08/03/99	7	x	x	x	x	†	x	x	24	10/20/99	A, C, D*	10/22/99	12/27/99	✣			1, 2	2	2
12	49273	08/09/99	8	x	x	x	x	x	x	x	24	10/07/99	A, C, D*		12/19/99	✣			2	2	2
13	49312	08/15/99	7	x	x	x	x	†	x	x	23	10/21/99	A, C, D*		12/19/99	✣			2	2	2
14	49345	08/21/99	8	x	x	x	x	x	x	x	26	09/30/99	A, C, D*		12/18/99	✣	09/11/99		2, M1	2, M1	2, M1
15	49384	08/27/99	5	x	**	x	**	†	x	x	24	09/30/99	A, C, D*		12/18/99	✣			2	2	2
16	49449	09/09/99	8	x	x	x	x	x	x	x	26	11/18/99	A, C*								
17	49530	09/22/99	7	x	x	x	x	†	x	x	22	11/09/99	A, C*			10/07/99	11/22/99	11/09/99	M1, M2, 3	M1, M2, 3	M1, M2, 3
18	49643	10/08/99	8	x	x	x	x	S	x	x	25	11/15/99	A, C*	11/16/99		✣	11/03/99		1, M1	1, M1	1, M1
19	49752	10/25/99	7	x	x	x	x	†	x	x	25	11/24/99	A, C*								
20	49924	11/16/99	8	x	x	x	x	x	x	x	21	12/15/99	A, C*								
21	50182	12/16/99	7	x	x	x	x	†	x	x	22										
22	50305	01/14/00	8	x	x	x	x	x	x	x											
23		02/17/00																			
	Total to Date		160																		

1st Qtr | 2nd Qtr | 3rd Qtr

Co.	Contact	ID
FWENC	Helen Douglas	A
FWENC	Celia Minch	B
ENSR	Deb McGrath	C
FWENC	Keir Craigie	D

x - Sample taken

† - Alternate duplicate samples sent to USACE lab.

‡ - Samples not initially collected.

** - Samples lost at lab.

S - Spike sample.

* - Cover letter sent to USACE, Maria Wojtas

✣ - 31 Jan 00, received sample summary pages

Electronic and Hard Copy Tracking for New Bedford Harbor Project
Task 17 Air Quality Program - Baseline Air Sampling and Analysis - KEVRIC 8301

	TLI Proj. No.	Sample Event Date	No. of Samp.	TLI Electronic Data			Met. Data	Field Data	COC Form	Date Sample was			Date TLI Case Narratives Received in Silver Springs				Date TLI Case Narratives Received in San Antonio			
				Orig. Saved On Date	Revision		Wind-rose/ Hourly	Hard Copy/ Elect.		Received at Lab	Extracted	Analyzed (mm/dd) 1999-2000	Original	Revisions/ Suppl.			Original	Revisions/ Suppl.		
					1	2								1	2	3, M1, M2		1	2	3, M1, M2
1	48858	06/04/99	6	11/19/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	06/08/99	06/12/99	7/2	07/22/99	na	na	na	U	U	U	
2	48894	06/10/99	7	11/19/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	06/12/99	06/16/99	7/12, 7/23	07/27/99	na	na	na	U	U	U	
3	48944	06/16/99	6	11/01/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	06/19/99	06/21/99	7/13	07/27/99		na	na	U		U	
4	48964	06/22/99	8	11/01/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	06/24/99	06/25/99	7/13, 7/15	07/28/99	na	na	na	U	U	U	01/03/00[a]
5	49004	06/28/99	7	11/01/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	06/30/99	07/03/99	7/15	07/29/99	na	na	na	U	U	U	
6	49048	07/06/99	8	11/23/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	07/08/99	07/10/99	7/16	07/30/99	na	na	na	U	U	U	01/03/00[a]
7	49076	07/10/99	7	11/23/99	12/20/99	02/11/00	Y/Y	Y/Y	Y	07/13/99	07/15/99	7/22, 9/8, 9/10	10/22/99	na	na	na	U	01/03/00	12/22/00	
8	49130	07/16/99	8	11/23/99	12/20/99		Y/Y	Y/Y	Y	07/21/99	07/22/99	9/10	10/01/99		na		U		01/03/00	
9	49159	07/22/99	7	11/23/99	12/20/99	01/18/00	Y/Y	Y/Y	Y	07/27/99	07/29/99	9/13	09/24/99		na	na	U		01/03/00	01/31/00
10	49201	07/28/99	8	11/23/99	12/20/99		Y/Y	Y/Y	Y	08/02/99	08/04/99	9/10, 9/11	10/01/99		na		U		01/03/00	
11	49236	08/03/99	7	11/19/99	12/20/99	01/18/00	Y/Y	Y/Y	Y	08/06/99	08/09/99	9/10	10/22/99	na	na	na	U	U	01/03/00	
12	49273	08/09/99	8	11/01/99	12/20/99		Y/Y	Y/Y	Y	08/12/99	09/14/99	9/24	10/12/99		na	na	U		01/03/00	
13	49312	08/15/99	7	12/06/99	12/20/99	01/18/00	Y/Y	Y/Y	Y	08/18/99	09/14/99	9/24-25, 9/29	10/22/99		na	na	U		01/03/00	
14	49345	08/21/99	8	11/08/99	12/20/99		Y/Y	Y/Y	Y	08/24/99	09/08/99	9/14	10/04/99		na	na	U		01/03/00	02/09/00[a]
15	49384	08/27/99	5	10/29/99	12/20/99	01/18/00	Y/Y	Y/Y	Y	08/31/99	09/08/99	9/14-15, 9/29	10/06/99		na	na	U		01/03/00	
16	49449	09/09/99	8	01/04/00	02/11/00		Y/Y	Y/Y	Y	09/13/99	09/21/99	9/28	U				U			
17	49530	09/22/99	7	11/19/99	02/11/00		Y/Y	Y/Y	Y	09/24/99	09/28/99	10/7, 10/8	U			na	U			02/09/00[a]
18	49643	10/08/99	8	11/19/99	01/03/00	02/11/00	Y/Y	Y/Y	Y	10/13/99	10/18/99	11/2, 11/3	U			na	U			02/09/00[a]
19	49752	10/25/99	7	01/04/00			Y/Y	Y/Y	Y	10/28/99	11/01/99	11/6	U				U			
20	49924	11/16/99	8	01/04/00			Y/Y	Y/Y	Y				U				12/22/00			
21	50182	12/16/99	7					Y/Y	Y			2/17	02/22/00							
22	50305	01/14/00	8										02/11/00							
23		02/17/00																		
	Total to Date		160																	

1st Qtr | 2nd Qtr | 3rd Qtr

Co.	Contact
FWENC	Helen Douglas
FWENC	Celia Minch
ENSR	Deb McGrath
FWENC	Keir Craigie

U - unknown dates

a - requested missing data

+ - FedEx Tracking No. for Jun-Dec. applies only to sample summary sheets sent 31 Jan 00

na - The revisions and supplemental information was sent directly to KEVRIC

d - Revision 2 contained duplicate information found in Revision 1.

Electronic and Hard Copy Tracking for New Bedford Harbor Project
Task 17 Air Quality Program - Baseline Air Sampling and Analysis - KEVRIC 8301

	TLI Proj. No.	Sample Event Date	No. of Samp.	Fed Ex/ UPS Tracking No.		Date Mailed to FWENC						Date Mailed to ENSR					
				Summary Sheets (31 Jan 00)	Supplemental Information (09 & 11 Feb 00)	Original Package	Revisions/ Suppl.					Original Package	Revisions/ Suppl.				
							1	2	3	M1	M2		1	2	3	M1	M2
1	48858	06/04/99	6	818565582980		08/19/99	11/10/99[d]	12/22/99[d]				08/19/99		12/22/99[d]			
2	48894	06/10/99	7	818565582980		08/19/99	11/10/99[d]	12/22/99[d]				08/19/99		12/22/99[d]			
3	48944	06/16/99	6	818565582980		08/19/99		12/22/99				08/19/99		12/22/99			
4	48984	06/22/99	8	818565582980	818565582708	08/19/99	11/10/99[d]	12/22/99[d]		01/03/00	02/11/00	08/19/99		12/22/99[d]		01/03/00	02/11/00
5	49004	06/28/99	7	818565582980		08/19/99	11/10/99[d]	12/22/99[d]				08/19/99		12/22/99[d]			
6	49048	07/06/99	8	818565582980		08/19/99	11/10/99[d]	12/22/99[d]		01/03/00		08/19/99		12/22/99[d]		01/03/00	
7	49076	07/10/99	7	818565582980		11/04/99	11/10/99[d]	12/22/99[d]				11/01/99		12/22/99[d]			
8	49130	07/16/99	8		1Z27X0550140495225	11/04/99	02/18/00	01/03/00				11/01/99	02/18/00	01/03/00			
9	49159	07/22/99	7	818565582980		11/04/99		01/03/00	02/01/00			11/01/99		01/03/00	02/08/00		
10	49201	07/28/99	8			11/04/99		01/03/00				11/01/99		01/03/00			
11	49236	08/03/99	7	818565582980		11/04/99	11/10/99	01/03/00				11/01/99		01/03/00			
12	49273	08/09/99	8	818565582980		11/04/99		01/03/00				11/01/99		01/03/00			
13	49312	08/15/99	7	818565582980		11/04/99		01/03/00				11/01/99		01/03/00			
14	49345	08/21/99	8	818565582980	818565582708	11/04/99		01/03/00		02/11/00		11/01/99		01/03/00		02/11/00	
15	49384	08/27/99	5	818565582980		11/04/99		01/03/00				11/01/99		01/03/00			
16	49449	09/09/99	8			12/21/99						12/21/99					
17	49530	09/22/99	7		818565582708	12/21/99			02/18/00	02/11/00	02/11/00	12/21/99			02/18/00	02/11/00	02/11/00
18	49643	10/08/99	8	818565582980	818565582708	12/21/99	12/22/99			02/11/00		12/21/99	12/22/99			02/11/00	
19	49752	10/25/99	7			12/21/99						12/21/99					
20	49924	11/16/99	8			12/21/99						12/21/99					
21	50182	12/16/99	7														
22	50305	01/14/00	8														
23		02/17/00															
	Total to Date		160														

1st Qtr | 2nd Qtr | 3rd Qtr

Co.	Contact
FWENC	Helen Douglas
FWENC	Celia Minch
ENSR	Deb McGrath
FWENC	Keir Craigie

Task Order 17 File List

Contract Information
- FWENC/KEVRIC
- Triangle/KEVRIC

Correspondence

Miscellaneous

Field Audit Responses

Invoices

Quarterly Report

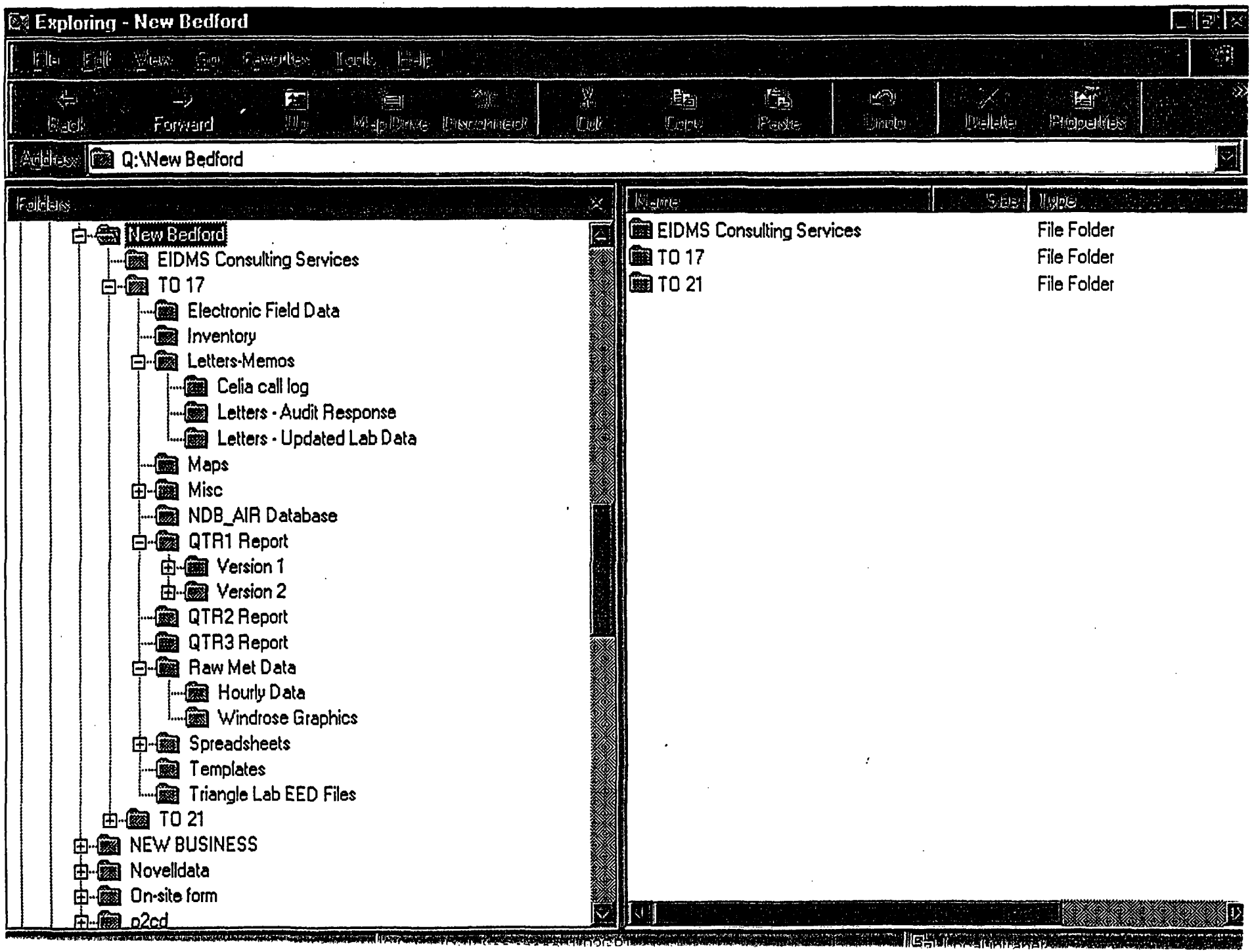
Sample Data Sheet
- Field Data Forms
- Chain of Custody Forms
- Calibration Data

Statement of Work
- Base Line Ambient air Sampling & Analysis

Supporting Documents
- Sample of Schedule
- Data Flow Chart
- TDI Executive Summary
- PUF Samples & Analysis

Triangle Lab
- Correspondences
- SOP

Laboratory Reports
- Case Narrative
- Case Narrative Revisions


Exploring - New Bedford
File Edit View Go Favorites Tools Help
Back Forward Up Map Drive Disconnect Cut Copy Paste Undo Delete Properties
Address Q:\New Bedford
Folders
New Bedford
EIDMS Consulting Services
TO 17
Electronic Field Data
Inventory
Letters-Memos
Celia call log
Letters - Audit Response
Letters - Updated Lab Data
Maps
Misc
NDB_AIR Database
QTR1 Report
Version 1
Version 2
QTR2 Report
QTR3 Report
Raw Met Data
Hourly Data
Windrose Graphics
Spreadsheets
Templates
Triangle Lab EED Files
TO 21
NEW BUSINESS
Novelldata
On-site form
p2cd
Name
Size
Type
EIDMS Consulting Services File Folder
TO 17 File Folder
TO 21 File Folder

314 E Commerce Street
Suite 200
San Antonio, TX 78205
(210) 212-6161
(210) 212-5432 fax

The KEVRIC Company

Memo

To: Mr. Michael Bilello

From: Chari Bryan

CC: Kevin Boyle

Date: 2 March 2000

Re: Systems Audit

Attached please find the following:

- Data Flow Diagram (2 pages)
- Data Tracking Sheet (3 pages)
- File List (1 page)
- Computer Directory List (1 page)
- PCB Sample Data Sheet 06 July 1999 (1 page)
- Client Chain of Custody 06 July 1999 (1 page)
- Calibration Report 06 July 1999 (1 page)
- TLI Summary Reports 06 July 1999 (22 pages)
- Database Summary Reports 06 July 1999 (8 pages)
- Latest Calibration Report 14 Jan 2000 (1 page)

Thank you for your patience.

Best Regards,

Chari Bryan

FAXED
MAR 0 2 2000

PCB Sample Data Sheet

Page 1 of 1

Prepared By: M. Gouveia — Date: 7-6-99

Sample Date: 7-6-99 — Sample Type: PCB

Remote Start Time: 0800 — Unit of Flow*: ☐ sccm ☒ in. water

Reclaimed By: — Date:

ID Numbers		Installation				Flow Check				Removal				Sample Start/Run Time	
		Technician: M. Gouveia				Technician: M. Gouveia				Technician:					
		Technician:				Technician:				Technician:					
		Date:				Date:				Date:					
Site ID	Sample No.	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Time (EST)	ETI Reading	Flow*	Initials	Start (MST)	Run (min.)
21	07068921	0745	00495.01	30.0	MAG	SEE				0825	00518.18	30.0	MAG	0800	1390.2
22	07068922	0805	00714.57	30.0	MAG					0838	00739.07	30.0	MAG	0800	1470.2
23	07068923	0830	06227.98	26.0	MAG	NOTE				0908	06251.89	27.0	MAG	0800	1434.6
24	07068924	0800	00707.50	30.0	MAG					0855	00730.66	31.0	MAG	0800	1362.6
24D	07068940	0800	00777.28	31.0	MAG					0855	00777.81	34.0	MAG	0800	1437
25	07068925	0755	05388.31	30.0	MAG					0845	05412.54	28.5	MAG	0800	1453.8
26	07068926	0840	00447.07	33.0	MAG					0810	00470.59	33.0	MAG	0800	1411.2

NOTE: DID NOT DO FLOW CHECK ON 7/6/99 DUE TO A PROBLEM ON-SITE THAT HAD TO BE ADDRESSED.

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 8

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
07069921	07/06/99	ICE	AIR	N/A	✓					
07069922										
07069923										
07069924										
07069924D										
07069925										
07069926										
07069926B										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
	07/07/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time
	7/8/99 11:00

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date: 7/6/99

Time:

Present Ambient Temp. (Ta) (oC) 29

Present Pressure (Pa) (mmHg) 757.174

STP 0.983085796

Target Flow (slpm) 225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	29.9	23.4	37.1	6/3/99	0.027582	-0.785865
22	30.1	24.6	36.3	6/3/99	0.023487	0.157119
23	26.0	21.4	31.0	6/3/99	0.020704	0.39368
24	29.5	23.5	36.1	6/3/99	0.025484	-0.349651
24D	31.2	25.3	37.6	6/3/99	0.024335	0.059518
25	29.5	24.5	35.0	6/3/99	0.021238	0.607088
26	32.9	26.5	39.9	6/21/99	0.025692	-0.094212

TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI Blank Analysis File: W214702

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	/ /	Spike File:	SPPCB810
TLI ID:	TLI Blank	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/15/1999	ConCal:	W992142
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	SW	% Solids:	n/a

Analytes	Amt (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	ND		0.09				—
3,3',4,4'-TetraCB (#77)	ND		0.08				—
2,3,4,4',5-PentaCB (#114)	ND		0.06				—
2,3',4,4',5-PentaCB (#118)	ND		0.08				—
2',3,4,4',5-PentaCB (#123)	ND		0.08				—
2,3,3',4,4'-PentaCB (#105)	ND		0.09				—
3,3',4,4',5-PentaCB (#126)	ND		0.10				—
2,3',4,4',5,5'-HexaCB (#167)	ND		0.06				—
2,3,3',4,4',5-HexaCB (#156)	ND		0.07				—
2,3,3',4,4',5'-HexaCB (#157)	ND		0.06				—
3,3',4,4',5,5'-HexaCB (#169)	ND		0.08				—
2,2',3,4,4',5,5'-HeptaCB (#180)	ND		0.1				—
2,2',3,3',4,4',5-HeptaCB (#170)	ND		0.2				—
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.10				—
Total MonoCB	0.41	1		0.50			—
Total DiCB	5.3	6					—
Total TriCB	3.5	8		4.1			—
Total TetraCB	2.4	8		2.9			—
Total PentaCB	0.62	3		1.5			—
Total HexaCB	0.20	1		0.55			—
Total HeptaCB	ND		0.1				—
Total OctaCB	ND		0.2				—
Total NonaCB	ND		0.2				—
DecaCB (#209)	ND		0.3				—

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI Blank Analysis File: W21470?

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.91	36.4	25%-150%	3.11	7:10	___
$^{13}C_{12}$-4,4'-DiCB (#15)	2.6	52.5	25%-150%	1.47	9:41	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	6.2	62.2	25%-150%	1.01	10:41	___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	7.1	71.0	25%-150%	0.75	11:34	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	11.1	111	25%-150%	0.74	16:34	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	9.4	94.1	25%-150%	0.61	14:26	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	10.8	108	25%-150%	0.58	19:55	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	9.4	93.8	25%-150%	1.19	19:14	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	9.5	94.8	25%-150%	1.17	23:15	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	11.6	116	25%-150%	1.00	21:47	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	11.1	111	25%-150%	0.83	26:23	___
$^{13}C_{12}$-DecaCB (#209)	23.6	118	25%-150%	1.14	30:17	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	8.3	83.1	25%-150%	0.78	14:52	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	7.7	76.6	25%-150%	0.87	20:41	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	8.2	81.9	25%-150%	1.21	17:39	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.76	13:25	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.22	20:53	___

Data Reviewer: Rose V. West 12/10/1999

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REVISED FILE 3

TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069921 Analysis File: W214703

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-1	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992142
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	SW	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	0.60				0.89	16:05	
3,3',4,4'-TetraCB (#77)	4.1				0.77	16:35	
2,3,4,4',5-PentaCB (#114)	5.7				0.61	16:59	
2,3',4,4',5-PentaCB (#118)	42.9				0.61	17:11	
2',3,4,4',5-PentaCB (#123)	1.2				0.66	17:50	
2,3,3',4,4'-PentaCB (#105)	16.1				0.61	18:41	
3,3',4,4',5-PentaCB (#126)	0.39				0.62	19:56	J
2,3',4,4',5,5'-HexaCB (#167)	1.5				1.15	20:15	
2,3,3',4,4',5-HexaCB (#156)	3.2				1.14	21:37	
2,3,3',4,4',5'-HexaCB (#157)	EMPC			0.60			
3,3',4,4',5,5'-HexaCB (#169)	ND		0.10				
2,2',3,4,4',5,5'-HeptaCB (#180)	4.3				0.97	21:49	
2,2',3,3',4,4',5-HeptaCB (#170)	3.3				0.93	23:36	
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.09				
Total MonoCB	6.2	3					
Total DiCB	246	8					E
Total TriCB	907	19					E
Total TetraCB	1330	25		1340			E
Total PentaCB	411	23		412			
Total HexaCB	126	18		127			
Total HeptaCB	20.3	9		21.1			
Total OctaCB	3.3	5		3.6			
Total NonaCB	0.87	2					
DecaCB (#209)	ND		0.4				

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069921 Analysis File: W2147[illegible]

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.57	22.7	25%-150%	2.88	7:10	V___
$^{13}C_{12}$-4,4'-DiCB (#15)	1.8	35.3	25%-150%	1.47	9:41	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	5.3	52.9	25%-150%	1.03	10:41	___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.6	56.2	25%-150%	0.74	11:34	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	11.8	118	25%-150%	0.75	16:34	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	11.2	112	25%-150%	0.58	14:27	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	9.5	94.8	25%-150%	0.58	19:56	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	9.6	95.9	25%-150%	1.20	19:15	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	8.8	88.4	25%-150%	1.19	23:15	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	12.9	129	25%-150%	1.00	21:48	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	10.4	104	25%-150%	0.84	26:23	___
$^{13}C_{12}$-DecaCB (#209)	20.6	103	25%-150%	1.17	30:16	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.6	95.7	25%-150%	0.75	14:52	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.8	108	25%-150%	0.85	20:42	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	8.7	87.4	25%-150%	1.16	17:39	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.75	13:25	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.20	20:52	___

Data Reviewer: Rose V. West 12/10/1999

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069922 — Analysis File: W215601

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-2	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	0.14				0.70	16:03	J__
3,3',4,4'-TetraCB (#77)	0.90				0.71	16:32	___
2,3,4,4',5-PentaCB (#114)	1.6				0.64	16:55	___
2,3',4,4',5-PentaCB (#118)	10.3				0.64	17:07	___
2',3,4,4',5-PentaCB (#123)	0.35				0.66	17:46	J__
2,3,3',4,4'-PentaCB (#105)	3.0				0.63	18:38	___
3,3',4,4',5-PentaCB (#126)	0.38				0.70	19:51	J__
2,3',4,4',5,5'-HexaCB (#167)	0.26				1.10	20:12	J__
2,3,3',4,4',5-HexaCB (#156)	0.67				1.18	21:30	___
2,3,3',4,4',5'-HexaCB (#157)	EMPC			0.12			J__
3,3',4,4',5,5'-HexaCB (#169)	ND		0.08				___
2,2',3,4,4',5,5'-HeptaCB (#180)	EMPC			1.9			___
2,2',3,3',4,4',5-HeptaCB (#170)	1.4				0.88	23:30	___
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.10				___
Total MonoCB	11.6	3					___
Total DiCB	234	7		235			E__
Total TriCB	561	18		562			E__
Total TetraCB	454	21		457			E__
Total PentaCB	114	22		116			___
Total HexaCB	36.5	16		38.0			___
Total HeptaCB	8.4	10		10.4			___
Total OctaCB	3.8	3		4.3			___
Total NonaCB	0.98	2					Q__
DecaCB (#209)	ND		0.4				___

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069922 Analysis File: W2156(

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.59	23.6	25%-150%	2.27	7:08	VRO___
$^{13}C_{12}$-4,4'-DiCB (#15)	1.8	36.3	25%-150%	1.56	9:38	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	4.9	49.1	25%-150%	1.02	10:39	___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.7	56.8	25%-150%	0.73	11:31	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	12.2	122	25%-150%	0.73	16:31	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	13.0	130	25%-150%	0.58	14:23	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	13.2	132	25%-150%	0.58	19:52	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.0	100	25%-150%	1.21	19:10	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	11.8	118	25%-150%	1.19	23:09	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	11.8	118	25%-150%	1.00	21:44	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	8.9	89.0	25%-150%	0.82	26:17	___
$^{13}C_{12}$-DecaCB (#209)	17.9	89.4	25%-150%	1.16	30:07	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.7	96.7	25%-150%	0.76	14:49	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.4	104	25%-150%	0.88	20:38	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.3	93.5	25%-150%	1.19	17:36	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.74	13:22	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.20	20:48	___

Data Reviewer: Rose V. West 12/13/1999

PCB#_PSR v1.05, LARS 6.16.01

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WHO Polychlorinated Biphenyls Analysis

TLI Project: 49048
Client Sample: 07069923
Analysis File: W215602

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-3	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	1.0				0.72	15:59	
3,3',4,4'-TetraCB (#77)	11.7				0.76	16:30	
2,3,4,4',5-PentaCB (#114)	10.2				0.64	16:53	
2,3',4,4',5-PentaCB (#118)	88.3				0.64	17:05	
2',3,4,4',5-PentaCB (#123)	2.2				0.66	17:45	
2,3,3',4,4'-PentaCB (#105)	14.8				0.62	18:35	
3,3',4,4',5-PentaCB (#126)	0.41				0.70	19:50	J
2,3',4,4',5,5'-HexaCB (#167)	1.7				1.13	20:09	
2,3,3',4,4',5-HexaCB (#156)	2.1				1.13	21:31	
2,3,3',4,4',5'-HexaCB (#157)	0.24				1.35	21:50	J
3,3',4,4',5,5'-HexaCB (#169)	ND		0.06				
2,2',3,4,4',5,5'-HeptaCB (#180)	4.4				1.00	21:43	
2,2',3,3',4,4',5-HeptaCB (#170)	3.7				0.91	23:28	
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.08				
Total MonoCB	62.8	3					E
Total DiCB	2240	9					E
Total TriCB	4800	20					E
Total TetraCB	4390	28		4390			E
Total PentaCB	1130	24		1130			E
Total HexaCB	272	23		274			
Total HeptaCB	27.5	10		28.2			
Total OctaCB	4.8	6					
Total NonaCB	0.80	2		1.5			Q
DecaCB (#209)	ND		0.2				

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069923 Analysis File: W215(

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.65	25.9	25%-150%	2.86	7:07	___
$^{13}C_{12}$-4,4'-DiCB (#15)	1.9	38.5	25%-150%	1.55	9:37	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	6.1	60.5	25%-150%	1.21	10:38	RO___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	6.2	61.8	25%-150%	0.83	11:30	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	12.8	128	25%-150%	0.73	16:28	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	11.9	119	25%-150%	0.60	14:21	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	13.3	133	25%-150%	0.60	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.0	100	25%-150%	1.24	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	14.1	141	25%-150%	1.18	23:07	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	13.3	133	25%-150%	0.97	21:42	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	11.2	112	25%-150%	0.84	26:14	___
$^{13}C_{12}$-DecaCB (#209)	33.2	166	25%-150%	1.15	30:06	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.6	96.2	25%-150%	0.74	14:47	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.5	105	25%-150%	0.89	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.1	91.2	25%-150%	1.18	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.73	13:20	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.19	20:47	___

Data Reviewer: Rose V. West 12/10/1999

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069924 Analysis File: W215603

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-5	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	11.2				0.75	15:59	___
3,3',4,4'-TetraCB (#77)	73.3				0.75	16:30	___
2,3,4,4',5-PentaCB (#114)	97.0				0.64	16:53	___
2,3',4,4',5-PentaCB (#118)	704				0.64	17:06	E__
2',3,4,4',5-PentaCB (#123)	24.5				0.64	17:45	___
2,3,3',4,4'-PentaCB (#105)	237				0.64	18:36	E__
3,3',4,4',5-PentaCB (#126)	2.6				0.59	19:51	___
2,3',4,4',5,5'-HexaCB (#167)	14.6				1.13	20:10	___
2,3,3',4,4',5-HexaCB (#156)	30.9				1.14	21:31	___
2,3,3',4,4',5'-HexaCB (#157)	5.2				1.15	21:49	___
3,3',4,4',5,5'-HexaCB (#169)	ND		0.08				___
2,2',3,4,4',5,5'-HeptaCB (#180)	50.1				0.96	21:43	___
2,2',3,3',4,4',5-HeptaCB (#170)	37.6				0.96	23:29	___
2,3,3',4,4',5,5'-HeptaCB (#189)	0.48				0.89	24:39	J__
Total MonoCB	141	3					QE_
Total DiCB	5950	10					E__
Total TriCB	12200	19					E__
Total TetraCB	21820	28		21840			E__
Total PentaCB	6960	28		6970			E__
Total HexaCB	1830	29		1880			E__
Total HeptaCB	266	15		266			___
Total OctaCB	27.4	9					___
Total NonaCB	2.7	3					Q__
DecaCB (#209)	ND		0.4				___

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069924 Analysis File: W2156

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	2.4	94.9	25%-150%	0.04	7:09	QIRO__
$^{13}C_{12}$-4,4'-DiCB (#15)	2.4	48.6	25%-150%	1.69	9:37	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	11.5	115	25%-150%	1.84	10:38	RO___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	7.4	74.5	25%-150%	1.10	11:31	RO___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	13.0	130	25%-150%	0.75	16:29	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	12.4	124	25%-150%	0.68	14:22	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	12.1	121	25%-150%	0.58	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.5	105	25%-150%	1.22	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	11.6	116	25%-150%	1.18	23:07	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	12.7	127	25%-150%	1.02	21:42	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	9.4	93.7	25%-150%	0.84	26:15	___
$^{13}C_{12}$-DecaCB (#209)	19.5	97.4	25%-150%	1.15	30:05	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	10.4	104	25%-150%	0.76	14:47	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.6	106	25%-150%	0.84	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.0	90.4	25%-150%	1.21	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.76	13:21	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.23	20:47	___

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069924D Analysis File: W215701

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-6	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	10.5				0.77	16:01	___
3,3',4,4'-TetraCB (#77)	68.4				0.76	16:30	___
2,3,4,4',5-PentaCB (#114)	103				0.63	16:53	E__
2,3',4,4',5-PentaCB (#118)	719				0.63	17:05	E__
2',3,4,4',5-PentaCB (#123)	24.2				0.62	17:45	___
2,3,3',4,4'-PentaCB (#105)	234				0.63	18:36	E__
3,3',4,4',5-PentaCB (#126)	2.1				0.63	19:50	___
2,3',4,4',5,5'-HexaCB (#167)	14.6				1.14	20:10	___
2,3,3',4,4',5-HexaCB (#156)	28.2				1.16	21:30	___
2,3,3',4,4',5'-HexaCB (#157)	4.7				1.16	21:50	___
3,3',4,4',5,5'-HexaCB (#169)	ND		0.09				___
2,2',3,4,4',5,5'-HeptaCB (#180)	50.5				0.98	21:43	___
2,2',3,3',4,4',5-HeptaCB (#170)	39.4				0.94	23:29	___
2,3,3',4,4',5,5'-HeptaCB (#189)	0.55				1.09	24:38	___
Total MonoCB	151	3					QE_
Total DiCB	5370	8		5960			E__
Total TriCB	11890	19					E__
Total TetraCB	20700	30		20730			E__
Total PentaCB	6650	28		6650			E__
Total HexaCB	1920	27		1920			E__
Total HeptaCB	288	15		289			___
Total OctaCB	25.7	8		26.3			___
Total NonaCB	1.9	2		2.4			Q__
DecaCB (#209)	ND		0.5				___

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069924D Analysis File: W21570

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	1.9	77.0	25%-150%	0.04	7:10	QRO___
$^{13}C_{12}$-4,4'-DiCB (#15)	2.4	47.9	25%-150%	1.67	9:38	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	10.9	109	25%-150%	1.80	10:38	RO___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	7.5	75.0	25%-150%	1.10	11:31	RO___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	12.1	121	25%-150%	0.75	16:29	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	15.3	153	25%-150%	0.68	14:22	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	12.7	127	25%-150%	0.59	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	11.1	111	25%-150%	1.19	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	11.1	111	25%-150%	1.21	23:07	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	11.3	113	25%-150%	0.98	21:42	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	7.7	76.5	25%-150%	0.85	26:14	___
$^{13}C_{12}$-DecaCB (#209)	15.8	79.2	25%-150%	1.12	30:06	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	10.2	102	25%-150%	0.74	14:48	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	9.7	96.7	25%-150%	0.88	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	10.0	100.0	25%-150%	1.22	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.76	13:21	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.21	20:47	___

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069925 — Analysis File: W215702

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-8	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	0.57				0.82	16:00	
3,3',4,4'-TetraCB (#77)	5.9				0.75	16:30	
2,3,4,4',5-PentaCB (#114)	6.3				0.63	16:53	
2,3',4,4',5-PentaCB (#118)	50.3				0.63	17:05	
2',3,4,4',5-PentaCB (#123)	1.2				0.67	17:45	
2,3,3',4,4'-PentaCB (#105)	9.8				0.64	18:36	
3,3',4,4',5-PentaCB (#126)	0.28				0.59	19:50	J
2,3',4,4',5,5'-HexaCB (#167)	1.1				1.23	20:09	
2,3,3',4,4',5-HexaCB (#156)	1.6				1.16	21:31	
2,3,3',4,4',5'-HexaCB (#157)	EMPC			0.20			J
3,3',4,4',5,5'-HexaCB (#169)	ND		0.08				
2,2',3,4,4',5,5'-HeptaCB (#180)	5.0				0.97	21:43	
2,2',3,3',4,4',5-HeptaCB (#170)	3.4				0.96	23:29	
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.1				
Total MonoCB	38.7	3					E
Total DiCB	1320	9					E
Total TriCB	3070	20					E
Total TetraCB	2690	27		2700			E
Total PentaCB	635	24		637			E
Total HexaCB	178	20		179			
Total HeptaCB	30.4	13					
Total OctaCB	5.9	7					
Total NonaCB	0.95	2					Q
DecaCB (#209)	ND		0.4				

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069925 Analysis File: W21570[illegible]

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.57	22.6	25%-150%	2.85	7:07	V___
$^{13}C_{12}$-4,4'-DiCB (#15)	1.8	36.3	25%-150%	1.45	9:37	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	5.2	52.3	25%-150%	1.12	10:37	___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.5	55.4	25%-150%	0.78	11:30	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	12.3	123	25%-150%	0.75	16:29	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	12.9	129	25%-150%	0.60	14:22	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	12.7	127	25%-150%	0.59	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.0	99.7	25%-150%	1.22	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	12.4	124	25%-150%	1.17	23:08	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	12.4	124	25%-150%	1.01	21:42	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	9.7	97.2	25%-150%	0.84	26:15	___
$^{13}C_{12}$-DecaCB (#209)	21.8	109	25%-150%	1.15	30:06	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.4	94.0	25%-150%	0.74	14:48	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.0	100	25%-150%	0.89	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.3	92.8	25%-150%	1.17	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.74	13:20	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.19	20:47	___

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069926 — Analysis File: W215703

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-9	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	TAT	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	2.1				0.73	15:59	___
3,3',4,4'-TetraCB (#77)	39.6				0.72	16:30	___
2,3,4,4',5-PentaCB (#114)	14.7				0.62	16:53	___
2,3',4,4',5-PentaCB (#118)	125				0.63	17:05	E__
2',3,4,4',5-PentaCB (#123)	3.1				0.65	17:46	___
2,3,3',4,4'-PentaCB (#105)	17.6				0.63	18:36	___
3,3',4,4',5-PentaCB (#126)	1.6				0.63	19:51	___
2,3',4,4',5,5'-HexaCB (#167)	2.5				1.23	20:09	___
2,3,3',4,4',5-HexaCB (#156)	2.4				1.11	21:31	___
2,3,3',4,4',5'-HexaCB (#157)	0.27				1.11	21:49	J__
3,3',4,4',5,5'-HexaCB (#169)	ND		0.06				___
2,2',3,4,4',5,5'-HeptaCB (#180)	5.3				0.98	21:44	___
2,2',3,3',4,4',5-HeptaCB (#170)	4.0				1.00	23:28	___
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.09				___
Total MonoCB	109	3					E__
Total DiCB	2430	9					E__
Total TriCB	4860	19		4920			E__
Total TetraCB	5810	28		5820			E__
Total PentaCB	1720	26		1730			E__
Total HexaCB	396	23		396			E__
Total HeptaCB	35.8	12					___
Total OctaCB	4.9	5		5.1			___
Total NonaCB	0.52	1					Q__
DecaCB (#209)	ND		0.3				___

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069926 Analysis File: W2157

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.58	23.1	25%-150%	3.14	7:07	V___
$^{13}C_{12}$-4,4'-DiCB (#15)	1.7	34.5	25%-150%	1.53	9:37	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	5.4	54.4	25%-150%	1.22	10:38	RO___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.5	55.4	25%-150%	0.83	11:31	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	13.1	131	25%-150%	0.73	16:29	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	12.5	125	25%-150%	0.60	14:21	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	13.3	133	25%-150%	0.61	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.3	103	25%-150%	1.20	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	14.1	141	25%-150%	1.18	23:07	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	13.0	130	25%-150%	1.00	21:42	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	10.2	102	25%-150%	0.84	26:14	___
$^{13}C_{12}$-DecaCB (#209)	22.9	115	25%-150%	1.17	30:06	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.6	96.5	25%-150%	0.73	14:48	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	10.4	104	25%-150%	0.86	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.4	93.5	25%-150%	1.21	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.73	13:21	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.27	20:47	___

Data Reviewer: Rose West 12/10/1999

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069926B — Analysis File: W215801

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	07/08/1999	Spike File:	SPPCB810
TLI ID:	241-55-10	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	SW	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	ND		0.07				
3,3',4,4'-TetraCB (#77)	ND		0.07				
2,3,4,4',5-PentaCB (#114)	ND		0.05				
2,3',4,4',5-PentaCB (#118)	0.24				0.68	17:09	J
2',3,4,4',5-PentaCB (#123)	ND		0.07				
2,3,3',4,4'-PentaCB (#105)	ND		0.08				
3,3',4,4',5-PentaCB (#126)	ND		0.08				
2,3',4,4',5,5'-HexaCB (#167)	ND		0.06				
2,3,3',4,4',5-HexaCB (#156)	ND		0.07				
2,3,3',4,4',5'-HexaCB (#157)	ND		0.06				
3,3',4,4',5,5'-HexaCB (#169)	ND		0.08				
2,2',3,4,4',5,5'-HeptaCB (#180)	ND		0.1				
2,2',3,3',4,4',5-HeptaCB (#170)	ND		0.2				
2,3,3',4,4',5,5'-HeptaCB (#189)	ND		0.09				
Total MonoCB	0.94	3					
Total DiCB	4.6	5					
Total TriCB	4.6	8		4.6			
Total TetraCB	4.6	9		5.2			
Total PentaCB	1.1	4		7.3			
Total HexaCB	0.14	1		0.72			
Total HeptaCB	ND		0.1				
Total OctaCB	ND		0.2				
Total NonaCB	ND		0.3				
DecaCB (#209)	ND		0.4				

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: 07069926B Analysis File: W2158[illegible]

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_6$-4-MonoCB (#3)	0.57	22.9	25%-150%	2.96	7:08	V___
$^{13}C_{12}$-4,4'-DiCB (#15)	2.0	39.5	25%-150%	1.46	9:37	___
$^{13}C_{12}$-2,4,4'-TriCB (#28)	4.3	43.3	25%-150%	1.03	10:38	___
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.9	58.8	25%-150%	0.75	11:31	___
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	12.9	129	25%-150%	0.75	16:30	___
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	11.2	112	25%-150%	0.59	14:22	___
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	12.5	125	25%-150%	0.59	19:50	___
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.2	102	25%-150%	1.21	19:09	___
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	10.9	109	25%-150%	1.18	23:08	Q___
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	12.9	129	25%-150%	0.99	21:43	___
$^{13}C_{12}$-2,2',3,3',4,4',5,5'-OctaCB (#194)	9.1	90.6	25%-150%	0.83	26:15	___
$^{13}C_{12}$-DecaCB (#209)	18.4	91.8	25%-150%	1.13	30:06	Q___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.4	93.7	25%-150%	0.78	14:48	___
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OctaCB (#202)	11.0	110	25%-150%	0.84	20:36	___

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	9.0	89.8	25%-150%	1.18	17:34	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.74	13:21	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.18	20:47	___

Data Reviewer: Ross V. West 12/10/1999

PCBR_PSR v1.05. LARS 6.

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI LCS — Analysis File: W215802

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	/ /	Spike File:	SPPCB810
TLI ID:	TLI LCS	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	SW	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	ND		0.1				
3,3',4,4'-TetraCB (#77)	8.7				0.75	16:29	
2,3,4,4',5-PentaCB (#114)	7.0				0.64	16:54	
2,3',4,4',5-PentaCB (#118)	7.2				0.65	17:05	
2',3,4,4',5-PentaCB (#123)	7.5				0.64	17:44	
2,3,3',4,4'-PentaCB (#105)	8.2				0.63	18:35	
3,3',4,4',5-PentaCB (#126)	10.4				0.63	19:51	
2,3',4,4',5,5'-HexaCB (#167)	7.6				1.15	20:09	
2,3,3',4,4',5-HexaCB (#156)	10.2				1.12	21:31	
2,3,3',4,4',5'-HexaCB (#157)	8.0				1.14	21:49	
3,3',4,4',5,5'-HexaCB (#169)	9.3				1.18	23:05	
2,2',3,4,4',5,5'-HeptaCB (#180)	8.8				1.00	21:43	
2,2',3,3',4,4',5-HeptaCB (#170)	9.9				0.97	23:27	
2,3,3',4,4',5,5'-HeptaCB (#189)	13.8				1.07	24:38	

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.3	52.6	25%-150%	0.76	11:30	
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	13.8	138	25%-150%	0.75	16:29	
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	6.1	60.7	25%-150%	0.63	14:21	
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	15.5	155	25%-150%	0.58	19:49	
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	9.3	92.9	25%-150%	1.23	19:09	
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	13.7	137	25%-150%	1.23	23:04	
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	11.6	116	25%-150%	1.03	21:42	

Surrogate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	8.8	88.2	25%-150%	0.76	14:48	

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	7.0	69.8	25%-150%	1.22	17:33	

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI LCS Analysis File: W2158[illegible]

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.74	13:19	___
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.20	20:47	___

Data Reviewer: Rose V. West 12/10/1999

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TLI Project: 49048 — WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI LCSD — Analysis File: W215803

Client Project:	New Bedford, MA Ambient Air				
Sample Matrix:	PUF	Date Received:	/ /	Spike File:	SPPCB810
TLI ID:	TLI LCSD	Date Extracted:	07/10/1999	ICal:	WPC7099
		Date Analyzed:	07/16/1999	ConCal:	W992155
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	W214702	% Lipid:	n/a
GC Column:	DB-35	Analyst:	SW	% Solids:	n/a

Analytes	Amt. (ng)	Number	DL	EMPC	Ratio	RT	Flags
3,4,4',5-TetraCB #81)	ND		0.2				
3,3',4,4'-TetraCB (#77)	9.0				0.75	16:30	
2,3,4,4',5-PentaCB (#114)	6.6				0.63	16:55	
2,3',4,4',5-PentaCB (#118)	7.0				0.64	17:05	
2',3,4,4',5-PentaCB (#123)	7.1				0.64	17:44	
2,3,3',4,4'-PentaCB (#105)	7.8				0.64	18:36	
3,3',4,4',5-PentaCB (#126)	10.3				0.63	19:51	
2,3',4,4',5,5'-HexaCB (#167)	8.1				1.15	20:09	
2,3,3',4,4',5-HexaCB (#156)	10.5				1.15	21:31	
2,3,3',4,4',5'-HexaCB (#157)	7.8				1.17	21:49	
3,3',4,4',5,5'-HexaCB (#169)	9.3				1.20	23:05	
?,2',3,4,4',5,5'-HeptaCB (#180)	8.8				0.99	21:42	
,2',3,3',4,4',5-HeptaCB (#170)	9.9				0.94	23:27	
2,3,3',4,4',5,5'-HeptaCB (#189)	15.0				1.06	24:38	

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',5,5'-TetraCB (#52)	5.5	55.5	25%-150%	0.78	11:30	
$^{13}C_{12}$-3,3',4,4'-TetraCB (#77)	14.1	141	25%-150%	0.75	16:29	
$^{13}C_{12}$-2,2',4,5,5'-PentaCB (#101)	5.9	58.6	25%-150%	0.60	14:21	
$^{13}C_{12}$-3,3',4,4',5-PentaCB (#126)	17.7	177	25%-150%	0.60	19:49	
$^{13}C_{12}$-2,2',3,4,4',5'-HexaCB (#138)	10.0	100	25%-150%	1.19	19:09	
$^{13}C_{12}$-3,3',4,4',5,5'-HexaCB (#169)	15.0	150	25%-150%	1.20	23:05	
$^{13}C_{12}$-2,2',3,4,4',5,5'-HeptaCB (#180)	11.9	119	25%-150%	1.03	21:42	

Surrogate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,4'-TetraCB (#60)	9.2	91.9	25%-150%	0.74	14:47	

Alternate Standard (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,2',4,4',5,5'-HexaCB (#153)	7.3	72.9	25%-150%	1.19	17:33	

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TLI Project: 49048 WHO Polychlorinated Biphenyls Analysis
Client Sample: TLI LCSD Analysis File: W21580

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-3,3',5,5'-TetraCB (#80)	0.75	13:19	
$^{13}C_{12}$-2,2',3,3',4,4'-HexaCB (#128)	1.22	20:47	

Data Reviewer: Rose V. West 12/10/1999

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Sample Event Date	7/6/99	**Lab Sample Number**	7069921	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	21 New Bedford Welding	**Run Time (hours)**	23.17	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	312.795	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	4.1	ng	--			0.08	ng	0.013	ng/m^3	0.0001	0.000001	ng/m^3
3,4,5,4'-TetraCB (#81)	=	0.6	ng	--			--	ng	0.002	ng/m^3	0.0001	0.0000002	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	16.1	ng	--			0.1	ng	0.0515	ng/m^3	0.0001	0.000005	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	5.7	ng	--			0.07	ng	0.018	ng/m^3	0.0005	0.000009	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	42.9	ng	--			0.09	ng	0.137	ng/m^3	0.0001	0.00001	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	1.2	ng	--			0.09	ng	0.0038	ng/m^3	0.0001	0.0000004	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	0.39	ng	--		J	0.1	ng	0.0012	ng/m^3	0.1	0.0001	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	3.2	ng	--			0.08	ng	0.010	ng/m^3	0.0005	0.000005	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	M	--		0.6	ng		0.07	ng	0.002	ng/m^3	0.0005	0.000001	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	1.5	ng	--			0.07	ng	0.0048	ng/m^3	0.00001	0.00000005	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.1	ng	0.0003	ng/m^3	0.01	0.000003	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.3	ng	--			0.2	ng	0.011	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	4.3	ng	--			0.1	ng	0.014	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.09	ng	0.0003	ng/m^3	0.0001	0.00000003	ng/m^3
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	6.2	ng	--			0.09	ng	0.020	ng/m^3			
Total DiCB	=	246	ng	--		E	0.07	ng	0.786	ng/m^3			
Total TriCB	=	907	ng	--		E	0.05	ng	2.9	ng/m^3			
Total TetraCB	M	1330	ng	1340	ng	E	0.09	ng	4.28	ng/m^3			
Total PentaCB	M	411	ng	412	ng		0.09	ng	1.32	ng/m^3			
Total HexaCB	M	126	ng	127	ng		0.09	ng	0.406	ng/m^3			
Total HeptaCB	M	20.3	ng	21.1	ng		0.1	ng	0.0675	ng/m^3			
Total OctaCB	M	3.3	ng	3.6	ng		0.2	ng	0.012	ng/m^3			
Total NonaCB	=	0.87	ng	--			0.3	ng	0.0028	ng/m^3			
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3			
Homologue Groups Sum		**3060**	**ng**						**9.8**	**ng/m^3**			

* M indicates all or a portion of the result has a calculated EMPC value.
** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069922	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	22 Woodlawn Park	**Run Time (hours)**	24.5	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	330.75	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	0.9	ng	--			0.07	ng	0.003	ng/m^3	0.0001	0.0000003	ng/m^3
3,4,5,4'-TetraCB (#81)	=	0.14	ng	--		J	--	ng	0.00042	ng/m^3	0.0001	0.00000004	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	3	ng	--			0.07	ng	0.009	ng/m^3	0.0001	0.0000009	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	1.6	ng	--			0.05	ng	0.0048	ng/m^3	0.0005	0.000002	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	10.3	ng	--			0.06	ng	0.0311	ng/m^3	0.0001	0.000003	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	0.35	ng	--		J	0.06	ng	0.0011	ng/m^3	0.0001	0.0000001	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	0.38	ng	--		J	0.08	ng	0.0011	ng/m^3	0.1	0.0001	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	0.67	ng	--			0.07	ng	0.0020	ng/m^3	0.0005	0.000001	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	M	--		0.12	ng	J	0.06	ng	0.0004	ng/m^3	0.0005	0.0000002	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	0.26	ng	--		J	0.06	ng	0.00079	ng/m^3	0.00001	0.000000008	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.08	ng	0.0002	ng/m^3	0.01	0.000002	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	1.4	ng	--			0.2	ng	0.0042	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	M	--		1.9	ng		0.1	ng	0.006	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.1	ng	0.0003	ng/m^3	0.0001	0.00000003	ng/m^3
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	11.6	ng	--			0.07	ng	0.0351	ng/m^3			
Total DiCB	M	234	ng	235	ng	E	0.06	ng	0.711	ng/m^3			
Total TriCB	M	561	ng	562	ng	E	0.04	ng	1.7	ng/m^3			
Total TetraCB	M	454	ng	457	ng	E	0.08	ng	1.38	ng/m^3			
Total PentaCB	M	114	ng	116	ng		0.08	ng	0.351	ng/m^3			
Total HexaCB	M	36.5	ng	38	ng		0.08	ng	0.115	ng/m^3			
Total HeptaCB	M	8.4	ng	10.4	ng		0.1	ng	0.031	ng/m^3			
Total OctaCB	M	3.8	ng	4.3	ng		0.2	ng	0.013	ng/m^3			
Total NonaCB	=	0.98	ng	--		Q	0.3	ng	0.0030	ng/m^3			
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3			
Homologue Groups Sum		**1440**	**ng**						**4.34**	**ng/m^3**			

* M indicates all or a portion of the result has a calculated EMPC value.
** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069923	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	23 Acushnet Substation	**Run Time (hours)**	23.91	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	322.785	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	11.7	ng	--			0.07	ng	0.0362	ng/m³	0.0001	0.000004	ng/m³
3,4,5,4'-TetraCB (#81)	=	1	ng	--			--	ng	0.003	ng/m³	0.0001	0.0000003	ng/m³
2,3,3',4,4'-PentaCB (#105)	=	14.8	ng	--			0.07	ng	0.0459	ng/m³	0.0001	0.000005	ng/m³
2,3,4,4',5-PentaCB (#114)	=	10.2	ng	--			0.05	ng	0.0316	ng/m³	0.0005	0.00002	ng/m³
2,3',4,4',5-PentaCB (#118)	=	88.3	ng	--			0.06	ng	0.274	ng/m³	0.0001	0.00003	ng/m³
2',3,4,4',5-PentaCB (#123)	=	2.2	ng	--			0.06	ng	0.0068	ng/m³	0.0001	0.0000007	ng/m³
3,3',4,4',5-PentaCB (#126)	=	0.41	ng	--		J	0.08	ng	0.0013	ng/m³	0.1	0.0001	ng/m³
2,3,3',4,4',5-HexaCB (#156)	=	2.1	ng	--			0.05	ng	0.0065	ng/m³	0.0005	0.000003	ng/m³
2,3,3',4,4',5'-HexaCB (#157)	=	0.24	ng	--		J	0.05	ng	0.00074	ng/m³	0.0005	0.0000004	ng/m³
2,3',4,4',5,5'-HexaCB (#167)	=	1.7	ng	--			0.05	ng	0.0053	ng/m³	0.00001	0.00000005	ng/m³
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.06	ng	0.0002	ng/m³	0.01	0.000002	ng/m³
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.7	ng	--			0.2	ng	0.011	ng/m³	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	4.4	ng	--			0.1	ng	0.014	ng/m³	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.08	ng	0.0002	ng/m³	0.0001	0.00000002	ng/m³
DecaCB (#209)	<	--		--			0.2	ng	0.0006	ng/m³	--		
PCB Homologue Groups													
Total MonoCB	=	62.8	ng	--		E	0.07	ng	0.195	ng/m³			
Total DiCB	=	2240	ng	--		E	0.06	ng	6.94	ng/m³			
Total TriCB	=	4800	ng	--		E	0.04	ng	15	ng/m³			
Total TetraCB	M	4390	ng	4390	ng	E	0.09	ng	13.6	ng/m³			
Total PentaCB	M	1130	ng	1130	ng	E	0.08	ng	3.5	ng/m³			
Total HexaCB	M	272	ng	274	ng		0.08	ng	0.849	ng/m³			
Total HeptaCB	M	27.5	ng	28.2	ng		0.1	ng	0.0874	ng/m³			
Total OctaCB	=	4.8	ng	--			0.2	ng	0.015	ng/m³			
Total NonaCB	M	0.8	ng	1.5	ng	Q	0.2	ng	0.005	ng/m³			
DecaCB (#209)	<	--		--			0.2	ng	0.0006	ng/m³			
Homologue Groups Sum		**12900**	**ng**						**40.1**	**ng/m³**			

* M indicates all or a portion of the result has a calculated EMPC value.
** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069924	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	24 Aerovox	**Run Time (hours)**	22.71	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	306.585	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	73.3	ng	--			0.07	ng	0.239	ng/m^3	0.0001	0.00002	ng/m^3
3,4,5,4'-TetraCB (#81)	=	11.2	ng	--			--	ng	0.0365	ng/m^3	0.0001	0.000004	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	237	ng	--		E	0.08	ng	0.773	ng/m^3	0.0001	0.00008	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	97	ng	--			0.06	ng	0.32	ng/m^3	0.0005	0.0002	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	704	ng	--		E	0.08	ng	2.3	ng/m^3	0.0001	0.0002	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	24.5	ng	--			0.08	ng	0.0799	ng/m^3	0.0001	0.000008	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	2.6	ng	--			0.09	ng	0.0085	ng/m^3	0.1	0.0008	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	30.9	ng	--			0.07	ng	0.101	ng/m^3	0.0005	0.00005	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	=	5.2	ng	--			0.06	ng	0.017	ng/m^3	0.0005	0.000008	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	14.6	ng	--			0.06	ng	0.0476	ng/m^3	0.00001	0.0000005	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.08	ng	0.0003	ng/m^3	0.01	0.000003	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	37.6	ng	--			0.2	ng	0.123	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	50.1	ng	--			0.1	ng	0.163	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.48	ng	--		J	0.1	ng	0.0016	ng/m^3	0.0001	0.0000002	ng/m^3
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	141	ng	--		QE	0.08	ng	0.460	ng/m^3			
Total DiCB	=	5950	ng	--		E	0.06	ng	19.4	ng/m^3			
Total TriCB	=	12200	ng	--		E	0.03	ng	39.8	ng/m^3			
Total TetraCB	M	21820	ng	21840	ng	E	0.08	ng	71.24	ng/m^3			
Total PentaCB	M	6960	ng	6970	ng	E	0.09	ng	22.7	ng/m^3			
Total HexaCB	M	1830	ng	1880	ng	E	0.09	ng	6.13	ng/m^3			
Total HeptaCB	M	266	ng	266	ng		0.1	ng	0.868	ng/m^3			
Total OctaCB	=	27.4	ng	--			0.2	ng	0.0894	ng/m^3			
Total NonaCB	=	2.7	ng	--		Q	0.3	ng	0.0088	ng/m^3			
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3			
Homologue Groups Sum		**49300**	**ng**						**161**	**ng/m^3**			

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** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069924D	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	24D Aerovox Duplicate	**Run Time (hours)**	20.53	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Field Duplicate	**Sample Volume (m^3)**	277.155	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	68.4	ng	--			0.06	ng	0.247	ng/m^3	0.0001	0.00002	ng/m^3
3,4,5,4'-TetraCB (#81)	=	10.5	ng	--			--	ng	0.0379	ng/m^3	0.0001	0.000004	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	234	ng	--		E	0.08	ng	0.844	ng/m^3	0.0001	0.00008	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	103	ng	--		E	0.05	ng	0.372	ng/m^3	0.0005	0.0002	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	719	ng	--		E	0.07	ng	2.59	ng/m^3	0.0001	0.0003	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	24.2	ng	--			0.07	ng	0.0873	ng/m^3	0.0001	0.000009	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	2.1	ng	--			0.09	ng	0.0076	ng/m^3	0.1	0.0008	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	28.2	ng	--			0.07	ng	0.102	ng/m^3	0.0005	0.00005	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	=	4.7	ng	--			0.06	ng	0.017	ng/m^3	0.0005	0.000008	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	14.6	ng	--			0.06	ng	0.0527	ng/m^3	0.00001	0.0000005	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.09	ng	0.0003	ng/m^3	0.01	0.000003	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	39.4	ng	--			0.2	ng	0.142	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	50.5	ng	--			0.1	ng	0.182	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	=	0.55	ng	--			0.1	ng	0.0020	ng/m^3	0.0001	0.0000002	ng/m^3
DecaCB (#209)	<	--		--			0.5	ng	0.002	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	151	ng	--		QE	0.3	ng	0.545	ng/m^3			
Total DiCB	M	5370	ng	5960	ng	E	0.04	ng	21.5	ng/m^3			
Total TriCB	=	11890	ng	--		E	0.03	ng	42.9	ng/m^3			
Total TetraCB	M	20700	ng	20730	ng	E	0.06	ng	74.8	ng/m^3			
Total PentaCB	M	6650	ng	6650	ng	E	0.07	ng	24	ng/m^3			
Total HexaCB	M	1920	ng	1920	ng	E	0.08	ng	6.93	ng/m^3			
Total HeptaCB	M	288	ng	289	ng		0.1	ng	1.04	ng/m^3			
Total OctaCB	M	25.7	ng	26.3	ng		0.3	ng	0.0949	ng/m^3			
Total NonaCB	M	1.9	ng	2.4	ng	Q	0.4	ng	0.0087	ng/m^3			
DecaCB (#209)	<	--		--			0.5	ng	0.002	ng/m^3			
Homologue Groups Sum		47600	ng						172	ng/m^3			

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** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069925	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	25 Cliftex	**Run Time (hours)**	24.23	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	327.105	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	5.9	ng	--			0.07	ng	0.018	ng/m^3	0.0001	0.000002	ng/m^3
3,4,5,4'-TetraCB (#81)	=	0.57	ng	--			--	ng	0.0017	ng/m^3	0.0001	0.0000002	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	9.8	ng	--			0.08	ng	0.030	ng/m^3	0.0001	0.000003	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	6.3	ng	--			0.06	ng	0.019	ng/m^3	0.0005	0.00001	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	50.3	ng	--			0.08	ng	0.154	ng/m^3	0.0001	0.00002	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	1.2	ng	--			0.08	ng	0.0037	ng/m^3	0.0001	0.0000004	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	0.28	ng	--		J	0.09	ng	0.00086	ng/m^3	0.1	0.00009	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	1.6	ng	--			0.07	ng	0.0049	ng/m^3	0.0005	0.000002	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	M	--		0.2	ng	J	0.06	ng	0.0006	ng/m^3	0.0005	0.0000003	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	1.1	ng	--			0.06	ng	0.0034	ng/m^3	0.00001	0.00000003	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.08	ng	0.0002	ng/m^3	0.01	0.000002	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	3.4	ng	--			0.2	ng	0.010	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	5	ng	--			0.1	ng	0.02	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.1	ng	0.0003	ng/m^3	0.0001	0.00000003	ng/m^3
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	38.7	ng	--		E	0.08	ng	0.118	ng/m^3			
Total DiCB	=	1320	ng	--		E	0.07	ng	4.04	ng/m^3			
Total TriCB	=	3070	ng	--		E	0.05	ng	9.39	ng/m^3			
Total TetraCB	M	2690	ng	2700	ng	E	0.09	ng	8.25	ng/m^3			
Total PentaCB	M	635	ng	637	ng	E	0.09	ng	1.95	ng/m^3			
Total HexaCB	M	178	ng	179	ng		0.09	ng	0.547	ng/m^3			
Total HeptaCB	=	30.4	ng	--			0.1	ng	0.0929	ng/m^3			
Total OctaCB	=	5.9	ng	--			0.2	ng	0.018	ng/m^3			
Total NonaCB	=	0.95	ng	--		Q	0.3	ng	0.0029	ng/m^3			
DecaCB (#209)	<	--		--			0.4	ng	0.001	ng/m^3			
Homologue Groups Sum		**7980**	**ng**						**24.4**	**ng/m^3**			

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** Concentration is calculated from the EMPC value if listed, or the detection limit if none detected.
† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069926	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	225	**Average Temperature (°F)**	85.8
Station	26 103 Sawyer St	**Run Time (hours)**	23.52	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Normal Sample	**Sample Volume (m^3)**	317.52	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**		TEF	TEQ†	
PCB Congeners													
3,3',4,4'-TetraCB (#77)	=	39.6	ng	--			0.06	ng	0.125	ng/m^3	0.0001	0.00001	ng/m^3
3,4,5,4'-TetraCB (#81)	=	2.1	ng	--			--	ng	0.0066	ng/m^3	0.0001	0.0000007	ng/m^3
2,3,3',4,4'-PentaCB (#105)	=	17.6	ng	--			0.07	ng	0.0554	ng/m^3	0.0001	0.000006	ng/m^3
2,3,4,4',5-PentaCB (#114)	=	14.7	ng	--			0.05	ng	0.0463	ng/m^3	0.0005	0.00002	ng/m^3
2,3',4,4',5-PentaCB (#118)	=	125	ng	--		E	0.07	ng	0.394	ng/m^3	0.0001	0.00004	ng/m^3
2',3,4,4',5-PentaCB (#123)	=	3.1	ng	--			0.07	ng	0.0098	ng/m^3	0.0001	0.000001	ng/m^3
3,3',4,4',5-PentaCB (#126)	=	1.6	ng	--			0.08	ng	0.0050	ng/m^3	0.1	0.0005	ng/m^3
2,3,3',4,4',5-HexaCB (#156)	=	2.4	ng	--			0.05	ng	0.0076	ng/m^3	0.0005	0.000004	ng/m^3
2,3,3',4,4',5'-HexaCB (#157)	=	0.27	ng	--		J	0.05	ng	0.00085	ng/m^3	0.0005	0.0000004	ng/m^3
2,3',4,4',5,5'-HexaCB (#167)	=	2.5	ng	--			0.05	ng	0.0079	ng/m^3	0.00001	0.00000008	ng/m^3
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.06	ng	0.0002	ng/m^3	0.01	0.000002	ng/m^3
2,2',3,3',4,4',5-HeptaCB (#170)	=	4	ng	--			0.2	ng	0.01	ng/m^3	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	=	5.3	ng	--			0.1	ng	0.017	ng/m^3	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.09	ng	0.0003	ng/m^3	0.0001	0.00000003	ng/m^3
DecaCB (#209)	<	--		--			0.3	ng	0.0009	ng/m^3	--		
PCB Homologue Groups													
Total MonoCB	=	109	ng	--		E	0.08	ng	0.343	ng/m^3			
Total DiCB	=	2430	ng	--		E	0.07	ng	7.65	ng/m^3			
Total TriCB	M	4860	ng	4920	ng	E	0.04	ng	15.5	ng/m^3			
Total TetraCB	M	5810	ng	5820	ng	E	0.08	ng	18.3	ng/m^3			
Total PentaCB	M	1720	ng	1730	ng	E	0.08	ng	5.45	ng/m^3			
Total HexaCB	M	396	ng	396	ng	E	0.08	ng	1.25	ng/m^3			
Total HeptaCB	=	35.8	ng	--			0.1	ng	0.113	ng/m^3			
Total OctaCB	M	4.9	ng	5.1	ng		0.2	ng	0.016	ng/m^3			
Total NonaCB	=	0.52	ng	--		Q	0.3	ng	0.0016	ng/m^3			
DecaCB (#209)	<	--		--			0.3	ng	0.0009	ng/m^3			
Homologue Groups Sum		**15400**	**ng**						**48.6**	**ng/m^3**			

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† TEQ is the product of the concentration and its TEF value.

Sample Event Date	7/6/99	**Lab Sample Number**	7069926B	**Prevailing Wind Direction**	WNW
Project Number	49048	**Preliminary Flow (slpm)**	0	**Average Temperature (°F)**	85.8
Station	26 103 Sawyer St	**Run Time (hours)**	0	**Average Solar Radiation ($w \cdot m^2$)**	323
Sample Type	Field Blank	**Sample Volume (m^3)**	0	**Total Precipitation (inches H_2O)**	0.00

Analyte	Detsym	Mass		EMPC*		QFlag	Detection Limit		Concentration**	TEF	TEQ†
PCB Congeners											
3,3',4,4'-TetraCB (#77)	<	--		--			0.07	ng	--		
3,4,5,4'-TetraCB (#81)	<	--		--			0.07	ng	--		
2,3,3',4,4'-PentaCB (#105)	<	--		--			0.08	ng	--		
2,3,4,4',5-PentaCB (#114)	<	--		--			0.05	ng	--		
2,3',4,4',5-PentaCB (#118)	=	0.24	ng	--		J	0.07	ng	--		
2',3,4,4',5-PentaCB (#123)	<	--		--			0.07	ng	--		
3,3',4,4',5-PentaCB (#126)	<	--		--			0.08	ng	--		
2,3,3',4,4',5-HexaCB (#156)	<	--		--			0.07	ng	--		
2,3,3',4,4',5'-HexaCB (#157)	<	--		--			0.06	ng	--		
2,3',4,4',5,5'-HexaCB (#167)	<	--		--			0.06	ng	--		
3,3',4,4',5,5'-HexaCB (#169)	<	--		--			0.08	ng	--		
2,2',3,3',4,4',5-HeptaCB (#170)	<	--		--			0.2	ng	--		
2,2',3,4,4',5,5'-HeptaCB (#180)	<	--		--			0.1	ng	--		
2,3,3',4,4',5,5'-HeptaCB (#189)	<	--		--			0.09	ng	--		
DecaCB (#209)	<	--		--			0.4	ng	--		
PCB Homologue Groups											
Total MonoCB	=	0.94	ng	--			0.08	ng	--		
Total DiCB	=	4.6	ng	--			0.06	ng	--		
Total TriCB	M	4.6	ng	4.6	ng		0.06	ng	--		
Total TetraCB	M	4.6	ng	5.2	ng		0.09	ng	--		
Total PentaCB	M	1.1	ng	7.3	ng		0.09	ng	--		
Total HexaCB	M	0.14	ng	0.72	ng		0.08	ng	--		
Total HeptaCB	<	--		--			0.1	ng	--		
Total OctaCB	<	--		--			0.2	ng	--		
Total NonaCB	<	--		--			0.3	ng	--		
DecaCB (#209)	<	--		--			0.4	ng	--		
Homologue Groups Sum		**23.4**	**ng**								

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	1/14/00
Time:	9:00
Present Ambient Temp. (Ta) (oC)	-10.6
Present Pressure (Pa) (mmHg)	764.54
STP	1.14245487
Target Flow (slpm)	225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	26.2	20.6	32.4	10/01/99	0.027375	-0.692731
22	25.8	20.3	31.9	10/01/99	0.026952	-0.636947
23	21.1	17.0	25.7	10/01/99	0.022372	-0.11856
24	23.9	18.5	30.1	10/01/99	0.026093	-1.092644
24D	27.3	21.7	33.5	11/24/99	0.027017	-0.497134
25	22.9	18.6	27.6	10/01/99	0.022458	0.059121
26	28.3	22.8	34.4	06/21/99	0.025692	-0.094212

KEVRIC

The KEVRIC Company, Inc.
Commerce Building, Suite 200
314 East Commerce Street
San Antonio, Texas 78205
(210) 212-6161 • Fax (210) 212-5432

17 April 2000

Mr. Michael Bilello
Foster Wheeler Environmental Corporation
302 Research Drive
Norcross, GA 30092

Re: New Bedford Harbor – Task Order 17 Air Quality Program Systems Audit Response

Dear Mr. Bilello,

The KEVRIC Company, Inc. (KEVRIC) is pleased to submit the following response to the New Bedford Harbor systems audit performed by Foster Wheeler QA Program Manager on 17 March 2000. Identified non-compliance items have been corrected. Additionally, KEVRIC has developed task specific procedures to ensure continued collection and reporting of quality data. These procedures are documented in our response to the audit findings below and the attached checklist.

Major Finding:

- Lack of current documentation on samplers: A calibration schedule has been developed to prevent future non-compliance. Documentation of the calibration will be logged in a logbook including the date and time of the event. Calibration Data Sheets will be submitted to the San Antonio office within 48 hours. All field personnel were reminded of these procedures. See attached memorandum and calibration schedule confirming contact with Mark Gouveia, KEVRIC Field Sampling Manager.

Minor Findings:

- Organization Chart: An organizational chart has been developed to reflect all personnel and their area of responsibility.
- No Spare Parts Inventory: A spare parts inventory is attached. Per Section 4.0 of the Statement of Work (SOW), Foster Wheeler is responsible for supplying all parts necessary to complete the task order. KEVRIC will notify FWENC when additional parts are needed.
- Corrections not dated and initialed: Field personnel were briefed on the importance of the PCB Sample Data Sheet. All future corrections will be dated and initialed to ensure data consistency and accuracy. See attached memorandum from Mark Gouveia, KEVRIC Field Sampling Manager, confirming field personnel have been notified of this procedure.

- Blanks on forms were not completed: Personnel were briefed on the process to complete all sections of the Sample Data Sheets. All blanks will be completed and all fields will be filled with a value, text, N/A, or a dash. See attached memorandum from Mark Gouveia, KEVRIC Field Sampling Manager, confirming field personnel have been notified of this procedure.
- Data Consistency Check: A sample event checklist has been developed to document the procedures for data consistency and completeness. A data flow diagram has been developed to illustrate the sampling and analysis process.

In summary, KEVRIC has completed corrective actions to address all individual audit findings noted in the 17 March 2000 report. Additionally, KEVRIC has formalized its procedures, assigned responsibilities, and developed a data quality checklist to ensure all activities and documentation are completed for each sampling event.

If you have any questions regarding these actions, please contact me at (210) 212-6161.

Sincerely,

Kevin M. Boyle
Manager
Environmental and Engineering Services

KMB/clb

cc: David Allen, The KEVRIC Company, Inc.
Mark Gouveia, The KEVRIC Company, Inc.
Helen Douglas, Foster Wheeler Environmental Corporation
File

Enclosures: Calibration and Sampling Schedule
Memorandum from Mark Gouveia
Organization Chart
Spare Parts Inventory
Sample Event Checklist
Data Flow Diagram

Task Order 17, Baseline Ambient Air Sampling and Analysis

Calibration and Sampling Schedule

March 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14 Sampler Calibration All Samplers	15 Sample Event Duplicate Sample	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 Sample Event QA Sample	5	6	7	8
9	10	11	12	13	14	15
16	17 Sample Event Spike Sample	18	19	20	21	22
23 30	24	25	26	27	28	29

May 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7 Sample Event QA Sample	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27 Sample Event Duplicate Sample
28	29	30	31			

June 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13 Sampler Calibration All Samplers	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Memorandum

To: Chari Bryan

CC: File

From: Mark A. Gouveia (MAG)

Date: 3/28/00

Re: System audit Task 17 air monitoring

I have prepared the following responses to the Foster Wheeler letterdated March 17, 2000.

Minor Findings:

No Spare Parts Inventory- Attached you will find a spare part inventory list.

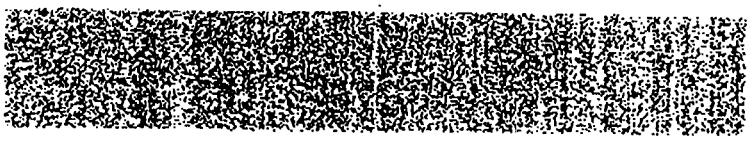
Corrections not dated and initialed- As was mentioned in the letter this was during Miguels training and no other instances were recorded. This has been corrected and all personal have been informed that all changes will be initialed.

Blanks on forms were not completed- All blanks will be filled with data or N/A from this point on.

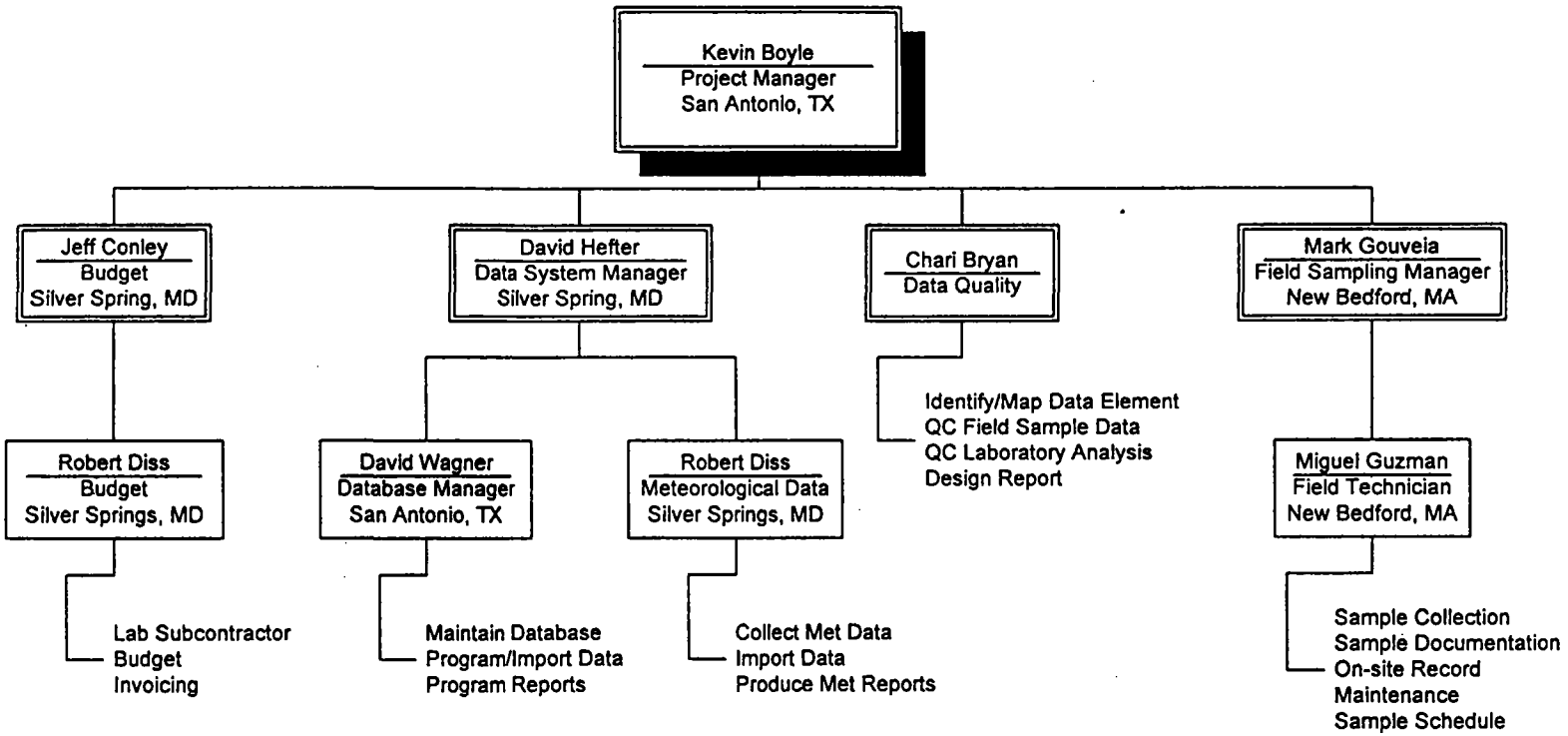
Major Finding:

As indicated during the Audit a calibration was completed during this time and the documentation was unable to be located. A recalibration of all samplers was completed in March prior to the March sampling event. As indicated on the calibration sheets and in the March 3, 2000 performance audit all sampling units were within the +/- 10 % flow tolerance required. To prevent this from occurring in the further a calibration schedule has been developed and all documentation will be sent to the San Antonio office within 48 hours of completion.

If I can be of any more help please feel free to contact me at (508) 910-9958



Task Order 17, Baseline Ambient Air Sampling and Analysis
Organization Chart



Spare Parts Inventory
Task Order 17, Baseline Ambient Air Sampling and Analysis

On Hand Quantity	Description	Comments
32 sets	Motor Brushes	1 set per motor
4	Motor	1 motor per unit
5	Voltage Regulators/Timers	1 per unit
1	Magnehelic	1 per unit
33	Dual Sampling Module	1 per unit
1	Complete Sampler	spare unit
5	Exhaust Hose	1 per unit

Task Order 17, Baseline Ambient Air Sampling and Analysis
Sample Event Checklist

Sample Event Date _____ No. of Samples _____
Triangle Lab Project No. _____ QA/Duplicate Sample _____

DATA SYSTEM	RESPONSIBLE PARTY	DATA COMPLETENESS/ DATA POINT CHECK	COMMENTS
Meteorological Data			
Data Completeness	Chari Bryan	☐ Verify hourly summary matches sampler operation hours for sampling dates ☐ Verify the sample event data is complete ☐ Verify windrose matches hourly summary ☐ Verify unusual weather patterns	
Field Sample Data			
Data Completeness	Chari Bryan	☐ Coordinate with field personnel to confirm calibration schedule ☐ Coordinate with field personnel to respond to any field Audits ☐ Confirm the number of samples that were sent to the lab ☐ Confirm whether or not QA sample was included in lab package ☐ Verify sample numbers on Sample Data Sheets match Chain of Custody form ☐ Verify sample date, flow rates, and total elapsed time on Sample Data Sheets ☐ Verify Chain of Custody forms are signed and dated ☐ Verify all corrections are initialed, dated, and explained ☐ Verify forms are completed and all fields are filled with data or N/A ☐ Verify a copy of the forms are faxed to FWENC	
Laboratory Analysis			
Data Completeness	David Wagner	☐ Verifies data can be imported into the database ☐ Reports any errors after importing data ☐ Coordinates to resolve errors	
Data Point Check	Chari Bryan	☐ Notify lab personnel when both native and spike samples are used ☐ Verify completeness of lab case narrative package ☐ Distribute laboratory case narratives to FWENC and ENSR ☐ Coordinate with lab personnel when data is missing or incorrect ☐ Coordinate any outstanding issues with lab and FWENC personnel ☐ Verify responses are correct and complete ☐ Distribute any corrected information to appropriate personnel ☐ Verify electronic data matches case narrative hard copy data ☐ Log and track all incoming and outgoing data ☐ Track sample information	

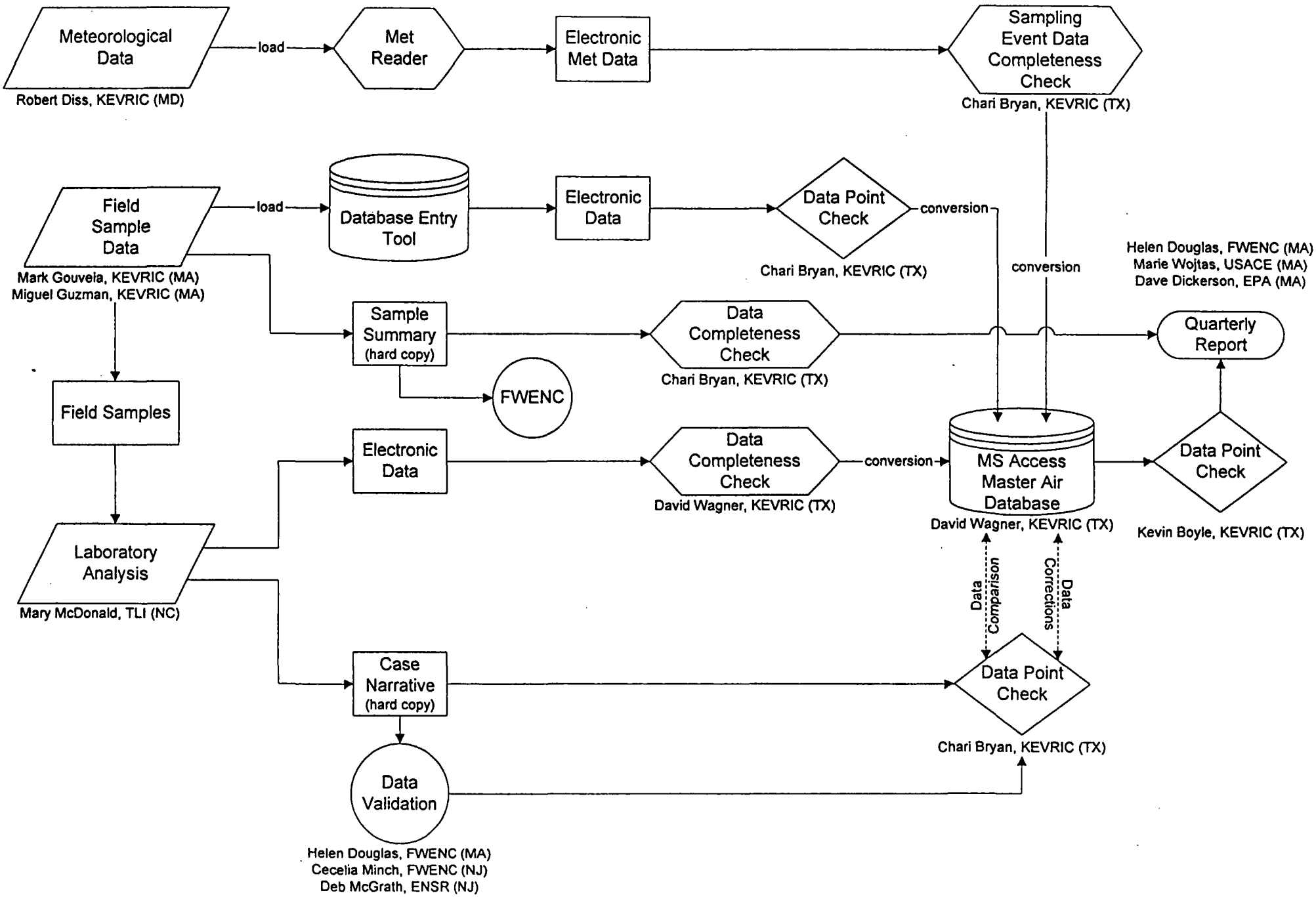
Task Order 17, Baseline Ambient Air Sampling and Analysis
Sample Event Checklist

Sample Event Date _____ No. of Samples _____

Triangle Lab Project No. _____ QA/Duplicate Sample _____

DATA SYSTEM	RESPONSIBLE PARTY	DATA COMPLETENESS/ DATA POINT CHECK	COMMENTS
Quarterly Report			
Production	Chari Bryan	☐ Verify report calculations ☐ Identify any errors in data reporting/importing ☐ Resolve any errors or data that looks unusual or out of place ☐ Run and print reports for specific date range	
Final QC	Kevin Boyle	☐ Verifies report is thorough and complete ☐ Verifies all issues have been resolved appropriately with the appropriate personnel	

Task Order 17, Baseline Ambient Air Sampling and Analysis
Data Flow Diagram



Appendix K

Appendix K: Data Validation Memorandums

The information contained in this section includes the data review reports for data validation purposes. These reports were prepared by FWENC.

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Ferro	Date: 2-27-01
Source:	AXYS Analytical Services		
Analysis:	Total Homologues/Congeners	Reviewed by: JP Nolan	Date: 02-27-01
SDG:	L2694 (1-8)		
		Reviewed by: _____	Date: _____

Total PCB Homologues / Congeners : 08150003, (08150003, 08150003D, field duplicates), 08150006, 08150017, (08150002B, field blank), 08150009, 08150027

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method 1668A.

The data review is based on the following parameters:

* Sample Preservation and Technical Holding times
  Method Blank Analysis
  Field Blanks
* Surrogate Recovery
  Field Duplicates
* Initial Calibration
* Continuing Calibration
* Retention Time Check
* Internal Standard Recovery
* Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Holding Time
Cooler temperature was acceptable (4°C) upon receipt. All samples were extracted and analyzed within specified holding times.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are in the attached tables. Results were greater than the action limit for all compounds present in the blank with the exception of #209 in samples 02 and 03D. Those two results should be considered non-detect.

Field Duplicate

Sample 08150003 was taken as a field duplicate. The attached table lists the RPD results that do not meet the <50% criteria. Congeners #8, #206, and #209 have RPD results greater than 50%. The total however has a RPD of 35.7%. PentaCB has a RPD of 52.7%, the total homologue RPD is 35.4%. Some of the results may be estimated, but overall the samples compare well.

Summary:

A review of this data found that results are acceptable for project use. There was a small amount of blank contamination, but the sample concentrations were well above these concentrations, therefore there was no adverse affect. Some individual congeners exceeded the duplicate RPD criteria. This is most likely a result of sample variability and since the total result was acceptable no action was needed.

Blank Contamination Highest concentration of any blank (field/method) used to calculate action level (ng)

Data Package: ***L2694 (1-8)***

ociated Samples: 08150009, 08150027

Method Blank ID:		**WG3311-101**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
TetraCB	0.008	0.04

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Method Blank ID:		**WG3369-101**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
TetraCB	0.013	0.065
HexaCB	0.046	0.23
OctaCB	0.012	0.06

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Method Blank ID:		**WG3369-102**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
#18	***0.079***	0.395
#44	1.3	6.5
#52	0.188	0.94
#66	0.018	0.09
#105	0.017	0.085
#118	0.02	0.1
#153	0.01	0.05
)	0.022	0.11
B	0.425	2.125
TriCB	0.409	2.045
TetraCB	2.1	10.5
PentaCB	0.017	0.085

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Field Blank ID:		**08150002B**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
#8	0.215	1.075
#18	0.334	1.67
#52	0.153	0.765
#66	0.03	0.15
#118	0.044	0.22
#153	0.042	0.21
#209	0.012	0.06
TriCB	1.14	5.7
PentaCB	0.824	4.12
HexaCB	0.117	0.585

Field Duplicate

Analyte	8150003	08150003D	%RPD
	ng	ng	%
#8	1960	1090	57
#206	0.161	0.092	54.3
#209	0.072	0.034	71.7
Total	**9243**	**6441**	**35.7**

Analyte	8150003	08150003D	%RPD
	ng	ng	%
PentaCB	2110	1230	52.7
Total	**36900**	**25800**	**35.4**

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: L2694 (1-8)
Reviewed By: H. Fern **Date:** 11/14/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	see attached
Field/Equipment Blanks	✓	< RL	N	see attached
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	N	see attached
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	Y	
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: AXYS
Lab Data Package ID: L2694 (1-8)
Analysis: PCB Homologues / Congeners

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
08150002		1668	air	8/15/00	~~8/30/00~~	~~9/6/00~~	Y	Y	
-03		↓	↓	↓	~~8/31/00~~	↓	↓	↓	
-030		↓	↓	↓	↓	↓	↓	↓	
-06		↓	↓	↓	↓	↓	↓	↓	
-17		↓	↓	↓	↓	↓	↓	↓	
-02B		↓	↓	↓	8/28/00	8/31/00	↓	↓	
09		↓	↓	↓	8/28/00	8/31/00	↓	↓	
27		↓	↓	↓					

Heather A. Feno 11/14/00
Reviewer/Date

TD99-213

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jesu	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by:	Date: 02-27-01
SDG:	51141		
		Reviewed by:_____	Date:_____

Total Homologues & Congeners: 05300021, 05300022, 05300023, 05300024, 05300024D, 05300025, 05300026, 05300026B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

- Sample Preservation and Technical Holding Times
- Method Blank Analysis
- Field and Equipment Blanks
- Laboratory Control Spike/LCS Duplicate
- Surrogate Recovery
- * Field Duplicates
- * Initial Calibration
- * Continuing Calibration
- * Retention Time Check
- Internal Standard Recovery
- Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times

Cooler temperature was elevated (4°C) upon receipt. Samples were extracted and analyzed within specified holding time.

Blank Contamination

The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Level (ng)
#118	0.05	0.25
#180	0.05	0.25
DiCB	3.9	19.5
TriCB	5.8	29.0
TetraCB	2.5	12.5
PentaCB	0.29	1.45
HexaCB	0.27	1.35
HeptaCB	0.13	0.65

Results were greater than the action limit for all samples. No validation action is needed.

Internal Standard Area

The following internal standards did not meet required QC criteria (25%-150%):

Sample	Compound	%R
05300021	#3	24.2
05300022	#3	20.9
05300023	#3	23.7
05300024	#3	23.5
05300024D	#3	20.6

Note that IS are spiked prior to extraction and the associated extraction efficiency is included in sample concentration calculations. These recoveries were determined acceptable by the lab since the response met a signal to noise ratio of 10:1. Results for analytes calculated using these IS may be considered estimated.

Laboratory Control Sample

Congener #189 had high percent recoveries for both the LCS and the LCSD. The recoveries were 151% and 171% respectively. The RPD between the two was acceptable (11.8%). Sample results for #189 may be biased high.

Summary:

Overall the data in this SDG are acceptable for project use. There was some minor method and field blank contamination, but the results were greater than the action levels so no action was needed. There were also some minor internal standard and LCS/LCSD exceedences which have no affect on the reported data.

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs
Lab Data Package ID: 51141
Analysis: PCB Homologues

Case No.
SDG No.
Cooler Receipt Form Present / Complete? Y N
Chain of Custody Form Present / Complete? Y N

Sample ID	Method		Matrix	Date Collected 00	Date Prepared 00	Date Analyzed 00	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
05300021			air	5/30	6/9	6/15	Y	Y N	~~6~~ 4°C
05300022									
05300023									
05300024									
05300024D									
05300025									
05300026									
05300026B									
~~0530002~~ HF									

Heather A. Ferro 9/6/00
Reviewer/Date

TD99-213
11/4/99

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 51141
Reviewed By: H. Ferro **Date:** 9/6/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	blank contamination present - see table in memo
Field/Equipment Blanks	✓	< RL	N	"
~~MS/MSD Recovery~~ LCS/LCSD	✓	40-150% R	N	LCS-#189 = 151%R LCSD-#189 = 170%R
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y/~~N~~	11.8% (#189)
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	Y	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	a few IS %Rs out of QC limits.
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jesup	Date: 2-27-01
Source:	AXYS Analytical Services		
Analysis:	Total Homologues/Congeners	Reviewed by: JDVelan	Date: 02-27-01
SDG:	L2699 (1-15)		
		Reviewed by:_____	Date:_____

Total PCB Homologues / Congeners : 08160002, 08160003, 08160006, (08160006B, field blank) 08160009, 08160017, 08160027, 08170002, (08170003, 0817 3D, field duplicates), 08170006, 08170009, 08170017, 08170027, (08170027B, field blank)

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method 1668A.

The data review is based on the following parameters:

* Sample Preservation and Technical Holding times
  Method Blank Analysis
  Field Blanks
* Surrogate Recovery
  Field Duplicates
* Initial Calibration
* Continuing Calibration
* Retention Time Check
* Internal Standard Recovery
* Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Holding Time
Cooler temperature was acceptable (4°C) upon receipt. All samples were extracted and analyzed within specified holding times.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are in the attached tables. Results were greater than the action level for all compounds present in the blank with the exception of #209 which had a result less than the action level for all the samples except 08170006 and 08170002. The positive results for this analyte in the appropriate samples should be considered estimated.

Field Duplicate

Sample 08150003 was taken as a field duplicate. The attached table lists the RPD results that did not meet the <50% criteria. Some individual congeners had recoveries >50%, but none over 62%R. The total congener result %R is 51.9%. Homologue results for Tri, Tetra, PentaCB, HexaCB, HeptaCB, and the total were greater than 50% RPD, but none were greater than 60%. NonaCB had one positive result and the other non-detect, an RPD could not be calculated. Some of the results may be estimated, but overall the samples compare well.

Summary:

A review of this data found that results are acceptable for project use. There was a small amount of blank contamination, but the sample concentrations were well above these concentrations, therefore there was no adverse affect. Some individual congeners exceeded the duplicate RPD criteria. This is most likely a result of sample variability and will not impact the data.

Blank Contamination Highest concentration of any blank (field/method) used to calculate action level (ng)

Data Package: ***L2694 (1-8)***

Associated Samples: 08150009, 08150027

Method Blank ID:		WG3311-101
Analyte	*Conc. (ng)*	*Action Limit (ng)*
TetraCB	0.008	0.04

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Method Blank ID:		WG3369-101
Analyte	*Conc. (ng)*	*Action Limit (ng)*
TetraCB	0.013	0.065
HexaCB	0.046	0.23
OctaCB	0.012	0.06

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Method Blank ID:		WG3369-102
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#18	*0.079*	0.395
#44	1.3	6.5
#52	0.188	0.94
#66	0.018	0.09
#105	0.017	0.085
#118	0.02	0.1
#153	0.01	0.05
[illegible]0	0.022	0.11
[illegible]8	0.425	2.125
TriCB	0.409	2.045
TetraCB	2.1	10.5
PentaCB	0.017	0.085

Associated samples: 08150002, 08150003, 08150003D, 08150006, 08150017, 08160002, 08160003, 08160006, 08160017

Field Blank ID:		08150002B
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#8	0.215	1.075
#18	0.334	1.67
#52	0.153	0.765
#66	0.03	0.15
#118	0.044	0.22
#153	0.042	0.21
#209	0.012	0.06
TriCB	1.14	5.7
PentaCB	0.824	4.12
HexaCB	0.117	0.585

Blank Contamination
L2699 (1-15)

Highest concentration of any blank
blank (field/method)
used to calculate action level (ng)

Method Blank ID:		**WG3370-102**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
Contamination higher in 27B		

Method Blank ID:		**WG3370-101**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
Contamination higher in 27B		

Field Blank ID:		**08170027B**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
#8	0.307	1.535
#18	0.395	1.975
#44	0.145	0.725
#52	0.189	0.945
#66	0.038	0.19
#118	0.081	0.405
#153	0.036	0.18
#180	0.012	0.06
#187	0.011	0.055
#209	0.014	0.07
MonoCB	0.035	0.175
DiCB	0.933	4.665
TriCB	1.83	9.15
TetraCB	0.715	3.575
PentaCB	0.518	2.59
HexaCB	0.0731	0.3655
HeptaCB	0.0184	0.092
OctaCB	0.007	0.035

Field Blank ID:		**0816006B**
Analyte	***Conc. (ng)***	***Action Limit (ng)***
Contamination higher in 27B		

Field Duplicate

Analyte	8170003	08170003D	%RPD
	ng	ng	%
#18	1410	2590	59
#52	900	1550	53.1
#105	6.82	11.8	53.5
#118	49.5	85.5	53.5
#128	2.36	4.05	52.6
#153	30.3	52.5	53.6
#187	1.92	3.44	56.7
#195	0.054	0.102	61.5
Total PCBs	**3965**	**6744**	**51.9**

Analyte	8170003	08170003D	%RPD
	ng	ng	%
TriCB	7690	13500	54.8
TetraCB	3500	5970	52.2
PentaCB	837	1480	55.5
HexaCB	158	273	53.2
HeptaCB	8.78	15.4	55.1
NonaCB	0.071	ND	NC
Total	**15600**	**26600**	**52.1**

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: L2699 (-1 to -15)
Reviewed By: H. Ferro **Date:** 11/13/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	see attached.
Field/Equipment Blanks	✓	< RL	N	see attached
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	N	see attached
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	Y	
Alternate Standard (prior to cleanup)	✓ X	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS	✓ X	50-150%	X Y	
RT Window Check (see Lab SOP)		RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: AXYS
Lab Data Package ID: L2699 (-1 to -15)
Analysis:

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
		1668							
081600-02			air	8/16/00	9/15/00	9/20/00	Y	Y	
-03									
-06									
-17									
-09				~~9/16/00~~	9/18/00	9/21/00			
-27					9/18/00	9/21/00			
-06B					9/18/00	9/21/00			
081700-02				8/17/00	9/18/00	9/21/00			
-03					9/18/00	9/21/00			
-03D					9/18/00	9/22/00			
-06									
-17									
-27									
-27B									
-09									

Heather A. Zeno 11/13/00
Reviewer/Date

TD99-213

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jesso	Date: 2-27-01
Source:	AXYS Analytical Services		
Analysis:	Total Homologues/Congeners	Reviewed by: JD Veden	Date: 02-27-01
SDG:	3,4,5		
		Reviewed by:_____	Date:_____

Total PCB Homologues / Congeners : 09010028, (09010028B, field blank), 09070028, (09070028B, field blank), 09130028, (09130028B, field blank)

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method 1668A.

The data review is based on the following parameters:

	Sample Preservation and Technical Holding times
	Method Blank Analysis
	Field Blanks
*	Surrogate Recovery
NA	Field Duplicates
*	Initial Calibration
*	Continuing Calibration
*	Retention Time Check
*	Internal Standard Recovery
*	Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Holding Time
Cooler temperatures were elevated (14°C) upon receipt for samples taken on 9/7 and 9/13. Surrogate recoveries were acceptable indicating that no sample loss occurred. All samples were extracted and analyzed within specified holding times.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are in the attached tables. Results for the associated samples were primarily greater than the action level for each analyte therefore no action was needed. Congener #180 did have a result less than the action level in samples taken on 9/7 and 9/13. The homologue octa-CB also was less than the action level. These results should be considered non-detect.

Summary:

A review of this data found that results are acceptable for project use. There was a small amount of blank contamination that caused some positive results to be qualified as non-detect, but there are no major impacts to the data.

Blank Contamination
SDG 3,4,5

Highest concentration of any blank (field/method) used to calculate action level (ng)

Method Blank ID:		WG3424-102L
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#52	0.066	0.33
#118	0.096	0.48
#153	0.145	0.725
#180	0.31	1.55
TriCB	0.067	0.335
PentaCB	0.936	4.68
HexaCB	0.269	1.345
HeptaCB	0.31	1.55
OctaCB	0.067	0.335

Method Blank ID:		WG3424-101i
Analyte	*Conc. (ng)*	*Action Limit (ng)*
No blank contamination		

Field Blank ID:		09010028B
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#18	0.102	0.51
#44	0.185	0.925
#52	0.136	0.68
#66	0.053	0.265
#118	0.15	0.75
#153	0.077	0.385
TriCB	0.521	2.605
TetraCB	0.335	1.675
PentaCB	0.29	1.45
HexaCB	0.242	1.21

Field Blank ID:		09070028B
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#18	0.055	0.275
#44	0.042	0.21
#52	0.038	0.19
#153	0.039	0.195
TriCB	0.055	0.275
TetraCB	0.08	0.4

Field Blank ID:		09130028B
Analyte	*Conc. (ng)*	*Action Limit (ng)*
#8	0.278	1.39
#18	0.192	0.96
#44	0.604	3.02
#52	0.158	0.79
#66	0.042	0.21
#118	0.091	0.455
#153	0.065	0.325
DiCB	0.278	1.39
TriCB	0.866	4.33
TetraCB	1.14	5.7
PentaCB	0.213	1.065
HexaCB	0.046	0.23

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: SDG 3,4,5
Reviewed By: H. Ferro **Date:** 11/13/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	see attached
Field/Equipment Blanks	✓	< RL	N	see attached
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	Y	
Alternate Standard *(prior to cleanup)*	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: AXYS
Lab Data Package ID: SDG 3,4,5 L2741(1-2), L2741(1-2)
Analysis: Homologues / Congeners L2768(1-2)

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
09010028		1668	aer	9/1/00	10/2/00	10/5/00	Y	Y	
09010028B				9/1/00	10/2/00	10/6/00		Y	
09070028				9/7/00	10/2/00	10/6/00		1.4°C	
09070028B				9/7/00	10/2/00	10/5/00		1.4°C	
09130028				9/13/00	10/2/00	10/6/00		1.4°C	
09130028B		↓	↓	9/13/00	10/2/00	~~10/5/00~~ ~~10/6/00~~ 10/6/00	↓	1.4°C	

Heather A. Feno
Reviewer/Date

TD99-213

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jesso	Date: 2-27-0
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: J.D. Veilon	Date: 02-27-01
SDG:	50754, 50754A		
		Reviewed by:_____	Date:_____

Total Homologues & Congeners: 04040021, 04040022, 04040023, 04040024, 04040025, 04040026, 04040021B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

Sample Preservation and Technical Holding times
Method Blank Analysis
Field and Equipment Blanks
Laboratory Control Spike/LCS Duplicate
Surrogate Recovery
* Field Duplicates
* Initial Calibration
* Continuing Calibration
* Retention Time Check
Internal Standard Recovery
Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated (8°C) upon receipt. All samples were extracted and analyzed within the specified holding time.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng)
#118	0.82	4.1
#105	0.40	2.0
#167	0.15	0.75
#156	0.63	3.15
#157	0.23	1.15
#180	2.6	13
#170	2.3	11.5
#189	0.21	1.05
MonoCB	1.5	7.5
DiCB	20.9	104.5
TriCB	27.2	136
TetraCB	9.0	45.0
PentaCB	2.7	13.5
HexaCB	4.2	21.0
HeptaCB	7.9	39.5
OctaCB	3.9	19.5
NonaCB	0.4	2.0

Sample results less than the action level were qualified as non-detect (U).

Surrogate Recovery

Sample 04040023 had surrogate recovery below 25% for both surrogates indicating the potential for target analyte loss from the field. Results for this sample maybe biased low. Positive and non-detect results may be estimated.

Internal Standard Area

The following internal standards did not meet required QC criteria (25%-150%):

Sample 04040023 had several internal standards that did not meet criteria:

Compound	%R
#28	1.24
#52	0.96
#101	0.89
#138	1.30
#180	1.06
#194	1.16
#209	0.90

Recovery criteria is 25-250%.

Homologue groups and congeners associated with these internal standards should be considered over-estimated. The lab feels that the internal standards were lost during clean up procedures. Non-detects should be rejected and positive results may be considered estimated.

Sample 04040025 had a 22.6% recovery for #15. The Di compound in that sample may be biased high. Sample 04040021 had low/high recoveries for #3, #15, and #209 internal standards, the recoveries were 18.0, 22.2, and 146%, respectively. The associated homologue groups for this sample may be biased.

Alternate Standard

Sample 04040023 had an alternate standard recovery of 1.13%, below the 25-150% limit. No further action is required.

Laboratory Control Sample

Recoveries for #189 in 50754 and 50754A were greater than the limit. Results for Hepta homologues maybe biased high.

Summary:

These samples are considered acceptable for project use. Some minor deviations were found for internal, surrogate and alternate standard recoveries and blank contamination. These exceedences caused the estimation of some data and the rejection of a few results. Blank contamination also changed some positive results to non-detect.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50754, 50754A
Reviewed By: A. Ferro **Date:** 6/12/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	Blank Contamination present - see table in memo
Field/Equipment Blanks	✓	< RL	N	Blank Contamination present - see table in memo.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	LCS: #189 = 159%, LCSD: #189 = 165% LCS: #189 = 157%, LCSD189 = 164%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	04040023 bothare < 25%
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y/N	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	some IS %Rs are out of QC limits.
Alternate Standard (prior to cleanup)	✓	25-150%	N	04040023 = 1.13% R
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)		RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs
Lab Data Package ID: 50754
Analysis: Total Homologues

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
04041002-1	1613		air	4/4	4/27	5/2	Y	Y N	~~4°C~~ 8°C
22					4/26	5/1			
23									
24									
25									
26						5/2			
21B						5/2			

Heather A. Ferro 6/12/00
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Ferro	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: J.D. Verlan	Date: 02-27-01
SDG:	50865		
		Reviewed by:_____	Date:_____

Total Homologues & Congeners: 04170021, 04170022, 04170023, 04170024, 04170025, 04170026, 04170023B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

Sample Preservation and Technical Holding times
Method Blank Analysis
Field and Equipment Blanks
* Laboratory Control Spike/LCS Duplicate
Surrogate Recovery
* Field Duplicates
* Initial Calibration
* Continuing Calibration
* Retention Time Check
Internal Standard Recovery
Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated (6°C) upon receipt. Samples were extracted and analyzed with the specified holding time.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng/l)
#114	0.06	0.30
#118	0.42	2.1
#105	0.22	1.1
#167	0.10	0.50
#156	0.34	1.7
#157	0.07	0.35
#180	1.8	9.1
#170	1.7	8.5
#189	0.10	0.5
DiCB	4.6	23.0
TriCB	5.0	25.0
TetraCB	4.6	23.0
PentaCB	1.3	6.5
HexaCB	2.7	13.5
HeptaCB	5.5	27.5
OctaCB	3.3	16.5
NonaCB	0.33	1.65

Sample results less than the action level were qualified as non-detect (U).

Internal Standard Area

The following internal standards did not meet required QC criteria (25%-150%):

Sample	Compound	%R
05300021	#3	15.3
05300022	#3	18.2
05300024	#3	21.0
05300025	#3	12.8
05300025	#15	23.4
05300026	#3	16.9
05300023B	#3	8.38
05300023B	#15	12.5

Note that IS are spiked prior to extraction and the associated extraction efficiency is included in sample concentration calculations. These recoveries were determined acceptable by the lab since the response met a signal to noise ratio of 10:1. Results for analytes calculated using these IS may be considered estimated.

Summary:

Overall the data in this SDG are acceptable for project use. There was some minor method and field blank contamination, which caused positive results to be qualified as non-detect. There were also some minor internal standard exceedences which caused the potential estimation of some data, but otherwise there is no affect on the reported data.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50865
Reviewed By: H. Ferro **Date:** 9/6/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comment
Method Blank	✓	< RL	N	See table in memo
Field/Equipment Blanks	✓	< RL	N	See table in memo
MS/MSD Recovery	✓	40-150% R	Y	
MS/MSD RPD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	–	< 50% RPD	X	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	several IS %Rs out of limits
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)		RT Windows and peak resolution		

Actions Taken:

LCS- ok

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs
Lab Data Package ID: 508105
Analysis: PCB Homologues

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? Y (N)
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method (Y/N)		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
04170021			air	4/17	4/30	5/4	Y	X N	60U
04170022									
04170023									
04170024						5/5			
04170025									
04170026									
04170023B									

Heather A. Zeno
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather Arterio	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: JD Velan	Date: 02-27-01
SDG:	51004		
		Reviewed by: _____	Date: _____

Total Homologues : 05080021, 05080022, 05080023, 05080024, 05080025, 05080026, (05080025B, field blank)

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

- Sample Preservation and Technical Holding times
- Method Blank Analysis
- Field Blanks
- * Laboratory Control Spike/LCS Duplicate
- * Surrogate Recovery
- * Field Duplicates
- * Initial Calibration
- * Continuing Calibration
- * Retention Time Check
- Internal Standard Recovery
- * Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Holding Time
Cooler temperature was elevated (4°C) upon receipt. All samples were extracted and analyzed within specified holding times.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng/l)
MonoCB	0.16	0.80
DiCB	14.1	70.5
TriCB	19.6	98
TetraCB	10.1	50.5
PentaCB	2.5	12.5
HexaCB	1.7	8.5
HeptaCB	1.5	7.5

Results were greater than the action limit for all compounds present in the blank. No validation action is needed.

Internal Standard Area

The following internal standards did not meet required QC criteria:

Sample ID	IS	%R
05080021	#3	15.8
05080022	#3	18.1
05080023	#3	18.1
05080025	#3	18.3
05080026	#3	24
05080026	#15	11.4
05080025B	#3	24.1

Note that IS are spiked prior to extraction and the associated extraction efficiency is included in sample concentration calculations. These recoveries were determined acceptable by the lab since the response met a signal to noise ratio of 10:1. Results for analytes calculated using these IS may be considered estimated.

Summary:

These samples are considered acceptable for project use. Some minor deviations were found for internal standard recoveries and blank contamination. As a result some positive sample data should be qualified as non-detect (U) and others may be considered estimated.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 51004
Reviewed By: H. Ferro **Date:** 6/9/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	blank contamination present - see table in memo
Field/Equipment Blanks	✓	< RL	N	
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	IS %Rs out of limits.
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

LCS - ok

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle
Lab Data Package ID: 51004
Analysis: Total Homologues

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
0508021			aq/pt	5/8	5/26	5/23	Y	N	4°C
22			↓	↓	↓	↓	↓	↓	
23						5/24			
24						↓			
25									
26									
25B			↓	↓	↓	↓	↓	↓	

Heather A. Feno 6/9/00
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jeno	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: J.D. Nelan	Date: 02-27-01
SDG:	50488		
		Reviewed by: _____	Date: _____

Total Homologues: 02170021, 02170022, 02170023, 02170024, 02170025, 02170026, 02170021B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

	Sample Preservation and Technical Holding times
	Method Blank Analysis
	Field Blanks
	Laboratory Control Spike/LCS Duplicate
*	Surrogate Recovery
*	Field Duplicates
*	Initial Calibration
*	Continuing Calibration
*	Retention Time Check
	Internal Standard Recovery
*	Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated upon receipt. Samples were extracted and analyzed within the specified criteria.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action levels (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng)
MonoCB	0.27	1.35
DiCB	3.6	18
TriCB	6.5	32.5
TetraCB	4.6	23
PentaCB	1.5	7.5
HexaCB	1.1	5.5

Sample results less than the action level were qualified as non-detect (U).

Laboratory Control Sample

There were a few congeners that did not meet QC criteria in the LCS/LCSD. In the LCS #114 had a recovery of 139% and #126 had a recovery of 135%. In the LCSD #114 had a recovery of 154% and #126 had a recovery of 132%. The RPDs between the LCS and LCSD were acceptable. Results for these congeners should be considered biased high. No significant impact on the data was observed.

Summary:

These samples are considered acceptable for project use. Some sample results should be considered non-detect (U) due to low levels of blank contamination.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50488
Reviewed By: H. Ferro **Date:** 10/19/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	Blank contamination present - see table in memo.
Field/Equipment Blanks	✓	< RL	N	Blank contamination present - see table in memo.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	LCS: #114 = 139%, LCSD #114 = 154% #126 = 135%, LCSD #126 = 132%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	N	
Continuing Calibration	✓	%D < 25%	N	IS #3 = 29%D
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	Y	
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs
Lab Data Package ID: 50488
Analysis: PCB Homologues

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? Y N
Chain of Custody Form Present / Complete? Y N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
02170021			air	2/17/00	2/25/00	3/10/00	Y	6° Y	
02170023			↓	↓	↓	3/10/00	↓	↓	
02170024			↓	↓	↓	3/10/00	↓	↓	
02170025			↓	↓	↓	3/14/00	↓	↓	
02170026			↓	↓	↓	3/10/00	↓	↓	
~~02170022~~									

Heather A. Leno 10/19/00
Reviewer/Date

TD99-213

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by:_____	Date:_____
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: [signature]	Date: 02-27-01
SDG:	50647		
		Reviewed by:_____	Date:_____

Total Homologues & Congeners: 03150021, 03150022, 03150023, 03150024, 03150024D, 03150025, 03150026, 03150026B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

Sample Preservation and Technical Holding times
Method Blank Analysis
Field Blanks
* Laboratory Control Spike/LCS Duplicate
* Surrogate Recovery
* Field Duplicates
* Initial Calibration
* Continuing Calibration
* Retention Time Check
* Internal Standard Recovery
* Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated (5°C) upon receipt. Samples were extracted and analyzed within the specified holding time.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng)
#118	0.40	2.0
#105	0.24	1.2
#167	0.06	0.3
#156	0.26	1.3
#180	1.3	6.5
#170	1.3	6.5
#189	0.14	0.7
MonoCB	0.33	1.65
DiCB	4.2	21
TriCB	6.6	33
TetraCB	3.3	16.5
PentaCB	0.65	3.25
HexaCB	1.9	9.5
HeptaCB	3.5	17.5
OctaCB	1.6	8

Sample results less than the action level were qualified as non-detect (U).

Summary:
These samples are considered acceptable for project use.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50647
Reviewed By: H. Ferro **Date:** 4/10/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comment
Method Blank	✓	< RL	N	Blank contamination present - see table in memo.
Field/Equipment Blanks	✓	< RL	N	Blank contamination present - see table in memo.
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	Y	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard ~~Areas~~ %R (prior to extraction) used to calc. samples	✓	25-150%	~~N~~ Y	
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs (NC)
Lab Data Package ID: 50647
Analysis: PCBs

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? Y N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
03150021			Air	3/15	3/27	3/31	Y	Y N	50
03150022			↓	↓	↓	↓	↓	↓	
03150023									
03150024									
03150024D									
03150025									
03150026									
03150028			↓	↓	↓	↓	↓	↓	

Heather A. Ferro 4/10/02
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jessio	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: JD Veler	Date: 02-27-01
SDG:	50305		
		Reviewed by:_____	Date:_____

Total Homologues: 01140021, 01140022, 01140023, 01140024, 01140024D, 01140025, 01140026, 01140023B (field blank)

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

	Sample Preservation and Technical Holding times
	Method Blank Analysis
	Field Blanks
	Laboratory Control Spike/LCS Duplicate
*	Surrogate Recovery
	Field Duplicates
*	Initial Calibration
	Continuing Calibration
*	Retention Time Check
	Internal Standard Recovery
*	Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated (8°C) upon receipt. Samples were extracted and analyzed within the specified holding time.

Blank Contamination
The maximum mass detected in the field and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng)
MonoCB	0.5	2.5
DiCB	16.3	81.5
TriCB	2.0	10.0
TetraCB	2.5	12.5
PentaCB	0.26	1.3
HexaCB	0.44	2.2
HeptaCB	0.06	0.3

Sample results less than the action level were qualified as non-detect (U).

The highest contamination in any blank was used to calculate the action level.

Field Duplicates

The duplicate results for the compound MonoCB were 41.4ng/l in the original sample and ND (DL = 0.03ng) in the duplicate. The RPD could not be calculated. These results may be estimated. Compounds DiCB and OctaCB had RPD for the duplicates of 85% and 148% respectively. These compounds in the original and duplicate samples may be estimated. The RPD between the total homologue results is 61.2%. Internal standard recovery for DiCB was <10% and did cause the overestimation of the Di homologue group. This most likely explains the large difference between the original and duplicate samples.

Continuing Calibration

The internal standard BZ #3 had a %D of 30.3% which is above the <25% limit. The samples affected are 01140022, 01140021, and TLI Blank. This is a minor exceedence, reported results for these samples are not likely to be significantly affected..

Internal Standard Area

The following internal standards did not meet required QC criteria:

Sample ID	IS	%R
01140021	$^{13}C_6$-4-MonoCB	23.7
	$^{13}C_{12}$-4-DiCB	7.33
01140022	$^{13}C_6$-4-MonoCB	12.3
	$^{13}C_{12}$-4-DiCB	3.2
01140023	$^{13}C_{12}$-4-DiCB	9.8
01140024	$^{13}C_6$-4-MonoCB	24.2
	$^{13}C_{12}$-4-DiCB	5.3
01140024D	$^{13}C_6$-4-MonoCB	18.1
	$^{13}C_{12}$-4-DiCB	11.2
01140025	$^{13}C_6$-4-MonoCB	17.1
	$^{13}C_{12}$-4-DiCB	4.5
01140026	$^{13}C_6$-4-MonoCB	22.0
	$^{13}C_{12}$-4-DiCB	10.0
01140023B	$^{13}C_6$-4-MonoCB	22.6
	$^{13}C_{12}$-4-DiCB	12.5

Note that IS are spiked prior to extraction and the associated extraction efficiency is included in sample concentration calculations. These recoveries were determined acceptable by the lab since the response met a signal to noise ratio of 10:1. Results for analytes calculated using these IS may be considered estimated.

Laboratory Control Sample
The recovery for #189 in the LCS is 160% and in the LCSD is 187%. The results for congener 189 and the hepta results should be considered biased high.

Summary:
These samples are considered acceptable for project use. Some minor exceedences were found such as IS percent recoveries, blank contamination, Ccal %Ds, and field duplicate RPDs. These deviations caused the potential estimation some sample results, but overall do not have a significant impact on the data.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50305
Reviewed By: H. Ferro **Date:** 4/10/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	Blank contamination present - see memo (table)
Field/Equipment Blanks	✓	< RL	N	Blank contamination present - see table in memo
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#189 LCS = 160%. #189 LCSD = 187%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	N	Sample 24 - mono = 41.4ng Sample 240 - mono = NB Di = 85% RPD, octa = 148% RPD
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	N	
Continuing Calibration	✓	%D < 25%	N	%D - CCAL = 30.3%
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	Some IS %Rs out of QC limits.
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs
Lab Data Package ID: 50305
Analysis: PCBs

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
0114002 1			Air	1/14	1/19	2/4	Y	X N	80
0114002 2			↓	↓	↓	↓	↓	↓	
0114002 3									
0114002 4									
0114002 5									
0114002 4D									
0114002 6									
0114002 3B			↓	↓	↓	2/5	↓	↓	

Heather A. Feno 4/10/00
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NEW BEDFORD HARBOR AIR SAMPLES
DATA REVIEW

Project:	NE TERC – T017	Prepared by: Heather A. Jerue	Date: 2-27-01
Source:	Triangle Laboratories Inc.		
Analysis:	Total PCB Homologues	Reviewed by: [signature]	Date: 02-27-01
SDG:	50182		
		Reviewed by:_____	Date:_____

Total Homologues: 12169921, 12169922, 12169923, 12169924, 12169925, 12169926, 12169922B

A data review was performed on the organic analytical data for air samples collected by The Kevric Company from the New Bedford Harbor site. The samples were extracted and analyzed using EPA Method TO-4A.

The data review is based on the following parameters:

	Sample Preservation and Technical Holding times
	Method Blank Analysis
	Field Blanks
*	Laboratory Control Spike/LCS Duplicate
*	Surrogate Recovery
NA	Field Duplicates
*	Initial Calibration
*	Continuing Calibration
*	Retention Time Check
	Internal Standard Recovery
*	Alternate Standard Recovery

* - All criteria were met for this parameter
NA – Not applicable to this SDG

Sample Preservation and Technical Holding Times
Cooler temperature was elevated (5°C) upon receipt. Samples were extracted and analyzed within the specified holding time.

Blank Contamination
The maximum mass detected in the field blank and laboratory blanks and the calculated action level (5x the maximum mass) are:

Parameter	Mass Detected(ng)	Action Limit (ng)
MonoCB	1.1	5.5
DiCB	21.1	105.5
TriCB	2.7	13.5
TetraCB	2.5	12.5
PentaCB	4.6	23
HexaCB	36.1	180.5
HeptaCB	20.2	101
OctaCB	47.2	236
DecaCB	0.97	4.85

Sample results less than the action level were qualified as non-detect (U).

#169 could not be reported in the method blank due to interference in the internal standard. #138 was used to calculate the other hexa-CB congeners.

Internal Standard Area

The following internal standards did not meet required QC criteria:

Sample ID	IS	%R
TLI Blank	$^{13}C_6$-2,2',4,5,5'-PentaCB	163
12169922B	$^{13}C_6$-4-MonoCB	24.1
	$^{13}C_{12}$-4,4'-DiCB	14.7
12169921	$^{13}C_{12}$-4,4'-DiCB	21.6
	$^{13}C_{12}$-DecaCB	5.4
12169922	$^{13}C_6$-4-MonoCB	20.2
	$^{13}C_{12}$-4,4'-DiCB	8.9
12169923	$^{13}C_{12}$-DecaCB	22.2
12169925	$^{13}C_6$-4-MonoCB	13.9
	$^{13}C_{12}$-4,4'-DiCB	11.0
12169926	$^{13}C_{12}$-DecaCB	15.4

Note that IS are spiked prior to extraction and the associated extraction efficiency is included in sample concentration calculations. These recoveries were determined acceptable by the lab since the response met a signal to noise ratio of 10:1. Results for analytes calculated using these IS may be considered estimated.

Summary:

These samples are considered acceptable for project use. Some minor deviations were found such as IS percent recoveries, and blank contamination. These deviations caused the possible estimation of some sample results as well as changing some positive detects to non-detects, but overall do not have a significant impact on the data.

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 50182
Reviewed By: H. Ferro **Date:** 4/10/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	blank contamination present - see table in memo
Field/Equipment Blanks	✓	< RL	N	blank contamination present - see table in memo
MS/MSD Recovery		40-150% R		
MS/MSD RPD		50% RPD		
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	several IS %Rs out of limits.
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS		50-150%		
RT Window Check (see Lab SOP)	✓	RT Windows and peak resolution	Y	

Actions Taken:

LCS - OK

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: Triangle Labs (NC)
Lab Data Package ID: 50182
Analysis: PCBS (Homologues)

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? Y N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Method		Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp. Met? (Y/N)	Comments
12169921			AIR	12/16	1/11	2/17	Y	Y N	5°C
12169922			↓	↓	↓	↓	↓	↓ ↓	
12169923									
12169924									
12169925									
12169926									
12169922B			↓	↓	↓	↓	↓	↓ ↓	

Heather A. Zeno 4/10/00
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 3, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 48858
ORGANIC DATA VALIDATION

PCBs: 5/Air/06049921, 06049922, 06049923, 06049924, 06049925
1/Field Blank/ 06049921B

review (HE)

A ~~modified Tier II~~ data ~~validation~~ was performed on the analytical data for 6 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
Blanks
Surrogate Compounds
NA Matrix Spike/Matrix Spike Duplicate
* Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
Internal Standards
* Alternate Standard
Recovery Standards
NA Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
Both surrogates exceeded specified limits in all samples. Sample results may be similarly biased.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Sample 21B exhibited high recovery of IS#209 and IS#3 exceeded limits in sample 24. Therefore, congener #209 and the monoCB homologue group may be biased high in their respective samples.

Recovery Standards
Both standards exhibited low recovery in sample 21B. Recovery standard #128 also exhibited low response in sample 25. Sample results may be biased low as a result.

Blank Contamination
The concentration reported for the total monoCB homologue group in samples 22 and 21B, as well as the di and triCB homologues in 21B should be considered suspect due to similar contamination in the method blank.
See attached table. (HF)

Calibrations
All criteria were met.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 6 air samples, including 1 field blank analyzed for PCB congeners and homologue groups as presented in package 48858. Data failed specified criteria for blank contamination, and for exceeding surrogate, recovery and internal standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 48858
Reviewed By: C. Muriel **Date:** 1/3/00

QC Parameter	Present	Criteria	Met	Comments
Method Blank	✓	< RL	N	mono, di and tri CB homologues present.
Field/Equipment Blanks	✓	< RL	N	mono → penta CB homologues present.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	Y	
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	Both surrogates high in all samples and blank.
Field Duplicate	NA	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	mono(#3) 7150 in 24 #209 7150 in 21B
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	both low in 21B #128 low in 25
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	-	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS, INC.
Lab Data Package ID: 48858
Analysis: PCB

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? Y N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met? (Y/N)	Preservative/ Temp Met? (Y/N)	Comments
06049921	PUF	6/4/99	06/12/99	07/02/99	Y	Y	
06049922	↓	↓	↓	↓	↓	↓	
06049923	↓	↓	↓	↓	↓	↓	
06049924	↓	↓	↓	↓	↓	↓	
06049925	↓	↓	↓	↓	↓	↓	
06049921B	↓	↓	↓	↓	↓	↓	

C. Mench
Reviewer/Date

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 9, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 48964

1. Please submit missing pages 61, 62, 73, & 74.
2. Please submit LCS/LCSD summary and raw data for W2143-02 & W2143-03.

TLI Number 49004

1. Submit LCS/LCSD summary and raw data for W2146-03 & W2147-01.

TLI Number 49048

1. Please submit LCS/LCSD summary and raw data for W2158-02 & W2158-03.
2. Please submit "listing" for concal W992155.

TLI Number 48858

1. Please submit missing pages 102, 128-131, 134, 137, 233, 237, 309, 311-12, 315, 317, 323 and 324.
2. Submit LCS/LCSD summary and raw data for W2062-01 &W2062-02

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 4, 2000

FROM: C. Minch

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 48894
ORGANIC DATA VALIDATION

PCBs: 6/Air/06109921, 06109922, 06109923, 06109924, 06109924D, 06109925, 1/Field Blank/ 06109926B

A modified Tier II data validation was performed on the analytical data for 7 air samples, including 1 field blank and field duplicate pair (24/24D) collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
Preservation and Technical Holding Times
Initial and Continuing Calibrations
Blanks
* Surrogate Compounds
NA Matrix Spike/Matrix Spike Duplicate
* Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
* Internal Standards
* Alternate Standard
* Recovery Standards
* Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was elevated upon sample receipt. However, since all surrogate recoveries were within limits, the impact on the data should be minimal. All samples were prepped and analyzed within specified holding times.

Surrogates
All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
All recoveries were within limits.

Recovery Standards
All standard recoveries were acceptable.

Blank Contamination
Concentrations reported for the MonoCB homologue group should be considered suspect in samples 22 and 26 due to similar contamination in the method blank. Congeners #77, 118, 105 and pentaCB and hexaCB homologues in sample 22 may be the result of field contamination.

Calibrations
Congener #209 exceeded criteria in the continuing calibration associated with samples 21-25 and 24D. Since no positive results were reported for #209, no impact on the data is expected.

Laboratory Control Sample
All criteria were met.

Field Duplicates
Field duplicate analyses were satisfactory.

Summary
A modified Tier II validation was performed on results of 7 air samples, including 1 field blank and field duplicate pair analyzed for PCB congeners and homologue groups as presented in package 48894. Data failed specified criteria for blank contamination, and for exceeding calibration criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

Region I
Data Review Worksheets

Site Name NEW BEDFORD HARBOR
Reference Number

REGION I REVIEW
OF
HIGH RESOLUTION DATA PACKAGE

The hardcopied(laboratory name) TRIANGLE LABS data package received at Region I has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No: 48894
Matrix: PUF
No. of Samples: 7

Sampling date(s): 6/10/99
Shipping date(s): -
Date Rec'd by lab: 6/12/99

Traffic Report Nos: 06109921 - 24, 24D, 25, 26B

Equipment Blank No: 26B
Field Dup Nos: 24 / 24D

Sow No._____ requires that specific analytical work be done and that associated reports be provided by the laboratory to the regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- -Data completeness
- -Holding Times
- -Recovery Standard
- -Calibrations
- -Surrogate Recoveries
- -Matrix spike/Matrix Spike Dup
- -Field Duplicates
- -Internal Standard Performance
- -Blanks

Overall Comments:

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - reject data due to quality control data.
U - Compound not detected.

Reviewer: C. Mench

Date: 12/22/99

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 15, 1999

The following issue requires resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 48894

- Please submit LCS/LCSD summary and raw data for W211003 & W211004.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 48894
Reviewed By: C. MINCH **Date:** 12/8/99

QC Parameter	Present	QC Criteria	Met	Comments
Method Blank	✓	< RL	N	#118 and numerous total CB reported
Field/Equipment Blanks	✓	< RL	N	#77, 114, 118 and 105. also numerous total CB reported
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	Y	
CW 12/8/99 ~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	✓	< 50% RPD	✓	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	N	3/12 cc deca (209) > 25% - all samples except 26B
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	✓	
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	✓	
RT Window Check (see Lab SOP)	NC	RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 48894
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Initial Calib. Met (Y/N)	Calib. Met (Y/N)	Comments
06109921	PUF	06/10/99	6/16/99	7/12/99	Y	N	all surrogates within limits, no action recommended for elevated temperature.
06109922	↓	↓	↓	↓	↓	↓	
06109923							
06109924							
06109924D							
06109925				↓			
06109926B	↓	↓	↓	7/23/99	↓	↓	

C. Merrick 12/8/99
Reviewer/Date

TD99-213
11/4/99

Region I
Data Review Worksheets - (Low or High Resolution)

II. INITIAL AND CONTINUING CALIBRATIONS

Date of Initial Calibration: 7/9/99
Date of Continuing Calibration: 7/12/99, 7/23/99

Date	Instrument	% RSD/%D	Compound (Results)	Samples Affected
7/12/99	W	34 %D	#209	21-25, 24D

ACTION:

~~25~~ 30 % RSD > ~~25~~ 30%, approximate all the associated data (J or UJ).
%D > ~~30~~ 25%, approximate all the associated data (J or UJ).

Was a CC3 analyzed just prior to sample analysis and every 12 hours?
If not explain how data are affected: _____

CAL					
FILE					
ION RATIO					
RF					
S/N					
CCl					
RT					
Resolution					

Region I
Data Review Worksheets - (High Resolution)

V. METHOD BLANKS

Was a method blank prepared and analyzed for each matrix prior to analysis of sample?

Yes [✓] No [ ]

Blank ID	Compound	Concentration (ng/Kg or pg/L)	Action Level (ng/Kg or pg/L)	Affected Samples:
TLI BLANK	total mono	3.0 ng	15.0 ng	22, 26B
26B	#77	0.17	0.85	22
	#114	0.22	1.1	22
	#118	0.87	4.3	22
	#105	0.33	1.6	22
	total di	28.0	140	~~22~~ none
	total tri	34.6	173	↓
	total tetra	36.0	180	
	total penta	13.9	69.5	22
	total hexa	9.7	35.5	22
	total hepta	1.3	6.5	none

@ 12/21/99

ACTIONS:

A. If no blank is run with a particular matrix, the non-detect results should be accepted without qualifying the data and the positive hits should be flagged "J". If all samples have the same hits with similar concentrations and no blank is run, professional judgment should be used to determine if all results should be rejected "R".

B. If a blank is contaminated above the specified limits, any sample hits reported as below the CRQL (flagged "J" by the laboratory) are to be reported as non-detected, and not included in the TEF calculations.

C. If a blank is contaminated above the specified limits and sample(s) contain hits above the CRQL, all data that are not greater than 5 times the blank are to be reported as non-detected and the CRQL raised to the level of contamination and positive results are reported as non-detected. If the detected analyte is OCDD/OCDF all data that are not greater than 10 times the blank are to be reported as non-detects with the CRQL raised to the level of contamination and positive results are reported as non-detected.

OK

Region I
Data Review Worksheets – (High Resolution)
Laboratory Control Sample/Duplicate – List all LCS/LCSD compounds outside method acceptance criteria.

Compound	LCS %R	LCSD %R	RPD	Limits		Action
				%R	RPD	
				40-150	50	

Validator: C. Merck Date: 1/3/00

OK

Region I
Data Review Worksheets – (High Resolution)
Recovery Standard Response

CC3 Standard File ID: _____ Date Analyzed: _____

C12-3,3',5,5'-TetraCB: _____

C12-2,2',3,3',4,4'-HexaCB: _____

List the recovery standards (RS) with response outside ± 50% (50-150%):

Sample ID	C12-3,3',5,5'-TetraCB	Area	C12-2,2',3,3',4,4'-HexaCB	Area	Action

Validator: C. Merck Date: 12/22/99

OK

Region I
Data Review Worksheets – (High Resolution)
Surrogate Recovery

List the surrogate recoveries outside 25-150%:

Sample ID	C12-2,3,4,4'-TetraCB	%R	C12-2,2',3,3',5,5',6,6'-OctaCB	%R	Action

Validator: C. Merck

Date: 12/22/99

Region I
Data Review Worksheets – (High Resolution)
Internal Standard Recovery

OK

List the internal standards (IS) outside the recovery window (25-150%):

Sample ID	Internal Standard	% R	Affected Congeners	Action

Validator: C. Mench

Date: 12/22/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 3, 2000

FROM: C. Minch

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 48944
ORGANIC DATA VALIDATION

PCBs: 5/Air/06169921, 06169922, 06169923, 06169924, 06169925
1/Field Blank/ 06169923B

review

A ~~modified Tier II~~ data ~~validation~~ was performed on the analytical data for 6 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
Blanks
* Surrogate Compounds
NA Matrix Spike/Matrix Spike Duplicate
* Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
Internal Standards
* Alternate Standard
Recovery Standards
NA Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
All surrogates were within specified limits.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Sample 22 exhibited high recovery of IS#209. Therefore, congener #209 may be similarly biased.

Recovery Standards
Both standards exhibited low recovery in all samples except 23B. Sample results may be biased low as a result.

Blank Contamination
The concentration reported for total DiCB homologue group in 23B should be considered suspect due to similar contamination in the method blank.
See attached table. (HF)

Calibrations
All criteria were met.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 6 air samples, including 1 field blank analyzed for PCB congeners and homologue groups as presented in package 48944. Data failed specified criteria for blank contamination, and for exceeding recovery and internal standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 48944
Reviewed By: C. MINCH **Date:** 12/23/99

Parameter	Present	QC Criteria	Y/N	Comments
Method Blank	✓	< RL	N	several homologue groups reported.
Field/Equipment Blanks	✓	< RL	N	#118 and several homologue groups reported.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	Y	
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	Y	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	NA	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	decr (209) high -.22 ~~not reported due to interference~~ ~~#3 -21, 24, 25 ; #28 -24, 25~~ ~~#52 -24~~ (C.M. 12/23/99
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	both low all samples except 230
RT Window Check (see Lab SOP)	NC	RT Windows and peak resolution		-

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID:
Analysis: PCB

Case No. 48944
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservative Temp. Met (Y/N)	Comments
06169921	PUF	6/16/99	6/21/99	7/13/99	Y	Y	
06169922	↓	↓	↓	↓	↓	↓	
06169923	↓	↓	↓	↓	↓	↓	
06169924	↓	↓	↓	↓	↓	↓	
06169925	↓	↓	↓	↓	↓	↓	
06169923B	↓	↓	↓	↓	↓	↓	

C. Mussel 12/23/99
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 3, 2000

FROM: C. Minch

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49048
ORGANIC DATA VALIDATION

PCBs: 7/Air/07069921, 07069922, 07069923, 07069924, 07069924D, 07069925, 07069926
1/Field Blank/ 07069926B

A ~~modified Tier II~~ data review ~~validation~~ was performed on the analytical data for 8 air samples, including 1 field blank and field duplicate pair (24/24D) collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds

NA Matrix Spike/Matrix Spike Duplicate

* Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was elevated upon sample receipt. However, since all surrogate recoveries were within limits, the impact on the data should be minimal. All samples were prepped and analyzed within specified holding times.

Surrogates
All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Low recovery of IS#3 was observed in samples 21, 22, 25 and 26 and IS#101 was low in 24D. Therefore, all penta congeners and the monoCB homologue group may be biased low in their respective samples.

Recovery Standards
All recovery standards were within limits.

Blank Contamination
The concentration reported for the total DiCB and HexaCB homologue groups in sample 26B should be considered suspect due to similar contamination in the method blank.
See attached Table. (HF)

Calibrations
All criteria were met.

Field Duplicates
Results for the field duplicate pair (24/24D) were satisfactory.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair analyzed for PCB congeners and homologue groups as presented in package 49048. Data failed specified criteria for blank contamination, and for exceeding recovery and internal standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49048
Reviewed By: C. MINCH **Date:** 1/8/00

Parameter	Present	QC Criteria	Met	Comments
Method Blank	✓	< RL	N	no numerous homologue groups reported
Field/Equipment Blanks	✓	< RL	N	no #118 and numerous homologue groups present
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	✓	
~~MS/MSD~~ RPD LCS/LCSD (CM 12/22/99)	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	Y	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	N	W992155 - PCB #3 @ 30% PCB #28 @ 29%
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%		MonoCB low - 21, 22, 25, 26 penta (101) - 24D
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	Y	
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC
Lab Data Package ID: 49048
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservative Temp Met (Y/N)	Comments
07069921	PUF	7/6/99	7/10/99	7/16/99			
07069922	↓	↓	↓	↓			
07069923							
07069924							
07069924D							
07069925							
07069926							
07069926B							

C. Merck 1/8/00
Reviewer/Date

TD99-213
11/4/99

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 4, 2000

FROM: C. Minch (@w

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 48964
ORGANIC DATA VALIDATION

PCBs: 7/Air/06229921, 06229922, 06229923, 06229924, 06229924D, 06229925, 06229926
1/Field Blank/ 06109921B

review (HP)

A ~~modified Tier II~~ data ~~validation~~ was performed on the analytical data for 8 air samples, including 1 field blank and field duplicate pair (24/24D) collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  NA Matrix Spike/Matrix Spike Duplicate
* Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
* Recovery Standards
  Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was elevated upon sample receipt. However, since all surrogate recoveries were within limits, the impact on the data should be minimal. All samples were prepped and analyzed within specified holding times.

Surrogates
All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Internal standard #3 (mono) exhibited low recovery in samples 25 and 26. Associated analytes may be biased low.

Recovery Standards
All standard recoveries were acceptable.

Blank Contamination
Concentrations reported for the diCB and triCB homologue groups should be considered suspect in sample 21B due to similar contamination in the method blank.
See attached table (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
All criteria were met.

Field Duplicates
Results for NonaCB homologues in the field duplicate pair exceeded criteria.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair analyzed for PCB congeners and homologue groups as presented in package 48894. Data failed specified criteria for blank contamination, and for exceeding internal standard and field duplicate criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 48964
Reviewed By: C. MINCH **Date:** 12/9/99

Parameter	Present	QC Criteria	Evaluation	Comments
Method Blank	✓	< RL	No	di and tri CB homologues present.
Field/Equipment Blanks	✓	< RL	No	none → less homologues present
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	✓	
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate	✓	< 50% RPD	N	total none - 104%
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	mono CB low - MB, -26, -25
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	Y	
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	—	

12/9/99

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 48964
Analysis: PCB

Case No. 48964
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

21°

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Times Met (Y/N)	Preservative Temp. Met (Y/N)	Comments
06229926	PUF	6/22/99	6/25/99	7/13/99	Y	N	
06229925	↓	↓	↓	↓	↓	↓	
06229924							
06229924D							
06229923							
06229922							
06229921				↓			
06229921B				7/15/99			

C. Mead 12/9/99
Reviewer/Date

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 9, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 48964

1. Please submit missing pages 61, 62, 73, & 74.
2. Please submit LCS/LCSD summary and raw data for W2143-02 & W2143-03.

TLI Number 49004

1. Submit LCS/LCSD summary and raw data for W2146-03 & W2147-01.

TLI Number 49048

1. Please submit LCS/LCSD summary and raw data for W2158-02 & W2158-03.
2. Please submit "listing" for concal W992155.

TLI Number 48858

1. Please submit missing pages 102, 128-131, 134, 137, 233, 237, 309, 311-12, 315, 317, 323 and 324.
2. Submit LCS/LCSD summary and raw data for W2062-01 &W2062-02

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Cele

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49076
ORGANIC DATA VALIDATION

PCBs: 6/Air/07109921, 07109922, 07109923, 07109924, 07109925, 07109926
1/Field Blank/ 07109921B

A ~~modified Tier II~~ data ~~validation~~ review (HF) was performed on the analytical data for 7 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
* Laboratory Control Sample (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was elevated upon sample receipt. In addition, all samples were analyzed outside of specified holding times. However, since most surrogate recoveries were within limits, low bias should be minimal.

Surrogates

Samples 23 and 25 exhibited high recovery of 1 surrogate (#202). Positive results may be biased slightly high.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Samples 21, 22, 23 and 25 exhibited low recovery of IS#3. High response was observed for #101 in samples 21, 24, 26 and 21B, #169 in sample 21 and #209 in sample 23. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in samples 22, 23, 24, 26 and 21B due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Standard #128 exhibited low recovery in sample 21B. Sample results may be biased low as a result.

Blank Contamination
The concentrations reported for total HeptaCB and OctaCB homologue groups in 21-26 and 21B and TetraCB in samples 22 and 21B should be considered suspect due to similar contamination in the method blank. Likewise, congeners #170 in samples 22-26, total MonoCB in samples 21, 22 and 25, total DiCB in 21 and total DiCB, PentaCB and HexaCB in 22 may be the result of field contamination.
See attached table. (HF)

Calibrations
All criteria were met.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 7 air samples, including 1 field blank analyzed for PCB congeners and homologue groups as presented in package 49076. Data failed specified criteria for blank contamination, and for exceeding holding time, surrogate, recovery and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49076
Reviewed By: C. MINCH **Date:** 1/4/00

Parameter	Present	Criteria	OK?	Comments
Method Blank	✓	< RL	No	#118 and numerous total PCB's reported.
Field/Equipment Blanks	✓	< RL	No	numerous total PCB's and #170 present
~~MS/MSD~~ Recovery LCS	✓	40-150% R	✓	
~~MS/MSD~~ RPD NA	No	50% RPD	—	
Surrogate Recovery (before field collection for air)	✓	25-150% R	No	octa(202) >150% 23, 25
Field Duplicate	No	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	101 >150% - 21, 24, 26, 28, LCS 3 <25% 21, 22, 23, 25 209 >150% 23; no 169 - 22-4, 26, 21B
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	RS2 < 50% 21B
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 49076
Analysis: PCB

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Times Met (Y/N)	Preservation / Temp. Met (Y/N)	Comments
07109921	PUF	7/10/99	7/15/99	9/8/99	N	N	reextracts analyzed 55 and 57 after extraction. Project-specific holding time is 40 days.
7109922	↓	↓	↓	↓	↓	↓	
7109923							
7109924							
7109925				↓			
7109926				9/10/99			
71099210	↓	↓	↓	9/10/99	↓	↓	

C. Mesi
Reviewer/Date

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 9, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49076

1. Please submit missing pages 94, 96, 99, 151, 182, 194, and 284.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Cebi

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 4, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49130
ORGANIC DATA VALIDATION

PCBs: 7/Air/07169921, 07169922, 07169923, 07169924, 071699Spike, 07169925, 07169926
1/Field Blank/ 07169926B

A ~~modified Tier II~~ data review (HF) ~~validation~~ was performed on the analytical data for 8 air samples, including 1 field blank, collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
Preservation and Technical Holding Times
* Initial and Continuing Calibrations
Blanks
* Surrogate Compounds
Matrix Spike/Matrix Spike Duplicate
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
Internal Standards
* Alternate Standard
Recovery Standards
NA Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was elevated upon sample receipt and all samples were analyzed outside specified holding times. However, since all surrogate recoveries were within limits, the impact on the data should be minimal.

Surrogates
All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Internal standard #101(penta) exhibited high recovery in all samples. As a result, associated analytes may be biased high. In addition, recovery for IS#169 was not reported in any of the samples due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Recovery standard #128 exhibited low recovery in sample 25. Consequently, sample results may be biased low.

Blank Contamination
Concentrations reported for congener #170 in samples 21, 23-26, monoCB in 21, 22, and 26B, the heptaCB homologue group in 21-23, and 25, 26 and 26B should be considered suspect due to similar contamination in the method blank. Congener #77 in samples 21 and 22, octaCB in 21and 23, and homologue groups di, penta and hexaCB in sample 22 may be due to field contamination.
See attached table. (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
Congener #170 exhibited 0% (-41/-49%) recovery in both the LCS and LCSD.

Matrix Spike
Sample 24 was designated as a matrix spike. The puf was fortified with the congener target compounds prior to sample collection. Analysis revealed low recovery for all congeners except #126, 157, 167, and 189. Therefore, all other congeners should be considered estimated in sample 24 due to a low bias.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and matrix spike, analyzed for PCB congeners and homologue groups as presented in package 49130. Data failed specified criteria for blank contamination, and for exceeding holding time, LCS, spike, internal and recovery standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49130
Reviewed By: CMINCH **Date:** 12/9/99

Parameter	Present	Criteria	Yes/No	Comments
Method Blank	✓	< RL	N	tetra (77) and hepta (170) present total mono → hepta also reported.
Field/Equipment Blanks	✓	< RL	N	tetra (77) + hepta (170) present total mono → hepta present. + octa.
~~MS/MSD~~ Recovery LCS/LCSD MS	✓	40-150% R	N	hepta (170) @ 0 % R
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	No	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	penta (101) >150% all samples no 169 all samples
Alternate Standard (prior to cleanup)	✓	25-150%	Y	
Recovery Standard (RS) (prior to analysis) used to calc. IS	✓	50-150%	N	RS_2 < 50% in 25.
RT Window Check (see Lab SOP)		RT Windows and peak resolution		

Actions Taken:

MS - low recovery for all congeners except #126, 167, 157 and 189.

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 49130
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

14/40

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservative Temp. Met (Y/N)	Comments
07169921	PUF	7/16/99	7/22/99	9/10/99	N	N	samples received at elevated temp. (23°) - no ice. all samples analyzed > 40 days.
07169922	↓	↓	↓	↓	↓	↓	
07169923							
07169924							
07169925							
07169926							
07169926B							

C. Mack 12/9/99
Reviewer/Date

TD99-213
11/4/99

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 14, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49130

1. Please submit spike summary for W257406.
2. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

ITEM 2. Outstanding Data Issues:

TLI Project 49130: Sample W257406-missing spike summary

Sample file W257405 (sample 07169924) was used as the native sample to the spiked sample file W257406 as per instructions from the client. Please note that there are several negative recoveries which indicate a problem with the sample matrix. The negative recoveries in all instances were associated with sample that contained more of the analyte in the native sample than in the spiked sample.

TLI Project 49345:

Page 276 is reported missing from the data package submittal. Upon review of the package it looks as though page 276 was inadvertently skipped during data pagination. All data is present between pages 275 and 277. I am submitting an insert for the missing page 276-which states "This page is intentionally left blank" such that no further inquiries will arise.

All comments noted in the case narrative are related to the specific project 49345. The comments noted offer further explanation of the problems associated with the QI. If there are specific comments that you feel do not relate to the project, please specify what it may be and why.

TLI Project 49530:

The listing for concal W992798 showing area response of recovery standards is being resubmitted for review. Concal W992978 was inadvertently submitted. I apologize for the error.

received
FEB 11 2000

Matrix Spike PERCENT RECOVERIES

TLI Project: 49130

Concentrations in NG SPIKE AMT (ng) 10

NATIVE SAMPLE MS

	Native	Matrix Spike
	FILE: W257405	FILE: W257406
		SMP. WT.(g) 1

Analyte	Conc.	Conc.	MS %REC.
3,4,4',5-TetraCB(#81)	5.9	5.3	-6
3,3',4,4'-TetraCB (#77)	41	43.1	21
2,3,4,4',5-PentaCB (#114)	92.2	80	-122
2,3',4,4',5-PentaCB (#118)	538	401	-1370
2',3,4,4',5-PentaCB (#123)	18.6	22.5	39
2,3,3',4,4'-PentaCB (#105)	190	145	-450
3,3',4,4',5-PentaCB (#126)	2.5	9.2	67
2,3',4,4',5,5'-HexaCB (#167)	11.4	18	66
2,3,3',4,4',5-HexaCB (#156)	29.1	27	-21
2,3,3',4,4',5'-HexaCB (#157)	3.4	12.9	95
2,2',3,4,4',5,5'-HeptaCB (#180)	39	35.3	-37
2,2',3,3',4,4',5'-HeptaCB (#170)	2.4	2.5	1
2,3,3',4,4',5,5'-HeptaCB (#189)	0.55	8.9	84

$$\%Rec. = \frac{\text{Conc.spiked sample - native Con}}{\text{(amt. spiked / smp. wt.)}} \times 100$$

$$RPD = \frac{\text{abs. value (LCS \% Rec. - LCSD \% Rec.)}}{\text{(LCS \% Rec. + LCSD \% Rec.) / 2}}$$

PC099:c:\qpro5\ms-msd.wq2

received
FEB 11 2000

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 4, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49159
ORGANIC DATA VALIDATION

PCBs: 6/Air/07229921, 07229922, 07229923, 07229924, 07229925, 07289926
1/Field Blank/ 07229921B

A ~~modified Tier II~~ data ~~validation~~ review (AF) was performed on the analytical data for 7 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt. However, all samples were analyzed out of specified holding times. As a result, sample values may be biased low. But, because the surrogates were within limits, the impact may be minor.

Surrogates

All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
High recovery of IS#101 was observed in sample 22. Therefore, all penta congeners and the pentaCB homologue group may be biased high. Results for IS#169 were not reported in any of the samples due to interference. Since previous samplings exhibited no positive results for #169, no impact on the data is expected.

Recovery Standards
Both recovery standards exhibited low recovery in all samples. Sample results may be biased low as a result.

Blank Contamination
Concentrations reported for the HeptaCB homologue group in samples 21, 23, 25, and 26, and congener #180 in 21 and 22 may be the result of field contamination. Congeners #170 in all samples and #77 in 21, 22 and 21B, total heptaCB in all samples except 24, total mono in 21 and 22, total diCB in 22 and 21B and total triCB in sample 21B should be considered suspect due to similar contamination in the method blank.
See attached table. (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
The LCS/LCSD exhibited 0%R recovery for #170. Sample results may be biased low.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair analyzed for PCB congeners and homologue groups as presented in package 49201. Data failed specified criteria for blank contamination, and for exceeding field duplicate, recovery and internal standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49159
Reviewed By: C. MINCH **Date:** 1/4/00

QC Parameter	Present	QC Criteria	OK (Y/N)	Comments
Method Blank	✓	< RL	No	numerous total PCB reported and individual targets
Field/Equipment Blanks	✓	< RL	No	numerous total PCBs and #118, 180 and 170 present.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	No	#170 @ 0
(CW 12/10/99 ~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	NA	< 50% RPD	—	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	no 169 reported for samples. #101 >150% - 22
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	all low
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	—	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID:
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date(s) Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservative Temp. Met (Y/N) 7°C	Comments
07229921	PUF	7/22/99	7/29/99	9/13/99	N	N	all samples analyzed outside of 40-day holding time.
07229922	↓	↓	↓	↓	↓	↓	
07229923							
07229924							
07229925							
07229926							
07222/3	↓	↓	↓	↓	↓	↓	

C. Mench 1/4/00
Reviewer/Date

TD99-217

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 9, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49159

1. Please submit missing pages 18, 36, 39, 41, 46, 70, 74, 76, 82, 84, 86, 92, 117, 119, 121, 125, 127, 134, 164, 201, 270, 310, 350, 353, 368, 397, and 399.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 4, 2000

FROM: C. Minch

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49201
ORGANIC DATA VALIDATION

PCBs: 7/Air/07289921, 07289922, 07289923, 07289924, 07289924D, 07289925, 07289926
1/Field Blank/ 07289921B

A modified Tier II data validation was performed on the analytical data for 8 air samples, including 1 field blank and field duplicate pair (24/24D) collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
Preservation and Technical Holding Times
* Initial and Continuing Calibrations
Blanks
* Surrogate Compounds
NA Matrix Spike/Matrix Spike Duplicate
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
Internal Standards
* Alternate Standard
Recovery Standards
Field Duplicates
* System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was elevated upon sample receipt. However, since all surrogate recoveries were within limits, the impact on the data should be minimal. All samples were prepped and analyzed within specified holding times.

Surrogates
All surrogates were within specified limits in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
High recovery of IS#101 was observed in all samples except 21B. Therefore, all penta congeners and the pentaCB homologue group may be biased high in their respective samples. Results for IS#169 were not reported due to interference. Since previous samplings did not exhibit any positive results for #169, no impact on the data is expected.

Recovery Standards
With the exception of #80 in sample 21, both recovery standards exhibited low recovery in all samples. Sample results may be biased low as a result.

Blank Contamination
Concentrations reported for the HeptaCB homologue group should be considered suspect in all samples except 24 and 24D, as well as #77 in 22 and 21B due to similar contamination in the method blank. Congener #170 in samples 21-26, total hexaCB in 22 and the octa homologues in samples 21-23, 24D, 25 and 26 may be the result of field contamination.

Calibrations
All criteria were met.

Laboratory Control Sample
The LCS/LCSD exceeded recovery criteria for #126 and the LCS exhibited low recovery of #170. Sample results should be considered estimated.

Field Duplicates
Results for the total OctaCB homologue group failed criteria in the field duplicate pair (24/24D) and should be considered estimated.

Summary
A modified Tier II validation was performed on results of 8 air samples, including 1 field blank and field duplicate pair analyzed for PCB congeners and homologue groups as presented in package 49201. Data failed specified criteria for blank contamination, and for exceeding field duplicate, recovery and internal standard criteria. The data appear to be acceptable.

Attachments: Data Validation Worksheets

Region I
Data Review Worksheets

Site Name NEW BEDFORD HARBOR
Reference Number _____

REGION I REVIEW
OF
HIGH RESOLUTION DATA PACKAGE

The hardcopied(laboratory name) TRIANGLE LABS data package received at Region I has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No: _____
Matrix: PUF
No. of Samples: 8

Sampling date(s): 7/28/99
Shipping date(s): -
Date Rec'd by lab: 8/2/99

Traffic Report Nos: 07289921, -22, 2324, 25, -26, 21B, 24D

Equipment Blank No: 21B
Field Dup Nos: 24/24D

Sow No._____ requires that specific analytical work be done and that associated reports be provided by the laboratory to the regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

-Data completeness
-Holding Times
-Recovery Standard
-Calibrations
-Surrogate Recoveries
-Matrix spike/Matrix Spike Dup
-Field Duplicates
-Internal Standard Performance
-Blanks

Overall Comments:

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - reject data due to quality control data.
U - Compound not detected.

Reviewer: C. Musch

Date: 1/4/00

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49201
Reviewed By: C. MINCH **Date:** 1/4/00

QC Parameter	Present	QC Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	numerous total PCBs and 77 and 170 reported
Field/Equipment Blanks	✓	< RL	N	numerous total PCBs, 77 and 170 present.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#126 >150%. LCS, LCSD 170 <40%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	#170 @ 130%.
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	✓	< 50% RPD	No	total octa PCB >50%
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	no 169 reported. 101 >150% all samples except 21B.
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	RS2 < 50% - 21 both low - samples 22 → 21B
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	—	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 49201
Analysis: PCB

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	[illegible] (Y/N)	[illegible] (Y/N)	Comments
07289921	PUF	7/28/99	8/2/99	9/10/99	Y	N	
07289922	↓	↓	↓	9/11/99	↓	↓	
07289923				↓			
07289924							
07289924D							
07289925							
07289926							
07289921B	↓	↓	↓	↓	↓		

C. Marsh 1/4/00
Reviewer/Date

TD99-213
11/4/99

Region I
Data Review Worksheets - (Low or High Resolution)

OK

II. INITIAL AND CONTINUING CALIBRATIONS

Date of Initial Calibration: _____
Date of Continuing Calibration: _____

Date	Instrument	% RSD/%D	Compound (Results)	Samples Affected

ACTION:

% RSD > ~~15%~~ 30%, approximate all the associated data (J or UJ).
%D > ~~30%~~ 25%, approximate all the associated data (J or UJ).

Was a CC3 analyzed just prior to sample analysis and every 12 hours?
If not explain how data are affected: _____

CAL FILE					
ION RATIO					
RF					
S/N					
CC1					
RT					
Resolution					

Region I
Data Review Worksheets - (High Resolution)

V. METHOD BLANKS

Was a method blank prepared and analyzed for each matrix prior to analysis of sample?

Yes [✓] No [ ]

Blank ID	Compound	Concentration (ng/Kg or pg/L) NG	Action Level (ng/Kg or pg/L)	Affected Samples:
TLI BLANK	#77	0.48 ng	2.4 ng	22, 21B
"	total Hepta	12.9	64.5	21-23, 25, 26, 21B
21B	#170	1.7	8.5	21→26
	total mono	3.1	15.5	none
	total di	11.8	59.0	
	total tri	8.4	42.0	
	total tetra	12.1	60.5	
	total Penta	5.5	27.5	22
	total octa	4.2	21.0	21→23, 24D, 25, 26

ACTIONS:

A. If no blank is run with a particular matrix, the non-detect results should be accepted without qualifying the data and the positive hits should be flagged "J". If all samples have the same hits with similar concentrations and no blank is run, professional judgment should be used to determine if all results should be rejected "R".

B. If a blank is contaminated above the specified limits, any sample hits reported as below the CRQL (flagged "J" by the laboratory) are to be reported as non-detected, and not included in the TEF calculations.

C. If a blank is contaminated above the specified limits and sample(s) contain hits above the CRQL, all data that are not greater than 5 times the blank are to be reported as non-detected and the CRQL raised to the level of contamination and positive results are reported as non-detected. If the detected analyte is OCDD/OCDF all data that are not greater than 10 times the blank are to be reported as non-detects with the CRQL raised to the level of contamination and positive results are reported as non-detected.

Region I
Data Review Worksheets – (High Resolution)
Surrogate Recovery

OK

List the surrogate recoveries outside 25-150%:

Sample ID	C12-2,3,4,4'-TetraCB	%R	C12-2,2',3,3',5,5',6,6'-OctaCB	%R	Action

Validator: C. Mack

Date: 1/4/00

Region I
Data Review Worksheets – (High Resolution)
Internal Standard Recovery

List the internal standards (IS) outside the recovery window (25-150%):

Sample ID	Internal Standard	% R	Affected Samples (CONGENERS)	Action
21	#101	201	*118, 114, 123, 105	
22	↓	195	↓	
23		160		
24		168		
24 D		176		
25		153		
26		161		

due to interference, IS #169 was not reported in any analyses.

Validator: C. Marcel Date: 1/4/00

Region I
Data Review Worksheets – (High Resolution)
Recovery Standard Response

CC3 Standard File ID: W992575 Date Analyzed: 9/10/99

C12-3,3',5,5'-TetraCB: _____

C12-2,2',3,3',4,4'-HexaCB: 2026.475 - 6079.425

List the recovery standards (RS) with response outside ± 50% (50-150%):

Sample ID	C12-3,3',5,5'-TetraCB Response	C12-2,2',3,3',4,4'-HexaCB Response	Action
21		1759	

Validator: C. Mirick Date: 1/4/00

Region I
Data Review Worksheets – (High Resolution)
Recovery Standard Response

CC3 Standard File ID: W258004 Date Analyzed: 9/11/99

C12-3,3',5,5'-TetraCB: 5617.51 - 16852.53

C12-2,2',3,3',4,4'-HexaCB: 2891.15 - 8673.45

List the recovery standards (RS) with response outside ± 50% (50-150%):

Sample ID	C12-3,3',5,5'-TetraCB Response	C12-2,2',3,3',4,4'-HexaCB Response	Action
22	2950	970	
23	3251	1274	
24	2901	1086	
24D	2899	1099	
25	3144	1280	
26	3006	1145	
21B	3465	1673	

Validator: C. Mirek Date: 1/4/00

Region I
Data Review Worksheets – (High Resolution)
Field Duplicate – List all compounds outside method acceptance criteria (50% RPD).

Sample ID: 07289924 Duplicate ID: 072899240

Compound	Sample Conc.	Sample QL		Dup. Conc.	Sample QL		RPD	Action
		SQL	2xSQL		SQL	2xSQL		
total OctaCB	30.7	-	-	10.4	-	-	99	

Validator: C Merel Date: 1/4/00

Region I
Data Review Worksheets – (High Resolution)
Laboratory Control Sample/Duplicate – List all LCS/LCSD compounds outside method acceptance criteria.

Compound	LCS %R	LCSD %R	RPD	Limits		Action
				%R	RPD	
3,3',4,4',5-PENTACB ($^{4}_{126}$)	322	449		40-150	50	
22',3,3',4,4',5'-HEPTACB($^{4}_{170}$)		16	130	"	"	

Validator: C Merck Date: 1/4/00

Region I

Data Review Worksheets - (Low or High Resolution)

XII. SAMPLE CALCULATION

N/A

Tier II

$$Concentration\ (ng/g) = \frac{Q_{is} \times (A_{x^1} + A_{x^2})}{(W \text{ or } V) \times (A_{is^1} + A_{is^2}) \times RRF_x \times D}$$

$$EDL = \frac{2.5 \times Q_{is} \times (H_{x^1} + H_{x^2}) \times D}{(W \text{ or } V) \times (H_{is^1} + H_{is^2}) \times RRF_x}$$

$$EMPC = \frac{Q_{is} \times (A_{x^1} + A_{x^2}) \times D}{(W \text{ or } V) \times (A_{is^1} + A_{is^2}) \times RRF_x}$$

where:

Q_{is}	=	Quantity (ng) of appropriate internal standard added to sample before extraction.
A_x^1/A_x^2	=	Integrated areas of the two quantitation ions.
A_{is}^1/A_{is}^2	=	Integrated areas of the internal standard quantitation ions
W	=	Weight (g) of sample extracted.
V	=	Volume (L) of sample extracted.
RRF_x	=	Calculated relative response factor from the continuing calibration.
$H_x^1 + H_x^2$	=	Peak heights of the noise for the quantitation ions.
$H_{is}^1 + H_{is}^2$	=	Peak heights of the internal standard quantitation ions.
D	=	Dilution.

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49236
ORGANIC DATA VALIDATION

PCBs: 6/Air/08039921, 08039922, 08039923, 08039924, 08039925, 08039926
1/Field Blank/ 08039924B

A ~~modified Tier II~~ data ~~validation~~ review was performed on the analytical data for 5 air samples, including 1 field blank, collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
  Laboratory Control Sample (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt. In addition, all samples were prepped and analyzed within specified holding times.

Surrogates

One surrogate exceeded recovery criteria in samples 21 and 23. Consequently, sample results may be biased high.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Standard #101 exceeded recovery criteria in all samples. Internal standard #209 exhibited low recovery in sample 23. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in any samples due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Standard #128 exhibited low response in all samples. Sample results may be biased low.

Blank Contamination
The concentrations reported for total monoCB in samples 21, 22 and 24B, congeners #170 in samples 21,22, 24-26, #77 in 22, and total heptaCB in samples 23-26 and 24B should be considered suspect due to similar contamination in the method blank. Likewise, congener #156 in samples 21, 23 and 26, #180 in 21-23, 25 and 26, total hexaCB in 21 and 22, and total octaCB in samples 21-26 may be the result of field contamination.
See attached table. (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
The LCS/LCSD analyses exhibited 0% recovery for congener #170 and high recovery for #126 and #157. Sample bias in the direction of LCS recovery may be assumed. Results for #170 were rejected (HF)

Summary
A modified Tier II validation was performed on results of 7 air samples, including 1 field blank, analyzed for PCB congeners and homologue groups as presented in package 49236. Data failed specified criteria for blank contamination, and for exceeding surrogate, LCS, recovery and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 49236
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Times Met (Y/N)	Preservation Met (Y/N)	Comments
080399921	PUF	8/3/99	8/9/99	9/10/99	Y	Y	
080399922	↓	↓	↓	↓	↓	↓	
080399923	↓	↓	↓	↓	↓	↓	
080399924	↓	↓	↓	↓	↓	↓	
080399925	↓	↓	↓	↓	↓	↓	
080399926	↓	↓	↓	↓	↓	↓	
080399924B	↓	↓	↓	↓	↓	↓	

C. Merck 12/9/99
Reviewer/Date

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49236
Reviewed By: C. MINCH **Date:** 12/9/99

QC Parameter	Present	QC Criteria	Y/N	Comments
Method Blank	✓	< RL	N	several individual congeners and congener groups were reported.
Field/Equipment Blanks	✓	< RL	N	several individual congeners and congener groups were reported.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	PENTA (126) @ 152 HEXA (157) @ 156 HEPTA (170) @ ∅
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	OCCN (202) high in 0803923, 21
Field Duplicate	No	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	>150% penta (101) & hexa (169) not reported due to interference all samples. decca (209) low - 23.
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	low response RS2 all samples, blank and LCS/LCSD.
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	NA	

(CW 12/9/99

Actions Taken:

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 13, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49236

1. Please submit missing pages 84, 152, & 183.
2. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49273
ORGANIC DATA VALIDATION

PCBs: 7/Air/08099921, 08099922, 08099923, 08099924, 08099924D, 08099925, 08099926
1/Field Blank/ 08099924B

A ~~modified Tier II~~ data review (HF) ~~validation was~~ performed on the analytical data for 8 air samples, including 1 field blank and field duplicate, collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
  Laboratory Control Sample (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time
The cooler temperature was acceptable upon sample receipt. However, all samples were prepped outside of specified holding times. Sample results may, therefore, be biased low.

Surrogates
All samples exhibited high recovery of 1 surrogate (#202). Positive results may be biased slightly high.

Alternate Standard
All recoveries were acceptable.

Internal Standards
All samples exhibited low recovery of IS#3 and exceeded recovery criteria for #101. Sample 25 also exhibited high recovery for #180. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in samples 21-23, 24D, 26 and 24B due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Standard #80 exceeded recovery criteria in all samples. Likewise, #128 exhibited high recovery in samples 24D, 25 and 24B. Sample results may be biased in the direction of standard response.

Blank Contamination
The concentrations reported for congener #77 in samples 21, 22 and 24B, total HeptaCB in 21-23, 25 and 26, and total homologue groups di, tri, tetra and heptaCB in 24B should be considered suspect due to similar contamination in the method blank. Likewise, congeners #170 in samples 22, 23, 24D and 25, #156 in 21, 22 and 25, #180 in 21 and 22 and #118, total mono and hexa homologues in 22 may be the result of field contamination.
See attached table. (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
Congener #170 exhibited 0% and #189 low recovery in both the LCS and LCSD.

Field Duplicate
Congeners #126, 167 and 156 failed criteria for the duplicate pair 24/24D. Data should be considered estimated in both samples.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate, analyzed for PCB congeners and homologue groups as presented in package 49273. Data failed specified criteria for blank contamination, and for exceeding holding time, surrogate, LCS, field duplicate, recovery and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49273
Reviewed By: C. MINCH **Date:** 12/16/99

QC Parameter	Present	QC Criteria	Met QC?	Comments
Method Blank	✓	< RL	No	numerous targets reported
Field/Equipment Blanks	✓	< RL	No	numerous targets present
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	No	#170 @ 0 #189 < 40%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	No	#180 > 50%
Surrogate Recovery (before field collection for air)	✓	25-150% R		octa (#202) > 150% in all samples
Field Duplicate	✓	< 50% RPD	N	#126, 167 and 156 failed criteria.
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	#101 > 150% all samples #3 < 25% all samples. #180 > 150% - 25. #0 169 in 21-3, 24D, 26, 24B + LCS, LCSD.
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	RS1 > 150% all samples RS2 > 150% 24D, 25 + 24B
RT Window Check (see Lab SOP)		RT Windows and peak resolution		

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: ~~49273~~ TRIANGLE LAB, INC.
Lab Data Package ID: 49273
Analysis: PCB

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservation Temp. Met (Y/N)	Comments
08099921	PUF	8/9/99	9/14/99	9/24/99	N	Y	results may be biased low
08099922	↓	↓	↓	↓	↓	↓	
08099923							
08099924							
080999240							
08099925							
08099926							
080999248	↓	↓	↓	↓	↓	↓	

C. Merck 12/10/99
Reviewer/Date

TD99-213
11/4/99

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Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 16, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49273

1. Please submit missing page 152.
2. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49312
ORGANIC DATA VALIDATION

PCBs: 6/Air/08159921, 08159922, 08159923, 08159924, 08159925, 08159926
1/Field Blank/ 08159923B

A ~~modified Tier II~~ data review (HF) ~~validation~~ was performed on the analytical data for 7 air samples, including 1 field blank, collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
  Laboratory Control Sample (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt. However, all samples were prepped outside of specified holding times. Sample results may, therefore, be biased low.

Surrogates

Samples 21-23 exhibited high recovery of 1 surrogate (#202). Positive results may be biased slightly high.

Alternate Standard
All recoveries were acceptable.

Internal Standards
All samples exceeded recovery criteria for #101. Likewise, high recoveries were observed for #180 in samples 24 and 25, and #28 in 24, while #3 exhibited low recovery in 21-23. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in any samples due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Standard #80 exceeded recovery criteria in samples 21-23. Likewise, #128 exhibited high recovery in samples 22 and 23. Sample results may be biased high.

Blank Contamination
The concentrations reported for congener #180 in 22, #77 in samples 22 and 23B, total HeptaCB in all samples, hexaCB in 23B and total homologue groups mono, di, tri, and tetraCB in 22 and 23B should be considered suspect due to similar contamination in the method blank. Likewise, congeners #170 in samples 21, 22 and 24 – 26 and total nonaCB in 21-25 may be the result of field contamination.
See attached table. (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
Congener #170 exhibited 0% and #189 low recovery in both the LCS and LCSD.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 7 air samples, including 1 field blank, analyzed for PCB congeners and homologue groups as presented in package 49312. Data failed specified criteria for blank contamination, and for exceeding holding time, surrogate, LCS, recovery and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49312
Reviewed By: C. MINCH **Date:** 12/10/99

QC Requirement	Present	QC Criteria	Met	Comments
Method Blank	✓	< RL	N	tetra(77), hepta(180) + total mono → hepta reported.
Field/Equipment Blanks	✓	< RL	N	tetra(77), hepta(170) + total mono → hepta and mono reported.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	hepta(170) @ ∅ hepta(189) @ < 40%.
(CM 12/10/99) ~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	hepta (180) @ 60
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	octa(202) > 150% - 21→23.
Field Duplicate	No	< 50% RPD	–	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	penta(101) > 150% all samples mono < 25% - 21→23. hepta > 150% - 24, 25 ~~tetra < 25% - 24~~, tri > 150 - 24
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	9/24 RS, > 150 - 21→23, LCS, LCSD RS_2 > 150% - 22, 23
RT Window Check (see Lab SOP)	–	RT Windows and peak resolution	–	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID: 49312
Analysis: PCB

Case No.
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservative / Temp. Met (Y/N)	Comments
08159921	PUF	8/15/99	9/14/99	9/24/99	N		
08159922	↓	↓	↓	9/25/99	↓		
08159923				9/25/99			
08159924				9/29/99			
08159925				↓			
08159926							
08159923B	↓	↓	↓		↓		

C. Hurd
Reviewer/Date

TD99-213
11/4/99

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 14, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49312

1. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celi

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch CW

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49345
ORGANIC DATA VALIDATION

PCBs: 7/Air/08219921, 08219922, 08219923, 08219924, 08219924D, 08219925, 08219926
1/Field Blank/ 08219926B

A modified Tier II data validation was performed on the analytical data for 8 air samples, including 1 field blank and field duplicate, collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
  Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample (LCS)
  Internal Standards
  Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

30 days from HF HF

Holding Time

The cooler temperature was elevated upon sample receipt. ~~In addition, all samples were prepped outside of specified holding times. Sample results may, therefore, be biased low.~~ Impact should be minimal because surrogates were acceptal Samples were prepped within the 28 day holding time. HF

Surrogates

All sample recoveries were within specified limits.

Alternate Standard
Standard #153 exhibited low recovery in sample 26. Sample results may be biased low.

Internal Standards
Samples 24, 26 and 26B exceeded recovery criteria for #101. Internal standard #209 exhibited low recovery in 24D. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in any samples due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Sample 26B exhibited low response for both standards. Sample results may be biased low.

Blank Contamination
The concentrations reported for congener #170 in samples 22-26 and 24D, total octaCB in 21, 23-25 and 24D, total heptaCB in all samples and total penta homologue group in 22 and 26B should be considered suspect due to similar contamination in the method blank. Likewise, congener #77 and monoCB in samples 21 and 22, and total mono, tri, tetra and hexa homologues in 22 may be the result of field contamination.

Calibrations
All criteria were met.

Laboratory Control Sample
Congener #170 exhibited 0% and #126 high recovery in the LCS/LCSD.

Field Duplicate
Total hepta and octa homologue groups failed criteria for the duplicate pair 24/24D. Data should be considered estimated in both samples.

Summary
A modified Tier II validation was performed on results of 8 air samples, including 1 field blank and field duplicate, analyzed for PCB congeners and homologue groups as presented in package 49345. Data failed specified criteria for blank contamination, and for exceeding holding time, LCS, field duplicate, recovery, alternate and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49345
Reviewed By: C. MINCH **Date:** 12/8/99

QC Parameter	Present	QC Criteria	QC Met	Comments
Method Blank	✓	< RL	N	several compounds reported
Field/Equipment Blanks	✓	< RL	N	several compounds reported
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	LCS >150 for penta (126) LCS/LCSD ∅ %R for hepta (170)
~~MS/MSD~~ RPD LCS/LCSD (CW 12/8/99)	✓	50% RPD	N	hepta (170) exceeds 50%.
Surrogate Recovery (before field collection for air)	✓	25-150% R	Y	
Field Duplicate -24/24D	✓	< 50% RPD	N	hepta (170) - 61% total octa - 152%
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	penta (101) >150% - 24, 26B, 26, LCS. hepta (180) >150% - LCSD dieca (209) < 25% - 24D
Alternate Standard (prior to cleanup)	✓	25-150%	N	1% in -26
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	Both low in 26B, LCS + LCSD.
RT Window Check (see Lab SOP)	No	RT Windows and peak resolution	NA	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS, INC.
Lab Data Package ID: 49345
Analysis: PCB

Case No. _____
SDG No. _____
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

14/40

Sample ID	Matrix	Date Collected	Date Prepared	Date Analyzed	Holding Time Met (Y/N)	Preservation Temp Met (Y/N)	Comments
08219921	PUF	8/21/99	9/8/99	9/14/99	N (18)	N	samples received at elevated temp (18°) - no ice. all samples prepped outside 14 day holding time.
08219922	↓	↓	↓	↓	↓	↓	
08219923							
08219924							
08219924D							
08219925							
08219926				↓	↓		
08219926B	↓	↓	↓	9/15/99	(19)	↓	

C. Merck 12/8/99
Reviewer/Date

Region I
Data Review Worksheets

Site Name NEW BEDFORD HARBOR
Reference Number

REGION I REVIEW
OF
HIGH RESOLUTION DATA PACKAGE

The hardcopied(laboratory name) TRIANGLE LAB data package received at Region I has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No: 49345
Matrix: PUF
No. of Samples:

Sampling date(s): 8/21/99
Shipping date(s): 8/23/99
Date Rec'd by lab: 8/24/99

Traffic Report Nos: 08219921, -22, -23, -24, -24D, 25, 26, 26B

Equipment Blank No: 26B
Field Dup Nos: 24 / 24D

Sow No. _____ requires that specific analytical work be done and that associated reports be provided by the laboratory to the regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

-Data completeness
-Holding Times
-Recovery Standard
-Calibrations
-Surrogate Recoveries
-Matrix spike/Matrix Spike Dup
-Field Duplicates
-Internal Standard Performance
-Blanks

Overall Comments:

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - reject data due to quality control data.
U - Compound not detected.

Reviewer: C. Munch

Date: 12/9/99

Region I
Data Review Worksheets - (High Resolution)

V. METHOD BLANKS

Was a method blank prepared and analyzed for each matrix prior to analysis of sample?

Yes [✓] No [ ]

Blank ID	Compound	Concentration (ng/Kg or pg/L)	Action Level (ng/Kg or pg/L)	Affected Samples:
TBL BLANK	#170	5.8 ng	29 ng	22-26, 24D
	total penta	13.0	65	22, 26B
	total hepta	29.9	149.5	all
	total octa	11.2	56	21, 23-25, 24D
26B	#77	0.63	3.15	21, 22
	total mono	3.3	16.5	21, 22
	total di	12.3	61.5	22
	total tri	11.7	58.5	22
	total tetra	14.3	71.5	22
	total hexa	3.0	15.0	22

ACTIONS:

A. If no blank is run with a particular matrix, the non-detect results should be accepted without qualifying the data and the positive hits should be flagged "J". If all samples have the same hits with similar concentrations and no blank is run, professional judgment should be used to determine if all results should be rejected "R".

B. If a blank is contaminated above the specified limits, any sample hits reported as below the CRQL (flagged "J" by the laboratory) are to be reported as non-detected, and not included in the TEF calculations.

C. If a blank is contaminated above the specified limits and sample(s) contain hits above the CRQL, all data that are not greater than 5 times the blank are to be reported as non-detected and the CRQL raised to the level of contamination and positive results are reported as non-detected. If the detected analyte is OCDD/OCDF all data that are not greater than 10 times the blank are to be reported as non-detects with the CRQL raised to the level of contamination and positive results are reported as non-detected.

Region I
Data Review Worksheets – (High Resolution)
Laboratory Control Sample/Duplicate – List all LCS/LCSD compounds outside method acceptance criteria.

Compound	LCS %R	LCSD %R	RPD	Limits		Action
				%R	RPD	
#126	165			40-150	50	
#170	0	0				

Validator: C. Flack Date: 12/9/99

Region I
Data Review Worksheets – (High Resolution)
Field Duplicate – List all compounds outside method acceptance criteria (50% RPD).

Sample ID: 08219924 Duplicate ID: 08219924D

Compound	Sample Conc.	Sample QL		Dup. Conc.	Sample QL		RPD	Action
		SQL	2xSQL		SQL	2xSQL		
total hepta CB	74.8	–	–	47.3	–	–	61	
total octa CB	4.1	–	–	30.4	–	–	152	

Validator: C. Mench Date: 12/9/99

Region I
Data Review Worksheets – (High Resolution)
Internal Standard Recovery

List the internal standards (IS) outside the recovery window (25-150%):

Sample ID	Internal Standard	% R	Affected Congeners	Action
24	#101	157	same	biased high
26	#101	159	"	↓
26B	#101	155	"	
24D	#209	21	#209	biased low

Validator: C. Mack Date: 12/9/09

Region I
Data Review Worksheets – (High Resolution)
Recovery Standard Response

CC3 Standard File ID: W992598 Date Analyzed: 9/14/99

C12-3,3',5,5'-TetraCB: 2468 - 7404

C12-2,2',3,3',4,4'-HexaCB: 1152 - 3456

List the recovery standards (RS) with response outside ± 50% (50-150%):

Sample ID	C12-3,3',5,5'-TetraCB Response	C12-2,2',3,3',4,4'-HexaCB Response	Action
26B	1989	745	biased low

Validator: C. Mack Date: 12/9/99

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Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 13, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49345

1. Please submit missing page 276.
2. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.
3. Please submit %RSD for ICal run on 9/11/99.
4. Delete comments not applicable to this project from narrative (last 2 paragraphs on page 2).

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

Overview

Eight PUF samples were received from KEVRIC Company, Inc. in good condition August 24, 1999 at 18.0 °C and stored in a refrigerator at 4°C. The samples were extracted and analyzed by Triangle Laboratories' WHO List procedures. Any particular difficulties encountered during the sample handling by Triangle Labs will be discussed in the QC remark section below. Results relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples.

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

QC Remarks

The release of this particular set of KEVRIC Company, Inc. analytical data by Triangle Labs was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below. Specific QC problems associated with this particular project are:

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review:

No $^{13}C_6$-MonoPCB internal standard was detected sample 07229921B. No results for Total MonoCB can be reported for this sample.

The percent recovery for the 2,2'4,5,5'-PentaCB (PCB #101) is above QC limits in sample 07229922 is above QC limits. No analyte amounts affected as none are quantified using this standard.

REVISED PAGE

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 24, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49384
ORGANIC DATA VALIDATION

PCBs: 4/Air/08279921, 08279923, 08279925, 08279926
1/Field Blank/ 08219924B

A ~~modified Tier II~~ data review (AF) ~~validation~~ was performed on the analytical data for 5 air samples, including 1 field blank, collected by Kevric Company, Inc. from the New Bedford Harbor site. Samples were also collected at sites 22 and 24, but the samples were lost during prep. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCB were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time
The cooler temperature was acceptable upon sample receipt. In addition, all samples were prepped and analyzed within specified holding times.

Surrogates
All sample recoveries were within specified limits.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Standard #101 exceeded recovery criteria in all samples. Internal standard #3 exhibited low recovery in sample 25. Therefore, bias in the direction of internal standard response can be assumed. In addition, recovery for #169 could not be reported in any samples due to interference. As a result, the lab did not report data for congener #169. Since previous samplings did not yield any positive results for congener 169, no impact on the data is expected.

Recovery Standards
Both standards exhibited low response in samples 21, 23, 25 and 26. In addition, #80 exceeded recovery criteria in sample 24B. Sample results may be biased in the direction of the standard recovery.

Blank Contamination
The concentrations reported for total octaCB in samples 21, 25 and 26, and congener #170 and total heptaCB in all samples should be considered suspect due to similar contamination in the method blank. Likewise, congener #77 in samples 21, 23 and 26 may be the result of field contamination.
See attached table (HF)

Calibrations
All criteria were met.

Laboratory Control Sample
Congener #170 exhibited 0% and #126 high recovery in the LCS/LCSD.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 5 air samples, including 1 field blank, analyzed for PCB congeners and homologue groups as presented in package 49384. Data failed specified criteria for blank contamination, and for exceeding LCS, recovery and internal standard criteria. Due to the combined impact of the different QC infractions, the direction of bias can not be determined. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49384
Reviewed By: C. MINCH **Date:** 12/17/99

QC Parameter	Present	Criteria	Met (Y/N)	Comments
Method Blank	✓	< RL	N	numerous compounds reported
Field/Equipment Blanks	✓	< RL	N	numerous compounds reported
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#126 >150% - LCS #170 @ ∅ - LCS, LCSD
~~MS/MSD~~ RPD LCS/LCSD (CW 12/17/99)	✓	50% RPD	✓	
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	No	< 50% RPD	NA	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	Y	
Continuing Calibration	✓	%D < 25%	Y	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	No	#101 > 150% 21, 23, 25, 26, 24B #3 @ ∅ - 25 #169 none reported.
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	No	RS1 >150% - 24B RS2 <50% - LCS both <50% - 21, 23, 25, 26, 24B
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:

QC DATA REVIEW SHEET

Site: New Bedford Harbor
Lab: TRIANGLE LABS INC.
Lab Data Package ID:
Analysis: PCB

Case No. 49384
SDG No.
Cooler Receipt Form Present / Complete? (Y) N
Chain of Custody Form Present / Complete? (Y) N

Sample ID	Matrix	Date(s) Collected	Date(s) Prepared	Date(s) Analyzed	Holding Time Met (Y/N)	Preservative Temp. Met (Y/N)	Comments
08279921	PUF	8/27/99	9/8/99	9/15/99	Y	Y	
08279923	↓	↓	↓	↓	↓	↓	
08279925	↓	↓	↓	↓	↓	↓	
08279926	↓	↓	↓	↓	↓	↓	
08279948	↓	↓	↓	9/29/99	↓	↓	

C. Merrick 12/17/99
Reviewer/Date

TD99-213
11/4/99

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	F. Stevens	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	December 15, 1999

The following issues require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49384

1. Please submit missing run log for files W260806, -07, -10, and -11
2. If "recalculated using IS#138", why wasn't a value reported for hexa #169? According to the SOP, all other hexa compounds were already quantified using #138. Please resubmit.

Please send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celi

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 6, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49449
ORGANIC DATA VALIDATION

PCBs: 7/Air/09099921, 09099922, 09099923, 09099924, 09099925, 09099926, 09099924D
1/Field Blank/ 09099926B

A ~~modified Tier II~~ data ~~validation~~ review (HF) was performed on the analytical data for 8 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* Field Duplicates
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
All surrogate recoveries were within specified limits.

Laboratory Control Samples (LCS/LCSD)
Congener #126 exhibited high recovery in both the LCS and LCSD. In addition, #126 and #170 exceeded RPD criteria. Therefore, the associated homologue groups in the samples should be considered estimated values.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Samples 23 and 26 exhibited low recovery of IS#3 and IS#180 exceeded recovery in sample 21. Therefore, the monoCB and heptaCB homologue groups may be biased in the direction of the recovery in their respective samples.
Results for #169 were not reported due to interference. No impact on the data is expected since previous samplings did not exhibit any positive results for #169.

Recovery Standards
Samples 21-24, 24D and 26 exhibited high recovery of #80. In addition, samples 25 and 26B experienced low response for both standards. As a result, sample results may be biased in the direction of the standard response in the affected samples.

Blank Contamination
The concentrations reported for the total heptaCB and octaCB homologue groups should be considered suspect in samples 21-23, 25 and 26 and octaCB in 24 and 24D due to similar contamination in the field blank. Likewise, monoCB in 21 and 26B and pentaCB and hexaCB in 26B may be due to method blank contamination.
See attached table (HF)

Calibrations
All criteria were met.

Field Duplicates
Results for the field duplicate pair (24/24D) were satisfactory.

Summary data review (HF)
A ~~modified Tier II~~ ~~validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair, analyzed for PCB homologue groups as presented in package 49449. Data failed specified criteria for blank contamination, and for exceeding LCS, recovery and internal standard criteria. Due to interference, results for IS#169 were not reported in all samples. No impact on the data is expected. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49449
Reviewed By: C. MINCH **Date:** 1/15/00

QC Parameter	Present	QC Criteria	Met	Comments
Method Blank	✓	< RL	N	numerous compounds present
Field/Equipment Blanks	✓	< RL	N	numerous compounds present.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	126 and 170 high
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	126 and 170 750%.
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	✓	< 50% RPD	✓	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	no 169 reported. #3 < 25% 23, 26 180 > 150% 21
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	80 high 21-24, 24D + 26 80 low in 25 and 26B 128 low in 25 and 26B.
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	R. West	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	January 10, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. All samples were subjected to additional clean-up procedures. Please submit alternate standard % recovery data.

Please send a hardcopy of the resubmittal to my attention at the above address.
Thank you.

Celia

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	M. McDonald	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	February 15, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. As documented on the "sample preparation tracking and management form" and the "sample extraction and clean-up tracking form", alternate standard mix was added to all samples in the above referenced project numbers following soxhlet extraction and before silica and alumina column cleanup procedures. Recoveries were reported in the associated blank and LCS/LCSD analyses. Likewise, all previous data packages for congeners/total homologues reported alternate standard (#153) recovery. Why was recovery of alternate standard #153 omitted in the above packages? Resubmit alternate standard recovery for all samples.

Please expedite your response and send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celi

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 6, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49530
ORGANIC DATA VALIDATION

PCBs: 6/Air/09229921, 09229922, 09229923, 09229924, 09229925, 09229926
1/Field Blank/ 09229922B

A ~~modified Tier II~~ data ~~validation~~ review (HF) was performed on the analytical data for 7 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
  System Performance

* - All criteria were met for this parameter.
NA - not applicable

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
The octaCB (#202) surrogate exceeded specified limits in samples 22, 24, 26 and 22B. Accordingly, sample results may be biased high.

Laboratory Control Samples (LCS/LCSD)
Congener #123 exhibited high recovery in the LCSD and #170 low recovery in the both the LCS/LCSD analyses. In addition, congeners #123 and 189 exceeded RPD criteria. Therefore, the associated homologue groups should be considered estimated values in all samples.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Sample 24 exhibited low recovery of IS#209. Therefore, congener #209 may be biased low. Recovery for standard #169 could not be reported due to interference. All total hexaCB constituents were quantified using #138. No impact on the data was anticipated.

Recovery Standards
Sample 26 exceeded recovery criteria for #80 and 22 and 23 exhibited low recovery of #128. As a result, sample results may be biased in the direction of standard recovery.

Blank Contamination
The concentrations reported for the total heptaCB homologues should be considered suspect in all samples due to similar contamination in the method blank. Likewise, the di, tetra, hexa and octa homologues in sample 22 and di through hexa, and octa homologues in 22B may also be due to method blank contamination. In addition, the monoCB homologues in 21 and 22 may be due to field contamination.
See attached table. (AF)

Calibrations
All criteria were met.

Summary data review (AF)
A ~~modified Tier II validation~~ was performed on results of 7 air samples, including 1 field blank analyzed for PCB homologue groups as presented in package 49530. Data failed specified criteria for blank contamination and LCS performance, and for failing surrogate, recovery and internal standard criteria. Due to interference, results for IS#169 were not reported in all samples. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49530
Reviewed By: C. MINCH **Date:** 2/28/00

QC Parameter	Present	QC Criteria	Met QC?	Comments
Method Blank	✓	< RL	N	numerous present
Field/Equipment Blanks	✓	< RL	N	numerous reported
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#170 low #123 high
~~MS/MSD~~ RPD LCS/LCSD (CM 2/28/00)	✓	50% RPD	N	#123 and 189 out
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	#202 high in 22, 24, 26, 22B
Field Duplicate	NO	< 50% RPD	—	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	no #169 reported #209 low in 24
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	#128 low in 22, 23 #80 high in 26
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 6, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49643
ORGANIC DATA VALIDATION

PCBs: 7/Air/10089921, 10089922, 10089923, 10089924, 10089925, 10089926, 10089924D
1/Field Blank/ 10089925B

A ~~modified Tier-II~~ data ~~validation~~ review (KF) was performed on the analytical data for 8 air samples, including 1 field blank and field duplicate pair collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
  Field Duplicates
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
All surrogate recoveries were within specified limits.

Laboratory Control Samples (LCS/LCSD)
Congeners #114 and 118 exhibited high recovery in both the LCS and LCSD and low recovery of #170 in the LCSD. In addition, after an incorrect value was adjusted, #170 exceeded RPD criteria. Therefore, the associated homologue groups in the samples should be considered estimated values.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Low recovery of internal standards were exhibited for IS#3 in samples 21-23, 24D and 26, IS#15 in sample 23, IS#194 in sample 26 and IS#209 in 24D, 25, 26 and 25B. Therefore, the monoCB, diCB, octaCB homologue groups and congener #209 may be biased low in their respective samples.
Results for #169 were not reported due to interference. No impact on the data is expected since previous samplings did not exhibit any positive results for #169.

Recovery Standards
Samples 24D and 25 exhibited low recovery of #128. As a result, sample results may be biased in the direction of the standard response in the both samples.

Blank Contamination
The concentrations reported for the total monoCB in samples 21, 22, 24D and 25B, penta and hexaCB in 25B. heptaCB in samples 21-26 and 25B and the octaCB homologue group in 21-25 and 24D should be considered suspect due to similar contamination in the method blank. Likewise, diCB in 22 may be due to field contamination.
See attached table (HF)

Calibrations
All criteria were met.

Field Duplicates Not a duplicate sample - was a spike. (HF)
Results for the field duplicate pair (24/24D) exceeded criteria for mono, di and heptaCB homologue groups and congener #209. Consequently, results should be considered estimated in both samples.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair, analyzed for PCB homologue groups as presented in package 49643. Data failed specified criteria for blank contamination, and for failing LCS, field duplicate, recovery and internal standard criteria. Due to interference, results for IS#169 were not reported in all samples. No impact on the data is expected. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49643
Reviewed By: C. MINCH **Date:** 1/15/00

QC Parameter	Present	QC Criteria	Met	Comment
Method Blank	✓	< RL	N	numerous present
Field/Equipment Blanks	✓	< RL	N	numerous compounds present
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	114 and 118 high 170 low in LCSD.
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	170 high.
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate		< 50% RPD		
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	#3 low 21-23, 24D, 26 #209 low 24D, 25, 26, 258 15 low 23. no 169 reported. 194 < 26.
Alternate Standard (prior to cleanup)		25-150%		
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	#128 low 24D and 25.
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:
Chain of custody documents 24 spike, however lab reported 24D.

873 Chivas Drive
Toms River, NJ 08753
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Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	M. McDonald	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	February 15, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. As documented on the "sample preparation tracking and management form" and the "sample extraction and clean-up tracking form", alternate standard mix was added to all samples in the above referenced project numbers following soxhlet extraction and before silica and alumina column cleanup procedures. Recoveries were reported in the associated blank and LCS/LCSD analyses. Likewise, all previous data packages for congeners/total homologues reported alternate standard (#153) recovery. Why was recovery of alternate standard #153 omitted in the above packages? Resubmit alternate standard recovery for all samples.

Please expedite your response and send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celi

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	R. West	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	January 10, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. All samples were subjected to additional clean-up procedures. Please submit alternate standard % recovery data.

Please send a hardcopy of the resubmittal to my attention at the above address.
Thank you.

Celia

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	R. West	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	January 8, 2000

The following issue require resolution before I can complete my review of the New Bedford Harbor data package identified below:

TLI Number 49643

1. Please submit ICal 11/3 (WPCN049).

Please fax a hardcopy of the resubmittal to my attention at the above number.
Thank you.

Celia

TRIANGLE LABORATORIES, INC.
801 Capitola Drive
Durham, North Carolina 27713
phone: 919/544-5729
fax: 919/544-5491

Date: February 28, 2000

To: Chari Bryan
Company: The Kevric Company
Fax: 210-212-5432

CC: Cecilia Minch
Foster Wheeler (732)270-1902

From: Mary C. McDonald, Project Scientist
919-544-5729, ext. 269

Re: New Bedford PCB Data Inquiry Responses Update II

Number of Pages, including cover sheet: 10

Notice: The information contained in this facsimile message is intended only for the recipient named above. This message may contain proprietary and confidential information. If the reader of this message is not the intended recipient nor an agent of the intended recipient, you are hereby notified that you received this message in error. Any review, dissemination, distribution, or copying of messages received in error is unethical. Please notify me immediately by telephone and return the original message by mail. Thank you in advance.

If a repeat transmission is required, please call: 919-544-5729

Message;

Chari,

Please find enclosed the following outstanding data issues for the New Bedford Harbor PCB data:

1) We talked this morning about missing document control information for TLI Project 49643; samples 10089923, 10089924, 1089924D and 10089925B. When the copying of the data package, data package assembly missed the information on the back of the wet lab project communication tracking form. I have copied the information and will call the pages 16a and 17a for addition to your copy of the data package.

2) Matrix spike summary for TLI project 49643. This project was processed for totals only. The analytes conatined in the matrix spike solution are specific PCB analytes. Given the current data, we cannot provide matrix spike precision and accuaracy results for totals only. The data would need to be re-processed to include the specific PCB analytes. As per our discussions we will reprocess the matrix spike and native for specifics and totals to get the necessary precision and recovery information.

3. Missing #153-alternate std (TLI Projects: 49449,49530,49643.49752,49924)
When the project first started, data was processed for specifics and totals. The list of analytes then changed to reporting Totals only. When reports were issued with "Totals only" the Alternate std #153 was missing. The reports have been reprocessed and a summary listing the #153 for all projects will be issued . All future projects (both specifics + totals and "totals only") will contain the #153 alternate std.
Summary reports will be available on Monday 2-28-00. Sorry for the delay.

If you have further questions, please do not hesitate to contact me .

Sincerely,

Mary C. McDonald
Project Scientist
(919)544-5729 x269

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 6, 2000

FROM: C. Minch(@w)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49752
ORGANIC DATA VALIDATION

PCBs: 6/Air/10259921, 10259922, 10259923, 10259924, 10259925, 10259926
1/Field Blank/ 10259925B

A ~~modified Tier II~~ data ~~validation~~ review (HF) was performed on the analytical data for 7 air samples, including 1 field blank collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high-resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
  Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
* System Performance

* - All criteria were met for this parameter.

Holding Time
The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
The octaCB (#202) surrogate exceeded specified limits in samples 21, 22, 23, 24,and 25B. Accordingly, sample results may be biased high.

Laboratory Control Samples (LCS/LCSD)
Congener #123 exhibited high recovery and #126 and #170 low recovery in the LCS analysis. Likewise, penta CB congeners #114 and 118 exceeded recovery limits, while #126 was again low. In addition, congener #170 exceeded RPD criteria. Therefore, the associated homologue groups in the samples should be considered estimated values.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Samples 22 and 25B exhibited low recovery of IS#3. Likewise, IS#15 experienced low recovery in samples 23 and 25B. Therefore, the monoCB and diCB homologue groups may be biased low in their respective samples. In addition, #3 was not reported in samples 21 or 23 or #169 in all samples due to interference.

Recovery Standards
All samples except 25 and 25B exhibited low recovery of #128. As a result, sample results may be biased low.

Blank Contamination
The concentrations reported for the mono, di, tri, penta and hexaCB homologue groups in 25B, and total heptaCB and octaCB in all samples should be considered suspect due to similar contamination in the method blank.
See attached table. (HF)

Calibrations
All criteria were met.

Summary data review (HF)
A ~~modified Tier II validation~~ was performed on results of 7 air samples, including 1 field blank analyzed for PCB homologue groups as presented in package 49752. Data failed specified criteria for blank contamination and LCS performance, and for exceeding surrogate, recovery and internal standard criteria. Due to interference, results for IS#3 and the monoCB homologue group were not reported in samples 21 and 23 or for IS#169 for all samples. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49752
Reviewed By: C. MINCH **Date:** 1/6/00

QC Parameter	Present	QC Criteria	OK	Comments
Method Blank	✓	< RL	N	all except mono and deca present
Field/Equipment Blanks	✓	< RL	N	numerous present.
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#114, 118 and 123 > 150% #126 and heptaCB < 40%
~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	170 > 50%
Surrogate Recovery (before field collection for air)	✓	25-150% R	N	#202 >150%. 21-24, 25B
Field Duplicate	No	< 50% RPD	—	
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	no 169 reported all samples #3 <25%. 22, 25B #15 <25% 23, 25B.
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	#128 <50% in 21-24, 26
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	R. West	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	January 10, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. All samples were subjected to additional clean-up procedures. Please submit alternate standard % recovery data.

Please send a hardcopy of the resubmittal to my attention at the above address.
Thank you.

Celia

873 Chivas Drive
Toms River, NJ 08753
Phone: 1 (732) 270 - 0988
Fax: 1 (732) 270 - 1902

Foster Wheeler Environmental Corporation

To:	M. McDonald	**From:**	Cecelia Minch
Fax:	1 (919) 544 - 5491	**Date:**	February 15, 2000

The following issue requires resolution before I can complete my review of the New Bedford Harbor data packages identified below:

TLI Number 49449, 49530, 49643, 49752, 49924

1. As documented on the "sample preparation tracking and management form" and the "sample extraction and clean-up tracking form", alternate standard mix was added to all samples in the above referenced project numbers following soxhlet extraction and before silica and alumina column cleanup procedures. Recoveries were reported in the associated blank and LCS/LCSD analyses. Likewise, all previous data packages for congeners/total homologues reported alternate standard (#153) recovery. Why was recovery of alternate standard #153 omitted in the above packages? Resubmit alternate standard recovery for all samples.

Please expedite your response and send a hardcopy of all resubmittals to my attention at the above address.
Thank you.

Celia

FOSTER WHEELER ENVIRONMENTAL CORPORATION

INTEROFFICE MEMORANDUM

TO: H. Douglas **Date:** January 6, 2000

FROM: C. Minch (CM)

SUBJECT: NEW BEDFORD HARBOR
TRIANGLE LABORATORIES, INC. PROJECT NUMBER - 49924
ORGANIC DATA VALIDATION

PCBs: 7/Air/11169921, 11169922, 11169923, 11169924, 11169925, 11169926, 11169924D
1/Field Blank/ 11169921B

A ~~modified Tier II~~ data ~~validation was~~ review (HF) performed on the analytical data for 8 air samples, including 1 field blank and field duplicate pair collected by Kevric Company, Inc. from the New Bedford Harbor site. The data validation was performed using the project-specific criteria and best professional judgement. A CADRE review was not performed on the data. The PCBs were analyzed using a high resolution method.

The data were evaluated based on the following parameters:

* Data Completeness
* Preservation and Technical Holding Times
* Initial and Continuing Calibrations
  Blanks
* Surrogate Compounds
  Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS)
  Internal Standards
* Alternate Standard
  Recovery Standards
  Field Duplicates
* System Performance

* - All criteria were met for this parameter.

Holding Time

The cooler temperature was acceptable upon sample receipt and all samples were prepped and analyzed within specified holding times.

Surrogates
All surrogate recoveries were within specified limits.

Laboratory Control Samples (LCS/LCSD)
Congeners #156, 157 and 167 exhibited high recovery while #123 was below limits in both the LCS and LCSD. Low recovery of #126 was also observed in the LCSD. In addition, #123, 126 and 170 exceeded RPD criteria. Therefore, the associated homologue groups in the samples should be considered estimated values.

Alternate Standard
All recoveries were acceptable.

Internal Standards
Low recoveries were observed for internal standards #3 in sample 21B and #15 in 24, 24D and 21B. Therefore, the monoCB and diCB homologue groups may be biased low in their respective samples. Results for #169 were not reported due to interference. No impact on the data is expected since previous samplings did not exhibit positive results for #169.

Recovery Standards
Samples 21 and 25 exhibited low recovery of #80. Likewise, all samples except 24D and 21B exhibited low response of #128. As a result, sample results may be biased low in the affected samples.

Blank Contamination
The concentrations reported for the total mono, di and hexaCB in samples 21, 22 and 25, tri and tetraCB in sample 22, tetra in 25, heptaCB in samples 21-26 and 24D, the octa homologue group in 24, 24D, and 26, and congener #209 in 21, 23, 24D, 25 and 26 should be considered suspect due to similar contamination in the field blank. Likewise, pentaCB may be due to method blank contamination in all samples except 26.
See attached table. (AF)

Calibrations
All criteria were met.

Field Duplicates
Results for the field duplicate pair (24/24D) exceeded criteria for mono, hepta and octaCB homologue groups and congener #209. Consequently, results should be considered estimated in both samples.

Summary data review (AF)
A ~~modified Tier II validation~~ was performed on results of 8 air samples, including 1 field blank and field duplicate pair, analyzed for PCB homologue groups as presented in package 49924. Data failed specified criteria for blank contamination, and for failing LCS, field duplicate, recovery and internal standard criteria. Due to interference, results for IS#169 were not reported in all samples. No impact on the data is expected. The data appear to be acceptable.

Attachments: Data Validation Worksheets

ORGANIC DATA REVIEW - PCB HOMOLOGUE GROUPS/CONGENERS - AIR, GW

Lab Package ID: 49924
Reviewed By: C. MINCH **Date:** 2/28/00

QC Parameter	Present	QC Criteria	Meets Criteria	Comments
Method Blank	✓	< RL	N	numerous compounds present
Field/Equipment Blanks	✓	< RL	N	numerous compounds reported
~~MS/MSD~~ Recovery LCS/LCSD	✓	40-150% R	N	#123 low, #126 low #156, 157 and 167 high
(EW 2/28/00 ~~MS/MSD~~ RPD LCS/LCSD	✓	50% RPD	N	#123, 126 and 170 high
Surrogate Recovery (before field collection for air)	✓	25-150% R	✓	
Field Duplicate	✓	< 50% RPD	N	mono, hepta and octa >50%
Initial Calibration	✓	% RSD < 30% $r^2 > 0.995$ S/N ≥ 10	✓	
Continuing Calibration	✓	%D < 25%	✓	
Internal Standard Areas (prior to extraction) used to calc. samples	✓	25-150%	N	#15 < 25% 24,24D, 21B #3 < 21B
Alternate Standard (prior to cleanup)	✓	25-150%	✓	
Recovery Standard (prior to analysis) used to calc. IS	✓	50-150%	N	#80 low in 21, 25, #128 high low 21-24, 25, 26 (EW 2/28/
RT Window Check (see Lab SOP)	—	RT Windows and peak resolution	—	

Actions Taken:

Appendix L

Appendix L: Chemical Quality Assurance Reports

The information contained in this section includes the chemical quality assurance reports. These reports were prepared by ENSR Corporation.

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 01 (Revised)
Ambient Air Sampling
June 4, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

October 11, 1999
Date Revised: January 11, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 01 (Revised)

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Twenty of these analytes were detected by both laboratories;
- two analytes were not detected by both laboratories,
- and two analytes were reported as not detected from the primary laboratory with detection limits slightly above the values reported by the QA laboratory.

The primary and QA laboratories showed overall agreement in 96% of the comparisons and quantitative agreement in 95% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There is one discrepancy between the results; this is a major discrepancy in the quantitative value for one congener. However, this analyte accounts for less than 1% of the total PCBs in the sample and this discrepancy therefore poses little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 4, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	23 of 24	96	21 of 22	95
Total	23 of 24	96	21 of 22	95

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 4, 1999

Sample ID	Matrix	Sample Date	Parameter
06049924D	Air (PUF)	06/04/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
June 4, 1999

1. QA sample shipping and chain of custody procedures

The samples were received at ambient temperature. PUF samples collected for PCBs should be preserved at 4°C. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample collection and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	X
LCSs		
Analyzed	X	NR
Acceptable	(1)	
Internal Standard Recoveries		
Acceptable	X	(2)

Notes:

(1) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Elevated recoveries for some analytes from the LCS are likely attributable to background contamination in the PUF used. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) One of twelve isotopically labeled standards recovered above limits. Results for monochlorobiphenyls may be biased. This nonconformance is of little or no concern.

NR = None reported.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 03031799 Field ID: 06049924D Sample Date: 06/04/99 Analysis Date: 07/08/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W206101 Field ID: 06049924 Sample Date: 06/04/99 Analysis Date: 07/02/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	11	6.8	0
PCB 77	56	41.8	0
PCB 114	6.8	60.1	4
PCB 118	310	439 E	0
PCB 123	17	11.2	0
PCB 105	69	79.2	0
PCB 126	0.89	1.1	0
PCB 167	23[2]	5.5	0
PCB 156	7.8	8.3	0
PCB 157	1.6	1.1	0
PCB 169	0.08 U	0.3 U	0
PCB 180	12	12.3	0
PCB 170	5.2	9.3	0
PCB 189	0.16 517	0.4 U 279.7	0
Total Mono	480	196 E	0
Total Di	8900	11,220 E	0
Total Tri	31,000	36,580 E	0
Total Tetra	12,000	14,090 E	0
Total Penta	5000	5690 E	0
Total Hexa	1000	892 E	0
Total Hepta	77	98.3	0
Total Octa	5.4	10.3	0
Total Nona	0.69	1.0 U	0
Decachlorobiphenyl	0.075 U	1.5 U	0
Internal standard Recoveries	58,463	68,777	
PCB 3	81	164	
PCB 15	91	96	
PCB 28	90	78	
PCB 52	101	138	
PCB 77	54	70	
PCB 101	104	132	
PCB 126	90	100	
PCB 138	73	99	
PCB 169	90	99	
PCB 180	77	87	
PCB 194	108	71	
PCB 209	86	73	

59.4% RPD

16.2% RPD

[1]Refer to Appendix B

[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated detection limits
J – estimated value
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte detected in the method blank
I – interference of the labeled standard

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** _____ **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.#(1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days): AS per Contract

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
X6049924D	06/04/99	ICE	AIR	N/A.	X					30317
UNUSED MEDIA	06/04/99	ICE	—	N/A	X					- MB7-30316
UNUSED MEDIA	06/04/99	ICE	—	N/A	X					- MS?
X6049926B	06/04/99	ICE	AIR	N/A	X					30318

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
_____	06/04/99	FEDEX.			

Received for Laboratory By/Signature	Date/Time	Send Samples to:
_____ - FAX.	990608 1:15pm.	Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

00799

Page ___ of ___

US SAMPLE LOG IN SHEET

00802
FOSTER WH

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Carano

Received By (Signature): [signature]

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	800656087838	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	08-06-99	
Time Received	1:15	

Temperature of Coolers

Cooler ID:	Temperature
1 COOLER	22°C

Relinquished By: [signature]

08-06-99

Logbook No: ___

Logbook Page No. ___

00485
01000

FedEx. USA Airbill

FedEx Tracking Number 0656087838

0200 Form I.D. No. Recip ts Copy

1 From

Date 6/7/99 [redacted]

Sender's Name MARK GOUVEIA Phone (770) 825-7108

Company FOSTER WHEELER ENVIRONMENTAL

Address 302 RESEARCH DR TECH PK #200 Dept./Floor/Suite/Room

City NORCROSS State GA ZIP 30092

2 Your Internal Billing Reference Information

3 To

Recipient's Name ~~[illegible]~~ RON McLEOD Phone (800) 668-0637

Company PHILLP ANAYITAL SERVICE

Address 299 CAYUGA RD Dept./Floor/Suite/Room

(To "HOLD" at FedEx location, print FedEx address here)

City CHEEKTOWAGA State NY ZIP 14225

☐ Check here if residence (Extra charge applies for FedEx Express Saver)

For HOLD at FedEx Location check here

☐ Hold Weekday (Not available with FedEx First Overnight)

☐ Hold Saturday (Not available at all locations) (Available for FedEx Priority Overnight and FedEx 2Day only)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations) (Available for FedEx Priority Overnight and FedEx 2Day only)

8 0 0 6 5 6 0 8 7 8 3 8

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

☒ FedEx Priority Overnight (Next business morning)

☐ FedEx Standard Overnight (Next business afternoon)

☐ FedEx 2Day* (Second business day)

☐ FedEx Express Saver* (Third business day)

☐ FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

* FedEx Letter Rate not available. Minimum charge: One pound rate.

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight (Next business day)

☐ FedEx 2Day Freight (Second business day)

☐ FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. See back for detailed descriptions of freight services.)

5 Packaging ☐ FedEx Letter ☐ FedEx Pak ☐ FedEx Box ☐ FedEx Tube ☒ Other Pkg.

Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☒ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 ___ x ___ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☒ Sender (Account no. in section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx account no. or Credit Card no. below)

☐ Obtain Recipient FedEx Account No.

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	15	$ .00	$

* When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE, AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

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NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 02 (Revised)
Ambient Air Sampling
June 16, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

October 11, 1999
Date Revised: January 11, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 02 (Revised)

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Eighteen of these analytes were detected by both laboratories;
- three analytes were not detected by both laboratories;
- and three analytes were reported as not detected from the QA laboratory with detection limits just slightly above or below the values reported by the primary laboratory.

The primary and QA laboratories showed overall agreement in 92% of the comparisons and quantitative agreement in 90% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are three discrepancies between the results; these are three major discrepancies in the quantitative values for three congeners. However, these analytes account for less than 1% of the total PCBs in the sample and these discrepancies therefore pose little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data. However, it should be noted that many of the values reported by the primary laboratory exceeded the calibration range and were flagged with an "E". Although all values met the criterion for data comparison, the end-user of the data should be aware that these values may be biased low.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 16, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	**N**	**%**	**N**	**%**
PCBs	22 of 24	92	19 of 21	90
Total	22 of 24	92	19 of 21	90

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 16, 1999

Sample ID	Matrix	Sample Date	Parameter
06169924D	Air (PUF)	06/16/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
June 16, 1999

1. QA sample shipping and chain of custody procedures

The samples were received at ambient temperature. PUF samples collected for PCBs should be preserved at 4°C. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample collection and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	NR
Acceptable	(1)	
Internal Standard Recoveries		
Acceptable	X	(3)

Notes:

(1) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Elevated recoveries for some analytes from the LCS are likely attributable to background contamination in the PUF used. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) Method blanks demonstrated low levels of contamination by PCBs. Sample levels for all analytes were orders of magnitude above blank levels; this nonconformance is therefore of little concern for data usability.

(3) The recoveries of three of twelve isotopically labeled standards could not be evaluated due to interference from elevated levels of the associated analytes in sample 06169924. Results for monochlorobiphenyls, trichlorobiphenyls, and tetrachlorobiphenyls may be biased in sample 06169924.

NR = None reported.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 03296299 Field ID: 06169924D Sample Date: 06/16/99 Analysis Date: 07/22/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W211702 Field ID: 06169924 Sample Date: 06/16/99 Analysis Date: 07/13/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	8.9	4.3	0
PCB 77	49	25.3	0
PCB 114	6.0	42.7	4
PCB 118	320	282 E	0
PCB 123	18	7.0	0
PCB 105	60	47.4	0
PCB 126	0.87 UJ	0.60	0
PCB 167	22[2]	4.2	4
PCB 156	6.7	5.3	0
PCB 157	1.4	0.61	0
PCB 169	0.09 UJ	0.3 U	0
PCB 180	9.6	8.2	0
PCB 170	4.7	7.3	0
PCB 189	0.21 UJ 506	0.3 U 435	0
Total Mono	390	335 E	0
Total Di	12,000	8570 E	0
Total Tri	30,000	9820 E	0
Total Tetra	17,000	10,410 E	0
Total Penta	5000	3670 E	0
Total Hexa	1000	745 E	0
Total Hepta	64	64.6	0
Total Octa	4.3 UJ	4.9	0
Total Nona	0.37 UJ	0.50	0
Decachlorobiphenyl	0.17 UJ	0.9 U	0
Internal Standard Recoveries	65,454	33,620	
PCB 3	72	NC	
PCB 15	83	50	
PCB 28	80	NC	
PCB 52	104	NC	
PCB 77	117	95	
PCB 101	96	105	
PCB 126	93	116	
PCB 138	77	100	
PCB 169	91	118	
PCB 180	74	105	
PCB 194	120	103	
PCB 209	77	115	

15% RPD

64.3% RPF

[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

   For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

NC – not calculable due to interference from elevated levels of target analytes
U – not detected
UJ – estimated nondetect due to blank contamination
E – estimated value; above calibration. Value may be biased low.

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** _____ **Project/Quote** 04824/9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Mark Gouveia
Phone: 508-990-2550
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
3616992 4D	06/16/99	ICE	AIR	N/A	X					32962
UNUSED MEDIA	↓	↓	↓	↓	X					32960
UNUSED MEDIA					X					32961
3616992613					X					32963

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	6/19/99 1600	FEDEX.			

Received for Laboratory By/Signature [signature] **Date/Time** 990619 12:40

Send Samples to: **Triangle Laboratories, Inc.**
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

00800

Page ___ of ___

US SAMPLE LOG IN SHEET

UUUUU FOSTER WHEELER

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K Garcia

Received By (Signature):

Client Project ID:

REMARKS:	Condition of Samples/Sample Shipment:
	Samples received intact.

Custody Seal(s)	Present ___	Absent ✓
Chain of Custody Records	Present ✓	Absent ___
Airbill	Present ✓	Absent ___
Airbill No.	818043666 92	
Does Information on Custody Records and Samples Agree?	Yes ✓	No ___
Date Received at Lab	19-06-99	
Time Received	12:40	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	25°C

Relinquished By:

Date: 19-06-99

Logbook No:

Logbook Page No.

Sample Reception Fo

25 1000 31662222 5

1 From

Date 6-17-99 [redacted]

Sender's Name MARK GOUVEIA Phone (617) 457-8200

Dept./Floor/Suite/Room

Company FOSTER WHEELER ENVIRONMENTAL

Address 470 ATLANTIC AVE 3RD FL

City BOSTON State MA Zip 02210

2 Your Internal Billing Reference Information

3 To

Recipient's Name RON McLeod Phone (800) 668-0639

Dept./Floor/Suite/Room

Company Phillip ANALYTICAL Services

Address 299 Cayuga ROAD
(To "HOLD" at FedEx location, print FedEx address here)

City Cheektowaga State NY Zip 14225

For HOLD at FedEx Location check here
- [ ] Hold Weekday (Not available with FedEx First Overnight)
- [ ] Hold Saturday (Not available at all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

For Saturday Delivery check here
- [x] (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

1810436692

4a Express Package Service *Packages under 150 lbs.*

- [x] FedEx Priority Overnight (Next business morning)
- [ ] FedEx Standard Overnight (Next business afternoon)
- [ ] FedEx 2Day
- [ ] FedEx Government Overnight (Authorized use only)
- [ ] NEW FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx Overnight Freight (Next business-day service for any distance)
- [ ] FedEx 2Day Freight (Second business-day service for any distance)
- [ ] FedEx Express Saver Freight (Up to 3 business-day service based on distance)

(Call for delivery schedule. See back for detailed descriptions of freight products.)

5 Packaging
- [ ] FedEx Letter
- [ ] FedEx Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other Pkg

Declared value limit $500

6 Special Handling

Does this shipment contain dangerous goods?
- [ ] Yes (As per attached Shipper's Declaration)
- [ ] Yes (Shipper's Declaration not required)
- [ ] Dry Ice — Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)
- CA [ ] Cargo Aircraft Only

7 Payment

Bill to:
- [ ] Sender (Account no. in section 1 will be billed)
- [ ] Recipient
- [x] Third Party
- [ ] Credit Card
- [ ] Cash/Check

(Enter FedEx account no. or Credit Card no. below)

- [ ] Recipient
- [ ] FedEx Account No.

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	10	$ .00	$

*When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

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Questions?
Call 1-800-Go-FedEx (1-800-463-3339)

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GBFE 7/96

00171

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #90 0E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PCB via Hrms.
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
032962	06169924D	99/06/16	99/06/19
032963	06169926B	99/06/16	99/06/19

Comments: _____

_____

_____

Date 99/06/22

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 03 (Revised)
Ambient Air Sampling
June 28, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

October 11, 1999
Date Revised: January 11, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 03 (Revised)

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Sixteen of these analytes were detected by both laboratories;
- three analytes were not detected by both laboratories;
- and five analytes were reported as not detected from the primary laboratory with detection limits below the values reported by the QA laboratory.

The primary and QA laboratories showed overall agreement in 21% of the comparisons and quantitative agreement in 9.5% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are 19 discrepancies between the results; these are 19 major discrepancies in the quantitative values for congeners or total homologues. Fifteen of these analytes account for less than 5% of the total PCBs in the sample and these 15 discrepancies therefore pose little to no concern on the data usability. However, four of these discrepancies account for >5% of the total PCBs in the sample and therefore adversely affect the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are major problems for utilization of project data. Further investigation of sample results is required in order to determine which set of data is unusable; however it would appear that the results of the QA laboratory are more consistent with those from previous sampling rounds.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 28, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	**N**	**%**	**N**	**%**
PCBs	5 of 24	21	2 of 21	9.5
Total	5 of 24	21	2 of 21	9.5

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
June 28, 1999

Sample ID	*Matrix*	*Sample Date*	*Parameter*
06289924D	Air (PUF)	06/28/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
June 28, 1999

1. QA sample shipping and chain of custody procedures

The samples were received at ambient temperature. PUF samples collected for PCBs should be preserved at 4°C. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample collection and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	NR
Acceptable	(1)	
Internal Standard Recoveries		
Acceptable	X	(3)

Notes:

(1) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Elevated recoveries for some analytes from the LCS are likely attributable to background contamination in the PUF used. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) Method blanks demonstrated low levels of contamination by PCBs. With the exception of the monochlorobiphenyls, sample levels for all analytes were orders of magnitude above blank levels. Results for monochlorobiphenyls may be biased high; this nonconformance is of little concern for data usability of the remaining contaminants.

(3) One of twelve isotopically labeled standards recovered below limits. Results for monochlorobiphenyls may be biased. This nonconformance is of little or no concern.

NR = None reported.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 03527599 Field ID: 06289924D Sample Date: 06/28/99 Analysis Date: 07/22/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W214502 Field ID: 06289924 Sample Date: 06/28/99 Analysis Date: 07/15/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	13	0.2 U	4
PCB 77	47	0.46 J	4
PCB 114	8.3	0.76	4
PCB 118	350	4.1	4
PCB 123	17	0.2 U	4
PCB 105	100	1.3	4
PCB 126	1.3	0.2 U	4
PCB 167	32[2]	0.10 J	4
PCB 156	11	0.24 J	4
PCB 157	2.3	0.1 U	4
PCB 169	0.05 U	0.2 U	0
PCB 180	23	1.0	4
PCB 170	10	0.60	4
PCB 189	0.25 UJ 615	0.2 U 8.6	0
Total Mono	460	3.2	4
Total Di	7200	30.7	4
Total Tri	29,000	40.7	4
Total Tetra	12,000	55.5	4
Total Penta	4300	34.7	4
Total Hexa	1100	12.8	4
Total Hepta	110	4.3	4
Total Octa	8.7	2.2	0
Total Nona	0.95	0.5 U	0
Decachlorobiphenyl	0.16 U	0.7 U	0
Internal Standard Recoveries	54,180	184	
PCB 3	72	20	
PCB 15	84	27	
PCB 28	83	45	
PCB 52	86	53	
PCB 77	72	106	
PCB 101	99	90	
PCB 126	91	93	
PCB 138	78	89	
PCB 169	90	97	
PCB 180	81	115	
PCB 194	129	92	
PCB 209	81	98	

[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1 < DL_1$ and $N_2 > DL_2$ but $< DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated nondetect due to blank contamination

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** Quote 99000000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
62899 4D	06/28/99	ICE	AIR	N/A	X	
MIXED MEDIA	↓	↓	↓	↓	↓	Method Blank/LCS
MIXED MEDIA						
62899 2B	↓	↓	↓	↓	↓	

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	6/29/99 1600	[signature]			

Received for Laboratory By/Signature [signature] **Date/Time** June 30 99

Send Samples to: **Triangle Laboratories, Inc.**
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

EA SR2 ACT "PCBHRWEL"

00800

Page ___ of ___

US SAMPLE LOG IN SHEET

00804
FOSTER WHEELER

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): SHARI TYFER

Received By (Signature): Shari Tyfer

Client Project ID: ENSR 2ACT

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent X	samples received intact
Chain of Custody Records	Present X Absent ___	
Airbill	Present X Absent ___	
Airbill No.	15104367 25	
Does Information on Custody Records and Samples Agree?	Yes X No ___	
Date Received at Lab	30-06-99	
Time Received	12:10	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	14°

Relinquished By: _____

Date: 30-06-99

Logbook No: _____

Logbook Page No: _____

FedEx USA Airbill Tracking Number 1810436725

Recipient's Copy

28 1000 31460028 6218N

1 From

Date 6/24/99

Sender's Name MARK GANEIA Phone 617-457-8200

Dept./Floor/Suite/Room

Company FOSTER WHEELER ENVIRONMENTAL

Address 470 ATLANTIC AVE 3RD FL

City BOSTON State MA Zip 02210

2 Your Internal Billing Reference Information

3 To

Recipient's Name Ron Malood Phone 800-668-0639

Dept./Floor/Suite/Room

Company Phillip Analytical Services

Address 299 CAYUTA ROAD

(To "HOLD" at FedEx location, print FedEx address here)

City Cheektowaga State NY Zip 14225

For HOLD at FedEx Location check here

☐ Hold Weekday ☐ Hold Saturday (Not available at all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

1810436725

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

☒ FedEx Priority Overnight (Next business morning) ☐ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day* (Second business day)

☐ FedEx Government Overnight (Authorized use only) ☐

☐ NEW FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

* FedEx Letter Rate not available. Minimum charge: One pound FedEx 2Day rate.

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight (Next business-day service for any distance) ☐ FedEx 2Day Freight (Second business-day service for any distance) ☐ FedEx Express Saver Freight (Up to 3 business-day service based upon distance)

(Call for delivery schedule. See back for detailed descriptions of freight products.)

5 Packaging ☐ FedEx Letter ☐ FedEx Pak ☐ FedEx Box ☐ FedEx Tube ☒ Other Pkg.

Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 lbs ____ x ____ kg 904 (Dangerous Goods Shipper's Declaration not required) CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☐ Recipient ☒ Third Party ☐ Credit Card ☐ Cash/Check

☐ Obtain Recipient FedEx Account No.

(Enter FedEx account no. or Credit Card no. below)

Total Packages Total Weight Total Declared Value $ .00 Total Charges $

Credit Card Auth.

* When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

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Questions?
Call 1-800-Go-FedEx (1-800-463-3339)

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00798

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PR via Hyms
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
035275	062899 24D	99/06/28	99/06/30
035277	062899 21B	99/06/28	99/06/30

Comments: _____

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 04
Ambient Air Sampling
July 10, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

January 11, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 04

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Twenty of these analytes were detected by both laboratories;
- one analyte was reported as not detected from the primary laboratory with a detection limit below the value reported by the QA laboratory;
- one analyte was reported as not detected from the primary laboratory with a detection limit above the value reported by the QA laboratory;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly above the value reported by the primary laboratory;
- and one analyte (PCB 169) was not reported by the primary laboratory due to interference.

The primary and QA laboratories showed overall agreement in 88% of the comparisons and quantitative agreement in 91% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are two discrepancies between the results; these are major discrepancies in the quantitative values for two congeners. However, these analytes account for less than 1% of the total PCBs in the sample and these discrepancies therefore pose little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
July 10, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	21 of 24	88	21 of 23	91
Total	21 of 24	88	21 of 23	91

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
July 10, 1999

Sample ID	Matrix	Sample Date	Parameter
7109924D	Air (PUF)	07/10/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
July 10, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 17°C. PUF samples collected for PCBs should be preserved at 4°C. It should be noted that all samples were stored on site at 4°C until shipment. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample shipment and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	X
Acceptable	(1)	X
Internal Standard Recoveries		
Acceptable	X	(3)

Notes:

(1) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. With the exception of PCB 189, sample levels for all analytes were orders of magnitude above blank levels. Erratic recovery of trichlorobiphenyl in the LCS is likely attributable to background contamination in the PUF used. The result of trichlorobiphenyl in the sample was over an order of magnitude above the blank level. These nonconformances are of little concern for data usability.

(2) The primary laboratory's method blank exhibited low levels of contamination by PCBs. With the exception of heptachlorobiphenyl and octachlorobiphenyl, sample levels for all analytes were orders of magnitude above blank levels. Results for heptachlorobiphenyl and octachlorobiphenyl may be biased high. These nonconformances are of little concern for data usability.

(3) One of twelve isotopically labeled standards was not measurable due to interference. A result for the associated analyte (PCB 169) was also not measurable. The recovery of the labeled standard PCB 101 slightly exceeded the QC acceptance limit. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 03790799 Field ID: 7109924D Sample Date: 07/10/99 Analysis Date: 07/29/99 Method: HRGC/HRMS		Contractor Laboratory Triangle Laboratories Research Triangle Park, NC Sample # W255104 Field ID: 7109924 Sample Date: 07/10/99 Analysis Date: 09/08/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	11	4.9 Q	0
PCB 77	52	27.4	0
PCB 114	10	34.8	0
PCB 118	310	210 E	0
PCB 123	14	7.5	0
PCB 105	100	75.7	0
PCB 126	0.79	0.1 U	4
PCB 167	30[2]	3.8	4
PCB 156	10	9.1	0
PCB 157	2.1	1.4	0
PCB 169	0.43 U	I	2
PCB 180	17	16.3	0
PCB 170	9.6	4.2 Q	0
PCB 189	0.2 UJ 566.5	0.14 J 395.2	0
Total Mono	420	157 QE	0
Total Di	7600	3750 QSEM	0
Total Tri	26,000	6840 QSE	0
Total Tetra	14,000	10,310 QE	0
Total Penta	3600	2120 EM	0
Total Hexa	920	657.9 EM	0
Total Hepta	92	106 QB	0
Total Octa	8.4	24.5 QMB	0
Total Nona	0.63	0.55 Q	0
Decachlorobiphenyl	0.29 52,641	1.8 U 23966	0
Internal Standard Recoveries			
PCB 3	83	31.9	
PCB 15	100	36.4	
PCB 28	93	78.7	
PCB 52	81	69.8	
PCB 77	98	111	
PCB 101	108	172	
PCB 126	81	89.7	
PCB 138	88	103	
PCB 153	94	82.3	
PCB 169	96	I	
PCB 180	103	104	
PCB 194	43	80.7	
PCB 209	101	101	

35.6%

200%

[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1 < DL_1$ and $N_2 > DL_2$ but $< DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated detection limits
J – estimated value
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte detected in the method blank
I – interference of the labeled standard
M – estimated maximum possible concentration

APPENDIX C

Sample Handling Documentation

edEx USA Airbill FedEx Tracking Number 813393655776

Form I.D. No. 0200

m
e 7/12/99

der's me: MARK. GOUVEIA Phone 508 910 - 9958

npany The Keurig C.O.

dress 103 SAWYER ST Dept./Floor/Suite/Room

, New Bedford State MA ZIP 02746

ur Internal Billing Reference

cipient's me Ron McLeod Phone 800 668 0639

npany Phillip ANALYTICAL

dress 299 CAYUGE ROAD Dept./Floor/Suite/Room

annot deliver to P.O. boxes or P.O. ZIP codes.

HOLD at FedEx location, FedEx address here.

, CHEEKTOWAGA State NY ZIP 14225

8133 9365 5776

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: _____

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? (One box must be checked.)

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
1		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

Credit Card Auth.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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360

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE _____

Quote 99000005

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
71099240	7/10/99	ICE	AIR	N/A	X	37907
71099238	〃	〃	〃	〃	〃	37908
UNUSED MEDIA	〃	〃	〃	〃	〃	37906
UNUSED MEDIA	〃	〃	〃	〃	〃	〃

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sig
_____	7/12/99 1600				

Received for Laboratory By/Signature	Date/Time	Send Samples to:
FASC	990713 12:30	Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check appropriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K-Caruso

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	813393655776	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	13-07-99	
Time Received	12:30	

Temperature of Coolers

Cooler ID:	Temperature
1 cooler	17°c

Relinquished By: Robert Imola

Date: 13-07-99

Logbook No: _____

Logbook Page No. _____

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PCB via Hand
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
037907	7109924D	99/07/10	99/07/14
037908	7109923B	99/07/10	99/07/14

Comments: _____

_____

_____

Date 99/07/15

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 05 (Revised)
Ambient Air Sampling
July 22, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

December 7, 1999
Date Revised: January 11, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 05 (Revised)

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- *Seventeen of these analytes were detected by both laboratories;*
- one analyte was not detected by both laboratories;
- three analytes were reported as not detected from the primary laboratory with detection limits below the values reported by the QA laboratory;
- two analytes were reported as not detected from the QA laboratory with detection limits slightly above the values reported by the primary laboratory;
- and one analyte (PCB 169) was not reported by the primary laboratory due to interference.

The primary and QA laboratories showed overall agreement in 79% of the comparisons and quantitative agreement in 82% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are four discrepancies between the results; these are major discrepancies in the quantitative values for three congeners and one homologue. However, these analytes account for less than 1% of the total PCBs in the sample and these discrepancies therefore pose little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
July 22, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	19 of 24	79	18 of 22	82
Total	19 of 24	79	18 of 22	82

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
July 22, 1999

Sample ID	Matrix	Sample Date	Parameter
07229924D	Air (PUF)	07/22/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
July 22, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 5°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	(1)	Met
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(4)
Field Spike Recoveries		
Acceptable	(5)	X

Notes:

(1) Samples were extracted 19 days outside of the 28-day holding time agreed upon with the USACE. Both positive results and nondetects were qualified as estimated; results for PCBs may be biased low.

(2) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank exhibited low levels of contamination by PCBs. With the exception of PCB 170, sample levels for all analytes were orders of magnitude above blank levels. Erratic recovery of PCB 170 from the LCS is likely attributable to background contamination in the PUF used. Results for PCB 170 may be biased high. These nonconformances are of little concern for data usability.

(4) One of twelve isotopically labeled standards was not measurable due to interference. A result for the associated analyte (PCB 169) was also not measurable. This nonconformance is of little or no concern to data usability.

(5) The recovery of the labeled standard PCB 202 slightly exceeded the QC acceptance limit. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 04038899 Field ID: 07229924D Sample Date: 07/22/99 Analysis Date: 09/17/99 Method: HRGC/HRMS		Contractor Laboratory Triangle Laboratories Research Triangle Park, NC Sample # W259105 Field ID: 07229924 Sample Date: 07/22/99 Analysis Date: 09/13/99 Method: HRGC/HRMS		
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**	
PCB 81	17 J	6.9	0	
PCB 77	63 J	45.1	0	
PCB 114	13 J	92.2	4	
PCB 118	540 J	522 E	0	
PCB 123	21 J	17.4	0	
PCB 105	170 J	177 E	0	
PCB 126	2.5 J	0.3 U	0	
PCB 167	61 J[2]	10.9	4	
PCB 156	28 J	26.1	0	
PCB 157	6.3 J	5.7 U	0	
PCB 169	0.24 UJ	I	2	
PCB 180	27 J	31.5	0	
PCB 170	24 J	4.2 QB	4	
PCB 189	0.67 UJ 978	0.53 933	0	4.2% RPD
Total Mono	420 J	0.1 U	4	
Total Di	8100 J	6610 QSE	0	
Total Tri	26,000 J	11,510 E	0	
Total Tetra	17,000 J	13,350 E	0	
Total Penta	5300 J	4600 E	0	
Total Hexa	1600 J	1759.9 E	0	
Total Hepta	160 J	172 Q	0	
Total Octa	49 J	27.9 Q	0	
Total Nona	1.9 UJ	0.8	0	
Decachlorobiphenyl	0.31 UJ	2.2 U	0	
Internal Standard Recoveries	58,629	38,031		42.6% RPD
PCB 3	87	42.2		
PCB 15	101	54.7		
PCB 28	107	109		
PCB 77	101	83.3		
PCB 126	92	83.7		
PCB 169	103	I		
PCB 180	130	95.8		
PCB 194	39	72.8		
PCB 209	113	80.4		
Field Spike Recoveries				
PCB 60	98	90.8		
PCB 202	131	104		

[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1 < DL_1$ and $N_2 > DL_2$ but $< DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

   For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated detection limits
J – estimated value
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte detected in the method blank
I – interference of the labeled standard

APPENDIX C

Sample Handling Documentation

0295

FedEx. *USA Airbill* FedEx tracking Number 8133 9365 5732

Form No. 0200 — Recipient's Copy

1 From

Date 7-26-99

Sender's Name MARK GOUVEIA Phone 508 910-9958

Company The Keurig Co.

Address 103 SAWYER ST. Dept./Floor/Suite/Room

City New Bedford State MA ZIP 02746

2 Your Internal Billing Reference

3 To

Recipient's Name (RON ~~Phillip~~) McLeod Phone 800 668-0639

Company Phillip ANALYTICAL

Address 299 CAYUGE ROAD Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

To "HOLD" at FedEx location, print FedEx address here.

City CHEEKTOWAGA State NY ZIP 14225

8133 9365 5732

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: _____

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No. [ ]

Total Packages	Total Weight	Total Declared Value†	Total Charges
		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

Credit Card Auth.

8 Release Signature Sign to authorize delivery without obtaining signature.

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE _____

Quote 9900005

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
072299 24D	7/22/99	ICE	AIR	N/A	X	40388.
07229926B	7/22/99	↓	↓	↓	↓	40389.
UNUSED MEDIA	7/22/99					40387
UNUSED MEDIA	7/22/99	↓	↓	↓	↓	

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Si
[signature]	7-22-99	FEDEX			

Received for Laboratory By/Signature	Date/Time
[signature] ASC	990727 12:15

Send Samples to: Triangle Laboratories, Inc.
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

0296

KEURIL

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Carun

Received By (Signature):

Client Project ID:

REMARKS:	Condition of Samples/Sample Shipment:
Custody Seal(s) Present ___ Absent ~	Samples received.
Chain of Custody Records Present ✓ Absent ___	
Airbill Present ~ Absent ___	
Airbill No. 813393655732	
Does Information on Custody Records and Samples Agree? Yes ✓ No ___	
Date Received at Lab 27-07-99	
Time Received 12:15	

Temperature of Coolers

Cooler ID:	Temperature
1 Cool/ER	5°C

Relinquished By: J. Jones

Date: 27-07-99

Logbook No: _____

Logbook Page No. _____

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 06
Ambient Air Sampling
August 3, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

January 12, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 06

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Eighteen of these analytes were detected by both laboratories;
- two analytes were not detected by both laboratories;
- one analyte was reported as not detected from the primary laboratory with a detection limit below the value reported by the QA laboratory;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly below the value reported by the primary laboratory;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly above the value reported by the primary laboratory;
- and one analyte (PCB 169) was not reported by the primary laboratory.

The primary and QA laboratories showed overall agreement in 92% of the comparisons and quantitative agreement in 95% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There is one discrepancy between the results; this is a major discrepancy in the quantitative value for one congener. However, this analyte accounts for less than 1% of the total PCBs in the sample and this discrepancy therefore poses little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
August 3, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	**N**	**%**	**N**	**%**
PCBs	22 of 24	92	20 of 21	95
Total	22 of 24	92	20 of 21	95

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
August 3, 1999

Sample ID	Matrix	Sample Date	Parameter
08039924D	Air (PUF)	08/03/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
August 3, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at ambient temperature. PUF samples collected for PCBs should be preserved at 4°C. It should be noted that all samples were stored on site at 4°C until shipment. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample shipment and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	(1)	Met
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(4)
Field Spike Recoveries		
Acceptable	X	(5)

Notes:

(1) Samples were extracted nine days outside of the 28-day holding time agreed upon with the USACE. Both positive results and nondetects were qualified as estimated.

(2) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank demonstrated low levels of contamination by PCBs. With the exception of PCB 170 and total octachlorobiphenyls, sample levels for all analytes were orders of magnitude above blank levels. Erratic recoveries of PCB 170 from the LCS are likely attributable to background contamination in the PUF used. Results for PCB 170 and total octachlorobiphenyls in the sample may be biased high; this nonconformance is of little concern for data usability.

(4) One of twelve isotopically labeled standards was not measurable due to interference. A result for the associated analyte (PCB 169) was also not measurable. The recovery of the labeled standard PCB 101 exceeded the QC limits. These nonconformances are of little or no concern for data usability.

(5) The recovery of the labeled standard PCB 202 slightly exceeded the QC acceptance limit. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 04303599 *Field ID: 08039924D* Sample Date: 08/03/99 Analysis Date: 09/17/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W257705 *Field ID: 08039924* Sample Date: 08/03/99 Analysis Date: 09/10/99 Method: HRGC/HRMS		
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**	
PCB 81	9.2 J	3.7	0	
PCB 77	53 J	29.1	0	
PCB 114	7.4 J	2.6	0	
PCB 118	370 J	404 E	0	
PCB 123	23 J	10.4	0	
PCB 105	76 J	82	0	
PCB 126	1.3 J	0.07 U	4	
PCB 167	27 J[2]	7.2	0	
PCB 156	11 J	9.8	0	
PCB 157	2.0 UJ	2.4 M	0	
PCB 169	0.27 UJ	I interference U	2	
PCB 180	11 J	12.7	0	
PCB 170	8.5 J	7.1 QB	0	
PCB 189	0.24 UJ 591.4	0.18 QJ 571.2	0	4.5% RPD
Total Mono	570 J	305 E	0	
Total Di	16,000 J	8060 QSEM	0	
Total Tri	41,000 J	10,760 SE	0	
Total Tetra	29,000 J	15,090 SEM	0	
Total Penta	5900 J	7810 EM	0	
Total Hexa	1200 J	943.1 EM	0	
Total Hepta	85 J	113 QBM	0	
Total Octa	32 J	31.9 QBM	0	
Total Nona	1.2 UJ	0.3 U	0	
Decachlorobiphenyl	0.22 UJ 93,787	1.2 U 43,113	0	74% RPD
Internal Standard Recoveries				
PCB 3	84	60.4		
PCB 15	94	68.7		
PCB 28	108	106		
PCB 77	80	86.1		
PCB 126	88	98		
PCB 169	98	I		
PCB 180	105	109		
PCB 194	27	61.9		
PCB 209	100	59.8		
Field Spike Recoveries				
PCB 60	81	93.4		
PCB 202	119	137		

[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – *not detected*
UJ – estimated nondetect due to blank contamination
J – *estimated value*
E – *estimated value, above calibration*
S – *minimum estimated value due to saturation*
Q – estimated value due to quantitative interference
B – *analyte detected in the method blank*
I – interference of the labeled standard
M – estimated maximum possible concentration

APPENDIX C

Sample Handling Documentation

FedEx USA Airbill

FedEx Tracking Number: 813393655695

Form I.D. No. 0200

1 From

Date: 8/11/99

Sender's Name: MARK GONYEA Phone: 508 910 9918

Company: THE KEVRIC CO.

Address: 103 SAWYER STREET Dept./Floor/Suite/Room

City: NEW BEDFORD State: MA ZIP: 02746

2 Your Internal Billing Reference

3 To

Recipient's Name: RON McLEOD Phone: 800 668-0639

Company: PHILIP ANALYTICAL

Address: 295 CAYUGA ROAD Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

To "HOLD" at FedEx location, print FedEx address here.

City: CHEEKTOWAGA State: NY ZIP: 14225

813393655695

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

*FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No.

Total Packages | Total Weight | Total Declared Value† | Total Charges

$ 100

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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360

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE _____

Quote 9900000

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

0311

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
080399241D	8/3/99	ICE	AIR	N/A	X	
080399223	↓	↓	↓	↓	↓	
UNUSED Media						
UNUSED media						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Si
	8/5/99 1700				

Received for Laboratory By/Signature	Date/Time
FASL	990809 11:30

Send Samples to: **Triangle Laboratories, Inc.**
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. [illegible]

Received By (Signature): [illegible]

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ✓ Absent ___	Samples rec'd intact.
Chain of Custody Records	Present ___ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	813393655685	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	08-09-99	
Time Received	11:30 a.m.	

Temperature of Coolers

Cooler ID:	Temperature
1 cooler	22° ✓

Relinquished By: JONES

Logbook No: ___

Date: 08-09-99

Logbook Page No. ___

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: Petroleum Hydrocarbons in High Concentrations
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
043035	08039924D	99/08/03	99/08/09
043036	08039922B	99/08/03	99/08/09

Comments: _____

_____

_____

Date 99/08/18

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 07
Ambient Air Sampling
August 15, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

January 12, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 07

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 24 target analyte determinations:

- Nineteen of these analytes were detected by both laboratories;
- one analyte was not detected by both laboratories;
- two analytes were reported as not detected from the QA laboratory with detection limits above the values reported by the primary laboratory;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly below the value reported by the primary laboratory;
- and one analyte (PCB 169) was not reported by the primary laboratory.

The primary and QA laboratories showed overall agreement in 79% of the comparisons and quantitative agreement in 82% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are four discrepancies between the results; these are major discrepancies in the quantitative values for three congeners and one total homologue. Three of these analytes account for ≤ 1% of the total PCBs in the sample and these three discrepancies therefore pose little to no concern on the data usability. However, based on the QA sample results, one of these discrepancies (total trichlorobiphenyls) accounts for > 45% of the total PCBs in the sample and therefore adversely affects the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there is one major problem for utilization of project data. Further investigation of sample results is required in order to determine which set of data is unusable; however it would appear that the results of the QA laboratory are more consistent with those from previous sampling rounds.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
August 15, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	19 of 24	79	18 of 22	82
Total	19 of 24	79	18 of 22	82

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
August 15, 1999

Sample ID	Matrix	Sample Date	Parameter
08159924D	Air (PUF)	08/15/99	PCB

New Bedford Harbor Superfund Site
Ambient Air Sampling
August 15, 1999

1. QA sample shipping and chain of custody procedures

The samples were received at the required temperature of 4°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(4)
Field Spike Recoveries		
Acceptable	X	X

Notes:

(1) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) The primary laboratory's method blank demonstrated low levels of contamination by PCBs. With the exception of PCB170, heptachlorobiphenyls, octachlorobiphenyls, and nonachlorobiphenyls, sample levels for all analytes were orders of magnitude above blank levels. Results for these analytes in the sample may be biased high; this nonconformance is of little concern for data usability.

(3) Low recoveries of PCB 157, PCB 180, PCB 170, and PCB 189 were observed in the primary laboratory's LCSs. Results for these analytes in the sample may be biased low; this nonconformance is of little concern for data usability.

(4) One of twelve isotopically labeled standards was not measurable due to interference. A result for the associated analyte (PCB 169) was also not measurable due to this interference. This nonconformance is of little concern for data usability. Three of twelve isotopically labeled standards recovered above limits. Results for trichlorobiphenyls, pentachlorobiphenyls, and heptachlorobiphenyls in the sample may be biased. These nonconformances are of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 04508099 Field ID: 08159924D Sample Date: 08/15/99 Analysis Date: 09/17/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W270302 Field ID: 08159924 Sample Date: 08/15/99 Analysis Date: 09/29/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	11	7.4	0
PCB 77	57	46.3	0
PCB 114	7.7	66.4 Q	4
PCB 118	320	363 QE	0
PCB 123	16	10.5 Q	0
PCB 105	83	86.6 Q	0
PCB 126	1.5	74.9 M	4
PCB 167	25[2]	3.8 Q	4
PCB 156	9.5 J	6.6 QM	0
PCB 157	1.9 UJ	1.3 Q	0
PCB 169	0.24 U	Interference	2
PCB 180	7.0	9.1	0
PCB 170	5.8	3.3 QB	0
PCB 189	0.15 UJ 543.5	0.04 QJ 679.2	0
Total Mono	2000	1410 SE	0
Total Di	17,000	5560 QSEM	0
Total Tri	40,000	7270 QSE	4
Total Tetra	23,000	16,160 QSEM	0
Total Penta	4900	4130 QEM	0
Total Hexa	950	763.7 QEM	0
Total Hepta	57	49.4 QMB	0
Total Octa	19	16.7 QMB	0
Total Nona	0.36 UJ	0.78 QM	0
Decachlorobiphenyl	0.20 U	0.4 U	0
Internal Standard Recoveries	87926	35,361	
PCB 3	89	39.9	
PCB 15	101	67.4	
PCB 28	106	176	
PCB 77	90	60.6	
PCB 126	89	69.3	
PCB 169	103	I	
PCB 180	131	160	
PCB 194	30	91.9	
PCB 209	116	55.2	
Field Spike Recoveries			
PCB 60	87	82.9	
PCB 202	130	85.1	

[1]**Refer to Appendix B**
[2]**Value reported reflects the sum of PCB 167 and PCB 128**

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated nondetect due to blank contamination
J – estimated value
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte detected in the method blank
I – interference of the labeled standard
M – estimated maximum possible concentration

APPENDIX C

Sample Handling Documentation

FedEx USA Airbill

FedEx Tracking Number 813393655526

Form I.D. No. 0200

1 From

Date 8-16-99

Sender's Name MARK Gowen Phone 508-910-9458

Company The Kuric Co.

Address 105 Sawyer ST Dept./Floor/Suite/Room

City New Bedford State MA ZIP 02746

2 Your Internal Billing Reference

3 To

Recipient's Name Ruth McLeod Phone 800-668-0639

Company Phillip Analytical

Address 299 Cayuga Road

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address here.

City Cheektowaga State NY ZIP 14225

8133 9365 5526

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
1	5	$ .00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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360

0009

MB

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** _____ **Quote 990000052**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777

Project (1): New Bedford, MA Ambient Air

P.O.# (1): _____

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs					Remarks
081599240	8-15-99	ICE	AIR	N/A	X					45080
081599253	↓	↓	↓	↓	↓					45081
UNUSED MEDIA										45079
UNUSED MEDIA										)

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign
_____	8/16/99 1600	FEDEX			

Received for Laboratory By/Signature	Date/Time
_____ - PASL	990819 12:30

Send Samples to: **Triangle Laboratories, Inc.**
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K Durand

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ✓ Absent ___	Samples rec'd intact
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	813393655526	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	08-18-99	
Time Received	12:30	

Temperature of Coolers

Cooler ID:	Temperature
1 cooler	4°C

Relinquished By: _____

Date: 08-18-99

Logbook No: _____

Logbook Page No. _____

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: OCB handaqus/Cingerets via HRNS.
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
045080	08159924D	99/08/15	99/08/18
045081	08159925B	99/08/15	99/08/18

Comments: _____

_____

_____

Date 99/08/19

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 08
Ambient Air Sampling
August 27, 1999

NR by Primary Lab

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

December 7, 1999

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 08

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford site, were submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues and PCB congeners as listed on the World Health Organization (WHO) target analyte list. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS).

It should be noted that the primary laboratory inadvertently lost the sample corresponding to the QA sample during the sample extraction process. Results for the primary sample corresponding to this QA sample could therefore not be provided for review. In addition, a comparison of the results of the analysis for this sample between the primary and QA laboratories could not be performed.

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 1 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 3 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, the results of the QA laboratory must be utilized due to the lack of the results from the primary laboratory. The results of the analysis performed by the QA laboratory are summarized in Appendix A.

Table 1

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
August 27, 1999

Sample ID	Matrix	Sample Date	Parameter
08279924D	Air (PUF)	08/27/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
August 27, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 10°C. PUF samples collected for PCBs should be preserved at 4°C. It should be noted that all samples were stored on site at 4°C until shipment. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample shipment and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	(1)
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(1)
Field Spike Recoveries		
Acceptable	X	(1)

Notes:

(1) None reported; sample lost during extraction

(2) PUF were provided to the QA Laboratory by the Primary Laboratory for use as method blanks and LCSs. These blank media consistently demonstrated low levels of contamination by PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank demonstrated low levels of contamination by PCBs. Erratic recovery of PCB 170 from the LCS is likely attributable to background contamination in the PUF used.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 04796799 Field ID: 08279924D Sample Date: 08/27/99 Analysis Date: 09/17/99 Method: HRGC/HRMS		Contractor Laboratory Triangle Laboratories Research Triangle Park, NC Sample # 244874 Field ID: 08279924 Sample Date: 08/27/99 Analysis Date: NA Method: HRGC/HRMS Not Reported	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
PCB 81	7.9	NR	2
PCB 77	69	NR	2
PCB 114	10	NR	2
PCB 118	560	NR	2
PCB 123	31	NR	2
PCB 105	72	NR	2
PCB 126	1.6	NR	2
PCB 167	31[2]	NR	2
PCB 156	14 J	NR	2
PCB 157	2.4 UJ	NR	2
PCB 169	0.24 U	NR	2
PCB 180	15	NR	2
PCB 170	10	NR	2
PCB 189	0.29 UJ	NR	2
Total Mono	650	NR	2
Total Di	16,000	NR	2
Total Tri	39,000	NR	2
Total Tetra	27,000	NR	2
Total Penta	7200	NR	2
Total Hexa	1600	NR	2
Total Hepta	110	NR	2
Total Octa	33	NR	2
Total Nona	0.89 UJ	NR	2
Decachlorobiphenyl	0.22 U	NR	2
Internal Standard Recoveries 90 943			
PCB 3	86	NR	
PCB 15	103	NR	
PCB 28	114	NR	
PCB 77	91	NR	
PCB 126	91	NR	
PCB 169	109	NR	
PCB 180	124	NR	
PCB 194	44	NR	
PCB 209	111	NR	
Field Spike Recoveries			
PCB 60	88	NR	
PCB 202	130	NR	

NA = not applicable; sample lost during extraction
[1]Refer to Appendix B
[2]Value reported reflects the sum of PCB 167 and PCB 128

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1 < DL_1$ and $N_2 > DL_2$ but $< DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1 < DL_1$ and $N_2 > DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

NR – not reported
U – not detected
UJ – estimated nondetect due to blank contamination
J – estimated value

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN) 1449

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	Remarks
8279924D	8-27-99	ICE	AIR	N/A	X	47967
8279922B	↓	↓	↓	↓	↓	68
used media	↓	↓	↓	↓	↓	47966
used media	↓	↓	↓	↓	↓	

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	8-30-99 16:00				

Received for Laboratory By/Signature	Date/Time	Send Samples to:
[signature] PAL	990831 12:00	Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

0313

FedEx USA Airbill FedEx Tracking Number 813393655397

0200 Recipient's Copy

1 From

Date 08-30-99

Sender's Name Miguel Guzmán Phone 508 910-9958

Company Kevric Company

Address 103 Sawyer St. Dept./Floor/Suite/Room

City New Bedford State MA ZIP 02746-2448

2 Your Internal Billing Reference (1 cooler)

3 To

Recipient's Name Ron McLeod Phone 800 668-1639 (Ext 236)

Company Phillip Analytical Services

Address 299 Cayuga Road

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address here.

City Cheektuwaga State NY ZIP 14225

8133 9365 5397

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
	5	$ .00	Credit Card Auth.

Your liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx (800-463-3339)

Visit our Web site at www.fedex.com

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360

0510

Page ___ of ___

US SAMPLE LOG IN SHEET

KEURIG

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K Lavano

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	813399655397	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	08-31-99	
Time Received	12:00	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	10°C

Relinquished By: _____

8C - 31 - 99

Logbook No: _____

Logbook Page No

LABORATORY COOLER RECEIPT FORM

Number of Coolers: 1

LIMS #: _____ Date Received: 990831

Project: New Bedford

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 990831

by (print): K Caruso (sign): [signature]

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES NO
   If YES, enter carrier name and airbill name here: FedEx #813893655597.
2. Were custody seals on outside of cooler? ..... YES NO
   How many and where: _____, seal date: _____, seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Did you screen samples for radioactivity using a Geiger Counter? ..... YES NO
5. Were custody papers sealed in a plastic bag and taped inside the lid? ..... YES NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO
7. Did you sign custody papers in the appropriate place? ..... YES NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form YES NO
9. If required, was enough ice used? Type of ice: blue plastic 10°C ..... YES NO
10. Have designated person initial here to acknowledge receipt of cooler: KC (date) 990831

B. LOG-IN PHASE: Date samples were logged in: 990831

by (print): K. Caruso (sign): [signature]

11. Describe type of packing in cooler: bubble wrap, peanuts (styrofoam).
12. Were all bottles sealed in separate plastic bags? ..... YES NO
13. Did all bottles arrive unbroken and were labels in good condition ..... YES NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO
15. Did all bottle labels agree with custody papers ..... YES NO
16. Were correct containers used for the tests indicated? ..... YES NO
17. Were correct preservatives added to samples? not req'd ..... YES NO
18. Was a sufficient amount of sample sent for tests indicated ..... YES NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ ..... YES NO
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES NO
21. Who was called? _____ By whom? _____ (date): _____

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PCB via HR GC/MS
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
047967	08279924D	99/08/27	99/08/31
047968	08279922B	99/08/27	99/08/31

Comments: _____

_____

_____

Date 99/09/08

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 09
Ambient Air Sampling
September 22, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

January 19, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 09

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Six of these analytes were detected by both laboratories;
- two analytes were not detected by both laboratories;
- one analyte was reported as not detected from the QA laboratory with a detection limit below the value reported by the primary laboratory;
- and one analyte was reported as not detected from the QA laboratory with a detection limit slightly above the value reported by the primary laboratory;

The primary and QA laboratories showed overall agreement in 90% of the comparisons and quantitative agreement in 88% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There is one discrepancy between the results; this is a major discrepancy in the quantitative value for one total homologue. This analyte accounts for < 1% of the total PCBs in the sample and this discrepancy therefore poses little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

It should be noted that the PUF media blank (supplied by Triangle Laboratories) analyzed by Philip Analytical Services and the PUF method blank analyzed by Triangle Laboratories contained excessive amounts of pentachlorobiphenyls. Although the result for this homologue group was negated in the QA sample during validation, the amount detected in the QA sample was comparable to the amount detected in the primary laboratory's sample as well as previous sampling rounds. The source of the pentachlorobiphenyl contamination may want to be investigated.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
September 22, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	9 of 10	90	7 of 8	88
Total	9 of 10	90	7 of 8	88

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
September 22, 1999

Sample ID	Matrix	Sample Date	Parameter
09229924D	Air (PUF)	09/22/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
September 22, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 10°C. PUF samples collected for PCBs should be preserved at 4°C. Results for PCBs at the lower level of chlorination may be biased low; however, the extent of this bias is most likely insignificant due to the limited time period between sample collection and sample receipt. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(4)
Field Spike Recoveries		
Acceptable	(5)	(6)

Notes:

(1) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) The primary laboratory's method blank demonstrated contamination by a wide range of PCBs. With the exception of heptachlorobiphenyls and octachlorobiphenyls, sample levels for all analytes were orders of magnitude above blank levels. Results for these analytes in the sample may be biased high; this nonconformance is of little concern for data usability.

(3) Low recoveries of PCB 170 and PCB 189 and a high recovery of PCB 123 were observed in the primary laboratory's LCSs. Since these analytes were not target analytes and represent a small portion of the total homologue group, this nonconformance is of little concern for data usability.

(4) One of seven isotopically labeled standards recovered slightly below limits. The result for decachlorobiphenyl in the sample may be biased. This nonconformance is of little or no concern for data usability.

(5) One of two isotopically labeled standards recovered slightly below limits. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical *Burlington, Ontario* Sample # 05405999 Field ID: 09229924D Sample Date: 09/22/99 Analysis Date: 11/12/99 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories *Research Triangle Park, NC* Sample # W992809 Field ID: 09229924 Sample Date: 09/22/99 Analysis Date: 10/08/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	250	120 QE	0
Total Di	4700	4190 MSE	0
Total Tri	11,000	5100 SE	0
Total Tetra	6900	6520 ME	0
Total Penta	2400 UJ	2020 MQE	0
Total Hexa	480	322.7 MQ	0
Total Hepta	36	42.7 QMB	0
Total Octa	2.1 UJ	103 QMB	4
Total Nona	1.0 U	0.2 U	0
Decachlorobiphenyl	0.33 U	1.7 U	0
Internal Standard Recoveries	23360	18,518	23.1% RPD
PCB 3	57	36.4	
PCB 15	74	29.7	
PCB 28	80	74.3	
PCB 77	68	89	
PCB 126	80	46.7	
PCB 194	76	59.4	
PCB 209	98	21	
Field Spike Recoveries			
PCB 60	68	130	
PCB 202	86	224	
[1]**Refer to Appendix B**			

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
UJ – estimated nondetect due to blank contamination
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte <5x the amount detected in the method blank
M – estimated maximum possible concentration

APPENDIX C

Sample Handling Documentation

FedEx. *USA Airbill* FedEx Tracking Number 813393644595

1 From

Date 9-23-99

Sender's Name Miguel Guzman Phone 508 910-9956

Company Kevric

Address 103 Sawyer St

City New Bedford State MA ZIP 02746

Your Internal Billing Reference

To Recipient's Name Ron McLeod Phone 800 668-0639 EXT 236

Company Phillip Analytical Services

Address 299 Cayuge Rd.

Cheektowaya State NY ZIP 14225

8133 9364 4595

00349

Recipient

4a Express Package Service — Packages up to 1[illegible]

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound

4b Express Freight Service — Packages over 150 [illegible]

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg. — Includes FedEx Box, FedEx Tube and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? (One box must be checked.)

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment Bill to: — Enter FedEx Acct. No. or Credit Card No. below. — [ ] Obtain Recip. Acct. No.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value†	Total Charges
		$ .00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature — Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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360

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 990000052**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2):

WHO PCBs	Total PCB's				

Total Number of Containers: 4

Turn Around Time (In Calendar Days): MB-

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
092299140	9-22-99	ICE	AIR	N/A		X				- 54060.
092299238	↓	↓	↓	↓						54061.
Unused Media										54059.
Unused Media										

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	9-23-99			990924 1:45	[signature]-PASC

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

LABORATORY COOLER RECEIPT FORM

Number of Coolers: 1

LIMS #: _____ Date Received: 990924

Project: ENSR - New Bedford.

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 990924

by (print): Kelly Lavoro (sign): [signature]

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES NO
   If YES, enter carrier name and airbill name here: FedEx 813393644595
2. Were custody seals on outside of cooler? ..... YES NO
   How many and where: _____, seal date: _____, seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Did you screen samples for radioactivity using a Geiger Counter? ..... YES NO
5. Were custody papers sealed in a plastic bag and taped inside the lid? ..... YES NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO
7. Did you sign custody papers in the appropriate place? ..... YES NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form YES NO
9. If required, was enough ice used? Type of ice: blue plastic 10°C ..... YES NO
10. Have designated person initial here to acknowledge receipt of cooler: KC (date) 990924

B. LOG-IN PHASE: Date samples were logged in: 990924

by (print): K. Lavoro (sign): [signature]

11. Describe type of packing in cooler: Styrofoam chips, bubble wrap.
12. Were all bottles sealed in separate plastic bags? ..... YES NO
13. Did all bottles arrive unbroken and were labels in good condition ..... YES NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO
15. Did all bottle labels agree with custody papers ..... YES NO
16. Were correct containers used for the tests indicated? ..... YES NO
17. Were correct preservatives added to samples? ..... YES NO
18. Was a sufficient amount of sample sent for tests indicated ..... YES NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ ..... YES NO
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES NO
21. Who was called? _____ By whom? _____ (date): _____

TD79-151

AUG. -17' 99(TUE) 14:51 FOSTER WHEELER BOSTON P.001

Page ___ of ___

US SAMPLE LOG IN SHEET

KEURIC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Graun

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipm
Custody Seal(s)	Present ___ Absent ~~—~~	Samples recd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ~~✓~~ Absent ___	
Airbill No.	873393644595	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 24 98	
Time Received	12:45 pm	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	10 °C

Relinquished By: L Jones 9 24 98

Logbook No: ___

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 10
Ambient Air Sampling
October 25, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

February 1, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 10

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Eight of these analytes were detected by both laboratories;
- and two analytes were not detected by both laboratories.

The primary and QA laboratories showed overall agreement in 90% of the comparisons and quantitative agreement in 88% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There is one discrepancy between the results; this is a major discrepancy in the quantitative value for one total homologue. This analyte accounts for < 1% of the total PCBs in the sample and this discrepancy therefore poses little to no concern on the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
October 25, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	9 of 10	90	7 of 8	88
Total	9 of 10	90	7 of 8	88

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
October 25, 1999

Sample ID	Matrix	Sample Date	Parameter
10259924D	Air (PUF)	10/25/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
October 25, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 2°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	(1)	Met
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	(4)
Internal Standard Recoveries		
Acceptable	(5)	X
Field Spike Recoveries		
Acceptable	X	(6)

Notes:

(1) Samples were extracted eleven days outside of the 28-day holding time agreed upon with the USACE. Both positive results and nondetects were qualified as estimated; results for PCBs may be biased low.

(2) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank demonstrated contamination by a wide range of PCBs. With the exception of heptachlorobiphenyls and octachlorobiphenyls sample levels for all analytes were orders of magnitude above blank levels. Results for these analytes in the sample may be biased high; this nonconformance is of little concern for data usability.

(4) Low recoveries of PCB 126 and PCB 170 and high recoveries of PCB 114 and PCB 118 were observed in the primary laboratory's LCSs. Since these analytes were not target analytes and represent a small portion of the total homologue group, this nonconformance is of little concern for data usability.

(5) One of eight isotopically labeled standards recovered below limits. The result for heptachlorobiphenyls in the sample may be biased. This nonconformance is of little or no concern for data usability.

(6) One of two isotopically labeled standards recovered above limits. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 06473599 Field ID: 10259924D Sample Date: 10/25/99 Analysis Date: 12/22/99 Method: HRGC/HRMS		Contractor Laboratory Triangle Laboratories Research Triangle Park, NC Sample # W288605 Field ID: 10259924 Sample Date: 10/25/99 Analysis Date: 11/06/99 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	350 J	202 QE	0
Total Di	7000 J	4500 QSEM	0
Total Tri	16,000 J	6620 QSE	0
Total Tetra	8,200 J	6880 SEM	0
Total Penta	2600 J	1970 QEM	0
Total Hexa	350 J	292.8 QM	0
Total Hepta	98 J	54.9 QMB	0
Total Octa	2.2 J	28.9 QMB	4
Total Nona	1.1 UJ	0.7 U	0
Decachlorobiphenyl	0.13 UJ	3.9 U	0
Internal Standard Recoveries	34600	20,549	51.0 RPD
PCB 3	58	53.6	
PCB 15	70	44.4	
PCB 28	84	75.4	
PCB 77	88	85.4	
PCB 126	72	64.1	
PCB 180	22	95.8	
PCB 194	101	51.6	
PCB 209	95	32.4	
Field Spike Recoveries			
PCB 60	94	102	
PCB 202	120	159	
[1]Refer to Appendix B			

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees *if any one of the following apply:*

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

   For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
J – estimated value
UJ – estimated nondetect due to blank contamination
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte <5x the amount detected in the method blank
M – estimated maximum possible concentration

APPENDIX C

Sample Handling Documentation

FedEx USA Airbill

Express Tracking Number 8133 9364 6256

Recipient's Copy

1 From

Date 10-27-19

Sender's Name MIGUEL GUZMAN Phone 508 910-0938

Company KEVRIC

Address 103 SAWYER ST Dept./Floor/Suite/Room

City NEW BEDFORD State MA ZIP 02746

2 Your Internal Billing Reference

3 To

Recipient's Name TOM McLEOD Phone 508-997-4791 XT. 220

Company PHILLIPS ANALYTICAL SERVICES

Address 209 CAYUGA RD

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address here.

City CHEEKTOWAGA State NY ZIP 14225

8133 9364 6256

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [ ] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

- [ ] Saturday Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] Sunday Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value*	Total Charges
		$ .00	Credit Card Auth.

*Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature — Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

Rev. Date 11/98 • Part #154615-01894-98 FedEx • PRINTED IN U.S.A. GBFE 0698

360

Package I.D.'s/Comments:

Remember to Mark in S/R Log Book

Remember to take and write temperature

CLIENT CHAIN OF CUSTODY | SAMPLER'S SIGNATURE [signature] | Quote 9900000521

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs | TOTAL PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days): MB-64734.-

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	WHO PCBs	TOTAL PCBs				Remarks
102599 24D	10-25-99	ICE	AIR	N/A		X				64735
102599 26B	↓	↓	↓	↓		X				36
unused media	↓	↓	↓	↓		X				64734
unused media	↓	↓	↓	↓		X				

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	10-27-99	FED-EX		991028 12:15	[signature] PASC

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Page ___ of ___

US SAMPLE LOG IN SHEET

KEURIG

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Grimo

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ___	Rec'd intact
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	8133 9764 6254	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	28-10-99	
Time Received	12:15p	

Temperature of Coolers	
Cooler ID:	Temperature
1 cooler	2°C

Relinquished By:

Date: 28-10-99

Logbook No: ___

Logbook Page No.

LABORATORY COOLER RECEIPT FORM

Number of Coolers: 1

LIMS #: _____ Date Received: 991028

Project: ENRGACT

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 991028

by (print): K. Carraro (sign): KC

1. Did cooler come with a shipping slip (airbill, etc.)? (YES) NO
   If YES, enter carrier name and airbill name here: FedEx 813393646256
2. Were custody seals on outside of cooler? taped (YES) NO
   How many and where: 2 - lid/cooler, seal date: 991027, seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival? YES NO
4. Did you screen samples for radioactivity using a Geiger Counter? YES (NO)
5. Were custody papers sealed in a plastic bag and taped inside the lid? (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? (YES) NO
7. Did you sign custody papers in the appropriate place? (YES) NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form (YES) NO
9. If required, was enough ice used? Type of ice: loose (YES) NO
10. Have designated person initial here to acknowledge receipt of cooler: KC (date) 991028

B. LOG-IN PHASE: Date samples were logged in: 991028

by (print): K Carraro (sign): KC

11. Describe type of packing in cooler: pots packed in bubblewraps
12. Were all bottles sealed in separate plastic bags? (YES) NO
13. Did all bottles arrive unbroken and were labels in good condition (YES) NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? (YES) NO
15. Did all bottle labels agree with custody papers (YES) NO
16. Were correct containers used for the tests indicated? (YES) NO
17. Were correct preservatives added to samples? n/c YES NO
18. Was a sufficient amount of sample sent for tests indicated (YES) NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES (NO)
21. Who was called? _____ By whom? _____ (date): _____

TD99-131

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 14
Ambient Air Sampling
December 16, 1999

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

April 25, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 14

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Seven of these analytes were detected by both laboratories;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly below the value reported by the primary laboratory;
- and two analytes were not detected by both laboratories.

The primary and QA laboratories showed overall agreement in 90% of the comparisons and quantitative agreement in 88% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There is one discrepancy between the results; this is a major discrepancy in the quantitative value for one total homologue. This analyte accounts for 48% of the total PCBs in the sample and this discrepancy therefore affects the data usability. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there is one major problem for utilization of project data. Further investigation of sample results is required in order to determine which set of data is unusable; however, it would appear that the results of the QA laboratory are more consistent with those from previous sampling rounds.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
December 16, 1999

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	9 of 10	90	7 of 8	88
Total	9 of 10	90	7 of 8	88

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
December 16, 1999

Sample ID	Matrix	Sample Date	Parameter
12169924D	Air (PUF)	12/16/99	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
December 16, 1999

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 5°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	(1)	Met
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	(4)
Internal Standard Recoveries		
Acceptable	X	(5)
Field Spike Recoveries		
Acceptable	X	X

Notes:

(1) Samples were extracted eleven days outside of the 28-day holding time agreed upon with the USACE. Both positive results and nondetects were qualified as estimated; results for PCBs may be biased low.

(2) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank demonstrated contamination by a wide range of PCBs. With the exception of heptachlorobiphenyls and octachlorobiphenyls sample levels for all analytes were orders of magnitude above blank levels. Results for these analytes in the sample may be biased high; this nonconformance is of little concern for data usability.

(4) A high recovery of PCB 209 was observed in the primary laboratory's LCS. Since this analyte was not a target analyte and represents a small portion of the total homologue group, this nonconformance is of little concern for data usability.

(5) One of eight isotopically labeled standards recovered below limits. The result for dichlorobiphenyls in the sample may be biased. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 07669999 Field ID: 12169924D Sample Date: 12/16/99 Analysis Date: 2/13/00 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W000417 Field ID: 12169924 Sample Date: 12/16/99 Analysis Date: 2/17/00 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	300 J	136 QE	0
Total Di	5600 J	3490 SE	0
Total Tri	12,000 J	2260 SE	4
Total Tetra	5300 J	2460 E	0
Total Penta	1500 J	1490 E	0
Total Hexa	300 J	175 Q	0
Total Hepta	7.0 UJ	8.9 B	0
Total Octa	1.1 J	1.8 QB	0
Total Nona	0.8 UJ	0.46 UQ	0
Decachlorobiphenyl	0.31 UJ	0.19 UJB	0
Internal Standard Recoveries	25,001	10,022	85.5% RPP
PCB 3	84	29	
PCB 15	93	19	
PCB 28	96	67	
PCB 77	84	81	
PCB 126	75	63	
PCB 180	32	84	
PCB 194	90	76	
PCB 209	73	101	
Field Spike Recoveries			
PCB 60	122	74	
PCB 202	116	70	
[1]Refer to Appendix B			

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit (N<DL)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy.

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
J – estimated value
UJ – estimated nondetect due to blank contamination
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
B – analyte <5x the amount detected in the method blank

APPENDIX C

Sample Handling Documentation

ENSR2ACT

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 990000052**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Data to be reported to the state of MA. 0766698 Method Blank

Analysis Wanted (2):

WHO PCBs	Total PCBs			

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
12169924D	12-16-99	Ice	Air	N/A		X	0766698			
12169923B	↓	↓	↓	↓		↓	0767700			
Unused Media	↓	↓	↓	↓		↓	0767701			
Unused Media	↓	↓	↓	↓		↓	0767702			

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	12-17-99	Fed Ex			[signature]

Received for Laboratory By/Signature	Date/Time
[signature]	Dec 20 99

Send Samples to: **Triangle Laboratories, Inc.**
Attn: Sample Custodian
801 Capitola Drive
Durham, NC 27713 USA
Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each [illegible]le.
(3) Enter the sample ID to be used when reporting th[illegible]mples.
(4) Please indicate the preservation used for each sa[illegible].

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): SHARI TYPER

Received By (Signature): Shari Typer

Client Project ID: ENSR2.ACT

REMARKS:		Condition of Samples/Sample Shipme
Custody Seal(s)	Present ✓ Absent ✓	samples received cold
Chain of Custody Records	Present X Absent ___	
Airbill	Present ✓ Absent ___	

This portion can be removed for Recipient's records.

12-17-99 FedEx Tracking Number 818717504876

Airbill No.

Sender's Name [illegible] Phone [illegible]

Company [illegible]

Address 103 [illegible]

[illegible] NJ [illegible]

State ZIP

Internal Billing Reference

Does Information on Custody Records and Samples Agree?	Yes X No ___
Date Received at Lab	12-20-99
Time Received	12:15

Temperature of Coolers	
Cooler ID:	Temperature
1 COOLER	5°

Relinquished By: [signature]

Date: 12-20-99

Logbook No: ___

Logbook Page No. ___

LABORATORY COOLER RECEIPT FORM

Number of Coolers: ____

LIMS #: _____ Date Received: _____

Project: AN990560

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: Dec. 20/99

by (print): TRACEY KUPSCH (sign): _____

1. Did cooler come with a shipping slip (airbill, etc.)? 818717504876 (YES) NO
   If YES, enter carrier name and airbill name here: FED EX
2. Were custody seals on outside of cooler? yes (YES) NO
   How many and where: _____, seal date: _____, seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival? (YES) NO
4. Did you screen samples for radioactivity using a Geiger Counter? YES (NO)
5. Were custody papers sealed in a plastic bag and taped inside the lid? (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? (YES) NO
7. Did you sign custody papers in the appropriate place? (YES) NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form (YES) NO
9. If required, was enough ice used? Type of ice: _____ (YES) NO
10. Have designated person initial here to acknowledge receipt of cooler: _____ (date) _____

B. LOG-IN PHASE: Date samples were logged in: Dec 20 99

by (print): SHARI TYLER (sign): Shari Tyler

11. Describe type of packing in cooler: packing chips and loose ice
12. Were all bottles sealed in separate plastic bags? (YES) NO
13. Did all bottles arrive unbroken and were labels in good condition (YES) NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? (YES) NO
15. Did all bottle labels agree with custody papers (YES) NO
16. Were correct containers used for the tests indicated? (YES) NO
17. Were correct preservatives added to samples? (YES) NO
18. Was a sufficient amount of sample sent for tests indicated (YES) NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ N/A YES NO
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES NO
21. Who was called? _____ By whom? _____ (date): _____

TD99-151

AUG. -17' 99(TUE) 14:51 FOSTER WHEELER BOSTON P.001

Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PLB Hondagon - Hi Res.
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
076699	12169924D	99/12/16	99/12/20
076700	12169923B	99/12/16	99/12/20

Comments: _____

_____

_____

Date 99/12/21

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 15
Ambient Air Sampling
February 17, 2000

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

May 15, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 15

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the corresponding sample analyzed by the primary laboratory were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Six of these analytes were detected by both laboratories;
- two analytes were reported as not detected from the QA laboratory with detection limits slightly below the values reported by the primary laboratory;
- and two analytes were not detected by either laboratories.

The primary and QA laboratories showed overall agreement in 80% of the comparisons and quantitative agreement in 75% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are two discrepancies between the results. These are minor discrepancies in the results for hepta- and octachlorinated homologues. These analytes account for less than 1% of the total PCBs in the sample and these discrepancies therefore pose little to no concern on the data usability, (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no major problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
February 17, 2000

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	8 of 10	80	6 of 8	75
Total	8 of 10	80	6 of 8	75

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
February 17, 2000

Sample ID	Matrix	Sample Date	Parameter
02170024D	Air (PUF)	02/17/00	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
February 17, 2000

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 6°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

It should be noted that isotopically labeled PCB congeners are added to the sample extract prior to the performance of the sample cleanup procedures. The percent recoveries of the cleanup standards in sample 02170024D fell below the QC acceptance limit. Positive and nondetected results for this sample were therefore qualified as estimated (J/UJ).

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X	(4)
Field Spike Recoveries		
Acceptable	X	X

Notes:

(1) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) The primary laboratory's method blank demonstrated contamination by a wide range of PCBs. Since sample levels for all analytes were orders of magnitude above blank levels; this nonconformance is of little concern for data usability.

(3) A high recovery of PCB 114 was observed in the primary laboratory's LCS. Since this analyte was not a target analyte and represents a small portion of the total homologue group, this nonconformance is of little concern for data usability.

(4) The percent recoveries of two of eight isotopically labeled standards were not reported. Result for tetra- and pentachlorobiphenyls in the sample may be biased. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 00684700 Field ID: 02170024D Sample Date: 2/17/00 Analysis Date: 3/22/00 Method: HRGC/HRMS		Contractor Laboratory Triangle Laboratories Research Triangle Park, NC Sample # W060604 Field ID: 02170024 Sample Date: 2/17/00 Analysis Date: 3/10/00 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	190 J	91.8 E	0
Total Di	2100 J	1870 E	0
Total Tri	3500 J	3110 E	0
Total Tetra	1400 J	1490 E	0
Total Penta	350 J	408	0
Total Hexa	67 J	55.2	0
Total Hepta	3.0 UJ	6.9	3
Total Octa	0.36 UJ	0.43	3
Total Nona	0.45 UJ	0.08 U	0
Decachlorobiphenyl	0.29 UJ	0.1 U	0
Internal Standard Recoveries	76%	70323	7.9RPD
PCB 3	55	47	
PCB 15	63	60	
PCB 28	59	57	
PCB 77	64	NR	
PCB 126	65	NR	
PCB 180	67	87	
PCB 194	71	83	
PCB 209	71	68	
Field Spike Recoveries			
PCB 60	57	90	
PCB 202	72	100	

[1]Refer to Appendix B
NR = not reported

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
J – estimated value
UJ – estimated nondetect
E – estimated value, above calibration

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** [signature] **Quote 9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Jeffrey Conley
Phone: 301-588-6000
Fax: 301-588-1777
P.O.# (1): _____

Project (1): New Bedford, MA Ambient Air

(KEV01 /UN)

Data to be reported to the state of MA.

Analysis Wanted (2): WHO PCBs / Total PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
021700 24D	02-17-00	ICE	Air	N/A		X				6847
021700 22B	↓	↓	↓	↓		↓				6848
Unused Media										6846.
Unused Media	↓	↓	↓	↓		↓				

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	02-18-00	FED EX		000221 0:0[illegible]	[signature] - PASI

Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

00552

LABORATORY COOLER RECEIPT FORM

Number of Coolers: 1

LIMS #: _____ Date Received: 000221

Project: ENSR - New Bedford

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: ~~000220~~ KC · 000221

by (print): K. Carman (sign): KC

1. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO
   If YES, enter carrier name and airbill name here: 818717504887 - FedEx
2. Were custody seals on outside of cooler? ..... YES (NO)
   How many and where: ____, seal date: ____, seal name: ____
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES (NO)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... YES (NO)
5. Were custody papers sealed in a plastic bag and taped inside the lid? ..... (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO
7. Did you sign custody papers in the appropriate place? ..... (YES) NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form (YES) NO
9. If required, was enough ice used? Type of ice: water 6°C ..... (YES) NO
10. Have designated person initial here to acknowledge receipt of cooler: KC (date) _____

B. LOG-IN PHASE: Date samples were logged in: 000222

by (print): K Carman (sign): KC

11. Describe type of packing in cooler: each container bubblewrapped
12. Were all bottles sealed in separate plastic bags? ..... (YES) NO
13. Did all bottles arrive unbroken and were labels in good condition ..... (YES) NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO
15. Did all bottle labels agree with custody papers ..... (YES) NO
16. Were correct containers used for the tests indicated? ..... (YES) NO
17. Were correct preservatives added to samples? Not req. ..... (YES) NO
18. Was a sufficient amount of sample sent for tests indicated ..... (YES) NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ ..... YES NO
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES (NO)
21. Who was called? _____ By whom? _____ (date): _____

TD99-151

00353

Page ___ of ___

US SAMPLE LOG IN SHEET

KEURIC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K Gravino

Received By (Signature): [signature]

Client Project ID:

REMARKS:

Condition of Samples/Sample Shipment:

Samples rec'd intact.

Custody Seal(s) Present ✓ Absent ___

Chain of Custody Records Present ✓ Absent ___

Airbill Present ✓ Absent ___

This portion can be removed for Recipient's records.

Airbill 09-18-00 FedEx Tracking Number 818717504887

Sender's Miguel Guzman Phone [illegible]

Company [illegible]

Address [illegible] Dept./Floor/Suite/Room

[illegible] State [illegible] ZIP [illegible]

Does Internal Billing Reference

Records and Samples Agree? Yes ✓ No ___

Date Received at Lab 2-21-00

Time Received 12:00p.

Temperature of Coolers

Cooler ID:	Temperature
1 cooler	6°C

Relinquished By: [signature]

Date: 2-21-00

Logbook No: ___

Logbook Page No. ___

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Liz Denly
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: Total PCBs
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
006847	02170024D	00/02/17	00/02/21
006848	02170022B	00/02/17	00/02/21

Comments: Cooler rec'd 6°C

Date 00/02/23

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 17
Ambient Air Sampling
April 4, 2000

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

June 26, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 17

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Eight of these analytes were detected by both laboratories;
- one analyte was reported as not detected from the QA laboratory with a detection limit slightly below the value reported by the primary laboratory;
- and one analyte was not detected by either laboratory.

The primary and QA laboratories showed overall agreement in 80% of the comparisons and quantitative agreement in 78% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are two discrepancies between the results; these are one minor discrepancy in the quantitative value for nonachlorinated biphenyls and one major discrepancy in the quantitative value for monochlorinated biphenyls. These analytes account for <2% of the total PCBs in the sample and these discrepancies therefore pose little to no concern on the data usability (refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there is no major problem for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
April 4, 2000

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	8 of 10	80	7 of 9	78
Total	8 of 10	80	7 of 9	78

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
April 4, 2000

Sample ID	Matrix	Sample Date	Parameter
04040024D	Air (PUF)	4/4/00	PCB

New Bedford Harbor Superfund Site
Ambient Air Sampling
April 4, 2000

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 3°C. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	Met	Met
Method Blanks		
Analyzed	X	X
Acceptable	(1)	(2)
LCSs		
Analyzed	X	X
Acceptable	X	(3)
Internal Standard Recoveries		
Acceptable	X (5)	(4)
Field Spike Recoveries		
Acceptable	X	X

Notes:

(1) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for all analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(2) The primary laboratory's method blank demonstrated low level contamination by a wide range of PCBs. Sample levels for all analytes were orders of magnitude above blank levels; this nonconformance is of little concern for data usability.

(3) High recoveries of PCB 189 were observed in the primary laboratory's LCS and LCS duplicate. Since this analyte was not a target analyte and represents a small portion of the total homologue group, this nonconformance is of little concern for data usability.

(4) The percent recoveries of two of eight isotopically labeled standards were not reported. Result for tetra- and pentachlorobiphenyls in the sample may be biased. This nonconformance is of little or no concern for data usability.

(5) It should be noted that isotopic labeled PCB congeners were inadvertently not added to the sample extract prior to the performance of the sample cleanup procedures. Since the recoveries of the internal standards of sample 04040024D were within the QC acceptance limit, no validation action was taken on this basis. This nonconformance is of little concern for data usability.

(5) References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 01511300 Field ID: 04040024D Sample Date: 4/4/00 Analysis Date: 5/09/00 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W001039 Field ID: 04040024 Sample Date: 4/4/00 Analysis Date: 5/01/00 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	410	71.9 QE	4
Total Di	7100	6160 QE	0
Total Tri	17,000	9240 E	0
Total Tetra	7100	6290 E	0
Total Penta	1800	1340 E	0
Total Hexa	470	361 E	0
Total Hepta	41	47.3	0
Total Octa	3.4	3.6	0
Total Nona	0.15 U	0.24	3
Decachlorobiphenyl	0.11 U	0.2 U	0
Internal Standard Recoveries	33 924		
PCB 3	45	79	
PCB 15	54	39	
PCB 28	60	83	
PCB 77	72	NR	
PCB 126	76	NR	
PCB 180	73	93	
PCB 194	75	80	
PCB 209	75	73	
Field Spike Recoveries			
PCB 60	71	90	
PCB 202	95	83	

[1]Refer to Appendix B
NR = not reported

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

   For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
Q – estimated value due to quantitative interference
E – estimated value, above calibration

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY **SAMPLER'S SIGNATURE** Project/Quote 05011/99000005

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Contact: Mark Gouveia
Phone: 508-990-2550
Fax: 301-588-1777
P.O.# (1): contract

Project (1): New Bedford, MA Ambient Air

(KEV01 /FMS) MB-15111

Data to be reported to the state of MA.

Analysis Wanted (2): TOTAL PCB'S

Total Number of Containers: 4

Turn Around Time (In Calendar Days):

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.						Remarks
040400 24D	04-04-00	ICE	AIR	N/A	X					15112 -
040400 24B	↓	↓	↓	↓	↓					15113 -
Unused Media										15111
UNUSED Media	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Si
	04-05-00	Fed EX			

Received for Laboratory By/Signature	Date/Time	Send Samples to:
	040400 12:30	Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

UU551

LABORATORY COOLER RECEIPT FORM

Number of Coolers: 1

LIMS #: _____ Date Received: 000406

Project: ENSR - New Bedford

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 000406

by (print): K. Larcara (sign): [signature]

1. Did cooler come with a shipping slip (airbill, etc.)? (YES) NO
   If YES, enter carrier name and airbill name here: FedEx 887175048 96-
2. Were custody seals on outside of cooler? (YES) NO
   How many and where: 2 across lid, seal date: 000405, seal name: illegible
3. Were custody seals unbroken and intact at the date and time of arrival? (YES) NO
4. Did you screen samples for radioactivity using a Geiger Counter? YES (NO)
5. Were custody papers sealed in a plastic bag and taped inside the lid? (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? photocopy (YES) NO
7. Did you sign custody papers in the appropriate place? (YES) NO
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form (YES) NO
9. If required, was enough ice used? Type of ice: water (loose) 1.3°C (YES) NO
10. Have designated person initial here to acknowledge receipt of cooler: KC (date) 000406

B. LOG-IN PHASE: Date samples were logged in: 000407

by (print): K. Larcara (sign): [signature]

11. Describe type of packing in cooler: bubble wrap around container.
12. Were all bottles sealed in separate plastic bags? (YES) NO
13. Did all bottles arrive unbroken and were labels in good condition (YES) NO
14. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? (YES) NO
15. Did all bottle labels agree with custody papers (YES) NO
16. Were correct containers used for the tests indicated? (YES) NO
17. Were correct preservatives added to samples? N/A YES NO
18. Was a sufficient amount of sample sent for tests indicated (YES) NO
19. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES ~~NO~~
20. Was the project manager called and status discussed? If YES, give details on the back of this form YES (NO)
21. Who was called? _____ By whom? _____ (date): _____

TD99-151

AUG. -17. 99 (TUE) 14:51 FOSTER WHEELER BOSTON P. 00

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Carano

Received By (Signature):

Client Project ID:

MARKS:	**Condition of Samples/Sample Shipment:**
stody Seal(s) Present ✓ Absent ___	Samples rec'd intact
ıain of Custody Records Present ✓ Absent ___	
rbill Present ✓ Absent ___	

This portion can be removed for recipient's records.

FedEx Tracking Number 818717504898

rbill No

Phone

Company

Address

Dept/Floor/Suite/Room

State ZIP

Internal Billing Reference

Information on Custody Records and Samples Agree?	Yes ✓ No ___
Date Received at Lab	4-6-00
Time Received	12:30

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	3°C

Relinquished By: E. Jones

e: 4-6-00

Logbook No: _____

Logbook Page No. _____

00353

** TX STATUS REPORT ** AS OF APR 17 2000 13:58 PAGE.01

PHILIP ANALYLICAL

	DATE TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
04	04/17 13:58	19786359180	EC--S	00'18"	001	150	OK

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: PES Londonderry
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
015112	04040024D	00/04/04	00/04/06
015113	04040024B	00/04/04	00/04/06

Comments: _____

_____

_____

Date 00/04/17

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MA

CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35

CQAR No. 18
Ambient Air Sampling
May 8, 2000

Prepared for

U.S Army Corps of Engineers
New England District
Concord, MA

Prepared by

ENSR Corporation
Acton, MA

September 21, 2000

NEW BEDFORD HARBOR SUPERFUND SITE
CHEMICAL QUALITY ASSURANCE REPORT

Contract No. DACW33-96D-0004
Delivery Order No. 35
CQAR No. 18

Executive Summary

One set of QA samples, consisting of one field blank and one air sample collected on polyurethane foam (PUF) at the New Bedford Harbor Superfund site, was submitted to the QA laboratory for analysis for total polychlorinated biphenyl (PCB) homologues. Analyses were performed by high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). Results for the primary sample corresponding to the QA sample were provided for review.

Results of the analysis for this sample were compared with results of the analysis of its corresponding primary sample, resulting in a total of 10 target analyte determinations:

- Nine of these analytes were detected by both laboratories;
- and one analyte was not detected by both laboratories.

The primary and QA laboratories showed overall agreement in 100% of the comparisons and quantitative agreement in 100% of the comparisons. (Refer to Table 1 for QA duplicate sample data comparison summary).

In the absence of guidance from USACE for air samples, soil guidelines were applied to the data comparison. There are no discrepancies between the results. (Refer to Appendix A for the comparison of QA and primary laboratory results).

QA analyses were performed by Philip Analytical Services of Burlington, Ontario. Triangle Laboratories, Research Triangle Park, NC was the primary laboratory. Table 2 summarizes the information associated with the QA sample analyzed by Philip Analytical Services. QA findings associated with the sample analyses are summarized on page 4 of this report. Sample handling documentation associated with the QA sample is included in Appendix C.

In summary, there are no problems for utilization of project data.

Table 1

Quality Assurance Sample Data Agreement
New Bedford Harbor Superfund Site
Ambient Air Sampling
May 8, 2000

Test	Overall (1)		Quantitative (2)	
Parameter	N	%	N	%
PCBs	10 of 10	100	9 of 9	100
Total	10 of 10	100	9 of 9	100

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was tested by both laboratories and detected by at least one laboratory.

Table 2

QA Analyses Performed
New Bedford Harbor Superfund Site
Ambient Air Sampling
May 8, 2000

Sample ID	Matrix	Sample Date	Parameter
05080024D	Air (PUF)	5/08/00	PCB

QA Findings

New Bedford Harbor Superfund Site
Ambient Air Sampling
May 8, 2000

1. QA sample shipping and chain of custody procedures

The samples were received by the laboratory at 14°C. Air samples collected for PCBs should be preserved at 4°C. Since the period of time between sample shipment and receipt was limited, data quality for PCBs was most likely not affected. No method was specified for the analysis of PCBs. All samples were analyzed using HRGC/HRMS.

2. Data comparison of PCBs

	QA Lab	Primary Lab
Holding Times	(1)	Met
Method Blanks		
Analyzed	X	X
Acceptable	(2)	(3)
LCSs		
Analyzed	X	X
Acceptable	X	X
Internal Standard Recoveries		
Acceptable	(4)	(5)
Field Spike Recoveries		
Acceptable	X	X

Notes:

(1) Sample was analyzed 8 days outside of the 40-day analysis holding time agreed upon with the USACE. Both positive results and nondetects were qualified as estimated; results for PCBs may be biased low.

(2) PUF were provided to the QA laboratory by the primary laboratory for use as method blanks and LCSs. These blank media consistently demonstrated contamination by a wide range of PCBs. Since sample levels for most analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(3) The primary laboratory's method blank demonstrated contamination by a wide range of PCBs. Since sample levels for all analytes were orders of magnitude above blank levels, these nonconformances are of little concern for data usability.

(4) Two of nine isotopically labeled standards recovered below limits. Results for mono- and dichlorobiphenyls in the sample may be biased. This nonconformance is of little or no concern for data usability.

(5) Two of nine isotopically labeled standards were not reported by the primary laboratory. This nonconformance is of little or no concern for data usability.

3. References

U.S. Army Corps of Engineers. 1997. Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects. EM 200-1-6.

APPENDIX A

Comparison of QA and Primary Laboratory Results

QA Laboratory Philip Analytical Burlington, Ontario Sample # 021912 Field ID: 05080024D Sample Date: 5/08/00 Analysis Date: 7/20/00 Method: HRGC/HRMS		**Contractor Laboratory** Triangle Laboratories Research Triangle Park, NC Sample # W001163 Field ID: 05080024 Sample Date: 5/08/00 Analysis Date: 5/24/00 Method: HRGC/HRMS	
Parameter	**QA Lab Results (ng)**	**Primary Lab Results (ng)**	**Comparison Code[1]**
Total Mono	390 J	119 QE	0
Total Di	12,000 J	3440 QSE	0
Total Tri	33,000 J	9040 QSE	0
Total Tetra	22,000 J	12,690 QSE	0
Total Penta	7200 J	4140 E	0
Total Hexa	2900 J	1040 E	0
Total Hepta	240 J	161	0
Total Octa	19 J	19.4	0
Total Nona	1.5 J	2.2	0
Decachlorobiphenyl	0.17 UJ	0.2 U	0
Internal Standard Recoveries	77 751		
PCB 3	4.0	32	
PCB 15	20	36.3	
PCB 28	28	71.6	
PCB 77	51	NR	
PCB 126	45	NR	
PCB 169	45	122	
PCB 180	43	70.2	
PCB 194	47	52	
PCB 209	41	64.5	
Field Spike Recoveries			
PCB 60	75	72.1	
PCB 202	93	70.1	
[1]Refer to Appendix B			

APPENDIX B

Comparison Codes on Data Comparison Tables

0. Data agrees if any one of the following apply:

   - Both values are less than the respective detection limit ($N<DL$)
   - $N_1<DL_1$ and $N_2>DL_2$ but $<DL_1$
   - Both values are above the respective detection limits and the difference between the two satisfies the condition below:

     For PCBs analyses on PUF: $\leq$4x difference

1. Minor contamination by method blank

2. Not reported by both laboratories

3. Minor data discrepancy, disagreement not serious

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values does not exceed the upper limit (5x) defining a minor data discrepancy

   If both values are above the respective detection limit and condition described below applies to the difference between the two values

   For PCB air analyses on PUF:
   4x $\leq$difference $\leq$5x

4. Major data discrepancy

   If $N_1<DL_1$ and $N_2>DL_2$ and the difference between values exceeds the upper limit (5x) defining a major data discrepancy

   If both values are above the respective detection limit and the condition below applies to the difference between the two values:

   >5x difference

Key to data qualifiers

U – not detected
J – estimated value
UJ – estimated nondetect due to blank contamination
E – estimated value, above calibration
S – minimum estimated value due to saturation
Q – estimated value due to quantitative interference
NR – not reported

APPENDIX C

Sample Handling Documentation

CLIENT CHAIN OF CUSTODY | **SAMPLER'S SIGNATURE** [signature] | **Project/Quote 04959/9900000521**

From (1): KEVRIC Company, Inc.
Silver Spring Metro Plaza One
8401 Colesville Rd, Ste 610
Silver Spring, MD 20910

Project (1): New Bedford, MA Ambient Air

Contact: Jeffrey Conley
Phone: 508-910-9958
Fax: 301-588-1777
P.O.# (1): contract

(KEV01 /FMS)

Data to be reported to the state of MA.

Analysis Wanted (2): Total PCBs

Total Number of Containers: 4

Turn Around Time (In Calendar Days): MB

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	Total PCBs					Remarks 21912.
05080024D	05-08-00	ICE	Air	N/A	X					21913
05080021B	↓	↓	↓	↓	↓					
Unused Media	↓	↓	↓	↓	↓					21911.
Unused Media	↓	↓	↓	↓	↓					

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
[signature]	05-09-00 ~~02~~ M.C	FEd - EX		000511 12:00	[signature]

Received for Laboratory By/Signature	Date/Time	Send Samples to:
		Triangle Laboratories, Inc. **Attn: Sample Custodian** **801 Capitola Drive** **Durham, NC 27713 USA** **Phone: (919) 544-5729 • Fax: (919) 544-5491**

Directions:
(1) Provide and/or correct client and project information.
(2) Verify analysis, check approriate boxes for each sample.
(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

Page ___ ___

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Caruso

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ✓ Absent ~~✓~~	Rec'd intact
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	818712504902	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	5-11-00	
Time Received	12:00	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	4° C

Relinquished By: E. Jones

Date: 5-11-00

Logbook No: ___

Logbook Page No. ___

NOTICE OF SAMPLE -

Attention: Debbie McGrath
Client: ENSR Consulting & Engineering
Re Client Project: Proposal #900E48
FAX #: 978-635-9180
Phone #: 978-635-9500

Samples for: DCB
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
021912	05080024D	00/05/08	00/05/11
021913	05080021B	00/05/08	00/05/11

Comments: _____

_____

_____

Date 00/05/15

Date Shipped	9-May-00
Date Received	11-May-00
Condition of Samples	all in tact
Temperature at Arrival	Cooler 1 @ 14 deg C**
Sample ID's (ENSR)	05080024D, 05080021B
# Samples	2
Sample ID's (PASC)	21911-21913
Tests to be Conducted	PCB Homologues
Methods	1668rev A
Lab QC	Laboratory Control Sample
	Method Blank
Hold Time	as per method
Reporting Date	8-Jun-00
Special Comments	

**Note that there was a small bag of ice and loose water in the cooler.

Appendix M

Appendix M: Calibration Information

The information in this section is used to support the flow rate calculations based on the potential error in factory calibration of orifice flow standard.

Example Calibration Calculation

Sampling Station	Sampling Date	Calibration Date	Actual Temp. at Sampling (°C)	Actual Pressure at Sampling (mmHg)	STP at Sampling	June 1999 Sampling				June 2000 Sampling				Percent Difference
						Slope (M_{old})	Intercept (I_{old})	Target Set Point	Target Flow Rate	Slope (M_{new})	Intercept (I_{new})	New Set Point	Calculated Flow Rate (Q_{new})	
22	4-Jun-99	3-Jun-99	21.0	747.3	0.996625	0.023487	0.157119	29.7	225	0.030510	-0.076359	46.2	180.9	20
	10-Jun-99	3-Jun-99	20.0	744.7	0.996627	0.023487	0.157119	29.7	225	0.030510	-0.076359	46.2	180.9	20
	16-Jun-99	3-Jun-99	19.0	764.5	1.026644	0.023487	0.157119	28.8	225	0.030510	-0.076359	44.9	180.9	20
	21-Jun-99	3-Jun-99	24.0	779.8	1.029481	0.023487	0.157119	28.8	225	0.030510	-0.076359	44.8	180.9	20
	30-Mar-00	14-Mar-00	11.6	767.5	1.057433	0.025946	-0.206720	30.0	225	0.0337049	-0.46464	47.9	180.9	20
	4-Apr-00	14-Mar-00	12.8	749.0	1.027554	0.025946	-0.206720	30.9	225	0.0337049	-0.46464	49.3	180.9	20
	8-May-00	14-Mar-00	25.6	756.9	0.993979	0.025946	-0.206720	31.9	225	0.0337049	-0.46464	51.0	180.9	20
	30-May-00	14-Mar-00	13.6	768.2	1.051027	0.025946	-0.206720	30.2	225	0.0337049	-0.46464	48.2	180.9	20
24	4-Jun-99	3-Jun-99	21.0	747.3	0.996625	0.025484	-0.349651	29.1	225	0.033104	-0.602992	47.0	180.9	20
	10-Jun-99	3-Jun-99	20.0	744.7	0.996627	0.025484	-0.349651	29.1	225	0.033104	-0.602992	47.0	180.9	20
	16-Jun-99	3-Jun-99	19.0	764.5	1.026644	0.025484	-0.349651	28.2	225	0.033104	-0.602992	45.6	180.9	20
	21-Jun-99	3-Jun-99	24.0	779.8	1.029481	0.025484	-0.349651	28.2	225	0.033104	-0.602992	45.5	180.9	20
	30-Mar-00	14-Mar-00	11.6	767.5	1.057433	0.026987	-0.872850	25.6	225	0.035057	-1.141122	43.0	180.9	20
	4-Apr-00	14-Mar-00	12.8	749.0	1.027554	0.026987	-0.872850	26.3	225	0.035057	-1.141122	44.3	180.9	20
	8-May-00	14-Mar-00	25.6	756.9	0.993979	0.026987	-0.872850	27.2	225	0.035057	-1.141122	45.8	180.9	20
	30-May-00	14-Mar-00	13.6	768.2	1.051027	0.026987	-0.872850	25.7	225	0.035057	-1.141122	43.3	180.9	20

	June 1999 Orifice Calibration	June 2000 Orifice Calibration
Slope	7.8123	10.1484
Intercept	0.055159	-0.022502
Correlation Coefficient	0.999993	0.999975

Calibration Date	Actual Temp. at Calibration (°C)	Actual Pressure at Calibration (mmHg)	STP at Calibration
3-Jun-99	29.9	745.7	0.965312
14-Mar-00	9.4	766.6	1.064405

Andersen Instruments, Inc.

Orifice Transfer Standard Certification Worksheet

Date: 05/04/1999 **Rootsmeter S/N:** 9736553 **Ta:** 21.00 C
Operator: S. LESTER **Calibrator S/N:** 2006N **Pa:** 745.7 mm Hg
Calibrator Model #: G40A (low flow) **Placed in service:**

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	5.695	3.74	2.00
2	3.00	4.00	1.00	3.346	10.09	5.50
3	5.00	6.00	1.00	2.666	15.51	8.50
4	7.00	8.00	1.00	2.267	21.11	11.50
5	9.00	10.00	1.00	2.001	26.53	14.50
6	11.00	12.00	1.00	1.860	30.27	16.50

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H(Ta / Pa)}$ (y-axis)
0.986	0.173	1.408	0.995	0.175	0.888
0.978	0.292	2.335	0.986	0.295	1.473
0.971	0.364	2.903	0.979	0.367	1.831
0.963	0.425	3.376	0.972	0.429	2.130
0.956	0.478	3.791	0.964	0.482	2.392
0.951	0.511	4.044	0.959	0.516	2.551
	m =	7.8123		m =	4.8852
	b =	0.055159		b =	0.034797
	r =	0.999993		r =	0.999993

Calculations

$$Vstd = \Delta Vol((Pa - \Delta P) / Pstd)(Tstd / Ta)$$
$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol((Pa - \Delta P) / Pa)$$
$$Qa = Va / \Delta Time$$

For subsequent flow rate calculations:

$$Qstd = 1 / m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right)$$

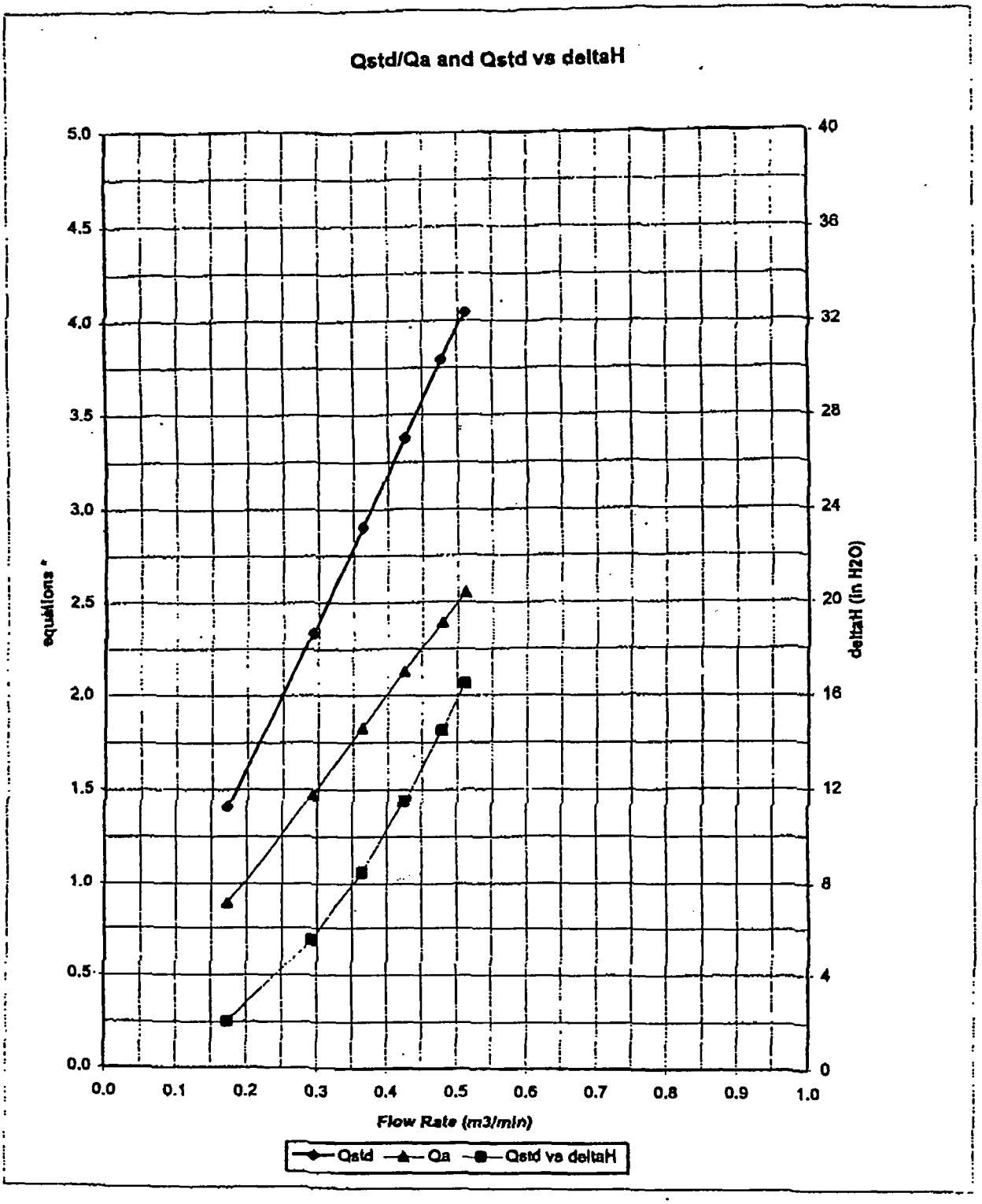
$$Qa = 1 / m\left(\left(\sqrt{\Delta H(Ta / Pa)}\right) - b\right)$$

Standard Conditions:
Tstd: 297.18 °K
Pstd: 760 mm Hg

where:
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (° K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

For additional information consult:
1. The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
2. Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
3. Andersen Instruments, Inc. Instruction Manual

Notes:
1. Copies of this calibration are not kept on file.
2. EPA recommends calibrators should be recalibrated after one year of use.



*** y-axis equations:**

Qstd series: $\sqrt{\Delta H \left(\frac{P a}{P std}\right)\left(\frac{T std}{T a}\right)}$

$\sqrt{(\Delta H\ (T a\ /\ P a))}$

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	6/4/99
Time:	12:23
Present Ambient Temp. (Ta) (oC)	21
Present Pressure (Pa) (mmHg)	747.268
STP	0.996624884
Target Flow (slpm)	225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	29.5	23.1	36.6	6/3/99	0.027582	-0.785865
22	29.7	24.2	35.8	6/3/99	0.023487	0.157119
23	25.6	21.1	30.6	6/3/99	0.020704	0.39368
24	29.1	23.2	35.6	6/3/99	0.025484	-0.349651
24D	30.7	25.0	37.1	6/3/99	0.024335	0.059518
25	29.1	24.2	34.5	6/3/99	0.021238	0.607088
26	0.0	0.0	0.0	1/0/00	0	0

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date: 6/10/99

Time:

Present Ambient Temp. (Ta) (oC) 20

Present Pressure (Pa) (mmHg) 744.728

STP 0.996627196

Target Flow (slpm) 225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	29.5	23.1	36.6	6/3/99	0.027582	-0.785865
22	29.7	24.2	35.8	6/3/99	0.023487	0.157119
23	25.6	21.1	30.6	6/3/99	0.020704	0.39368
24	29.1	23.2	35.6	6/3/99	0.025484	-0.349651
24D	30.7	25.0	37.1	6/3/99	0.024335	0.059518
25	29.1	24.2	34.5	6/3/99	0.021238	0.607088
26	0.0	0.0	0.0	1/0/00	0	0

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date: 6/16/99

Time:

Present Ambient Temp. (Ta) (oC) 19

Present Pressure (Pa) (mmHg) 764.54

STP 1.026644376

Target Flow (slpm) 225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	28.6	22.4	35.5	6/3/99	0.027582	-0.785865
22	28.8	23.5	34.7	6/3/99	0.023487	0.157119
23	24.9	20.5	29.7	6/3/99	0.020704	0.39368
24	28.2	22.5	34.6	6/3/99	0.025484	-0.349651
24D	29.8	24.2	36.0	6/3/99	0.024335	0.059518
25	28.3	23.5	33.5	6/3/99	0.021238	0.607088
26	0.0	0.0	0.0	1/0/00	0	0

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date: 6/21/99

Time:

Present Ambient Temp. (Ta) (oC) 24

Present Pressure (Pa) (mmHg) 779.78

STP 1.02948095

Target Flow (slpm) 225

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	28.5	22.4	35.4	6/3/99	0.027582	-0.785865
22	28.8	23.4	34.6	6/3/99	0.023487	0.157119
23	24.8	20.4	29.6	6/3/99	0.020704	0.39368
24	28.2	22.5	34.5	6/3/99	0.025484	-0.349651
24D	29.8	24.2	35.9	6/3/99	0.024335	0.059518
25	28.2	23.4	33.4	6/3/99	0.021238	0.607088
26	31.4	25.3	38.1	6/21/99	0.025692	-0.094212

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	03/30/2000				
Time:	1100				
Present Ambient Temp. (Ta) (oC)	11.6	T (deg F)	52.8		
Present Pressure (Pa) (mmHg)	767.5118	P(in H20)	30.217	25.4 mmHg/in H	
STP	1.057598105				
Target Flow (slpm)	225				

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	27.9	22.2	34.4	03/13/2000	0.026354	-0.49435
22	30.0	24.1	36.5	03/14/2000	0.025946	-0.20672
23	25.5	20.5	31.2	03/14/2000	0.024112	-0.22751
24	25.6	19.9	31.9	03/14/2000	0.026987	-0.87285
24D	32.8	26.8	39.4	03/14/2000	0.025087	0.242758
25	24.3	20.3	28.6	03/13/2000	0.019408	0.700031
26	30.7	24.8	37.3	03/13/2000	0.02559	-0.05566

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	04/04/2000			
Time:	800			
Present Ambient Temp. (Ta) (oC)	12.8	T (deg F)	55	
Present Pressure (Pa) (mmHg)	748.9698	P(in H20)	29.487	25.4 mmHg/in H
STP	1.027634139			
Target Flow (slpm)	225			

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	28.7	22.8	35.4	03/13/2000	0.026354	-0.49435
22	30.9	24.8	37.6	03/14/2000	0.025946	-0.20672
23	26.3	21.1	32.1	03/14/2000	0.024112	-0.22751
24	26.3	20.5	32.8	03/14/2000	0.026987	-0.87285
24D	33.7	27.6	40.5	03/14/2000	0.025087	0.242758
25	25.0	20.9	29.5	03/13/2000	0.019408	0.700031
26	31.6	25.6	38.4	03/13/2000	0.02559	-0.05566

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New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	05/08/2000			
Time:	1000			
Present Ambient Temp. (Ta) (oC)	25.6	T (deg F)	78	
Present Pressure (Pa) (mmHg)	756.9454	P(in H20)	29.801	25.4 mmHg/in H
STP	0.994127457			
Target Flow (slpm)	225			

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
21	29.7	23.6	36.6	03/13/2000	0.026354	-0.49435
22	31.9	25.6	38.9	03/14/2000	0.025946	-0.20672
23	27.2	21.8	33.1	03/14/2000	0.024112	-0.22751
24	27.2	21.2	33.9	03/14/2000	0.026987	-0.87285
24D	34.9	28.5	41.9	03/14/2000	0.025087	0.242758
25	25.8	21.6	30.5	03/13/2000	0.019408	0.700031
26	32.7	26.4	39.6	03/13/2000	0.02559	-0.05566

FOSTER WHEELER
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New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	05/30/2000			
Time:	1000			
Present Ambient Temp. (Ta) (oC)	13.6	T (deg F)	56.5	
Present Pressure (Pa) (mmHg)	768.223	P(in H20)	30.245	25.4 mmHg/in H
STP	1.050986057			
Target Flow (slpm)	225			

		Acceptable Range				
Sampler ID	Set Point	-10%		Calib Date	Slope	Intercept
21	28.1	22.3	34.6	03/13/2000	0.026354	-0.49435
22	30.2	24.2	36.8	03/14/2000	0.025946	-0.20672
23	25.7	20.6	31.4	03/14/2000	0.024112	-0.22751
24	25.7	20.1	32.1	03/14/2000	0.026987	-0.87285
24D	33.0	27.0	39.6	03/14/2000	0.025087	0.242758
25	24.4	20.4	28.8	03/13/2000	0.019408	0.700031
26	30.9	25.0	37.5	03/13/2000	0.02559	-0.05566

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22
Date: 06/03/99
Time: 10:40
Operator:

Sampler ID/SN: 22/na
Timer Model/ SN: 70/4820
ETI (Start): 593.80
ETI (End):

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1)	0.999993
Slope (M1):	7.8123
Intercept (B1):	0.055159

AS FOUND

Ambient Temp:(°C)(Ta):	29.9
Amb. Press: (mmHg)(Pa):	745.7
STP:	0.9654

Previous Calibration Data

Slope (MP):	
Intercept (BP):	
Date of Previous calibration:	

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
		0.00	0.00	-7.1
NOTES:			Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*100
			#DIV/0!	#DIV/0!

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor:	na	Change Brushes:	5/27/99
magnehelic Zeroed:	6/3/99	Leak Test:	6/3/99
GFI Tested:	6/2/99		

Notes: New Installation

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE: 22
Date: 06/03/99
Time: 10:40
Operator:

AS LEFT

Ambient Temp:(°C): 29.9
Amb. Press:(Pa) (mmHg): 745.7
STP: 0.9654

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer inches (Y1)	Sampler magnehelic inches (Y2)	Orifice manometer (Y3)	Sampler Magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	3.40	31.0	*1.81*	*5.47*	224.8
2	3.20	30.0	*1.76*	*5.38*	217.9
3	2.80	25.0	*1.64*	*4.91*	203.4
4	2.30	20.0	*1.49*	*4.39*	183.7
5	1.70	15.0	*1.28*	*3.81*	156.9
6	1.20	10.0	*1.08*	*3.11*	130.7
7	0.50	5.0	*0.69*	*2.20*	81.9
Regression of Y4 vs X1		Corr. Coef.	Slope	Intercept	
		0.998645	*0.0235*	*0.15712*	
Sampler Set-Up		Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
		225	30.7	30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qa) Intercept
M1 = Manuf.'s Calibration orifice (Qa) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= $(Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

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FOSTER WHEELER
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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24
Date: 06/03/99
Time: 12:10
Operator:

Sampler ID/SN: 24/45195
Timer Model/ SN: 70/4823
ETI (Start): 589.93
ETI (End):

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1)	0.999993
Slope (M1):	7.8123
Intercept (B1):	0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 29.1
Amb. Press: (mmHg)(Pa): 744.5
STP: 0.9663

Previous Calibration Data

Slope (MP):
Intercept (BP):
Date of Previous calibration:

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
	30	0.00	5.38	-7.1

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
#DIV/0!	#DIV/0!

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 5/27/99
magnehelic Zeroed: 6/3/99
Leak Test: 6/3/99
GFI Tested: 6/2/99
Notes: New Installation

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FOSTER WHEELER
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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24
Date: 06/03/99
Time: 12:10
Operator:

AS LEFT

Ambient Temp:(°C): 29.1
Amb. Press:(Pa) (mmHg): 744.5
STP: 0.9663

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, Inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	41.0	2.11	6.29	262.8
2	4.30	40.0	2.04	6.22	253.9
3	3.90	35.0	1.94	5.82	241.4
4	3.50	30.0	1.84	5.38	228.3
5	2.90	25.0	1.67	4.91	207.2
6	2.30	20.0	1.49	4.40	183.8
7	1.30	10.0	1.12	3.11	136.4

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999215	0.0255	-0.34965

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	30.0		

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qa) Intercept
M1 = Manuf.'s Calibration orifice (Qa) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler Intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT = Target Flow (slpm)
SP = magnehelic Set Point
$= [((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
$= (Y3-B1)/M1*1000$

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
$STP = (Pa/760)(298/(Ta + 273))$

XP = Flow based on Previous Calib (slpm)
$= (Y4-BP)/MP$

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22

Date: 03/14/00

Time: 14:20

Operator: M.GUZMAN

Sampler ID/SN: 22/1689

Timer Model SN: #1689

ETI (Start): 1234.47

ETI (End): 1234.61

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999993

Slope (M1): 7.8123

Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4

Amb. Press: (mmHg)(Pa): 766.6

STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0270

Intercept (BP): -0.63695

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.1	29	1.82	5.56	225.5
NOTES:			Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*1000
			229.8	-1.9

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 05/27/1999

magnehelic Zeroed: 03/14/2000

Leak Test: 03/14/2000

GFI Tested: 03/14/2000

Notes: Calibration check

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 22

Date: 03/14/00

Time: 14:20

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, Inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.09*	*6.53*	260.4
2	3.60	35.0	*1.96*	*6.10*	243.5
3	3.05	30.0	*1.80*	*5.65*	223.6
4	2.60	25.0	*1.66*	*5.16*	205.9
5	2.20	20.0	*1.53*	*4.61*	188.8
6	1.60	15.0	*1.31*	*4.00*	160.0
7	1.15	10.0	*1.11*	*3.26*	134.6

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999581	*0.0259*	*-0.20673*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	29.8	30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2] / STP$

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

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FOSTER WHEELER
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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24
Date: 03/14/00
Time:
Operator: M.GUZMAN

Sampler ID/SN: 24/45195
Timer Model/ SN: #1688
ETI (Start): 1218.86
ETI (End): 1219.17

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999993
Slope (M1): 7.8123
Intercept (B1): 0.055159

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0645

Previous Calibration Data

Slope (MP): 0.0281
Intercept (BP): -1.09264
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.90	5.56	236.5

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
236.7	-0.1

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 05/27/1999
magnehelic Zeroed: 03/14/2000
Leak Test: 03/14/2000
GFI Tested: 03/14/2000
Notes: Calibration check

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0645

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	40.0	*2.21*	*6.53*	276.2
2	4.00	35.0	*2.06*	*6.10*	257.1
3	3.50	30.0	*1.93*	*5.65*	240.0
4	3.10	25.0	*1.82*	*5.16*	225.5
5	2.50	20.0	*1.63*	*4.61*	201.8
6	2.00	15.0	*1.46*	*4.00*	179.7
7	1.50	10.0	*1.26*	*3.26*	154.7
	Regression of Y4 vs X1	Corr. Coef. *0.999593*	Slope *0.0270*	Intercept *-0.87288*	
	Sampler Set-Up	Target Flow(slpm)(XT) 225	Target magnehelic(SP) 25.4	Actual magnehelic	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manufacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP = Sampler intercept from most recent calibration
MP = Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

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Andersen Instruments, Inc.

Orifice Transfer Standard Certification Worksheet

Date: 06/28/2000 **Rootsmeter S/N:** 9736553 **Ta:** 24.00 C
Operator: J. Patel **Calibrator S/N:** 2006 N **Pa:** 747.0 mm Hg
Calibrator Model #: G40A (low flow) **Placed in service:**

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	6.931	3.64	2.00
2	3.00	4.00	1.00	4.215	10.00	5.50
3	5.00	6.00	1.00	3.355	15.41	8.50
4	7.00	8.00	1.00	2.861	20.93	11.50
5	9.00	10.00	1.00	2.533	26.34	14.50
6	11.00	12.00	1.00	2.364	29.99	16.50

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H(Ta/Pa)}$ (y-axis)
0.978	0.141	1.402	0.995	0.144	0.892
0.970	0.230	2.325	0.987	0.234	1.479
0.963	0.287	2.890	0.979	0.292	1.839
0.955	0.334	3.362	0.972	0.340	2.139
0.948	0.374	3.775	0.965	0.381	2.402
0.943	0.399	4.027	0.960	0.406	2.562
	m =	10.1484		m =	6.3460
	b =	-0.022502		b =	-0.014316
	r =	0.999975		r =	0.999975

Calculations

$$Vstd = \Delta Vol((Pa - \Delta P)/Pstd)(Tstd/Ta) \qquad Va = \Delta Vol((Pa - \Delta P)/Pa)$$

$$Qstd = Vstd/\Delta Time \qquad Qa = Va/\Delta Time$$

For subsequent flow rate calculations:

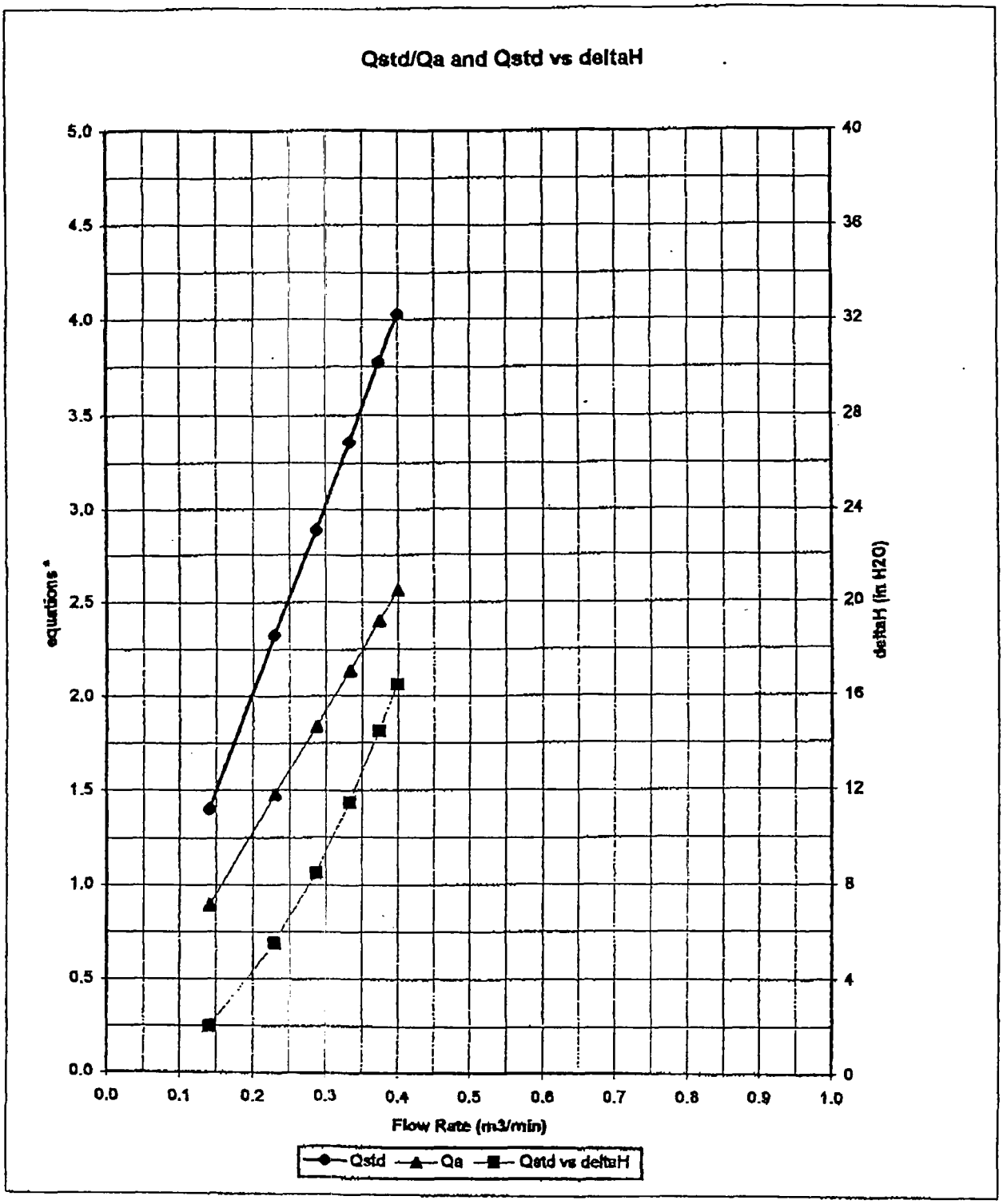
$$Qstd = 1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right) \qquad Qa = 1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right) - b\right)$$

Standard Conditions:
Tstd: 297.18 °K
Pstd: 760 mm Hg

where:
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (° K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

For additional information consult:
1. The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
2. Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
3. Andersen Instruments, Inc. Instruction Manual

Notes:
1. Copies of this calibration are not kept on file.
2. EPA recommends calibrators should be recalibrated after one year of use.



*** y-axis equations:**

Qstd series: $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\,(Ta\ /\ Pa))}$

FOSTER WHEELER
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New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	6/4/99				
Time:	12:23				
Present Ambient Temp. (Ta) (oC)	29.0				
Present Pressure (Pa) (mmHg)	757.174	P(in H20)	30.217	25.4	mmHg/in H2O
STP	0.983085796				
Target Flow (slpm)	225				

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
22	46.9	37.9	56.8	6/3/99	0.030510	-0.076359
24	47.7	37.9	58.6	6/3/99	0.033104	-0.602992

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New Bedford Harbor Project
Sampling Day Data Sheet
PS1 Sampler

Date:	3/30/00				
Time:	1100				
Present Ambient Temp. (Ta) (oC)	11.6	T (deg F)	52.8		
Present Pressure (Pa) (mmHg)	767.5118	P(in H20)	30.217	25.4	mmHg/in H2O
STP	1.057432946				
Target Flow (slpm)	225				

		Acceptable Range				
Sampler ID	Set Point	-10%	10%	Calib Date	Slope	Intercept
22	47.9	38.3	58.7	3/14/00	0.033705	-0.464645
24	43.0	33.6	53.7	3/14/00	0.035057	-1.141122

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

New Bedford Harbor Project
Field Calibration Data Sheet

PS1 Sampler

SITE 22

Date: 03/14/00

Time: 14:20

Operator: M. GUZMAN

Sampler ID/SN: 22/1689

Timer Model/ SN: #1689

ETI (Start): 1234.47

ETI (End): 1234.61

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999975

Slope (M1): 10.1484

Intercept (B1): -0.022502

AS FOUND

Ambient Temp:(°C)(Ta): 9.4

Amb. Press: (mmHg)(Pa): 766.6

STP: 1.0644

Previous Calibration Data

Slope (MP): 0.0270

Intercept (BP): -0.63695

Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.1	29	1.82	5.56	181.2

NOTES:

Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
229.4	-26.6

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 5/27/99

magnehelic Zeroed: 3/14/00

Leak Test: 03/14/00

GFI Tested: 3/14/00

Notes: Calibration check

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New Bedford Harbor Project
Field Calibration Data Sheet

PS1 Sampler

SITE 22

Date: 03/14/00

Time: 14:20

Operator: M. GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0644

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.10	40.0	*2.09*	*6.53*	208.1
2	3.60	35.0	*1.96*	*6.10*	195.1
3	3.05	30.0	*1.80*	*5.65*	179.8
4	2.60	25.0	*1.66*	*5.16*	166.1
5	2.20	20.0	*1.53*	*4.61*	153.0
6	1.60	15.0	*1.31*	*4.00*	130.8
7	1.15	10.0	*1.11*	*3.26*	111.2

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.999581	*0.0337*	*-0.46464*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	47.6	30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O
Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept
M1 = Manuf.'s Calibration orifice (Qs) Slope
Y3 = Calculated value for orifice manometer
$= [(Y1)(STP)]^{1/2}$
BP =Sampler Intercept from most recent calibration
MP =Sampler Slope from most recent calibration
XT= Target Flow (slpm)
SP= magnehelic Set Point
$=[\{(XT*M2)+B2\}^2]$ / STP

Y4 = Calculated value for magnehelic
$= [(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg
T_a = Temperature actual, °C
STP= (Pa/760)(298/{Ta + 273})

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

S

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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24
Date: 03/14/00
Time:
Operator: M.GUZMAN

Sampler ID/SN: 24/45195
Timer Model/ SN: #1699
ETI (Start): 1218.86
ETI (End): 1219.17

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999975
Slope (M1): 10.1484
Intercept (B1): -0.022502

AS FOUND

Ambient Temp:(°C)(Ta): 9.4
Amb. Press: (mmHg)(Pa): 766.6
STP: 1.0644

Previous Calibration Data

Slope (MP): 0.0281
Intercept (BP): -1.09264
Date of Previous calibration: 10/01/99

AS FOUND

Actual Values from As Found			Calculated Values	
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
3.4	29	1.90	5.56	189.7
NOTES:			Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
			236.6	-24.7

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na
Change Brushes: 5/27/99
magnehelic Zeroed: 3/14/00
Leak Test: 3/14/00
GFI Tested: 3/14/00
Notes: Calibration check

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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 03/14/00

Time:

Operator: M.GUZMAN

AS LEFT

Ambient Temp:(°C): 9.4

Amb. Press:(Pa) (mmHg): 766.6

STP: 1.0644

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	40.0	*2.21*	*6.53*	220.3
2	4.00	35.0	*2.06*	*6.10*	205.5
3	3.50	30.0	*1.93*	*5.65*	192.4
4	3.10	25.0	*1.82*	*5.16*	181.2
5	2.50	20.0	*1.63*	*4.61*	163.0
6	2.00	15.0	*1.46*	*4.00*	146.0
7	1.50	10.0	*1.26*	*3.26*	126.7

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
	0.999593	*0.0351*	*-1.14112*	
Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic	
	225	42.8		

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$

BP =Sampler Intercept from most recent calibration

MP =Sampler Slope from most recent calibration

XT= Target Flow (slpm)

SP= magnehelic Set Point
=$[[(XT*M2)+B2]^2]$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

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New Bedford Harbor Project
Field Calibration Data Sheet

PS1 Sampler

SITE 22

Date: 06/03/99

Time: 10:40

Operator: M. GOUVEIA

Sampler ID/SN: 22/na

Timer Model/ SN: 70/4820

ETI (Start): 593.80

ETI (End):

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1): 0.999975

Slope (M1): 10.1484

Intercept (B1): -0.022502

AS FOUND

Ambient Temp:(°C)(Ta): 29.9

Amb. Press: (mmHg)(Pa): 745.7

STP: 0.9653

Previous Calibration Data

Slope (MP):

Intercept (BP):

Date of Previous calibration:

AS FOUND

Actual Values from As Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
		0.00	0.00	2.2
NOTES:			Flow based on Previous calibration, slpm (XP)	Percent Difference (X1-XP)/X1*1000
			#DIV/0!	#DIV/0!

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 5/27/99

magnehelic Zeroed: 6/3/99

Leak Test: 06/03/99

GFI Tested: 6/2/99

Notes: New installation

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New Bedford Harbor Project
Field Calibration Data Sheet

PS1 Sampler

SITE 22

Date: 06/03/99

Time: 10:40

Operator: M. GOUVEIA

AS LEFT

Ambient Temp:(°C): 29.9

Amb. Press:(Pa) (mmHg): 745.7

STP: 0.9653

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	3.40	31.0	*1.81*	*5.47*	180.7
2	3.20	30.0	*1.76*	*5.38*	175.4
3	2.80	25.0	*1.64*	*4.91*	164.2
4	2.30	20.0	*1.49*	*4.39*	149.0
5	1.70	15.0	*1.28*	*3.81*	128.4
6	1.20	10.0	*1.08*	*3.11*	108.3
7	0.50	5.0	*0.69*	*2.20*	70.7

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept
	0.998645	*0.0305*	*-0.07636*

Sampler Set-Up	Target Flow(slpm)(XT)	Target magnehelic(SP)	Actual magnehelic
	225	47.7	30.0

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$

BP =Sampler Intercept from most recent calibration

MP =Sampler Slope from most recent calibration

XT= Target Flow (slpm)

SP= magnehelic Set Point
=$[\{(XT*M2)+B2\}^2]$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/{Ta + 273})

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 06/03/99

Time: 12:10

Operator: M. GOUVEIA

Sampler ID/SN: 24/45195

Timer Model/ SN: 70/4823

ETI (Start): 589.93

ETI (End):

Calibration Orifice ID: G40/2006N

Orifice Data

Correlation Coef. (CC1) 0.999975

Slope (M1): 10.1484

Intercept (B1): -0.022502

AS FOUND

Ambient Temp:(°C)(Ta): 29.1

Amb. Press: (mmHg)(Pa): 744.5

STP: 0.9663

Previous Calibration Data

Slope (MP):

Intercept (BP):

Date of Previous calibration:

AS FOUND

Actual Values from AS Found		Calculated Values		
Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
	30	0.00	5.38	2.2

NOTES:

Flow based on Previous calibration , slpm (XP)	Percent Difference (X1-XP)/X1*100
#DIV/0!	#DIV/0!

Maintenance *(Enter Date Maintenance Item was last Performed)*

Install New Motor: na

Change Brushes: 5/27/99

magnehelic Zeroed: 6/3/99

Leak Test: 6/3/99

GFI Tested: 6/2/99

Notes: New Installation

S

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New Bedford Harbor Project
Field Calibration Data Sheet
PS1 Sampler

SITE 24

Date: 06/03/99

Time: 12:10

Operator: M. GOUVEIA

AS LEFT

Ambient Temp:(°C): 29.1

Amb. Press:(Pa) (mmHg): 744.5

STP: 0.9663

	Actual Values from Calibration		Calculated Values		
	Orifice Manometer, inches (Y1)	Sampler magnehelic, inches (Y2)	Orifice manometer (Y3)	Sampler magnehelic (Y4)	Calculated value orifice flow, slpm (X1)
1	4.60	41.0	*2.11*	*6.29*	210.0
2	4.30	40.0	*2.04*	*6.22*	203.1
3	3.90	35.0	*1.94*	*5.82*	193.5
4	3.50	30.0	*1.84*	*5.38*	183.4
5	2.90	25.0	*1.67*	*4.92*	167.2
6	2.30	20.0	*1.49*	*4.40*	149.1
7	1.30	10.0	*1.12*	*3.11*	112.7

Regression of Y4 vs X1	Corr. Coef.	Slope	Intercept	
	0.999215	*0.0331*	*-0.60299*	
Sampler Set-Up	**Target Flow(slpm)(XT)**	**Target magnehelic(SP)**	**Actual magnehelic**	
	225	48.5	30.0	

Definitions

Y1 = Calibration orifice reading, in. H_2O

Y2 = Sampler magnehelic reading, in. H_2O

B1 = Manfacturer's Calibration orifice (Qs) Intercept

M1 = Manuf.'s Calibration orifice (Qs) Slope

Y3 = Calculated value for orifice manometer
= $[(Y1)(STP)]^{1/2}$

BP =Sampler Intercept from most recent calibration

MP =Sampler Slope from most recent calibration

XT= Target Flow (slpm)

SP= magnehelic Set Point
=$[((XT*M2)+B2)^2]$ / STP

Y4 = Calculated value for magnehelic
= $[(Y2)(STP)]^{1/2}$

X1 = Calculated value orifice flow, (slpm)
= (Y3-B1)/M1*1000

P_a = Barometric pressure actual, mm Hg

T_a = Temperature actual, °C

STP= (Pa/760)(298/(Ta + 273))

XP = Flow based on Previous Calib (slpm)
= (Y4-BP)/MP

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