



**US Army Corps  
of Engineers**  
New England District

**FINAL  
WATER QUALITY MONITORING SUMMARY REPORT  
2011 REMEDIAL DREDGING  
NEW BEDFORD HARBOR SUPERFUND SITE, OU #1**

**Contract No. W912WJ-09-D-0001-0010-04**



**Prepared For:**  
United States Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742

**Prepared By:**  
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**April 2012**

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## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>ES-1</b>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
1.1 SITE LOCATION AND DESCRIPTION.....	1
1.2 PROJECT OBJECTIVES .....	3
1.3 WATER QUALITY MONITORING PROGRAM .....	3
<b>2.0 METHODS.....</b>	<b>9</b>
2.1 MONITORING APPROACH .....	9
2.1.1 Boat-Based Water Quality Monitoring.....	10
2.1.2 Fixed Station Water Quality Monitoring .....	13
2.1.3 Discrete Water Samples .....	15
2.2 LABORATORY ANALYSIS .....	18
2.2.1 Total Suspended Solids and Turbidity.....	18
2.2.2 Polychlorinated Biphenyl Congeners (NOAA-18).....	18
2.2.3 Toxicity.....	19
2.2.3.1 Test Species .....	20
2.2.3.2 Site Water Samples and Laboratory Control Water .....	20
2.2.3.3 Bioassay Tests.....	20
2.2.3.4 Data Analysis .....	21
2.2.3.5 Quality Control .....	21
<b>3.0 CHRONOLOGY OF BOAT-BASED OBSERVATIONS .....</b>	<b>22</b>
<b>4.0 DREDGING SUMMARY .....</b>	<b>48</b>
<b>5.0 RESULTS .....</b>	<b>52</b>
5.1 FIELD MONITORING SUMMARY .....	52
5.2 BOAT-BASED MONITORING.....	52
5.2.1 Turbidity Summary.....	53
5.2.2 Dissolved Oxygen Summary .....	54
5.3 FIXED-STATION CONTINUOUS MONITORING .....	54
5.4 COLLECTION OF DISCRETE WATER SAMPLES .....	59
5.4.1 Level II - Baseline Water Quality Samples .....	59
5.4.2 Level I – Startup Water Quality Samples .....	62

5.4.3 Level II – TSS & Turbidity Correlation Water Quality Samples ..... 62

5.5 LABORATORY TESTING SUMMARY ..... 62

5.5.1 Total Suspended Solids and Turbidity ..... 62

5.5.2 Polychlorinated Biphenyl Congeners (NOAA-18)..... 65

5.2.3 Toxicity ..... 67

5.5.4 Quality Control ..... 69

**6.0 DISCUSSION ..... 70**

6.1 FISHERY AND WILDLIFE OBSERVATIONS ..... 70

6.2 SEDIMENT RESUSPENSION RELATED TO REMEDIAL DREDGING ACTIVITIES ..... 71

6.3 RECOMMENDATIONS FOR FUTURE SAMPLING EVENTS ..... 72

**REFERENCES..... 74**

**APPENDIX A. WATER QUALITY MONITORING FIELD LOGS AND  
DAILY REPORTS (ON CD) ..... A-1**

**APPENDIX B. CONTINUOUS IN-SITU FIXED STATION WATER QUALITY  
TIME SERIES DATA (ON CD)..... B-1**

**APPENDIX C. ALPHA ANALYTICAL LABORATORIES REPORTS AND  
ANALYTICAL DATA (ON CD)..... C-1**

**APPENDIX D. ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL  
DATA (ON CD)..... D-1**

## List of Figures

Figure 1.	Basemap of New Bedford Harbor Superfund Site in Southeastern, MA ...	1
Figure 2.	Basemap of 2011 Remedial Dredging Areas .....	5
Figure 3.	Decision Sequence for 2011 Water Quality Monitoring .....	6
Figure 4.	Decision Sequence for Level III Water Quality Sample Analysis .....	7
Figure 5.	Compliance Transects for the Turbidity Criterion.....	12
Figure 6.	2011 Fixed Station in-situ Water Quality Mooring Locations .....	14
Figure 7.	Diagram of Fixed Station Water Quality Moorings .....	15
Figure 8.	Mud Cat™ Hydraulic Dredge.....	49
Figure 9.	Debris Removal Excavator and Debris Storage Scow.....	49
Figure 10.	Example of Turbidity Levels Related to Dredging and Support Operations at Mooring SAK, August 30 – September 9, 2011 .....	57
Figure 11.	Example of Rapid Changes in Dissolved Oxygen, August 31–September 9, 2011.....	58
Figure 12.	Average Monthly Water Temperature at the SAK Fixed-Station in-situ YSI sonde, April 12 – October 24, 2011. ....	59
Figure 13.	Correlation between TSS and Turbidity results from 2011 samples .....	63
Figure 14.	Correlation between Turbidity and Total NOAA-18 Congeners, and Dissolved NOAA-18 Congeners.....	67

## List of Tables

Table 1.	Fixed-station IDs and positions for in-situ instruments.....	13
Table 2.	Sample collection requirements and participating laboratories .....	17
Table 3.	Summary of discrete water sampling events .....	61
Table 4.	Summary of TSS and turbidity results.....	64
Table 5.	Summary of Total and Dissolved PCB (NOAA-18 Congeners) results...	66
Table 6.	Summary of toxicity results for Level I – Startup samples .....	69

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## ACRONYMS

AAL	Alpha Analytical Laboratory
CDF	Confined Disposal Facility
CETIS	Comprehensive Environmental Toxicity Information System
CSO	Combined Sewer Overflow
DMU	Dredge Management Unit
DO	Dissolved Oxygen
DR	Debris Removal
DRG	Dredge/dredging
EDD	Electronic Data Deliverable
EMIS	New Bedford Environmental Management Information System
EPA	US Environmental Protection Agency
ESI	EnviroSystems, Inc.
FSP	Field Sampling Plan
JE	Jacobs Engineering
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDL	Method Detection Limit
MS	Matrix Spike sample
MSD	Matrix Spike Duplicate sample
NCS	North of Coggeshall Street
NOAA	National Oceanic and Atmospheric Administration
NTU	Nephelometric Turbidity Unit
PAL	Project Action Limit
PCB	Polychlorinated Biphenyls
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
SAK	South of Area K
SAL	South of Area L
SES	Sevenson Environmental Services, Inc.
SOP	Standard Operating Procedure
SWS	South of Wood Street
TSS	Total Suspended Solids
VOC	Volatile Organic Compound
USACE NAE	US Army Corps of Engineers, New England District
WHG	Woods Hole Group, Inc.
YSI	Yellow Springs Instruments (6920-V2 sonde)

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## **EXECUTIVE SUMMARY**

In 2011, remediation activities at the New Bedford Harbor Superfund Site included hydraulic dredging and excavation of contaminated sediments from the upper harbor. Water quality monitoring was performed during remediation activities as part of a larger environmental monitoring program with the goal to minimize potential ecological impacts that could be caused by the resuspension of contaminated sediment into the water column during operations. Data and observations resulting from the water quality monitoring were used to document background conditions and gauge the extent of impacts potentially resulting from remediation operations. The water quality monitoring program helped to ensure that dredging activities were conducted in a manner that did not produce extensive turbidity plumes or cause detrimental impacts to water quality, such as toxicity to marine organisms, contaminant transport, or hindrance of the seasonal migrations of anadromous fish within the Acushnet River. This report presents the scope and key findings from the water quality monitoring performed during the 2011 dredge season.

Dredging, debris removal, and other support operations were performed between June and September 2011, and resulted in the removal of 25,674 cubic yards of contaminated sediments. Water quality monitoring was performed during the first week of dredging to reaffirm the ecological protectiveness of the project-based turbidity criterion, and to establish baseline water quality conditions of the harbor. The monitoring program included: 1) boat-based monitoring of in-situ turbidity and dissolved oxygen, and observation of the active work zone for sediment plumes, as well as fish and wildlife passage, 2) fixed-station water quality moorings deployed to record in-situ data that supplemented the boat-based monitoring, and 3) collection of discrete water samples for physical, chemical, and biological analysis for assessment of the ecological protectiveness of the project-specific turbidity criterion.

Boat-based in-situ measurements were evaluated against the turbidity criterion, which was defined as 100 Nephelometric Turbidity Units (NTU) above background or ambient turbidity. Consistent with previous years, a turbidity criterion was defined to mandate that remediation have a low impact on the greater New Bedford Harbor ecology, and was used to determine whether discrete water samples would be collected and analyzed for verification of impacts. During the 2011 environmental monitoring season turbidity was monitored 100-1000 feet down-current of the active work zone. Observations by the boat-based monitoring team confirmed that the turbidity criterion was not exceeded during the 2011 remediation dredging season.

Boat-based monitoring and the fixed-station in-situ turbidity data from the water quality moorings revealed that dredge operations did, at times, have an effect on the turbidity in the immediate vicinity ( $\leq 300$  feet) of the dredging activity. Background turbidity levels ranged from  $\geq 0$  to 13.4 NTU compared to  $>0$  to 140 NTU during times of active remediation. The fixed-station in-situ data also exhibited that weather events, tidal activity, and natural influences affected water quality throughout the harbor. When turbidity plumes were observed, they were generally immediately adjacent to active

debris removal operations or near the dredge on windy days when support vessels were utilized to keep the dredge positioned in a straight line. These plumes tended to be ephemeral, and were confined to within approximately 150-200 feet, well within the compliance transects.

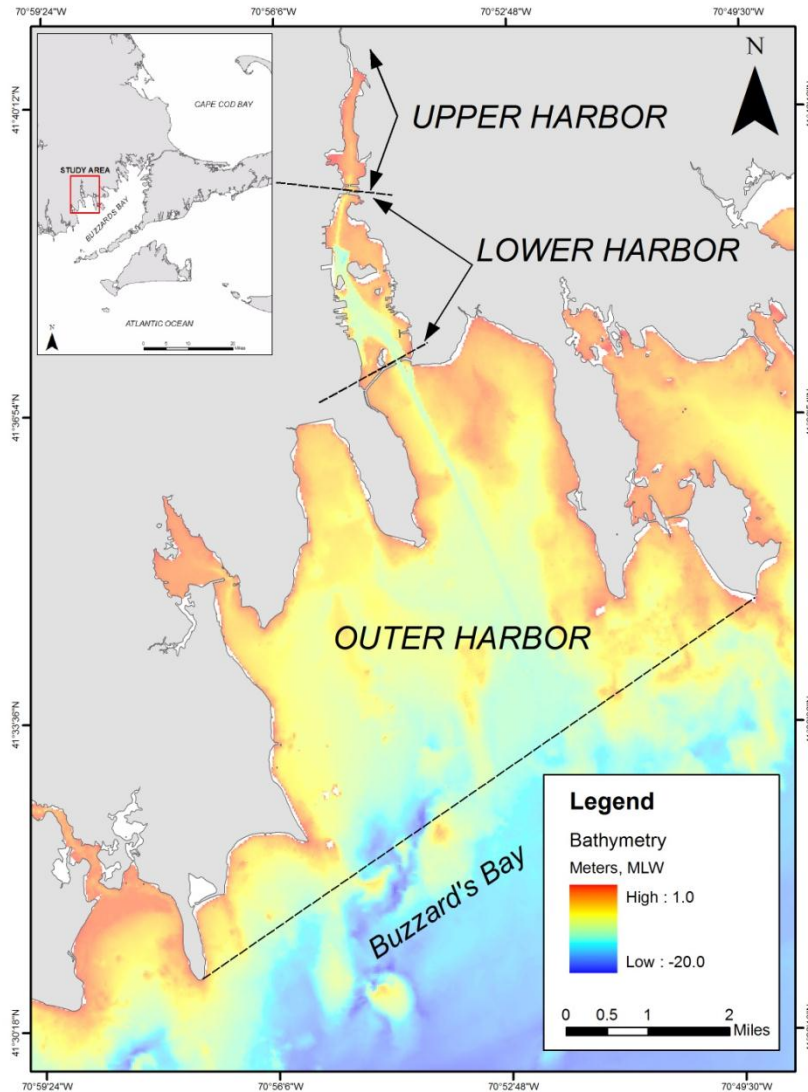
Throughout the 2011 dredge season, large numbers of fish and wildlife were observed. Lower trophic level fish were consistently observed moving throughout the river between the Sawyer Street Confined Disposal Facility (CDF) and the Wood Street Bridge. Birds, such as great blue herons, green herons, gulls, swans, cormorants, egrets, osprey, terns, ducks and other water fowl were observed feeding along the shoreline and in the river. During late summer, hypoxic conditions were observed in the northernmost dredge areas and south of Wood Street. Water temperatures approached 30°C and dissolved oxygen concentrations routinely dropped to below 1 mg/L; these hypoxic conditions are naturally occurring in estuarine systems like the Acushnet River. During hypoxic occasions small fish were observed exhibiting stressed behavior, and a few were found dead; however, no large scale fish kills were observed. These conditions occurred regardless of remediation activities. During the active dredge season, when fish were most abundant, there appeared to be no restriction of fish movement past the dredge area based on visual observations of the monitoring field crew.

The combination of boat-based monitoring, fixed-station in-situ water quality data, and discrete water samples demonstrated that the remediation operations at the New Bedford Harbor Superfund Site have a low, but measurable impact to water quality. These impacts, most notably to turbidity and suspended sediment concentration, were limited to near-field areas, contained within the active dredge zone, and generally decreased with increasing distance from the active operations. Overall, the polychlorinated biphenyls (PCB) and toxicity data, along with the in-situ water quality measurements, confirmed the project compliance criteria are ecologically protective, while allowing remediation efforts to progress.

## 1.0 INTRODUCTION

### 1.1 SITE LOCATION AND DESCRIPTION

The New Bedford Harbor Superfund Site, located in Bristol County, Massachusetts, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial harbors of New Bedford and Fairhaven and into 17,000 adjacent acres of Buzzards Bay (Figure 1). The City of New Bedford, located along the western shore of the Site, is approximately 55 miles south of Boston. New Bedford is currently home port to a large offshore fishing fleet and is a densely populated manufacturing and commercial center. By comparison, the eastern shore of New Bedford Harbor is predominantly residential, light commercial, or salt marsh.



**Figure 1. Basemap of New Bedford Harbor Superfund Site in Southeastern, MA**

The Acushnet River's 16.5 square mile drainage basin discharges to New Bedford Harbor in the northern reaches of the Site, contributing relatively minor volumes of fresh water to the tidally influenced harbor. Numerous storm drains, combined sewer overflows (CSOs), industrial discharges, as well as smaller brooks and creeks also discharge directly to the Site. The upper and lower harbors are believed to be areas of net groundwater discharge. The estuary can be characterized as a shallow, well-mixed system.

Industrial and urban development surrounding the harbor has resulted in sediments becoming contaminated with high concentrations of many pollutants, notably polychlorinated biphenyls (PCBs) and heavy metals. Contaminant gradients within harbor sediments decrease from north to south. The source of the contamination has been attributed to two electrical capacitor manufacturing facilities that operated between the 1940s and the 1970s. One facility, Aerovox Corporation, is located near the northern boundary of the Site, and the other, Cornell-Dubilier Electronics, Inc. is located just south of the New Bedford Harbor hurricane barrier. The two facilities are known to have discharged PCB-laden wastes either directly into the harbor or indirectly via discharges to the City's sewerage system.

Based on human health concerns and ecological risk assessments, the United States Environmental Protection Agency (USEPA) added New Bedford Harbor to the National Priorities List in 1983 as a designated Superfund Site. Through an Interagency Agreement between the USEPA and the United States Army Corps of Engineers, New England District (USACE NAE), the USACE is responsible for carrying out the design and implementation of remedial measures at the Site.

The Site has been divided into three geographic areas: the upper, lower and outer harbors, which are consistent with geographic features, basin morphology, and gradients of contamination (Figure 1). The Site is also defined by three state-sanctioned fishing closure areas extending approximately 6.8 miles north to south and encompassing approximately 18,000 acres in total. The upper harbor comprises approximately 187 acres, with present sediment PCB levels ranging from below detection to approximately 4,000 parts per million (ppm). Prior to the removal of the most contaminated hot spot sediments in 1994 and 1995 as part of EPA's first cleanup phase, sediment PCB levels were reported higher than 100,000 ppm in the upper harbor. The boundary between the upper and lower harbor is the Coggeshall Street Bridge; at this point the harbor is constricted to a width of approximately 100 feet. The lower harbor comprises approximately 750 acres, with present sediment PCB levels ranging from below detection to over 100 ppm. The boundary between the lower and outer harbor is the 150 foot wide opening of the New Bedford hurricane barrier. The hurricane barrier was constructed in the mid-1960s. Sediment PCB levels in the outer harbor are generally low, with only localized areas of PCBs in the 50–100 ppm range near the Cornell-Dubilier plant and the New Bedford sewage treatment plant's outfall pipes. The southern extent of the outer harbor is a line mapped from Rock Point (the southern tip of West Island in Fairhaven), southwesterly to Negro Ledge, and then southwesterly to Mishaum Point in Dartmouth (Figure 1).

## **1.2 PROJECT OBJECTIVES**

The primary objective of the 2011 water quality monitoring program was to conduct boat-based and fixed-station in-situ monitoring during dredging activity. Remediation of the Site involves the excavation and dredging of approximately 900,000 cubic yards of PCB-contaminated sediment. To date, crews have removed approximately 210,000 cubic yards of sediment from the harbor. This number is a sum of the 2004-2010 total (185,000 cubic yards) and the 2011 estimate (25,674 cubic yards). The majority of the contaminated material was removed by a hydraulic dredge that pumps a spoils-slurry to the project's Sawyer Street facility where it is mechanically processed to remove all sand, gravel, and debris. The remaining silt and clay slurry was then pumped to the Area D Dewatering Facility located on Herman Melville Boulevard where it was mechanically dewatered and transported off-site for disposal.

The field reconnaissance information, collected as part of this effort, was made available to the USACE, USEPA, and dredge operators, and used to help limit the extent of water quality impacts resulting from dredging operations. This information was also used to make operational adjustments as may be necessary to limit the dispersal of suspended sediments and their associated contaminants, and to limit the extent of biological impacts to the water column. An additional objective of the monitoring program was to ensure that anadromous fish are able to successfully navigate through or around dredging operations on their natural migratory paths. Close observation of fisheries and wildlife behaviors will be pertinent to the goals of the project as defined in the 2011 Fish Migration (Jacobs Engineering Group, 2011). Dredging activities and water quality monitoring were coordinated to minimize any potentially negative impacts to migratory fish. Such methods include keeping a minimum of 6 inches of clearance between the river bottom and the dredge pipeline to allow for fish passage even during low tide.

The Site is divided into a series of Dredge Management Units (DMU) based primarily on contamination levels and topography. Each year, specific Dredge Areas are established based on DMU boundaries, removal volume, and dredging operations logistics. In 2011, remediation activities at the Site included hydraulic dredging and/or debris removal in four Dredge Areas: G, N, K, and O (Figure 2). A fifth area, Area Q, is located just south of the Area C dock (Figure 2). Area Q was mechanically excavated briefly from a barge but work stopped indefinitely in August.

During dredging and dredging related activities, such as debris removal, resuspended sediments and associated contaminants can be transported by currents away from the dredge area. Contaminated sediments suspended in the water column present a concern for toxicity to aquatic organisms in the area. The water quality monitoring program presented herein was developed to assess the near-field water column impacts, as well as the extent of sediment resuspension and transport away from the remedial dredging operation.

## **1.3 WATER QUALITY MONITORING PROGRAM**

The water quality monitoring program was developed to meet the objectives described above; this was accomplished by employing a tiered monitoring approach. The approach

was consistent with previous years' monitoring and incorporated field measurements of turbidity and water quality parameters along with discrete water samples for physical, chemical, and biological testing, as needed.

The turbidity criterion for the 2011 season was defined as 100 Nephelometric Turbidity Units (NTU) above background turbidity levels. Background turbidity levels ranged from 0 – 13.4 NTU depending location and environmental conditions. Compliance transects at 300 feet north of Area M (completed in 2010) and 300 feet south of Area L constrain the area of the river where the turbidity criterion would be monitored (Figure 5).

Background or ambient turbidity was quantified from observations at reference stations 1000 feet up-current of all dredging activity. For example, if background turbidity of the ambient harbor water was quantified as 10 NTU, then the turbidity criterion for that particular time would be 110 NTU. If values of  $\geq 100$  NTU above background were observed 300 feet down-current of the active work zone, and was attributable to dredging related activities, the resident USACE NAE Project Engineer (Mr. Paul L'Heureux) was notified to implement corrective actions as determined necessary to abate the condition, while WHG would proceed to collect contingency water samples for potential analysis to assess impacts per the established protocol. A situation where values were measured higher than the turbidity criterion was considered a "threshold exceedance," if observed 300 feet down-current of the area between compliance transects (Figure 5). Factors used in determining the cause of threshold exceedance included an assessment of remediation activity, location, weather, tides, and ambient water quality conditions. Following water sample collection at the 300-foot location, WHG continued to monitor water quality parameters before collecting water samples at the background reference location, 1000 feet up-current of all activity. Figure 3 depicts the decision sequence for the 2011 water quality monitoring program

A threshold exceedance is not the same as a "high turbidity event," which occurred if turbidity levels reached 100 NTU above background, but still within the compliance transects. Although this condition may necessitate certain adjustments to active dredging operations in the area, it did not constitute a project-specific threshold exceedance and therefore did not require collection of water quality samples.

If there was a threshold exceedance of the turbidity criterion, a full suite of water samples would be collected and submitted for analysis including toxicity, dissolved PCBs, Total PCBs (sum of NOAA-18 congeners), metals, turbidity and TSS. An initial toxicity analysis would be performed using the *Arbacia punctulata* (sea urchin) 1-hour sperm immobilization/fertilization bioassay. Results of this initial toxicity screening and information regarding the intensity and duration of the plume would be delivered to appropriate USACE personnel to determine whether subsequent analytical chemistry testing should be performed. Figure 4 illustrates the tiered decision sequence for water sample analyses.



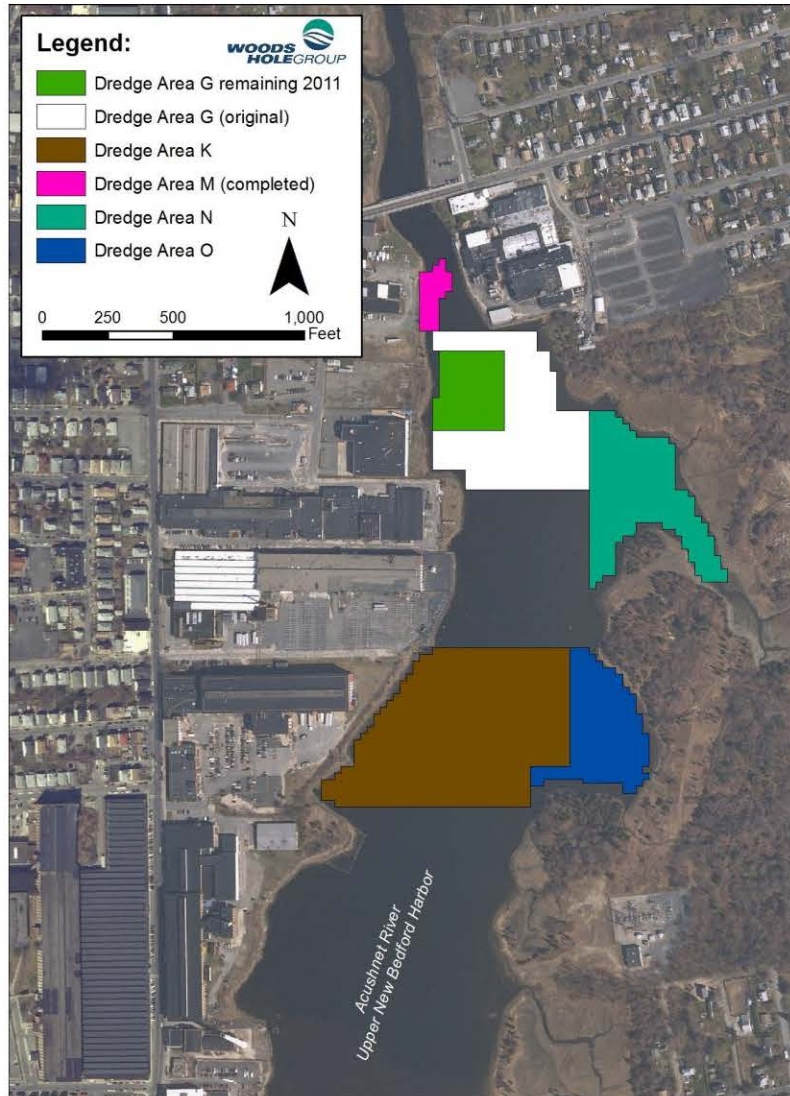
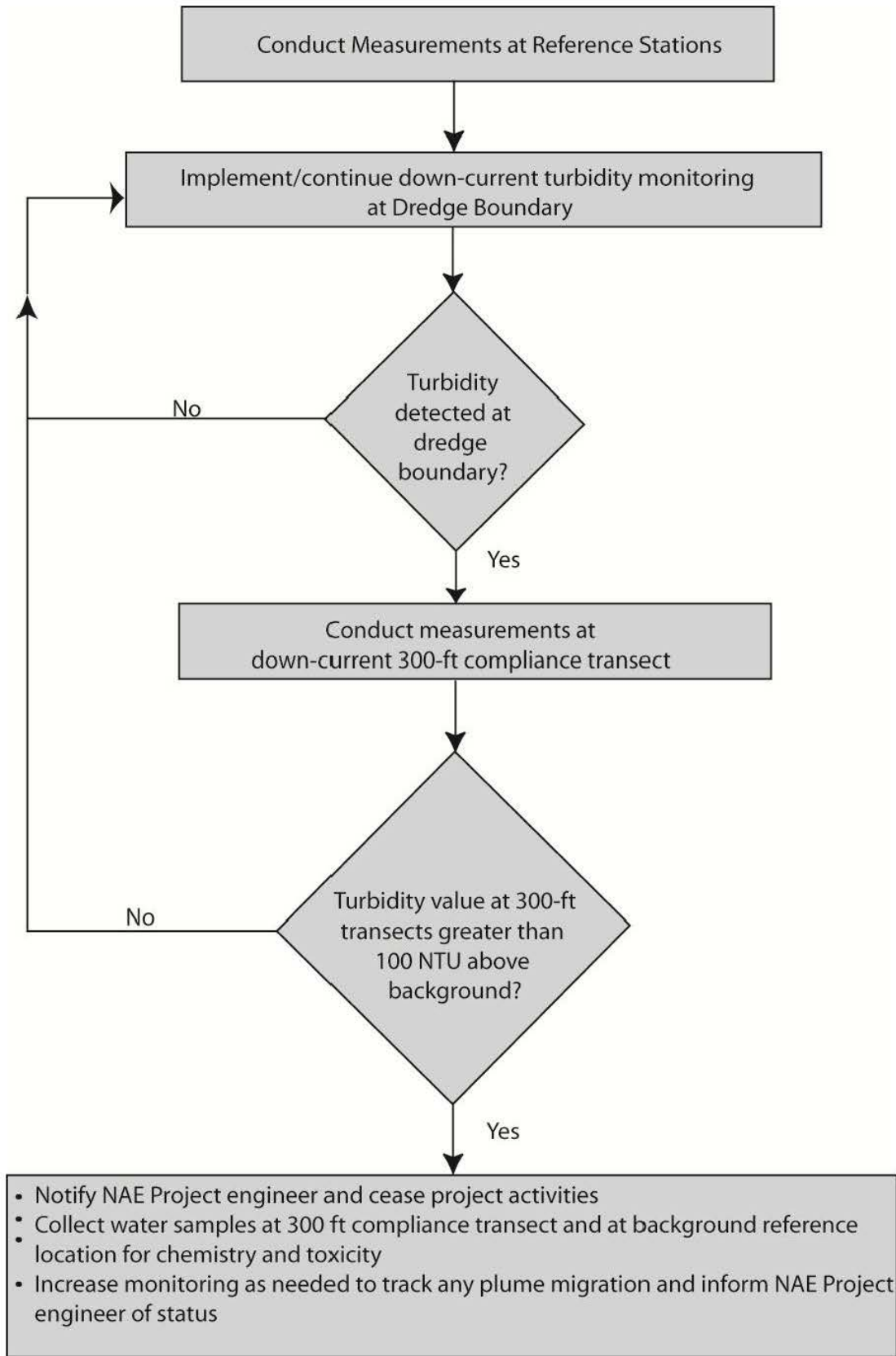
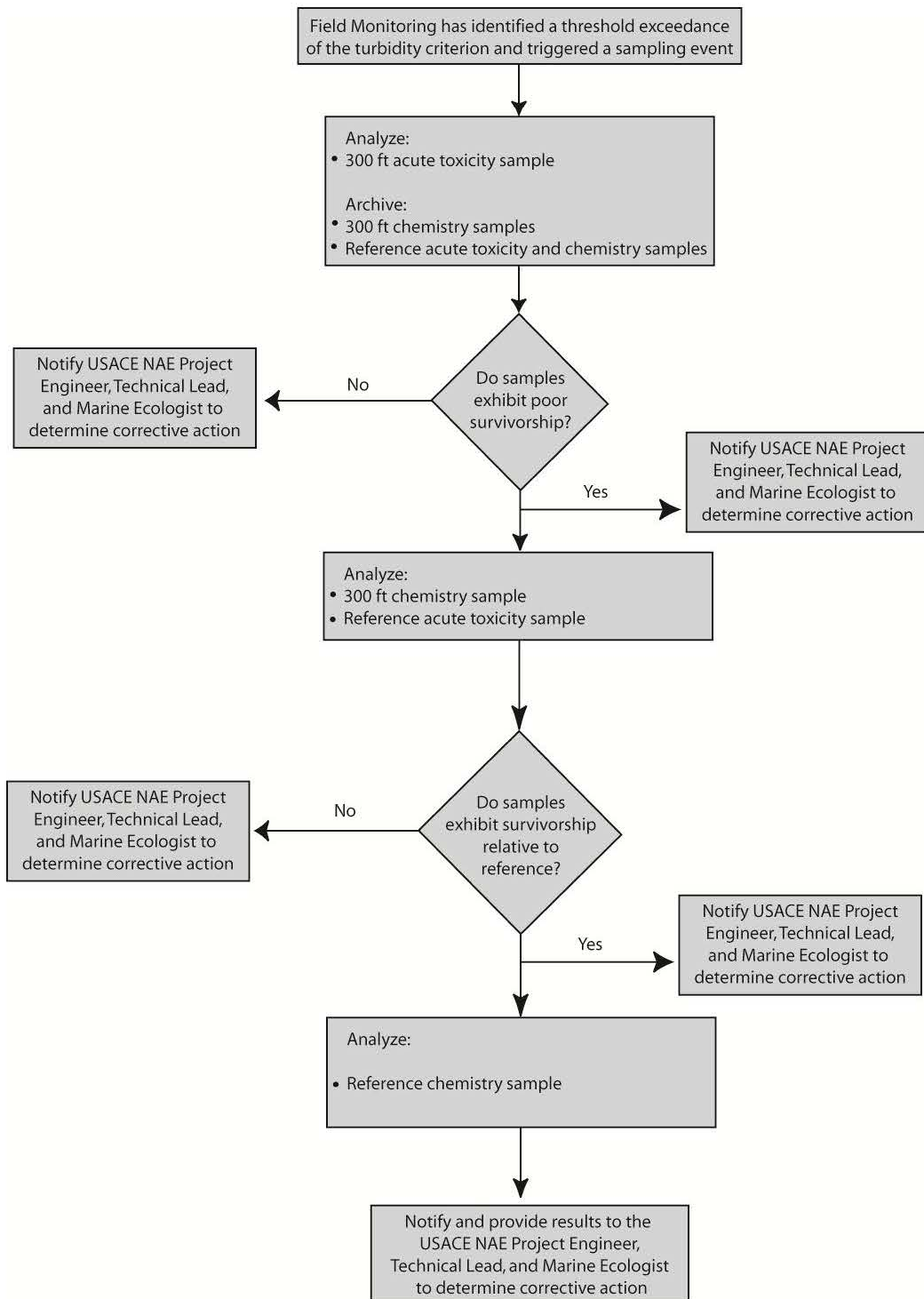


Figure 2. Basemap of 2011 Remedial Dredging Areas



**Figure 3. Decision Sequence for 2011 Water Quality Monitoring**



\*Notes: "Threshold exceedance" is defined as 100 NTU above background turbidity level if observed 300 feet down-current of compliance transects

**Figure 4. Decision Sequence for Level III Water Quality Sample Analysis**

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## 2.0 METHODS

Methods employed to monitor water quality and collect water quality samples are summarized below and described in detail in the project Field Sampling Plan (FSP) (Woods Hole Group, 2011a) and Quality Assurance Project Plan (QAPP) (Woods Hole Group, 2011b).

### 2.1 MONITORING APPROACH

The established sampling approach for this program employed a variety of methods to characterize sediment suspension in the water column and its potential impact on water quality. The overall approach utilizes an adaptive, criteria-based, sampling scheme to monitor project-related water quality parameters and impacts. In-situ boat-based water quality monitoring was performed along transects immediately adjacent to defined distances down-current of dredging operations and at up-current reference stations as described in Section 1.3. Daily boat-based monitoring data was supplemented with fixed instrument stations that recorded a near-continuous time series of the pertinent water quality parameters in the estuary before, during, and after the dredging season.

As with previous years' efforts, a tiered monitoring approach was employed that used varying levels of monitoring intensity to assess dredging related water quality impacts, the levels of monitoring are described below. Intensive daily monitoring occurred during the initial week of dredging to verify the effectiveness of the project-specific turbidity criterion, and to track sediment plume dispersion and potential for contaminant transport downfield of the dredge. Following the intensive daily monitoring at the start of the season, boat-based monitoring was performed twice weekly. Flexibility in the monitoring program and the operational program was necessary throughout the dredging process. The sampling locations and frequency of sampling was often altered depending on field conditions (e.g., tide level, location of equipment).

The three levels of monitoring are defined as follows:

- **Level I:**  
Level I represents the highest level of monitoring and required collection of discrete water samples, independent of *in-situ* observations. Level I sampling was conducted at the start of the season, requiring the collection of discrete water samples at four designated stations: two reference (1 ebb, 1 flood) and 300 feet down-current (1 ebb, 1 flood). Water samples were collected for all test parameters from the depth of highest turbidity, based on in-situ readings. For the last five years, Level I sampling has been implemented to collect discrete samples at locations representing a full range of turbidities to evaluate relationships, if any, between turbidity, PCB concentration, and toxicity. This also served to confirm that the turbidity criterion was adequately protective of the environment.

- **Level II:**  
Level II represents a lower level of monitoring intensity compared to Level I, and is performed to identify any project-related water quality impacts, as warranted or requested by the USACE. An example of Level II sampling includes collecting samples for TSS and turbidity to be used for Baseline calculations and typically occurs at 4 stations: 2 reference and 2 activity locations.
- **Level III:**  
Level III occurs when boat-based monitoring identifies a situation during dredging activities which requires sample collection in order to evaluate a threshold exceedance of the project-specific turbidity criterion. Collection of Level III discrete water samples for laboratory analysis is conditional upon in-situ turbidity monitoring and occurs if there is an exceedance of the turbidity criterion. Level III sample collection occurs at 2 stations: 1 reference and 1 in the active turbidity plume.

Complete details of these sampling methods are provided in the Field Sampling Plan (Woods Hole Group, 2011a) and Quality Assurance Project Plan (Woods Hole Group, 2011b).

#### *2.1.1 Boat-Based Water Quality Monitoring*

Boat-based monitoring was performed aboard the R/V George Hampson, a 24-foot pontoon boat, which provided access to all areas of the harbor during most tides. Except for Level I and Level II monitoring events implemented at the beginning of the dredge season, Level II monitoring was typically scheduled on Mondays and Thursdays, throughout the active dredge season from June to September. A YSI 6920-V2 sonde was used to collect in-situ measurements of depth, temperature, salinity, turbidity, and dissolved oxygen along monitoring transects. The sonde was equipped with optical turbidity and dissolved oxygen sensors; these sensors were calibrated for turbidity and conductivity once per week, according to manufacturer's specifications to ensure data quality. A handheld YSI 650 was used to display real-time data during monitoring transects with the sonde. The sonde was lowered into the water slowly, allowing parameters to slowly stabilize, and was ultimately lowered to the depth of highest turbidity according to the optical turbidity sensor. This depth was then monitored for several minutes, at which time the sonde was raised and lowered in the water column to see if a new depth of highest turbidity was present. In this way, WHG field crews would constantly search for the depth at which turbidity was highest and monitor for compliance. Data were recorded on field log sheets and summarized in a daily report, which was delivered to the USACE at the end of each monitoring day. The daily water quality summary reports are presented in Appendix A.

At the start of each monitoring day, the vessel transited to the appropriate reference station, 1000 feet up-current of the active work zone, to collect background water quality observations to establish baseline conditions for the day. During a flood tide this station was typically located 1000 feet south of Area K, other times it was at mooring SAL. Conversely, during an ebb tide, this station was either located 1000 feet north of the

northern boundary of Area G or at the location of mooring SWS when Area G was completed. These background reference observations were used to characterize the ambient conditions in the estuary, and to serve as the basis for comparison with the monitoring data from the active work zone on a given day and tide. Background turbidity values were re-established as necessary given changes in weather and tidal conditions. The terms “background” and “reference” are used interchangeably in this report.

Once background values were established, the WHG team would initiate boat-based monitoring per required protocols. Water quality parameters (dissolved oxygen, turbidity, water temperature, salinity) were monitored at transects 300 feet down-current from the active work zone, wherever work was being performed at that time. This typically happened between 300’ north of the northern boundary of Area G and 300 feet south of the southern boundary of Area K. Figure 5 depicts the compliance transects for the 2011 water quality monitoring efforts. These transects are a result of a water quality monitoring plan self-imposed upon the USACE and EPA. If turbidity values were measured to be in excess of the turbidity criterion (100 NTU above background) at either of the compliance transects, a threshold exceedance and a Level III sampling event would occur. If turbidity readings remained elevated above the turbidity criterion for several minutes, the resident Project Engineer Mr. Paul L’Heureux would be notified and all dredge related operations were to be shut down until the condition abated. An ephemeral (short-lived) spike in turbidity would not warrant sample collection, but would be noted as a high turbidity reading.

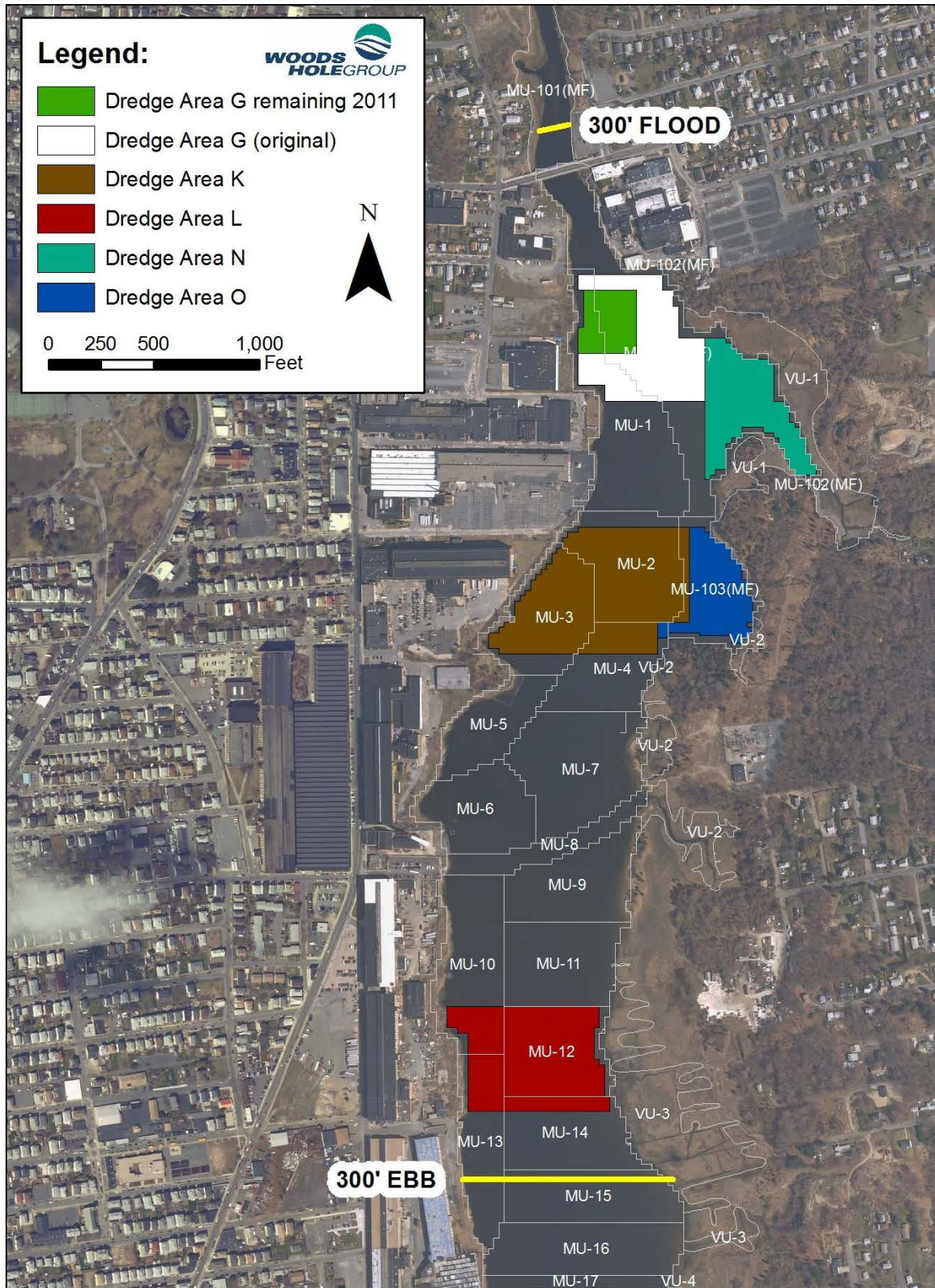


Figure 5. Compliance Transects for the Turbidity Criterion



### 2.1.2 Fixed Station Water Quality Monitoring

In addition to the active boat-based monitoring, fixed station water quality moorings were deployed at four locations throughout the upper portion of the estuary (Figure 6). The data from the fixed stations supplemented the field monitoring to provide coverage on a 24 hour per day cycle. Mooring locations included: 1) South of the Wood Street Bridge (SWS), 2) South of Area K (SAK), 3) South of Area L (SAL), and 4) North of the Coggeshall Street Bridge (NCS). Moorings were designed to float approximately 2.0–2.5 feet below the water surface. Each mooring was instrumented with a YSI 6920-V2 sonde that recorded depth, temperature, salinity, turbidity, and dissolved oxygen measurements in 15-minute intervals. The mooring locations were strategically selected in order to best supplement the boat-based water quality monitoring data.

The fixed-station water quality moorings were made up of a YSI sonde that was anchored by a chain and mushroom anchor, and suspended by a lobster pot buoy (Figure 7). The instruments were positioned to float vertically, with the sensors facing downward. Fixed-station IDs and locations are summarized in Table 1.

**Table 1. Fixed-station IDs and positions for in-situ instruments**

Station ID	Position	Date Deployed	Date Recovered
SWS	41°40.685 N 70°55.003 W	Apr. 12, 2011	October 24, 2011
SAK	41°40.277 N 70°54.984 W	Apr. 12, 2011	October 24, 2011
SAL	41°39.979 N 70°55.029 W	Apr. 12, 2011	October 24, 2011
NCS	41°39.405 N 70°55.052 W	Apr. 12, 2011	October 24, 2011

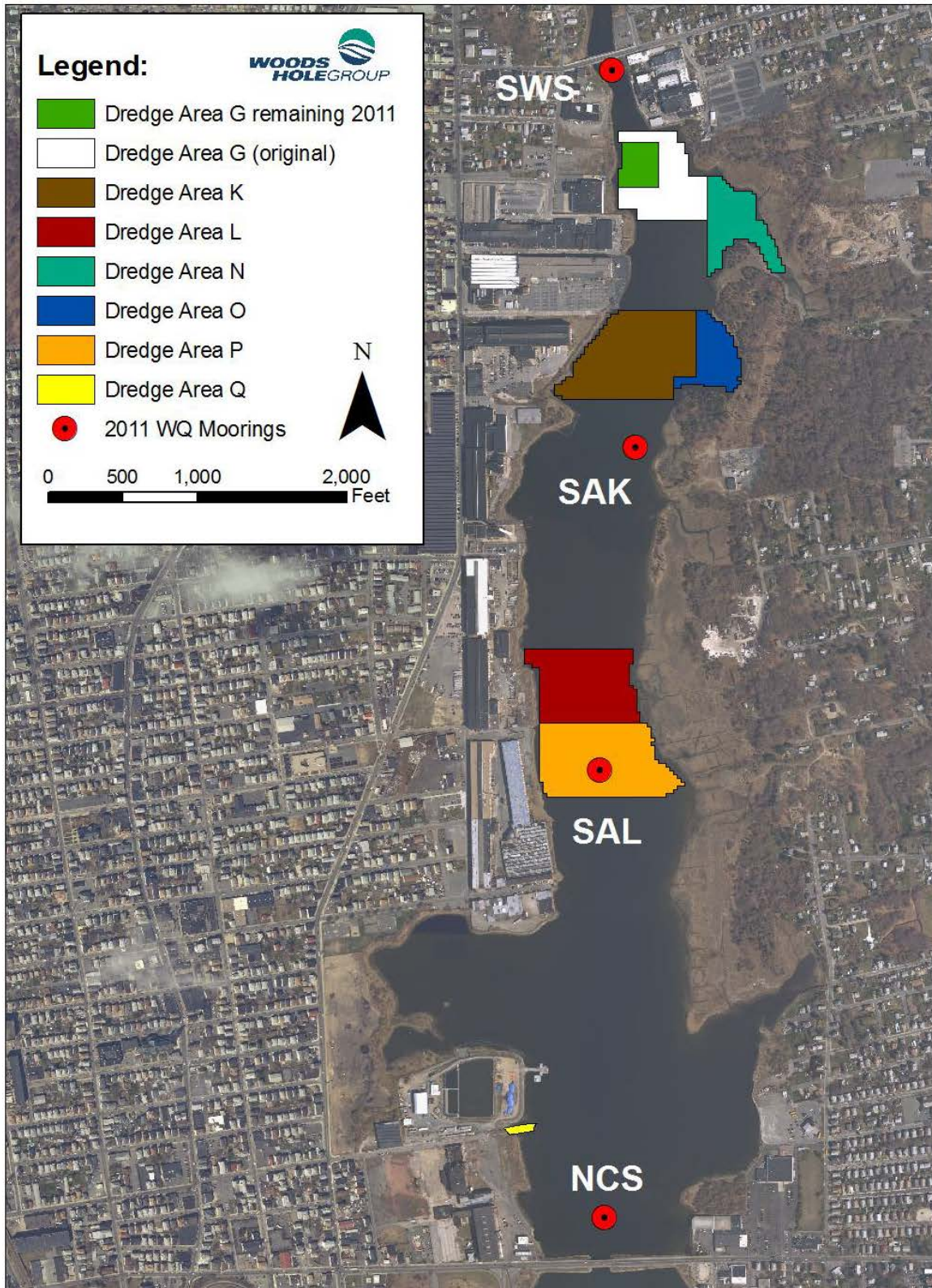
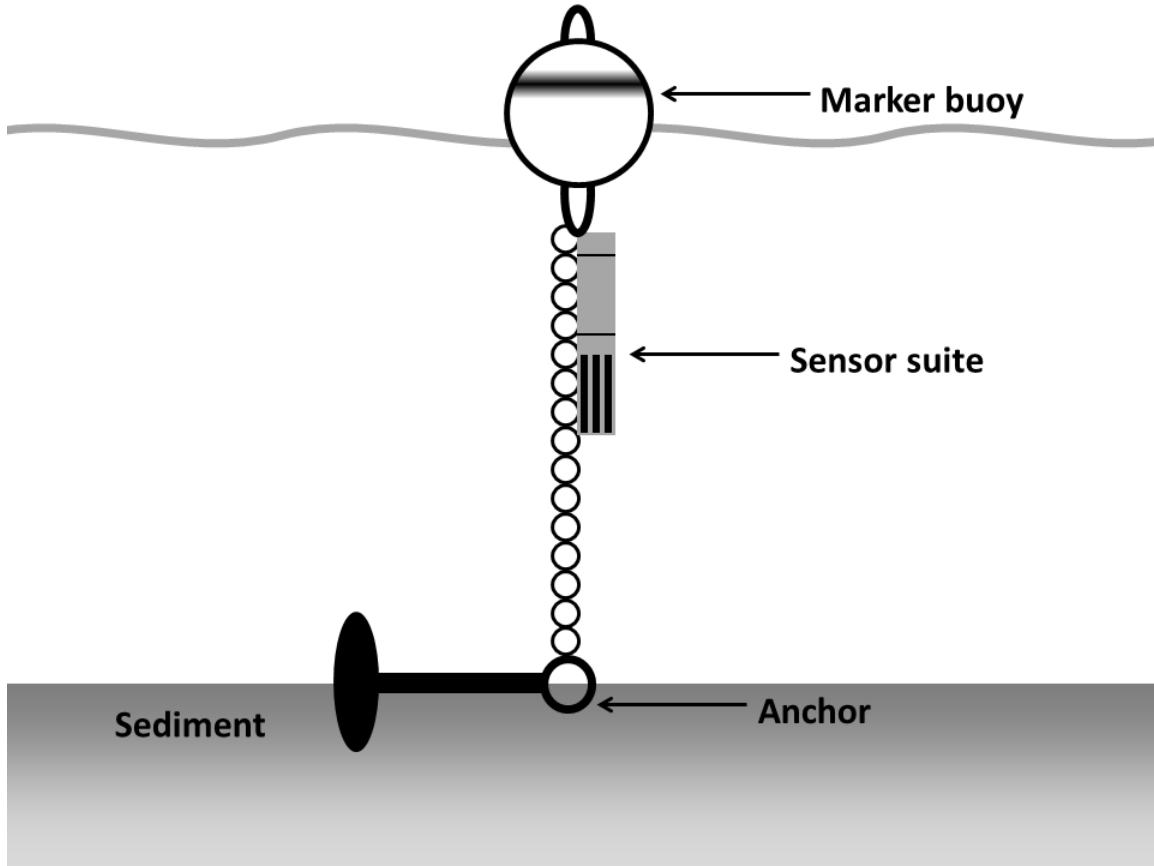


Figure 6. 2011 Fixed Station in-situ Water Quality Mooring Locations



**Figure 7. Diagram of Fixed Station Water Quality Moorings**

Data from all water quality moorings were downloaded once per week and reported to the USACE. The data were provided as plots of the turbidity and dissolved oxygen time series at each station in one week intervals. Information regarding dredge related activities was provided by the dredge contractor and was included on these figures. The complete time series of turbidity and dissolved oxygen concentration data are provided for each mooring in Appendix B.

The moorings and YSI instruments were maintained approximately every other week (14 days). Maintenance required that the instruments be recovered for cleaning, recalibration, and to have batteries changed, as needed. Once routine maintenance was performed and the data had been downloaded, the mooring instruments were redeployed at their respective locations.

### *2.1.3 Discrete Water Samples*

Discrete water samples were collected during boat-based monitoring using a diaphragm pump connected to 10 feet of tygon tubing. Prior to collecting samples at a given location, water was pumped continuously through the system for approximately two minutes to flush the equipment. This process purged the pumping system in order to reduce the potential for site-to-site cross-contamination. The tubing was connected to the YSI in-situ sensor with the tubing inlet positioned adjacent to the depth sensor during

collection to ensure that the sensor measurements and the analytical results were representative of the parcel of water being tracked.

Following the purging procedure, water sampled from the pump tube outlet was collected into the appropriate sample containers for laboratory testing (Table 2). The geographic coordinates of the sample collection location and other ancillary information were recorded in the WHG field logbook and later entered into electronic data deliverable (EDD) file for inclusion in the project database. Following collection, samples were stored on ice in coolers until delivery to the participating laboratories for analysis (Table 2). For each sample event, a routine set of field-based quality control (QC) samples were collected to monitor data quality. Samples included one equipment blank and one field duplicate sample for each set of 20 or fewer field samples. Field QC samples were collected for all test parameters except for toxicity bioassays.

**Table 2. Sample collection requirements and participating laboratories**

Parameter	Sample Container Type and Volume	Number of Containers per Sample	Preservation	Storage Condition	Hold Time	Analytical Laboratory
TSS	1 L HDPE Bottle	1	Ice	4 ± 2 °C	7 Days	<b>Alpha Analytical</b> 320 Forbes Blvd Mansfield, MA 02767 Ph: 508-822-9300
Turbidity	1 L HDPE Bottle	1	Ice	4 ± 2 °C	48 Hours	
Total PCBs	1 L Amber Glass Bottle	2	Ice	4 ± 2 °C	7 Days to extraction; 40 Days to analysis	
Dissolved PCBs	1 L Amber Glass Bottle	2	Ice	4 ± 2 °C filter 0.45 µm at lab	24 hours to filtration, 7 Days to extraction; 40 Days to analysis	
Total Metals	500 ml HDPE Bottle	1	Ice *	4 ± 2 °C pH < 2	6 Months	
Toxicity	20 L Cubitainer	1	Ice	4 ± 2 °C	24 Hours	<b>EnviroSystems, Inc</b> 1 Lafayette Road P.O. Box 778 Hampton, NH 03843 Ph: 603-926-3345

\*Preservation with HNO<sub>3</sub> (nitric acid) to be performed at laboratory within 24 h of sample collection.

## 2.2 LABORATORY ANALYSIS

Laboratory testing was performed on preplanned discrete water samples. Contingency based samples (Level III) were not collected during the 2011 season because no threshold exceedances were observed. At the direction of USACE, planned samples (Levels I and II) were submitted for total suspended solids (TSS), turbidity, PCB (total and dissolved phases), and toxicity testing. An additional sample was collected and archived in the event that heavy metals analysis was later requested; however, metals analysis was not needed and the samples were eventually discarded. Metals Laboratory methods are summarized below and described in detail in the project QAPP (Woods Hole Group, 2011b).

In addition to the discrete water samples, a routine set of laboratory-based QC samples were prepared from the sample bottles submitted to the laboratory to monitor data quality in terms of laboratory accuracy and precision. Depending on the analysis, QC samples included a procedural blank, laboratory control sample (LCS), laboratory control sample duplicate (LCSD), matrix spike (MS), and matrix spike duplicate (MSD). Specific QC samples and the associated measurement quality objectives are discussed in the QAPP (Woods Hole Group, 2011b).

### 2.2.1 *Total Suspended Solids and Turbidity*

In addition to real-time in-situ turbidity monitoring, discrete water samples were submitted for TSS and turbidity analyses at Alpha Analytical Laboratories (AAL). Water samples were analyzed for TSS following AAL Standard Operating Procedure (SOP) "Total Suspended Solids (TSS) Non-Filterable Residue, Rev. 6.1" (WHG, 2011B), USEPA Method 160.2. In brief, a well-mixed sample was filtered through a 0.45  $\mu\text{m}$  membrane filter and the residual retained on the filter was dried and weighed. Results were reported on a milligram dry-weight basis per volume of water filtered (mg/L). Water samples were analyzed for turbidity following AAL SOP "Turbidity 180.1 Rev. 2.2" (Woods Hole Group, 2011b), which is based on USEPA Method 180.1. Sample results were reported as NTU.

TSS and Turbidity samples were collected on 5/19/11 (Level II – Baseline) and 6/27 & 6/28 (Level I – Startup). Four extra collections (8/15, 8/30, 9/12, and 10/24) were added to the schedule in 2011 to produce a more robust understanding of the relationship between turbidity and TSS. These sampling events each consisted of collecting water samples for TSS and turbidity only, similar to the baseline sampling. Samples were sent to AAL for analysis.

### 2.2.2 *Polychlorinated Biphenyl Congeners (NOAA-18)*

Polychlorinated biphenyl (PCB) analysis for the National Oceanic and Atmospheric Administration (NOAA) eighteen congeners was conducted by AAL, using both unfiltered (total) and filtered (dissolved) water samples. Dissolved phase samples required filtering using Gelman AE glass fiber filters (0.45  $\mu\text{m}$  pore size) and the filtrate captured for analysis. Samples for PCB analysis were collected only during Level I – Startup activities (6/27/11 & 6/28/11).

Polychlorinated biphenyl samples (total and dissolved) were extracted following EPA Method 3510C, AAL SOP “Extraction of Water Samples by Separatory Funnel” (Woods Hole Group, 2011b). An aliquot of a well-mixed, homogeneous aqueous sample is accurately measured for sample preparation. Generally, 1L of a water sample is extracted. The sample is spiked with surrogate compounds and then extracted using methylene chloride. The extract is dried using anhydrous sodium sulfate and solvent exchanged to hexane during sample concentration. After extraction and concentration, the SW-846 3600-series methods for extract clean-up techniques are applied as necessary. The extract may be treated with Florisil (3620B) or GPC (3640A) for hydrocarbon and lipid removal, and copper (3660B) for sulfur removal. The extract is solvent exchanged into hexane and concentrated to the appropriate volume, generally 10mL, and transferred for analysis. Prior to analysis, the extract is cleaned with sulfuric acid (3665A). Alternatively, this method can be employed for lower detection limits by decreasing the final volume to 1–5 mL.

After clean-up and re-concentration, the extracts are analyzed on a gas chromatograph (GC) which is fitted with two capillary columns of differing polarities each employing separate ECD detectors. This process follows USEPA Method 8082 (Woods Hole Group, 2011b). The extracts of PCB Congeners are spiked with internal standards (IS) prior to analysis. The target analytes are resolved on each column and detected using an electron capture detector (ECD). Analytes are introduced into the GC/ECD by injecting a known volume of the calibration standards, quality control samples, and sample extracts into the GC which is temperature and flow programmed to separate the analytes. Identification of the target analytes is accomplished by confirming a target hit on two dissimilar columns using Retention Time (RT) and Pattern Recognition (PR). Concentrations are calculated from the ECD response using internal standard techniques. Sample results were reported in micrograms per liter ( $\mu\text{g/L}$ ) for the individual eighteen congeners.

For each batch of 20 or fewer samples, a laboratory method blank, LCS/LCSD, MS and MSD was processed and analyzed with the field samples.

### *2.2.3 Toxicity*

Acute and chronic (sub-lethal) exposure screening assays were performed to evaluate the potential toxicity of surface water samples. Samples collected for toxicity analysis were only collected during Level I – Startup activities (6/27/11 & 6/28/11). All assays were conducted by EnviroSystems, Inc. (ESI) located in Hampton, New Hampshire. The information regarding the toxicity analyses that is contained in this section has been obtained from the ESI report text (Appendix D). Assay design included a laboratory control treatment and one or more surface water samples, generally including a site reference sample. Samples were evaluated “As Received” without dilutions. Testing was based on programs and protocols developed by the USEPA, primarily designed to provide standard approaches for the evaluation of toxicological effects of discharges on aquatic organisms, and for the analysis of water samples. Testing included the following bioassays: 1) a 48-hour acute assay conducted with the mysid shrimp *Americamysis*

*bahia*, 2) a 7-day chronic assay conducted with *Americamysis bahia*, and 3) a 60-minute chronic fertilization assay conducted with the purple sea urchin, *Arbacia punctulata*.

### 2.2.3.1 Test Species

*Americamysis bahia* were obtained from cultures maintained by Aquatic Research Organisms (ARO), Hampton, New Hampshire. Juvenile shrimp were collected daily, isolated, and placed in a rearing tank. Holding tanks were maintained in a flow-through culture mode at a temperature of  $25\pm 2^{\circ}\text{C}$ . At the start of the assays the mysids were  $< 5$  days old for the acute evaluation and 7 days old for the chronic evaluation. Juveniles were fed  $\leq 24$  hour old brine shrimp on a daily basis. Water temperature, salinity, and pH were monitored on a daily basis. Prior to testing, organisms were siphoned from the rearing tanks to a holding vessel, and then transferred to test chambers using a large bore pipet, minimizing the amount of water added to test solutions.

*Arbacia punctulata* adults were acquired from cultures maintained by ESI. Original stock was obtained from commercial supply. Male and female urchins were maintained in separate chambers. Adult urchins were induced to spawn by the injection of a potassium chloride solution. The viability of gametes obtained was determined prior to their addition to the test solutions. Eggs and/or sperm that would not result in a fertilized egg were rejected from the pool of gametes used in the assay.

### 2.2.3.2 Site Water Samples and Laboratory Control Water

Prior to testing, samples were evaluated to document salinity, conductivity, and total residual chlorine. Total residual chlorine was measured by amperometric titration (MDL 0.02 mg/L). When necessary, the salinity of samples for the *A. bahia* acute and chronic exposure assays were adjusted to  $25\pm 2\text{‰}$  while samples used for the *A. punctulata* assays were adjusted to  $30\pm 2\text{‰}$ . Samples with “as received” salinity above these levels were not adjusted.

Laboratory control water used for the mysid and sea urchin assays was collected from the Hampton/Seabrook Estuary; this water is classified as SA-1 and has been used to culture marine test organisms since 1981.

### 2.2.3.3 Bioassay Tests

#### ***Americamysis bahia* Acute Exposure Assays**

The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity tests were conducted at  $25\pm 1^{\circ}\text{C}$  with a light:dark photoperiod of 16:8 hours. Test chambers for the acute assays were 250 mL glass beakers containing 200 mL test solution in each of 4 replicates with 10 organisms per replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded daily in one replicate of each treatment. Specific conductivity was measured in one replicate of each sample at the start of the assay. Mysids were not fed during the assay.



### ***Americamysis bahia* Chronic Exposure Assays**

The endpoints for the *A. bahia* assays were survival and growth. The 7 day assays were conducted at a temperature of  $26\pm 1^{\circ}\text{C}$  with a light:dark photoperiod of 16:8 hours. Mysids were maintained in 250 mL beakers containing 150 mL of test solution. Approximately 100 mL of the test solution were replaced each day. The assay incorporated 8 replicates with 5 organisms per replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded in a composite sample of the “old” test solution and in the “new” test solution prior to being added to the test chamber. Incubator temperatures were also recorded on a daily basis. During the test, mysids were fed  $\leq 24$  hour old *Artemia nauplii*. On Day 7 of the assay, surviving mysids were removed from test solutions, rinsed to remove any surface detritus and salts, and transferred to tared foils and dried for 24 hours at  $104^{\circ}\text{C}$ . Foils were weighed to the nearest 0.01 mg. Mean dry weights per individual were obtained by dividing the net dry weight of all surviving organisms by the number of organisms added at the start of the assay.

### ***Arbacia punctulata* Chronic Exposure Fertilization Assays**

The endpoint for the *A. punctulata* bioassay was fertilization. Gametes were obtained by potassium chloride injection to induce spawning. Sperm were collected dry, diluted to achieve a concentration of approximately  $5.0 \times 10^7$  sperm/mL in the surface water treatments. Actual sperm concentrations are provided on laboratory bench sheets within ESI’s report in Appendix D. Sperm solutions were added to 5 mL aliquots of each sample being evaluated and allowed to remain in the test solutions for 60 minutes before the addition of unfertilized eggs. Each treatment incorporated a total of four (4) replicates. After 20 minutes exposure, the assay was terminated by the addition of 0.2 mL of preservative. Aliquots of preserved solution were counted to determine numbers of fertilized and unfertilized eggs. Fertilization was accepted based on the presence or absence of a fertilization membrane around the egg.

#### **2.2.3.4 Data Analysis**

Statistical analysis of acute and chronic exposure data was completed using Comprehensive Environmental Toxicity Information System (CETIS) software. The program computes acute and chronic exposure endpoints based on EPA decision tree guidelines specified in individual test methods. For chronic exposure endpoints statistical significance was accepted at  $\alpha < 0.05$ .

#### **2.2.3.5 Quality Control**

As part of the toxicity testing laboratory quality control program, standard reference toxicant assays are conducted on a regular basis for each test species to provide relative health and response data while allowing for comparison with historic data sets.

### **3.0 CHRONOLOGY OF BOAT-BASED OBSERVATIONS**

Water quality monitoring of the Acushnet River and Upper New Bedford Harbor via in-situ fixed-station moorings started on April 12, 2011, approximately 2.5 months prior to the onset of the dredging season. Monitoring with the fixed-station mooring ended on October 24, 2011, approximately 1 month after the dredging season was completed. Boat-based monitoring began with baseline samples collected on May 19, 2011 and continued through the dredge season until the completion of dredging activities in mid-September 2011. Remedial dredging began on June 27, 2011 and was completed on September 19, 2011.

The following section provides a weekly summary of boat-based water quality monitoring observations and activities. The text was summarized from the daily field logs and weekly summary reports submitted to the USACE throughout the 2011 dredge season. All turbidity values referenced are the actual values as read from the sensor, and therefore, not corrected for background levels. Background levels were recorded each day and were used as a basis of comparison for readings recorded each day. With the exception of reference sites and monitoring of Area Q, all values were recorded within the compliance transects of 300 feet north of Area M and 300 feet south of Area L. Most monitoring was done within the active work zone, 300 feet down current of active work to monitor near-field impacts.

Field logs and daily summary reports, as well as figures depicting the complete time series from in-situ fixed-station instruments are included in Appendices A and B, respectively. Tide level data are included on the field logs (Appendix A). DR stands for “debris removal” and DRG stands for “dredge”.

**Weekly Report: June 15-30, 2011 (Week 1)**

- A) **Areas of activity:** Dredging in Areas G and K. Debris removal in Areas N and K.  
 B) **Days monitored:** Monday 6/27, Tuesday 6/28, Wednesday 6/29 and Thursday 6/30.  
 C) **Exceedances:** None  
 D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
6/27/11	Ebb Reference	Ebb	3.2-6.4
	Flood Reference	Flood	0.9-5.4
	300' south of Area K DR & DRG	Ebb	3.7-14.9
	300' north of Area G DRG	Flood	2.8-5.3
6/28/11	Ebb Reference	Ebb	10.0-12.0
	Flood Reference	Flood	2.6-10.3
	300' south of Area K DR & DRG	Ebb	3.7-14.9
	300' north of Area K DR & DRG	Flood	5.1-23.9
6/29/11	Ebb Reference	Ebb	5.9-8.0
	Flood Reference	Flood	4.9-11.1
	125' south of Area G DRG	Ebb	5.0-13.1
	150' south of Area K DR	Ebb	8.8-36.9
	300' south of Area K DR	Ebb	6.4-19.5
	300' north of Area K DR	Flood	5.4-11.8
	300' north of Area K DRG	Flood	6.6-12.7
6/30/11	Ebb Reference	Ebb	3.6-7.7
	Flood Reference	Flood	8.7-10.3
	125' south of Area K DRG	Ebb	5.2-13.0
	200' SW of Area K dredge	Ebb	15.1-36.0
	300' south of Area K DR	Ebb	3.1-4.2
	100'-400' north of Area K DR & DRG	Flood	5.0-60.0

- E) **Samples:** Level I water quality samples collected on Monday 6/27 and Tuesday 6/28. Level I samples are being analyzed for toxicity, total and dissolved PCB concentrations, turbidity, total suspended solids and metals.
- F) **Wildlife:** Swans, seagulls, water fowl and shorebirds observed. Some jellyfish were observed.
- G) **Notes:** Oily sheens observed on Wednesday 6/29 and Thursday 6/30. Heavy sheen on 6/29 was observed inside and north of containment booms in area K on flood tide; DR and DRG crews were advised to reduce pace and another set of booms was recommended. Light sheen on 6/30 was observed inside booms and to south/southwest outside of booms in area K.

***In-situ Mooring Data:***

Mooring SWS shows signs of biological growth beginning sometime on 6/26, and for quality control reasons the data has been omitted. The same may be evident for mooring SAK beginning at approximately the same time but the exact cause for the increased turbidity measurements is unknown. Mooring SAL was pinched between dredging pipeline sometime on Saturday 6/18 and was later removed from the water and repositioned on Tuesday 6/21. The data for this period has been omitted since the mooring was not in its specified location.

Turbidity data collected at NCS from 6/15 to 6/20 were characterized by periods of low turbidity ( $n < 5$  NTU) followed immediately by a sharp jump to increased turbidity ( $n > 100$ ). This trend continued for several days in a row, suggesting a piece of debris was entangled in the instrument or the wipers designed to clear the measuring interface of obstructions were malfunctioning. As such, the quality of the data from this period is suspect and the data were omitted from weekly figures of DO and turbidity.

***Boat-Based Water Quality Monitoring:***

Remediation dredging activities began this week in New Bedford Harbor. WHG performed Level I water quality monitoring during dredging activities on Monday 6/27 and Tuesday 6/28. The two sets of Level I water quality samples were submitted to EnviroSystems, Inc. (ESI) for toxicity analysis, and Alpha Analytical Laboratories (AAL) for chemical and physical analyses, including total and dissolved PCBs, turbidity, total suspended solids and metals. On Wednesday 6/29 and Thursday 6/30, WHG continued boat-based water quality monitoring.

During monitoring on Monday 6/27, monitoring efforts were focused around the collection of Level I samples for analysis of all pertinent water quality parameters. Samples were collected 300 feet north of the active dredging and debris removal in Area G on the flood tide and 300 feet south of the activities in Area K during the ebb tide. Reference water samples were also collected at locations 1000 feet south of Area L during the flood tide and 1000 feet north of Area G during the ebb tide. Turbidity was generally low surrounding the remediation activities, reaching a maximum of 16.8 NTU. Dissolved oxygen concentrations ranged from a minimum of 3.76 mg/L observed at the northern ebb reference location to 13.9 mg/L, measured 300 feet north of activities in Area K.

Tuesday 6/28 was the second day of Level I water quality monitoring. Samples were collected in the same manner as was done on Monday 6/27, surrounding dredging activities in Areas G and K. Turbidities were observed to be between 3 – 23.9 NTU during sample collection at both the flood and ebb sampling locations. Dissolved oxygen concentrations ranged from a minimum of 2.77 mg/L observed at the northern ebb reference location, to 13.29 mg/L, measured 300 feet north of activities in Area K.

On Wednesday 6/29, boat-based water quality monitoring began. Monitoring efforts surrounded dredging in Area G and K for both flood and ebb tides. Ebb reference turbidity was between 5.9 – 8 NTU; flood reference turbidity was between 4.9 – 11.0

NTU. Higher turbidities were observed at 3-foot depth south of debris removal in area K, with a maximum of 36.9 NTU 150 feet south of activity ebb tide. Dissolved oxygen values remained similar to previous days. No remediation activities were performed in Areas N and O, but oil boom was deployed in anticipation of beginning work.

Turbidity on Thursday 6/30 remained low at all stations. Ephemeral plumes of higher turbidity (maximum 36.0 NTU) were observed occurring infrequently at distance 200 feet southwest of the debris removal in Area K during the ebb tide. This area was very shallow and the hydraulic forces for mobilizing bottom sediment may have increased due to the reduced water elevation. The highest turbidity values were measured north of active dredging and debris removal in Area K during the flood tide, but were determined to be a result of submerged dredge pipeline disturbing bottom sediment and not a result of dredging or debris removal. Dissolved oxygen concentrations ranged from a minimum of 3.11 mg/L at the northern ebb reference station, to 10.5 mg/L at 300' south of activity in Area K. No remediation activities were performed in Area L, however pipeline was repositioned and oil boom was deployed in anticipation of beginning work there soon.

**Weekly Report: July 4 – July 8, 2011 (Week 2)**

- A) **Areas of activity:** Dredging in Areas G and K. Debris removal in Areas K and N.
- B) **Days monitored:** Wednesday 7/6 and Friday 7/8.
- C) **Exceedances:** None.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
7/6/11	Ebb Reference	Ebb	4.5-11.8
	Flood Reference	Flood	2.8-6.7
	300' north of Area G DRG	Flood	6.5-22.4
	300' north of Area K DR	Flood	6.2-10.9
	200' south of Area G DRG	Flood	6.3-9.8
	300' south of Area N DR	Ebb	10.2-13.5
	300' south of Area K DR	Ebb	6.2-8.0
7/8/11	Flood Reference	Flood	3.4-13.4
	300' north of Area K DR & DRG	Flood	4.4-16.0
	300'-400' transects north of Area K DR & DRG	Flood	11.0-24
	300' north of Area G DRG	Flood	8.1-20.9
	150' north of Area N DR	Flood	7.8

- E) **Samples:** None.
- F) **Wildlife:** Numerous terns and gulls feeding, occasional fish observed jumping, cormorants, swans, and ducks.
- G) **Notes:** A very light sheen was observed outside of containment areas north of the boom in Area K during flood tide and near the same area on ebb tide southwest of debris removal in Area N on 7/6. No odor was observed. Very light sheens were

observed north of Area G DRG inside booms and north of Area K outside of booms, both during flood on 7/8.

***In-situ Mooring Data:***

All four in-situ water quality moorings were redeployed after being recovered, cleaned and calibrated the week prior.

***Boat-Based Water Quality Monitoring:***

Woods Hole Group performed boat-based water quality monitoring on Wednesday 7/6 and Friday 7/8. Background turbidity measurements on Wednesday 7/6 at the ebb reference station were generally larger than turbidities measured near remediation activities, with a maximum of 11.8 NTU. Background turbidity measurements at the flood reference station were the lowest values observed anywhere during sampling. A very light sheen was observed outside the boom north of Area K while debris removal was active during flood tide and in the same area southwest of debris removal in Area N during ebb tide. No odor was observed.

Turbidity readings around areas of active debris removal and dredging in Areas G, K and N (within 300 feet) never exceeded 25 NTU during monitoring on 7/6 or 7/8. On 7/6, dissolved oxygen concentrations reached a minimum of 1.20 mg/L at depth, but near the surface and mid-depth were generally between 5-9 mg/L, reaching a maximum of 13.85 mg/L at the surface near Area N debris removal. On 7/8, dissolved oxygen concentrations reached a minimum of 0.16 mg/L at depth (5 ft) 300' north of Area K dredging, but near the surface and mid-depth were generally between 2-5 mg/L, reaching a maximum of 5.42 mg/L at the surface north of Area G dredging.

On Friday 7/8 background turbidity readings were recorded at the flood tide reference location 1000 feet south of Area L (it was believed there would be dredging in this area, but there was none while monitoring took place). Background readings were 3.3 – 13.4 NTU during the flood tide. Turbidity values were highest near the debris removal operations in Area K. During a transect north of Area K at a distance of 400 feet down current, a maximum of approximately 24 NTU was recorded. Dissolved oxygen concentrations were higher on 7/6, ranging from approximately 1.2 mg/L to 13.85 mg/L in near-surface waters during the afternoon. Dissolved oxygen values at depth nearly reached 0 mg/L at some stations on 7/8.

A severe thunderstorm disrupted all remediation and monitoring operations for two hours on 7/8. This event can clearly be seen in data from mooring SWS, where turbidity and dissolved oxygen increase rapidly for a time. Once activities began again, a ~one foot layer of fresher (salinity < 5ppt) was moving seaward for the remainder of the monitoring period, despite the flood tide. This surface layer contained slightly elevated turbidity values, though none were recorded

**Weekly Report: July 11 – July 15, 2011 (Week 3)**

- A) **Areas of activity:** Dredging in Areas G and K. Debris removal in Areas K and N.
- B) **Days monitored:** Monday 7/11 and Friday 7/15.
- C) **Exceedances:** None.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
7/11/11	Ebb Reference	Ebb	4.9
	Flood Reference	Flood	2.3-3.4
	300' south of Area G DRG	Ebb	3.0-20.6
	350' north of Area K DRG	Flood	5.3-20.3
	300' north of Area G DRG	Flood	5.1-17.0
7/15/11	Ebb Reference	Ebb	3.7-6.1
	300' north of Area N DR	Flood	2.7-12.3
	300' south of Area K DR & DRG	Ebb	7.3-31.4

- E) **Samples:** None.
- F) **Wildlife:** Terns, gulls, occasional fish (silversides) observed jumping, cormorants, swans, ducks, egrets, blue heron.
- G) **Notes:** Slight sheen was observed up to 1000' south of debris removal in Area K during ebb tide on 7/15.

***In-situ Mooring Data:***

Woods Hole Group performed boat-based water quality monitoring on Monday 7/11 and Friday 7/15. All four in-situ water quality moorings had their data downloaded and were cleaned on 7/15.

Data recovered from mooring SWS were characterized by sudden and large shifts in dissolved oxygen, where values dropped as low as 0.10 mg/L. Turbidity readings at this site were also the most dynamic, though values never exceeded 60 NTU. Other moorings recorded low (<20 NTU) turbidities at most times. Mooring SAK showed a period of increased turbidity on 7/14, peaking at ~70 NTU but averaging ~15 NTU over a 6-hour period. Moorings SAL and NCS recorded very low turbidity values (<15 NTU) during the period of interest.

***Boat-Based Water Quality Monitoring:***

Background turbidity measurements at both the ebb and flood reference stations were among the lowest values observed anywhere during sampling on Monday 7/11. The lowest turbidity readings as well as the highest dissolved oxygen readings that day came from the flood reference station.

Turbidity readings around areas of active debris removal and dredging in Areas G, K and N were generally <15 NTU. The monitoring location 300' south of Area G dredging was positioned in an area where most boat traffic enters and exits Area G because the dredging pipeline prevented access to a more favorable location. Turbidities remained

between 30-60 NTU for the entire period of monitoring at this location on ebb tide, approximately one hour. While monitoring, dredging pipeline was observed floating to surface and sinking repeatedly. The area of higher turbidity extended ~600' south of the dredge. Given how shallow this area is, it was believed the pipeline movement combined with boat traffic were responsible for the sustained higher turbidities. This was corroborated by low ( $\leq 15$  NTU) readings taken within 50' of the dredge (data not recorded). Dissolved oxygen measurements on 7/11 were similar to those seen during other monitoring periods: ~3-11.6 mg/L near the surface, decreasing to 0.30-0.45 mg/L at depths greater than 5 feet.

On Friday 7/15, background readings were 3.7 – 6.1 NTU during ebb tide. Most monitoring activity was focused on Area K during ebb tide. High (<50 NTU) turbidity values were seen 100-200' from dredge and debris removal, but decreased to <30 NTU with increasing distance away from activity. Dissolved oxygen values (1.8 - 3.7 mg/L at depth) were not as low as previous monitoring periods.

**Weekly Report: July 18 – July 22, 2011 (Week 4)**

- A) **Areas of activity:** Dredging in Areas G and K, mechanical dredging in Area Q. Debris removal in Areas K, L and N.
- B) **Days monitored:** Monday 7/18, Tuesday 7/19 and Wednesday 7/20.
- C) **Exceedances:** None.
- D) **Turbidity summary:**

<b>Date</b>	<b>Area/Station</b>	<b>Tide</b>	<b>Turbidity range (NTU)</b>
7/18/11	Ebb Reference	Ebb	5.2-10
	Flood Reference	Flood	1.7-4.4
	100' north Area K DRG	Flood	7.8-13.4
	150' north of Area K DRG	Flood	6.0-56.2
	200' south of Area N DR	Ebb	4.9-25.1
	350' south of Area G DRG	Ebb	11.6-65
	500' south of Area G DRG	Ebb	9.3-21.9
7/19/11	Ebb Reference	Ebb	1.2-2.4
	Flood Reference	Flood	0.8-0.9
	300' north of Area Q mechanical DRG	Flood	1.3-2.2
	150' north of Area Q mechanical DRG	Flood	1.5-2.3
	~100'-200' transects east of Area Q mechanical DRG	Ebb	2.0-3.1
	300' south of Area G DRG	Ebb	6.0-25.8
7/20/11	Flood Reference	Flood	1.4-2.1
	300' north of Area K DR & DRG (1st)	Flood	11.4-65.8
	300' north of Area K DR & DRG (2nd)	Flood	10.8-23.8

- E) **Samples:** None.



- F) **Wildlife:** Terns, gulls, occasional small fish, cormorants, swans, ducks, egrets, blue heron.
- G) **Notes:** Heavy sheen with strong odor and high turbidity values were observed at 300' north of DR & DRG in Area K during flood tide on 7/20. Vast majority of sheen was contained by booms on northern edge of Area K. Mooring data showed no evidence of threshold exceedance during sampling period.

***In-situ Mooring Data:***

Woods Hole Group performed boat-based water quality monitoring on Monday 7/18, Tuesday 7/19 and Wednesday 7/20. All four in-situ water quality moorings had their data downloaded and were cleaned on 7/18. Data from mooring NCS was downloaded on 7/20 as well.

Turbidity data from mooring SWS increased during periods when depth is smallest at low tide. Dissolved oxygen decreased greatly to near-zero values during these times. The maximum depth at SWS during high tide is approximately 6 feet, at low tide it is approximately 3 feet. Turbidity and dissolved oxygen values from moorings SWS or SAK showed no evidence of threshold exceedances or anomalous data. Mooring SAL recorded a spike (64 NTU max) in turbidity on 7/17 which was most likely a result of dredge and/or debris removal mobilization.

Mooring NCS is located approximately 800' south of Area Q, making it the most likely mooring to record the effects of Area Q mechanical dredging, if any. Beginning at the start of 7/18 turbidity data steadily increased, in much the same way as biofouling would appear despite the fact that the mooring was thoroughly cleaned that same day. Turbidity data recorded by mooring NCS have been the subject of several quality control issues since deployment in April. Large sections of previous datasets were omitted due to apparent biofouling or entangled debris, but a diagnostic test in the field on 7/20 revealed a possible malfunction which could be responsible for the erroneous data.

***Boat-Based Water Quality Monitoring:***

Background turbidity measurements at both the ebb and flood reference stations were low (0.8 – 10 NTU) on most days, though background measurements were generally higher when taken at the northern reaches of the study area (i.e. north of Area G).

On Monday, no impact was observed from mobilization activities for Area Q mechanical dredging. Turbidities at all monitoring stations remained fairly low (~5 – 25 NTU) with exceptions at 100-150' north of Area K dredge (31.4 & 56.2 NTU) and 350' south of Area G dredge (55 – 65 NTU), though the latter may have been due to dredging pipeline disturbing bottom sediments near the monitoring station. Dissolved oxygen values reached 0 mg/L at the bottom in Area J and were < 2.0 mg/L near the bottom. Dissolved oxygen values elsewhere remained higher (>3 mg/L).

Tuesday's (7/19) monitoring efforts focused mainly around the start of Area Q mechanical dredging. Monitoring locations were chosen at several distances from Area Q activity in order to survey the area as completely as possible. This included performing transects approximately 100-200' east of Area Q, monitoring at 1-2' depth.

Turbidity values around Area Q were very low (1.3 – 6.9 NTU), indicating that mechanical dredging is an effective and non-dispersive method for removing material from Area Q.

Monitoring on Wednesday 7/20 was spent at Area K, where stations were located inside the booms ~200-300' north of dredging and debris removal. Once monitoring began it was observed that turbidity values 1-2.5' beneath the surface were high (30 – 70 NTU, peaking at 98 NTU). Shortly thereafter a heavy sheen with strong odor was observed coming from the debris removal. Both the debris removal and dredging crews were advised to reduce their pace: debris removal was suspended for one hour while monitoring continued at the same location as before. Once debris removal stopped, the sheen and odor dissipated but turbidity slowly dropped to 20-35 NTU, at which time the dredge pipeline was observed being dragged directly up-current of monitoring, which may be one cause of the sustained higher turbidity values. Monitoring then moved west, closer to the shore but still within the Area K booms, where a heavy sheen and odor were observed again once debris removal began though turbidity values were much lower than before (10.8 – 23.8 NTU). Crews noticed the sheen and slowed their pace, but a slight sheen and odor remained regardless of their pace. Oil booms on the north boundary of Area K were preventing the vast majority of the sheen from escaping but a very light sheen was observed up to 500' north of Area K during flood tide.

**Weekly Report: July 25 – July 29, 2011 (Week 5)**

- A) **Areas of activity:** Dredging in Areas G and K, mechanical dredging in Area Q. Debris removal in Areas K.
- B) **Days monitored:** Monday 7/25 and Thursday 7/28.
- C) **Exceedances:** None.
- D) **Turbidity summary:**

<b>Date</b>	<b>Area/Station</b>	<b>Tide</b>	<b>Turbidity range (NTU)</b>
7/25/11	Flood Reference	Flood	1.1-3.0
	200' north of Area K DRG	Flood	13.2-56.8
7/28/11	Ebb Reference	Ebb	4.9-5.1
	Flood Reference	Flood	3.8-8.3
	200' south of Area K DRG	Ebb	4.3-7.2
	300' north of Area K DRG	Flood	7.2-18.9
	Transect east and parallel to Area K DRG	Flood	4.0-6.0

- E) **Samples:** None.
- F) **Wildlife:** Terns, gulls, occasional small fish, cormorants, swans, ducks, egrets, blue heron, kingfishers.
- G) **Notes:** Very light sheen observed south of DRG in Area G during ebb tide on 7/25 and very light sheen observed within boom area of Area K on 7/28. Mooring data showed no evidence of threshold exceedance during sampling period. Mooring NCS was replaced with entirely new instrument on 7/25. All four moorings failed to

collect data from 7/25 to 7/28 due to a loss of power. All four instruments were verified to be in working order and collecting data by the end of Thursday 7/28.

***In-situ Mooring Data:***

Woods Hole Group performed boat-based water quality monitoring on Monday 7/25 and Thursday 7/28. All four in-situ water quality moorings were cleaned, re-calibrated and had their data downloaded on 7/25. No data was downloaded on 7/28 due to a loss of instrument power following servicing on 7/25.

Turbidity data from mooring SWS show a spike on 7/21 but it occurred after remediation work stopped that day, so it could not be caused by dredging or debris removal. Dissolved oxygen decreased significantly to near-zero values several times but quickly rebounded to higher values, as is characteristic of this mooring location. Turbidity and dissolved oxygen values from moorings SWS showed no evidence of threshold exceedance or anomalous data from 7/18-7/25.

Moorings SAK and SAL have very similar data sets from 7/18-7/25 both in terms of dissolved oxygen and turbidity. Both recorded low turbidity values throughout the monitoring period and varying dissolved oxygen values, as to be expected with changes in tides and temperature. Neither mooring recorded spikes in turbidity nor dissolved oxygen during the monitoring period.

As mentioned in the weekly report for 7/18-7/22, mooring NCS has repeatedly recorded anomalous data despite cleaning, recalibration and troubleshooting with the instrument manufacturer. NCS was allowed to record data until 7/25, but the data is of poor quality and was omitted from this report. The old NCS instrument was removed from the water and a new instrument was installed in its place on 7/25. However, after initial deployment the new instrument lost power.

When moorings were collected to have their data downloaded on 7/25 it was observed that no data had been recorded from midday 7/25 to 7/28. A loss of power was to blame. All four moorings were verified to be collecting data and have ample power for continuous monitoring by the end of Thursday 7/28. After this power loss, WHG field crews were told to make certain that instruments are functioning under their own power, which includes visually confirming that sensor wiper blades are spinning 360 degrees and all data parameters are being collected before the instrument is re-deployed.

***Boat-Based Water Quality Monitoring:***

Background turbidity measurements at both the ebb and flood reference stations were low (1.1 – 8.3 NTU) on both days.

On Monday the majority of time spent on site was devoted to recovering, cleaning and re-calibrating the in-situ moorings. Boat-based monitoring was conducted north of Area K activity. Turbidity values observed within Area K were elevated (max 56.8 NTU, 1.5' depth), most likely because the survey vessel was located directly downstream of both the dredge and debris removal. A light sheen was observed south of Area G dredge within the containment area during ebb while in transit to mooring SWS.

Monitoring on Thursday was conducted mainly around Area K during both flood and ebb tide. Only dredging was being performed and turbidity values remained fairly low (< 20 NTU) even 200' from the dredge. Dissolved oxygen values remained high (6.44 – 9.4 mg/L at depths < 3' at all monitoring locations within Area K. At greater depths (> 3') dissolved oxygen dropped considerably (3.32 mg/L).

**Weekly Report: August 1 – August 4, 2011 (Week 6)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Area K.
- B) **Days monitored:** Monday 8/1 and Thursday 8/4.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

<b>Date</b>	<b>Area/Station</b>	<b>Tide</b>	<b>Turbidity range (NTU)</b>
8/1/11	Ebb Reference	Ebb	2.6-8.4
	Flood Reference	Flood	1.3-2.2
	300' north of Area K DR & DRG	Flood	3.8-22.0
	~100' north of Area K DR	High slack	10.1-30.2
	100-200' south of Area K DR & DRG	Ebb	6.5-8.3
	100' south of Area K DR	Ebb	6.5-102.5
8/4/11	Ebb Reference	Ebb	5.2-6.4
	Flood Reference	Flood	3.7-6.4
	300' south of Area K DR (east)	Flood	6.6-10
	300' north of Area K DR & DRG	Flood	22.8-37.8
	200-250' north of Area N DRG	Flood	13.3-19.6
	50-150' south of Area Q vibracoring	Ebb	7.0-7.6

- E) **Samples:** None.
- F) **Wildlife:** Gulls, terns, egrets, small fish jumping, swans, cormorants, ducks, blue heron.
- G) **Notes:** Very light sheen observed up to 300' north of Area K DRG & DR during flood on 8/1, but it was contained within booms. Monitoring efforts were obstructed by floating pipeline spanning the width of the upper bay between Areas K and N on 8/1. Monitoring within Area N was made difficult by floating pipeline on 8/4 but was later moved by dredge crews. Vibracoring took place in Area Q on 8/4, but produced no observable effect on water quality.

***In-situ Mooring Data:***

Water quality data from mooring SWS contains the most variability in both turbidity and dissolved oxygen values. Dissolved oxygen ranged from ~0 – 11 mg/L with much higher daily variability than any other mooring and did not remain near 0 mg/L for long before returning to higher values. Turbidity values demonstrated a similar pattern of rapid increase and decrease, the maximum value reaching ~70 NTU for a moment then decreasing to average range of 10-20 NTU.

Moorings SAK and SAL show very similar dissolved oxygen profiles: average values 6-8 mg/L, maximum near 12 mg/L, minimum near 4 mg/L. These data are consistent with profiles from previous weeks and do not show signs of rapid changes in dissolved oxygen. Turbidity data from SAK and SAL are similar, both averaging 1-15 NTU, but SAK contains several periods of increased turbidity (up to 40 NTU). These may have resulted from mobilization activities surrounding Area K, which is being worked on extensively. Turbidity values from SAL remained low (1-10 NTU) at all times.

Having fully replaced mooring NCS, the new instrument is functioning properly. Data collected from NCS show extremely low turbidity values (1-5 NTU) with dissolved oxygen values varying between 5-10 mg/L. All moorings are scheduled to be cleaned and re-calibrated this Thursday (8/11).

***Boat-Based Water Quality Monitoring:***

Monitoring on 8/1 was performed entirely within Area K. Background turbidity readings from the flood and ebb reference stations were low, even though the ebb reference station was within Area N. Floating pipeline spanning the width of the upper bay between Areas K and N prevented the survey vessel from reaching an ideal location for taking an ebb reference, but no work was being done in Area N so it was chosen as the ebb reference for the day. 100' south of debris removal in Area K, turbidity values were very high (102.5 NTU maximum) on ebb tide. However, these values were short-lived and when debris removal paused they quickly returned to a range of ~10-30 NTU. Debris crews were advised to continue their pace, as it did not produce long-lasting effects on water quality, even at such close proximity to the work being done. Dissolved oxygen values everywhere were higher (5.47 – 9.26 mg/L) than in previous monitoring periods for Area K, even at depth.

Monitoring on 8/4 was performed in Areas K and N. One dredge and two debris removal crews were working in Area K in the morning, switching to just debris removal crews in the afternoon. On flood tide, the monitoring station 300' north of Area K activity was positioned less than 50 feet from dredge pipeline. Turbidity values at this location ranged between 22.8 – 37.8 NTU, but it is unclear if these were a product of dredging and debris removal or pipeline motion. The same occurred when monitoring in Area N: moving pipeline was less than 20 feet from the survey vessel, yet turbidity values remained fairly low (13.3 – 19.6 NTU). Turbidity values remain highest in Area K compared to Areas N and G (now complete), but are not high enough to be of concern. Monitoring of the vibracore activity in Area Q was conducted briefly in the afternoon, and it produced no observable effect on water quality. Dissolved oxygen values were similar to those recorded in previous monitoring sessions (4.97 – 7.90 mg/L) and at no point did values approach 0 mg/L even at depth.

**Weekly Report: August 8 – August 11, 2011 (Week 7)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Area K.
- B) **Days monitored:** Monday 8/8 and Thursday 8/11.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
8/8/11	Ebb Reference	Ebb	2.1-3.6
	50' south of Area K DR	Low slack	20-60
	200' south of Area K DR	Low slack	8.0-20
	250' south of Area K DR & DRG	Flood	7.5-9.8
	250' north of Area K DR & DRG	Flood	3.8-24.2
	300' north of Area K DR & DRG	Flood	10.7-79.7
	175' northeast of Area K DR & DRG	Flood	4.8-39.7
	100' north of Area N DRG	Flood	23.5
	250' northwest of Area N DRG	Flood	9.7-14.9
	150' north of Area N DRG	Flood	11.3-16.2
	150' northeast of Area K DR & DRG	Flood	3.0-7.7
8/11/11	Ebb Reference	Ebb	4.0-5.0
	200' south of Area K DR (west)	Ebb	3.6-26.1
	250' south of Area K DR (2 crews)	Ebb	2.1-14.5
	350' south of Area K DR & DRG (both crews)	Ebb	8.2-11.6

- E) **Samples:** None.
- F) **Wildlife:** Gulls, terns, egrets, small fish jumping, swans, cormorants, ducks.
- G) **Notes:** spotty, light sheen observed south of Area K outside of booms during both tides on 8/8. Monitoring efforts were obstructed by floating pipeline spanning the width of the upper bay between Areas K and N on 8/8. Monitoring on 8/8 took place in close proximity to dredging pipeline several times throughout the day.

***In-situ Mooring Data:***

Mooring SWS showed a high degree of variability in both turbidity and dissolved oxygen readings which is characteristic for this mooring. Turbidity values generally remained low (< 20 NTU) but recorded occasional periods of increased turbidity (< 80 NTU). These high turbidity values could be from runoff after periods of precipitation. NOAA-NWS shows the New Bedford area recorded 0.25-1.5” of precipitation each day from 8/7-8/10. The sustained high turbidity values during 8/8 could be a result of the aforementioned rainfall events but could also be a result of biofouling or a piece of debris on the instrument, which is corroborated by the return to consistently low turbidity readings after the instrument was cleaned on 8/8. Dissolved oxygen was very dynamic at SWS, showing a pattern of sharp increase and decline but averaging ~4 mg/L for the period of interest. On 8/10 dissolved oxygen reached super-saturation (16.09 mg/L) but

decreased to average values once again. Dissolved oxygen measurements still occasionally reach near-zero at SWS.

Moorings SAK, SAL and NCS all show a very high degree of similarity to one another for the period of interest. Not only do turbidity and dissolved oxygen values vary by nearly the same amounts and at the same time, both measurements are nearly identical at all three moorings simultaneously. All three moorings show low (1-10 NTU) average turbidity and dissolved oxygen values ranging from 3-8 mg/L from 8/4-8/8 then ranging from 3-12 mg/L from 8/8-8/11. SAK recorded two small spikes in turbidity (60 NTU max) but readings did not exceed turbidity criterion. Dissolved oxygen values reached super-saturation at SAK and SAL moorings from 8/8-8/10 and NCS on 8/10-8/11 and at no point did values approach 0 mg/L.

***Boat-Based Water Quality Monitoring:***

Monitoring on 8/8 was conducted at many different sites around Areas K and N. Various distances from remediation equipment were monitored for elevated turbidity readings and none were observed. Monitoring was obstructed by a combination of floating pipeline and tides, but sufficient coverage of remediation activities was still completed. Turbidity measurements around Area K climbed as high 60 NTU at a distance of 50' from debris removal, but remained < 40 NTU at distances ranging from 175'-300' from remediation activity. Turbidity peaked at 79.7 NTU but the survey vessel was directly above shifting dredge pipeline. Dissolved oxygen at all locations remained low (3.03 – 5.97 mg/L) throughout the day at all depths. Later in the afternoon DO reached 8.39 mg/L at the surface near Area K. A light, spotty sheen was observed south of Area K outside the booms on both flood and ebb tide.

The majority of monitoring activities on 8/11 were spent servicing the four in-situ moorings, but boat-based observations were made. Debris removal in Area K was being conducted by two crews, one of which was based very close to the western shoreline of the estuary. Despite the highly energetic activity in this area, no sheens were observed, though occasional ephemeral plumes of high turbidity (~70 NTU max) were observed. In the late morning, both debris removal crews and the dredge were active in Area K, and the monitoring stations 200' and 350' south (during ebb) did not record any signs of threshold exceedance.

**Weekly Report: August 15 – August 19, 2011 (Week 8)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Area K.
- B) **Days monitored:** Monday 8/15 and Friday 8/19.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
8/15/11	Ebb Reference	Ebb	1.3-2.8
	Flood Reference	Flood	1.9-3.0
	300' north of Area K DR (one crew)	Flood	2.1-3.3
	150'-250' south of Area N DRG	Ebb	7.6-9.3
	250' south of Area K DR (two crews)	Ebb	1.6-24.7
8/19/11	Ebb Reference	Ebb	2.2-10.7
	Flood Reference	Flood	2.7-4.3
	300' north of Area K DR	Flood	6.3-19.3
	200' south of Area N DRG	Ebb	5.6-20.7
	200' south of Area K DR	Ebb	3.4-26.5

- E) **Samples:** TSS and turbidity samples collected at four sites on 8/15.
- F) **Wildlife:** gulls, cormorants, ducks, blue herons, osprey, egrets, many fish jumping.
- G) **Notes:** light sheen with no odor seen W-SW of Area N dredge outside of booms during ebb tide on 8/15. Water quality samples for TSS and Turbidity were collected on 8/15 as part of an ongoing effort to determine a correlation between turbidity and TSS in New Bedford Harbor. Moderate sheen associated with debris removal in Area K contained within booms on 8/19.

***In-situ Mooring Data:***

Mooring SWS recorded variable turbidity measurements, ranging from 5-50 NTU from 8/11 to 8/16. The New Bedford area received a substantial amount of rainfall on 8/15-8/16 (1-2", NOAA) and turbidity readings afterwards become extremely variable, ranging from 40 NTU to > 100 NTU. However, very rapid shifts in turbidity and the sustained nature of the readings well after the precipitation indicate that a piece of debris may have been entangled in the instrument. The amount of runoff this area receives coupled with the close proximity to shore make this a likely scenario. Dissolved oxygen readings showed similar a pattern of increase and decline, ranging from near 0 mg/L to 16 mg/L (super-saturation).

Moorings SAK and SAL show similar profiles for DO with values ranging from 2-15 mg/L over the monitoring period. Turbidity at SAL was very low (< 10 NTU), whereas SAK showed rising turbidity (1-20 NTU) values beginning around the same time as the precipitation event on 8/15-8/16. Mooring NCS recorded extremely low turbidity values (<5 NTU) for entire monitoring period, regardless of the precipitation. The DO profile was similar to previous weeks, ranging from 4-12 mg/L.



**Boat-Based Water Quality Monitoring:**

Boat-based monitoring on 8/15 was conducted mostly around Area K. One debris removal crew was working in Area K throughout the time spent monitoring. Turbidity (2.1 – 3.3 NTU) and dissolved oxygen (3.87 – 4.93 mg/L) values in Area K in the morning were low, but consistent across all sampled depths. A second debris removal crew began working simultaneously in the early afternoon in Area K, but the combined activity of two crews only increased turbidity to 24.7 NTU at the surface and values remained low at depth. As part of an ongoing effort to correlate turbidity and TSS in New Bedford Harbor, samples were collected at four locations: ebb reference (1000' north of Area N), flood reference (1000' south of Area L), 300' down-current of activity during ebb (250' south of Area K debris removal), and 300' down-current of activity during flood (300' north of Area K debris removal) plus a replicate at one site (250' south of Area K debris removal). The survey vessel could not spud in an area with submerged high voltage cables, so the sampling location was moved closer to the remediation activity during ebb.

Monitoring on Friday 8/19 was conducted within Areas K and N. A single debris removal crew was operating in Area K along with the dredge, and monitoring 200-300' down-current showed low turbidity values (~3-19 NTU, 26.5 NTU maximum) during both flood and ebb. Monitoring the Area N dredge also showed low turbidity values (5.6-20.7 NTU) at a distance 200' down-current. Dissolved oxygen measurements were high (>100% saturation) near the surface at all locations, averaging 9-12 mg/L in the top 0-2'. Two moderate/slight sheens were observed north of the Area K debris removal and dredge on flood tide, but both were contained within the booms.

**Weekly Report: August 22 – August 25, 2011 (Week 9)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Areas K and O.
- B) **Days monitored:** Monday 8/22 and Thursday 8/25.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
8/22/11	Ebb Reference	Ebb	6.4-9.4
	Flood Reference	Flood	2.6-3.2
	300' north of Area K DR	Flood	8.7-40.5
	250' north of Area O DR	Flood	5.7-23.3
	200' southwest of Area O DR	Flood	8.7-80
	300' south of Area N DRG	Ebb	3.4-9.2
8/25/11	Ebb Reference	Ebb	0.5-8.5
	Flood Reference	Flood	2.6-3.6
	300' south of Area K DRG	Ebb	2.8-3.6
	200-300' north of Area K DRG	Flood	10.0-35
	250' north of Area N DRG	Flood	11.1-52.4

- E) **Samples:** None.
- F) **Wildlife:** Green herons, cormorants, gulls, terns, egrets, ducks, minnows, swans.
- G) **Notes:** Turbidity plume observed on 8/22 in top 1.5' of water SW of Area O debris removal on flood tide with turbidity values 18-80 NTU depending on distance from remediation work. Heavy sheen with strong oily and H<sub>2</sub>S odor observed on 8/25 originating from Area K dredge. Later, Pipeline in Area K burst/leaked, dredging stopped immediately and pipeline was floated to surface for repair. All 4 WHG instruments and moorings were removed from the water as well as the WHG survey vessel.

***In-situ Mooring Data:***

Upon retrieval, all four moorings were covered with significant biological growth, more than had been observed in recent weeks between cleanings. Data from mooring SWS show a steadily increasing trend in turbidity readings. However, this may be a factor of growth on the instrument passing in front of the optical turbidity sensor. The optical sensors were free of direct obstruction, but biological growth was within reach and may have been floating into their line of sight. Turbidity data from SWS seems more affected by this than dissolved oxygen, and are therefore not reliable. Dissolved oxygen shows high peaks followed by lows where DO reaches 0 mg/L for several hours, or one tidal cycle (low tide).

Other moorings show similar trends in turbidity and DO datasets. At SAK, turbidity remains < 20 NTU until a point when readings start fluctuating between 0 – 50 NTU with two spikes reaching > 80 NTU. DO values are very high during flood tides, reaching 14 mg/L but the average is ~7 mg/L. At SAL the data are similar: turbidity remains 0-10 NTU until growth appears then increase to 0 – 40 NTU, and DO averages 8 mg/L with highs up to 15 mg/L and lows to 2 mg/L. NCS recorded extremely low turbidity values (0-5 NTU), then increased to 15 – 40 NTU after growth appeared. DO at NCS was also very high, averaging 8 mg/L with minimum and maximum of 3 mg/L and 13 mg/L, respectively.

Dissolved oxygen readings at all moorings were high and the presence of biological growth on all instruments suggests a bloom of some kind. The instruments are equipped with wipers that are verified to be working and are doing their job of keeping optical sensors free of growth, but the wipers themselves had growth on them that may be obstructing the sensors. Even with regular cleaning this can still be an issue, and WHG may invest in alternatives to help lessen the impact of biofouling (e.g. wipers made of anti-biofouling copper).

***Boat-Based Water Quality Monitoring:***

Boat-based monitoring on 8/22 was focused around debris removal in Area K and debris removal in Area O, which hadn't been monitored previously. Turbidity readings at all monitoring sites remained low throughout the day, only twice exceeding 30 NTU. DO was moderately low (4-7 mg/L) at the surface (0-3 ft), but decreased to lower values (1-3 mg/L) at depths greater than 3 ft. While monitoring Area O debris removal a plume was observed to the SW of activity moving against the flood tide, likely a result of strong winds that day. Turbidity within 50' of activity increased to 80 NTU at the surface and

decreased to 18 NTU 300' away. The plume was still evident 30 minutes after debris removal stopped, though it was greatly diminished in both coverage and turbidity readings. Floating pipeline prevented the survey vessel from reaching the upper reaches of the estuary in the morning but was sunk in the afternoon.

Thursday 8/25 monitoring was spent mostly in and around Area K dredging. Upon entering Area K from the north, a moderate sheen was observed outside the booms, and a heavy sheen was inside the booms originating from the dredge. The sheen smelled heavily of oil and H<sub>2</sub>S and extended roughly 600' north of the dredge. Proper administrators were alerted and dredging paused briefly while more boom was added on the northern edge of Area K. There was no observed increase in turbidity with the sheen: values remained 10-35 NTU inside and out of the sheen. Sheen was still evident in work afterwards, but the boom appeared to be containing it. In the early afternoon, the submerged pipeline in Area K burst/leaked. The fluid coming out of the pipeline did not appear muddy and the dredge crew was alerted as soon as the leak was observed. It is believed that the leak occurred when the dredge was backing up, which could explain why the fluid coming from the pipe did not appear muddy. The pipeline was floated to the surface to await repairs and crews moved to Area N. In Area N a light sheen was observed north of the dredge in the afternoon. Turbidity values throughout the day were low except while monitoring north of Area N. Turbidities 40-60 NTU were recorded 250' NW of the dredge, but this may have been caused by a combination of high wind and waves acting in shallow (<3 ft) water. The remainder of the day was spent preparing for Hurricane Irene: all four moorings and instruments were removed from the water, as well as the WHG survey vessel which was secured on the Sawyer Street premises.

**Weekly Report: August 30 – September 1, 2011 (Week 10)**

- A) **Areas of activity:** Dredging in Area N, debris removal in Area N, sheet piles installation in Area N.
- B) **Days monitored:** Tuesday 8/30 and Thursday 9/1.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
8/30/11	Ebb Reference	Ebb	3.5-5.5
	Flood Reference	Flood	0.7-2.3
	300' north of Area N DR & DRG	Flood	1.3-14.5
	300' south of Area N DR & DRG (before DR relocation)	Ebb	0.8-33.5
	300' south of Area N DR & DRG (during DR relocation, at surface)	Ebb	30-100
	300' south of Area N DR & DRG (after DR relocation, 1-2 ft depth)	Ebb	40-65
	300' south of Area K (@ SAK)	Ebb	7.8-12.2
	300' south of L (@ SAL)	Ebb	3.9-4.9
	800' south of Area Q (@ NCS)	Ebb	1.5-1.6
9/1/11	Ebb Reference	Ebb	4.4-5.5
	Flood Reference	Flood	0.1-0.7
	transects along western edge of Area N	Flood	6-20.5
	250' north of Area N DR & DRG	Flood	8.4-13.4
	300' south of Area N DR & DRG	Ebb	7.4-21.6

- E) **Samples:** Bi-weekly samples for TSS and turbidity collected at four sites on 8/30, 12 samples total.
- F) **Wildlife:** Many osprey, ducks, terns, gulls, green heron, blue heron, many fish (herring/pogies?) jumping, swans, cormorants, minnows.
- G) **Notes:** Short-lived turbidity plume observed in top 1' of water 300' south of Area N debris removal on ebb tide with turbidity values 30-100 NTU. Moderate sheen with H<sub>2</sub>S odor observed on 8/30 coming from Area N activity moving south on ebb tide, some escaping past booms. All 4 WHG instruments and moorings were redeployed on 8/30. Heavy/moderate sheen observed coming from Area N dredge/debris removal on 9/1 flood tide, extending west and south to Area K. Dissolved oxygen values at ebb ref on 9/1 were 16-20 mg/L.

**Boat-Based Water Quality Monitoring:**

Boat-based monitoring on 8/30 was focused on Area N, where dredging and debris removal were taking place. Flood measurements recorded low turbidity (1.3 – 14.5 NTU) and fairly low dissolved oxygen (DO) (3.30 – 4.95 mg/L). Monitoring moved to 300' south of Area N debris removal and dredge after the tide switched. At this location, turbidity was higher compared to readings taken at 300' north of activity, but

measurements remained fairly low as did DO. In the late morning the debris removal barge was relocated to the western edge of Area N, after which a plume of very high turbidity (30-100 NTU, average ~75 NTU) was observed within the top 1' of water near the surface. High turbidity values were maintained for several minutes until the wind and ebb tide moved it past the survey vessel. There was no observed effect on DO or other water quality properties. The WHG sampling crew was prepared to collect samples, but noticed the plume was not sustained and would not last long enough to sample. Shortly after the plume passed, turbidity returned to values recorded previously (~15 - 30 NTU). However, once debris removal was active for several minutes a layer of elevated turbidity (40 – 65 NTU) was observed between 1-2' depth moving south away from Area N.

Bi-weekly water quality samples for TSS and turbidity were collected at four sites (two samples per site, except last site which had six samples = 12 samples total). They were collected at 300' south of Area L (flood ref, two samples), 300' north of Area N dredge and debris removal (flood sample, two samples), 1000' north of Area N (ebb ref, two samples) and 300' south of Area N dredge and debris removal (ebb sample, four samples, two sample replicates). All four WHG moorings and in-situ water quality instruments were redeployed in their original locations as well.

Thursday 9/1 monitoring was also focused in Area N. After collecting the flood reference 1000' south of Area L (very low turbidity <1 NTU), the WHG crew observed two dead fish (~1 ft long, herring or pogie maybe) en route to Area N. They had a black film on some parts of their body that came off after being agitated, and both appeared to have been partially eaten. The cause of death is unknown and the carcasses may just be a result of the high frequency of fish jumping in the upper bay and the subsequent predation. After arriving at Area N, it was observed that approximately 50' of boom from the western edge of Area N was left open while both dredging and debris removal was ongoing. Upon arriving at Area N, support crews closed the boom, and it is unknown for how long the boom was open. This allowed a heavy/moderate sheen with oily odor to exit the containment area and extend to the west and south to Area K. It appeared to be a cloudy film with occasional oily splotch and did not have the rainbow/iridescent look of an oil slick. There was no associated increase in turbidity with the sheen and values were 6-18 NTU in or out of the sheen. Monitoring north of Area N proceeded as usual: turbidity 8.4 – 13.4 NTU, DO = 2.73 – 5.58 mg/L. Dissolved oxygen was 16-20 mg/L at the ebb reference station. The water was observed to be reddish in color and a bloom of some type is suspected as the cause. Later in the afternoon this reddish water mass was observed at the 300' south of Area N debris removal monitoring station on ebb tide, with surface DO values slightly increased as a result (not recorded in log sheets). Water quality parameters 300' south of Area N were within range of values recorded in previous weeks: turbidity = 7.4 – 21.6 NTU, DO = 3.51 – 6.37 mg/L.

On both monitoring days this week WHG crew observed many fish jumping throughout the entire monitoring period. The fish, believed to be herring or pogie, were being preyed upon heavily by numerous osprey and gulls.

**Weekly Report: September 7 – September 9, 2011 (Week 11)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Areas K and N.
- B) **Days monitored:** Wednesday 9/7 and Friday 9/9.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
9/7/11	Ebb Reference	Ebb	1.0-1.8
	Flood Reference	Flood	0.2-7.1
	200' south of Area K DRG	Ebb	8.9-32.3
	300' north of Area K DRG	Flood	4.1-34.4
	300 north of Area K DRG (plume)	Flood	60-140
	300' north of Area K DRG (no active work)	Flood	7.0-22
9/9/11	Ebb Reference	Ebb	0.0-3.2
	Flood Reference	Flood	0.9-6.7
	300' south of Area N DR	Ebb	0.0-4.1
	300' transects south of Area K DRG	Ebb	5.0-17
	300' south of Area K DRG	Ebb	2.3-17.5
	300' north of Area K DRG	Flood	21.2-72.7*

\*Dredge was inactive for most of monitoring at this location: turbidity likely caused by wind/wave energy agitating the bottom or shoreline.

- E) **Samples:** none collected.
- F) **Wildlife:** Gulls, terns, ducks, egrets, herons, cormorants, fish jumping, osprey, red-tailed hawk, swans.
- G) **Notes:** ephemeral turbidity plume with no sheen observed north of Area K dredge on 9/7 flood, which was likely caused by support boat propeller wash. Turbidity returned to lower values after plume passed. Heavy sheen with high turbidity from Area N on 9/9 was a result of support boat propeller wash transporting bottom sediment underneath booms and outside containment area. High wind and waves plus ebb tide contributed to sheen escaping south out of Area K on 9/9.

***In-situ Mooring Data:***

In the daily report from 9/1 it was hypothesized that a bloom of some kind was taking place in the northern reaches of the harbor near mooring SWS based on extremely high dissolved oxygen (DO) values (17.41 mg/L) near the surface at mooring SWS. However, the mooring did not record values this high until 9/3-9/5. The maximum recorded DO reading at SWS was 20.43 mg/L on 9/3. Turbidity at SWS varied between 5 – 40 NTU for much of the time, though spikes in excess of 100 NTU occurred on 9/4 and 9/8. The spike on 9/4 could not have been from remediation activities because it was the Sunday before Labor Day. The spikes on 9/8 occurred after 10PM and were likely a result of heavy rainfall and runoff. Upon recovery on 9/9, the mooring was entangled with a large

amount of freshwater vegetation, and though it may have contributed to the turbidity spikes on 9/8 it did not appear to adversely affect data collected afterwards.

SAK shows very characteristic profiles for DO and turbidity from 8/30 – 9/3, with increases in turbidity during working hours, lingering aftereffects into the evening, then low values for turbidity during off-hours. Turbidity varied between 0 – 40 NTU and DO varied between 2 – 8 mg/L. From 9/3 – 9/7 remediation activity was suspended for Labor Day and turbidity values dropped to background levels. The rise in DO may be a result of the bloom in the upper harbor extending farther south or the DO-rich water moving into the area by way of wind and tides. Mooring SAL shows a similar but muted pattern of increased DO during these times, but shows no sign of increased turbidity (values remained < 20 NTU). It is unclear if the extended break in remediation activity is related to the increase in DO, though it seems unlikely based on previous periods of inactivity and data from previous off-days. Values for both parameters return to characteristic levels on 9/7.

Data from NCS shows no signs of sudden change in either turbidity or DO during the deployment period. Turbidity remained < 20 NTU for the duration and DO varied between 5-10 mg/L. Maximum values for DO from 9/3 – 9/5 are not as high as previous or future days in this data set.

***Boat-Based Water Quality Monitoring:***

Boat-based monitoring on 9/7 was focused around Area K, though work in Area N began once the tides permitted. Turbidity values at various locations in/around Area K were within turbidity criterion for most of the day. During the PM flood tide, the survey vessel recorded turbidity values 60 – 85 NTU with a peak of 140 NTU at 300' north of the dredge at 0.5 – 1.5' depth. The short-lived high turbidity plume passed the survey vessel and its source was believed to be the propeller wash from a support boat pushing the dredge. The wash was directly upstream of the survey vessel and took place in a shallow area near the shore. The plume lasted less than 10 minutes and stopped once dredging was paused for 20 minutes. The plume contained no sheen or odor. Due to the plume's short life span, downstream monitoring was not performed. DO values were lower (1.56 – 4.36 mg/L) at all locations and at all depths except at the surface at the flood reference station during monitoring on 9/7.

Monitoring on 9/9 began at 300' south of Area N debris removal. Shortly after arriving on location, sheen with oily odor was observed moving past the survey vessel. The source was determined to be the Area N dredge/support crews ~800' north of the survey vessel. Upon closer inspection the source was propeller wash from support crews pushing the dredge in very shallow water which was transporting sediment and sheen underneath the oil booms. At 100' from the disturbance, turbidity was > 250 NTU but dropped very quickly with time and with increasing distance away from the source. At this time support boat propeller wash was black with sediment. Dredging in Area N stopped shortly after the source of the sheen was identified and crews moved to Area K. The combined energy of wind, waves and tides served to break up the sheen so much that it was difficult to identify in places where it was easily seen only minutes beforehand. Jay Mackay (USACE) was consulted and informed of the situation but advised against

sampling due to the large degree of break-up the plume/sheen had undergone. At its greatest extent, the WHG crew estimates the sheen extended from the northwestern tip of Area N to the southern edge of Area O (~1400 ft).

Later on 9/9, a moderate sheen with mild oily odor was observed inside containment of Area K: turbidity values from transects 250 – 300’ south of the dredge were 5 – 15 NTU. Sheen occurred when the dredge head was lifted and dredge was moved: during times of active dredging very little sheen is observed. Strong wind, waves and ebb tide combined to propel the sheen over and under the boom on the south edge of Area K. The majority of sheen still remained inside containment. In the early afternoon, support crews were observed installing extra boom on the southern edge of Area K, which reduced the amount of escaping sheen to near-zero. All four moorings had data downloaded and were redeployed.

**Weekly Report: September 12 – September 15, 2011 (Week 12)**

- A) **Areas of activity:** Dredging in Areas K and N, debris removal in Area K.
- B) **Days monitored:** Monday 9/12 and Thursday 9/15.
- C) **Exceedances:** None observed.
- D) **Turbidity summary:**

Date	Area/Station	Tide	Turbidity range (NTU)
9/12/11	Ebb Reference	Ebb	1.7-6.1
	Flood Reference	Flood	0
	150' W-NW of Area N DRG	Flood	5.5-16.9
	150 W-SW of Area N DRG	Ebb	7.8
	150' southeast of Area K DR (west crew)	Ebb	0.5-5.4
	150' south of Area K DR (east crew)	Ebb	6.1-18.4
	300' southwest of Area K DR (east crew)	Ebb	10-180
	300' south of Area K DRG	Ebb	0-4.4
9/15/11	Ebb Reference	Ebb	1.9-2.4
	Flood Reference	Flood	0.3-0.4
	300' west of Area N DRG	Flood	5.0-17
	300' north of Area K DR	Flood	1.8-60
	250' south of Area N DRG	Ebb	2.8-72
	300' south of Area K DR	Ebb	2.2-80

- E) **Samples:** bi-weekly samples for TSS and turbidity collected on 9/12.
- F) **Wildlife:** Gulls, green heron, ducks, minnows, swans, kingfishers, osprey, squirrel, egret, cormorants, fish jumping near SWS, turkey vulture. One dead fish (striper?) south of Area L, one dead herring in Area N.
- G) **Notes:** very light, spotty sheen from Area N on 9/12 flood, no odor or turbidity. Monitoring turbidity south of Area K debris removal proved difficult on ebb tide due to boat traffic (including WHG vessel), plus wind, waves and opposing surface/bottom currents agitating bottom in shallow areas. A moderate sheen was



observed between the Area C dock and Coggeshall street bridge on 9/15 flood, which appeared to be coming from areas south of Coggeshall bridge.

***In-situ Mooring Data:***

Mooring SWS showed a departure from the high dissolved oxygen (DO) values observed during the previous deployment period. Values ranged from 0 – 9 mg/L, with an average of 3.4 mg/L. Turbidity remained low at all times, never exceeding 25 NTU. Upon recovery, the mooring ball and instrument had fishing line with a hook and fish (herring) still attached. It is unknown when this occurred but it does not appear to have had an effect on the data.

Of all the moorings deployed, SAK is in closest proximity to remediation work (300 feet south of Area K). As such, it recorded several jumps in turbidity throughout the deployment period. Both spikes in excess of 80 NTU occur for only one data point, making a duration impossible to compute: a spike of 169 NTU was recorded on Sunday 9/11 at 9:45, and a spike of 130 NTU was recorded on Monday 9/12 at 13:45. In the daily report for 9/12 it was noted that WHG monitoring crews had issues measuring consistent turbidity values at 300' south of Area K debris removal (east) on ebb in the afternoon. Combined with general boat traffic, the combination of high wind, waves, and opposing surface and bottom currents are believed to be contributing factors to the elevated turbidity seen at this site and may not necessarily be a result of remediation activity taking place 300' away. Background turbidity remained low (<10 NTU), especially during off-hours. DO remained high at SAK, reaching a maximum of 14.4 mg/L, averaging 6.4 mg/L.

Turbidity at SAL remained low (<12 NTU) throughout the deployment period. DO reached 14.6 mg/L, averaging 6.8 mg/L. Data from NCS showed consistent DO values, ranging from 4.7 – 12.5 mg/L with an average of 7.3 mg/L. Turbidity at NCS showed small peaks on 9/12 – 9/14, each occurring between 1200 and 1500 during ebb tide. During these times turbidity peaked between 22 – 53 NTU when the average at other times was approximately 6 NTU.

***Boat-Based Water Quality Monitoring:***

Monitoring on 9/12 moved between Area N and Area K. A very light, spotty sheen was observed W-NW of Area N during flood, but there was no associated turbidity or odor. The cause is believed to be support boat propeller stirring up the bottom and transporting sheen underneath the booms. While monitoring the western debris removal unit in Area K (in the cove), turbidity varied between 0.8 – 244 NTU but highs were short-lived and readings averaged 10 – 40 NTU. Work in the area was stop-and-go and the excavator operator was aware he was stirring up the bottom heavily and took breaks as needed. Monitoring the eastern debris removal unit proved difficult as well, due to highly variable turbidity readings over a very short time (turbidity was observed changing from 5 NTU to 180 NTU back to 10 NTU in less than 30 seconds). The debris removal crew was asked to take a break, and they complied while WHG monitored the same location as before (300' south of activity). Turbidity was still highly variable while work was stopped for 10 minutes, after which it was decided a combination of boat traffic, wind, waves and opposing surface and bottom currents were agitating the bottom. Considering that

turbidity values were < 20 NTU at 150' from the debris removal crew, it seems unlikely that the high values seen farther away are a result of remediation. DO was low for most locations on average. Bi-weekly samples for TSS and turbidity were collected at 4 locations: 600' south of Area L, 150' W-NW of Area N dredge, 1000' north of Area N and 150' south of Area K debris removal (east).

After leaving the Area C dock on 9/15, a moderate sheen was observed between the dock, extending south past the Coggeshall street bridge. Tide was flooding and there was a strong wind from the south, so the source of the sheen must have been farther south in New Bedford Harbor. There was no turbidity or odor with the sheen. En route to Area N, a dead fish approximately 1.5' long was observed and another dead fish (herring) was observed in Area N that afternoon. Turbidity was low for most areas, but there were short-lived exceptions. On flood, an ephemeral plume of higher turbidity (30 – 60 NTU) passed the survey vessel at 4' depth. The plume was short-lived and was the only plume observed at this monitoring location. Throughout the day there was a very light sheen coming from the Area K debris removal crew. It is thought that wind and waves were moving the sheen up/around booms. On ebb tide the WHG survey vessel observed higher (45 – 72 NTU) turbidity readings throughout monitoring 250' south of Area N dredge. Readings averaged 20 – 30 NTU for an hour and a half. Another attempt was made to definitively monitor turbidity at 300' south of Area K debris removal (east) but the same natural disturbance as noted on 9/12 overpowered any apparent turbidity from the remediation activity. Readings at this location varied between 2.2 – 80 NTU and changed rapidly over short timeframes. In-situ instrument moorings were recovered, cleaned, calibrated, had data downloaded and were redeployed.

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## **4.0 DREDGING SUMMARY**

Remedial dredging was initiated on June 27, 2011 and completed on September 19, 2011. In 2011 remediation activities at the Site included hydraulic dredging and/or debris removal in four Dredge Areas: N, G, K and O (Figure 2). A fifth area, Area Q, is located just south of the Area C dock, adjacent to Sawyer street. Area Q was mechanically excavated from a barge but work stopped in early August. A sixth area, Area P, was slated for work in 2011 in situations where work was not possible in the previously mentioned dredge areas. No work was performed there this season. Dredge Areas are comprised of Dredge Management Units (DMU), which divide up the entire Site and are based primarily on contamination levels, contamination sources, and topography. Portions of the following DMUs fell within the boundaries of the Dredge Areas that were active in the 2011 season: DMU-1, DMU-2, DMU-3, DMU-4, DMU-10, DMU-12, DMU-13, DMU-14, DMU-15, DMU-102(MF) and DMU-103(MF).

Once the dredge areas were determined, sheet pilings were placed around the perimeter of each section, at approximately 50-foot spacing, to anchor the dredge winching cables. The perimeter cable was run around the sheet piles at approximately the high tide mark. Floating, absorbent oil booms were also placed around the dredge area perimeter to contain any surface slicks/sheens.

Dredging was performed by Severson Environmental Services Inc. (SES) under the direction of Jacobs Engineering (JE). Severson Environmental Services utilized a Mud Cat<sup>TM</sup> hydraulic dredge equipped with a horizontal auger (Figure 8). The dredge was propelled by winching itself along a transverse cable that spans the dredge area perimeter. Once a pass was completed, support crews relocated the cable to position for the next pass. Dredged material was pumped through a flexible pipeline to a booster pump, then to the de-sanding facility at Sawyer Street. Following de-sanding, the remaining fine material was pumped via a separate pipeline to the dewatering, treatment, and handling facility in the Lower Harbor. In total, JE has estimated that the dredging team removed 25,674 cubic yards of material in 2011.



**Figure 8. Mud Cat™ Hydraulic Dredge**

Hydraulic dredges cannot process large debris contained in the native sediment because the debris fouls the auger and suction of the slurry pipeline. Therefore, the hydraulic dredging operation requires a separate debris removal operation prior to the dredging of a particular area. Debris removal was accomplished by ‘raking’ the bottom with a barge-mounted excavator (Figure 9). The end of the excavator has two forked jaws that are hydraulically opened and closed. The jaws are deployed to the bottom and methodically “grab” or scrape the bottom for debris. Each “grab” of the bottom is brought to the surface, rinsed of sediment and inspected. If debris such as cobbles, old tires, timbers or scrap metal is contained within the excavator jaws, the debris is stored in scows that are secured to the excavator or barge. Support boats were used throughout the operation to transport crews, maintain dredges, handle the pipeline, and move barges.



**Figure 9. Debris Removal Excavator and Debris Storage Scow**

The northern most portions of Areas N and G, and westernmost portions of Area K contain intertidal areas and therefore dredging operations could not always be conducted, especially during low tides. When low water prevented work in these areas, the dredge crew moved operations to deeper waters in Areas K, or O. Due to the narrowing of the estuary in the northern regions of the harbor and the shallow waters in these locations, the use of heavy equipment and pipeline in Area G caused some concern that the equipment and dredge activity might impact the seasonal migration of anadromous fish species. The fish plan was developed to prevent any remediation equipment from impeding anadromous fish passage (Jacobs Engineering Group, 2011).

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## **5.0 RESULTS**

Results for the water quality monitoring of the 2011 remedial dredging operations at the New Bedford Harbor Superfund Site are presented in this section. Complete results, including fixed-station time series and laboratory data reports are provided as Appendices to this report.

### **5.1 FIELD MONITORING SUMMARY**

Water quality monitoring, using in-situ fixed station YSI mooring and boat-based observations was conducted in an adaptive manner due to changing operational and weather related conditions. The monitoring approach was modified: 1) as tides and winds changed, 2) as dredge activities moved between areas, 3) as debris removal activities changed, and 4) as warranted based on support activities. All of these activities (dredging, debris removal, and support activities) had the potential to impact water quality. The monitoring program incorporated assessment of the entire operation. Monitoring activities were also largely influenced by tidal conditions and safety. Early in the dredge season and again late in the season, the dredge areas and the associated perimeter cable and oil boom spanned most of the width of the river limiting access to northern portions of the river, including the northern reference location. Due to the narrow river channel and shallow water depths at Area G, however, there was increased potential for water quality impacts. Monitoring in this restrictive location was successfully accomplished using the in-situ fixed station YSI mooring and boat-based monitoring when able.

Boat-based monitoring in Area Q was performed in the same manner as other Dredge Areas. From July 19 to August 4, intermittent work including mechanical excavation and vibracoring was performed in Area Q. Several days of monitoring showed that mechanical excavation or vibracoring were not negatively affecting water quality >150' down-current and any surface slicks/sheens were being contained by oil boom surrounding the active work zone.

Demolition of the Aerovox facility began in mid-July, just north of Area K. Artificial mist-makers were in use during demolition, which at times produced a noticeable amount of runoff from the site. The runoff sometimes contained sediment from the demolition activities, which then made its way into the estuary. The runoff was no longer observed once the demolition moved west away from the shoreline. This may have had a very localized effect on turbidity readings while monitoring north of Area K from mid to late July during periods of high runoff.

### **5.2 BOAT-BASED MONITORING**

Boat-based water quality monitoring was performed four days during the first week of the dredging season in June, and typically twice a week until dredging was completed in September 2011. Site conditions and in-situ water quality measurements collected during boat-based monitoring are summarized in Section 3.0 and documented per monitoring protocols in the field logs and daily reports, located in Appendix A. Water quality monitoring was performed primarily north of activities during a flood tide and south of



activities during an ebb tide. Access to the northern areas was somewhat limited due to vessel draft during low tidal periods, which is sometimes reflected in the volume of boat-based monitoring data collected from that location for a particular day.

### *5.2.1 Turbidity Summary*

Each water quality monitoring day began with a transit to the reference station, 1000 feet up-current of the active work zone. The water quality readings collected at the reference location provided data regarding the background conditions and established the baseline turbidity for use in determining the turbidity criterion (100 NTU above background turbidity) on a given day. Turbidity values were generally higher at the northern reference site as compared to the southern reference site. Background turbidity readings were typically around 5 NTU, but ranged over the season between 0 and 20 NTU, depending on environmental conditions.

During dredging and debris removal operations, in-situ turbidity readings in the active work zone increased compared to background conditions, with readings ranging <1–244 NTU. Variations in turbidity were observed due to proximity to dredging activities, and environmental conditions. The maximum turbidity observation of 244 NTU was observed on September 12, 2011 in Area K. The WHG survey vessel observed this value 150' south of Area K debris removal during an ebb tide, which is closer than the specified observation distance of 300 feet down-current of active work. Readings within the plume ranged from background to 244 NTU, and dissipated with increasing distance from the active operation as well as time. The plume was ephemeral (lasted less than 5 minutes) and water quality parameters returned to background conditions within a few minutes of observation.

On average, turbidity plumes observed at various distances from remedial activity (100 to 300+ feet) during boat-based monitoring were less than 100 NTU (generally 30 – 60 NTU) and turbidity levels decreased as the plume migrated down-current, away from its origin. Plumes were observed on multiple occasions throughout the dredge season on both flood and ebb tides and were typically ephemeral (lasted less than 5 minutes). Often, the most significant plumes occurred down-current of debris removal in Area K and north/west of dredging in Area N.

Sheens were observed while monitoring turbidity near dredging and debris removal operations, particularly during operations in Areas K and N. These sheens either had an oily/iridescent color or appeared like a dull haze on the water surface. They often had a petroleum-like or H<sub>2</sub>S odor. Sheens were likely produced as a result of disturbing bottom sediments, though both high and low turbidity values were observed when surface sheens were present. Sheens often persisted long after turbidity subsided to background levels and were sometimes transported several hundred feet away from the source by wind or waves.

Relatively high turbidity readings were frequently observed immediately adjacent to dredging support activities. This is especially the case for, but not limited to, debris removal activities and the use of boats to push barges or dredges for re-location and wind stabilization. During high winds, boats were used to maintain the hydraulic dredge's

heading, and when used during low water levels, the motor's propeller wash often disturbed bottom sediments, forming narrow plumes of high turbidity. This was observed on numerous occasions throughout the dredge season especially in Area N. Close monitoring of these activities and conditions ensured that elevated turbidity plumes did not migrate outside of the active work zone. Dredge crews were alerted if they did. In general, dredging itself did not produce high turbidities in surrounding areas.

### *5.2.2 Dissolved Oxygen Summary*

At the request of the USACE, WHG closely monitored the concentration of dissolved oxygen during the 2011 season on account of the concern for potential impacts to anadromous fish and other fish species.

At several times during the season, dissolved oxygen concentrations decreased to hypoxic levels throughout the system (0.4–2.8 mg/L). Hypoxia is a naturally occurring phenomenon in estuarine systems during summer months. As in previous years, dissolved oxygen readings of <1 mg/L were frequently observed south of Wood Street and in the vicinity of Areas N and G. Because of the project's activity in the northern reaches of the estuary during the fall migratory season, characterization of dissolved oxygen conditions were important to distinguish between naturally occurring conditions and dredge related impacts to water quality.

During the month of August, schools of small bait fish were observed in the river throughout the active work zone, from north of Coggeshall Street to south of Wood Street. On occasion, these fish appeared to be stressed, likely due to the low dissolved oxygen levels in the estuary. While only a few dead fish were observed, no large scale fish-kills were documented. Large schools of herring and menhaden were observed near the surface south of Area L on September 9, possibly feeding on smaller fish. They did not exhibit stressed behavior while the WHG vessel passed by.

Efforts to limit activity and keep equipment from interfering with fish passage or water flow exchange during hypoxic conditions in the northern areas were successful, as directed by the 2011 Fish Migration Impact Plan (Jacobs Engineering Group, 2011). Dredging operations appear to have had little or no effect on the fish migration or the overall health of the local fish and wildlife population.

## **5.3 FIXED-STATION CONTINUOUS MONITORING**

Four water quality instruments (YSI 6920 sondes) were deployed on April 12, 2011, prior to the onset of active dredging operations. Appendix B provides of complete time series of all fixed station water quality data. Initial deployment stations were: 1) South of the Wood Street Bridge (SWS), 2) South of Area K (SAK), 3) South of Area L (SAL), and 4) North of the Coggeshall Street Bridge (NCS) (Table 1). The instruments remained at these stations for the duration of the 2011 environmental monitoring season, apart from these deviations:

- Mooring NCS was removed from the water from 4/30-5/3 for a boat race in New Bedford Harbor.

- Mooring SAL was dragged from its original location on 6/18 during dredging mobilization and was not returned to its proper location until 6/22. It was dragged again on 9/23 and returned to its original position on 9/28 during demobilization activities.
- All four moorings were removed from the water to be thoroughly cleaned during the July 4<sup>th</sup> holiday (6/30-7/6). No remediation work was being done at this time.
- The entire NCS instrument was replaced on 8/25 after it was determined it had been experiencing a hardware issue since deployment. The wipers designed to keep the optical sensors free of obstructions were not operating as designed.
- All four moorings were removed from the water in preparation for Hurricane Irene (8/25-8/30). Remediation dredging was still performed during this period on 8/25, 8/26, 8/29, and 8/30.

Fixed-station instrumentation and equipment was recovered for the season on October 24, 2011, completing the 2011 water quality monitoring season. See Table 1 for specific fixed-station deployment details.

The continuously recording water quality sensors provided additional data that complemented the adaptive boat-based monitoring approach discussed in the previous section. The location of the sensors north and south of the dredge areas and active work zone helped characterize the extent of sediment suspension and potential plume transport as it related to operational activity. Furthermore, the data were collected during periods when active boat-based monitoring of dredge activities was not performed. These data helped to “fill the gaps” when boat-based monitoring crews were not on site, and also provided valuable information used to define the ambient water quality parameters during non-working periods (nights, weekends, and holidays). Appendix B contains the fixed-station time series data plots for turbidity and dissolved oxygen concentration in the study area.

Dredging operations frequently stopped and started due to mechanical or physical issues and the location of active operations was highly variable. Moreover, the 2011 active remediation zone was divided into seven separate dredge areas, each active at various dates and times depending on tides, fish migration, and other factors. As a result, it was difficult to positively determine whether active work in a given area would cause changes in the data recorded by the moored instruments. However, comparison of boat-based monitoring daily report logs and mooring data allowed for a cause-effect relationship to be determined.

Background turbidity is influenced by tidal conditions, river flow, weather and wind, output from CSOs, and other minor factors. As a result, the background signal can fluctuate on scales from minutes to days. The background turbidity level, on a given day in one area of the estuary, can be different than the background turbidity level in another area. Local turbidity fluctuations are apparent in the figures in Appendix B. In some cases of low turbidity (<10 NTU), it is difficult to discern whether a fluctuation in turbidity is caused by natural processes, or related to dredge activities. One may be able to determine the cause of turbidity fluctuations when evaluating the following

parameters: 1) proximity to and timing of active dredging operations, 2) weather conditions, 3) tide conditions, and 4) ambient turbidity conditions.

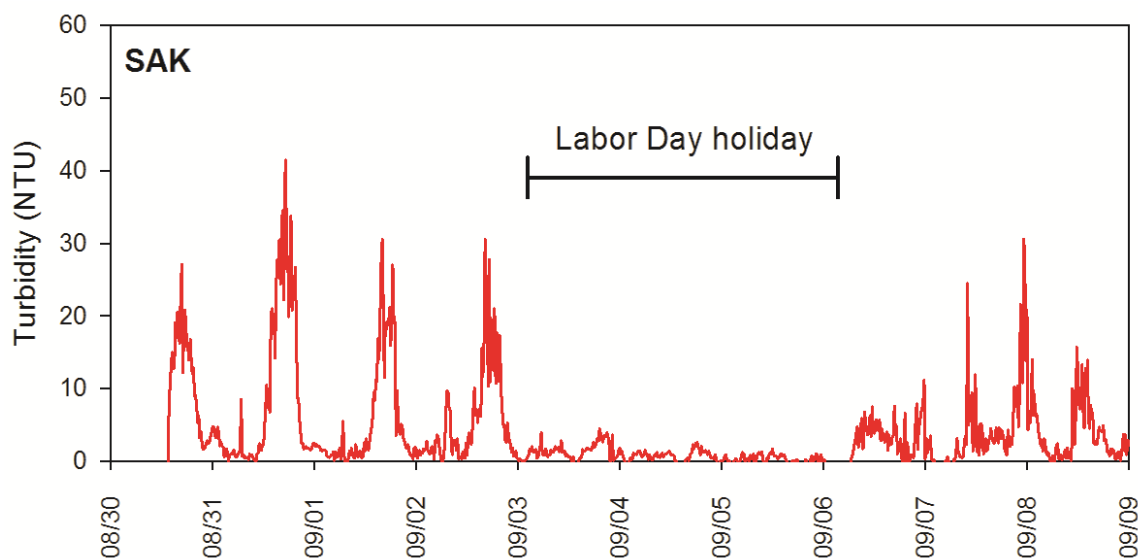
The turbidity levels in the 2011 environmental monitoring time series did not exceed the project-specific turbidity criterion (100 NTU above background). Turbidity values >100 NTU were recorded throughout the season, but it is difficult to determine if these readings are a direct consequence of remediation activity, a piece of debris caught on the instrument, a natural turbidity plume (which occurred during storms with heavy runoff) or some other phenomenon. In an attempt to reduce the occurrence of compromised data caused by biofouling on the sensors, instruments were visually inspected weekly and removed from the mooring and thoroughly cleaned every two weeks. Even with regular inspection and cleaning, growth on the instrument could not be fully prevented.

A maximum of 244 NTU was observed directly down-current of debris removal during boat-based operations. Therefore, a range of 100 – 250 NTU was used in order to investigate threshold exceedances as recorded by in-situ moorings. Using this range, the following was observed:

- SWS recorded the largest number (240) of data points in this range. The majority are from 8/16-8/25, which occurred at a time when significant biological growth appeared on the instrument. Yet field-based observations show that the optical sensor was kept free of direct obstruction upon recovery for cleaning. The majority of the points are in June before remediation activities began. Throughout the season, SWS had the highest degree of variability in turbidity readings where values would change drastically based on tidal cycle. On 10/12/11, SWS was redeployed at low tide and the instrument was observed partially resting on the bottom. This, along with bottom agitation caused by the decreased water column at low tide, likely caused many of the high-turbidity readings at this station throughout the year. In future deployments at this location, steps will be taken to avoid this from happening such as mounting the instrument so that sensors are up-facing.
- SAL and NCS each recorded several points in this range, but it is believed that all were caused either by instrument entanglement or during mobilization and demobilization activities since remediation activity was not performed near these instruments in 2011.
- SAK recorded fewer than 10 points in this range during periods of active remediation. Considering that this instrument was at times less than 300 feet from active work in Area K, this is a good indication that remediation crews were being diligent about controlling sediment dispersal.

At times, the cause-effect relationship between turbidity and remedial activity (e.g., debris removal rake) is apparent; this was the case at the SAK station between August 30 and September 9, 2011. Figure 10 depicts data for this time period. Periods of sustained elevated turbidity are observed during periods when dredge- and support boat-related activity in and around Area K. During this particular deployment period, preparations were made to begin debris removal in the southeastern corner of Area K in a shallow area near shore. The highest turbidity recorded (42 NTU) was on August 31, 2011 late in the

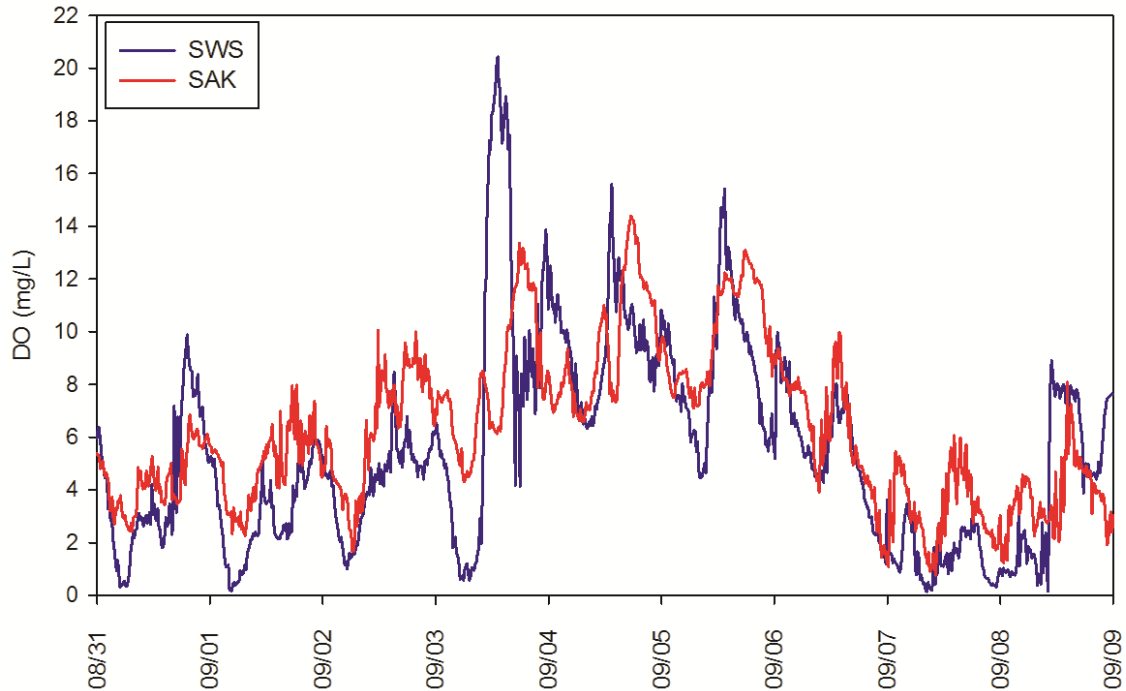
day and on most days turbidity readings did not return to background levels until a few hours after all work stopped at 6pm. Saturday 9/3/2011 was a half day for remediation activity and crews did not return to work until September 7, 2011. During this time, turbidity readings at SAK dropped to background levels for the entirety of the work stoppage, indicating that remediation activity is causing elevated turbidity levels at this station. At other times throughout the year, noticeable spikes in turbidity readings sometimes occurred during weekends and inoperable hours at this and other moorings.



**Figure 10. Example of Turbidity Levels Related to Dredging and Support Operations at Mooring SAK, August 30 – September 9, 2011**

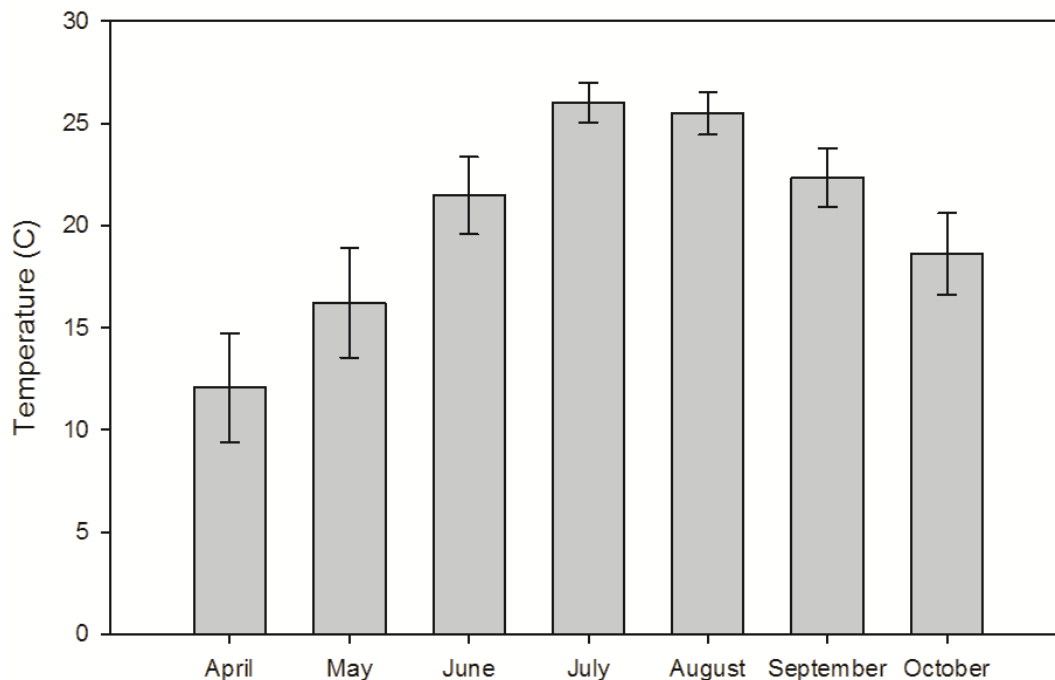
Continuous in-situ DO concentration data were also collected at each of the fixed-station moorings. Dissolved oxygen concentrations varied significantly over the seven month deployment. For example, at station SWS DO concentrations of 0 and 20.4 mg/L were recorded. These, values are the minimum and maximum concentrations for the entire study area, respectively. In late August, normal conditions (1–6 mg/L) in the northern areas of the estuary were followed by supersaturated DO concentrations as high as 20.4 mg/L. The rapid change in DO was observed most notably at mooring stations SWS and SAK but not at all at NCS. The data plotted in Figure 11 depict this phenomenon, as observed at the stations SWS and SAK between August 31 and September 9. Late summer conditions (0.5 – 8 mg/L, 4 mg/L average) prevail over the first two days and are followed by readings of supersaturated water September 3 to September 6. Figure 11 also illustrates the natural diel cycle of oxygen consumption and production in water; this is apparent in the daylight peaks (photosynthesis production dominant) and low concentrations at night (aerobic consumption dominant). During the first two days, DO concentrations were <2 mg/L at night, and between 5 – 10 mg/L during peak hours of the day. However, over the next four days DO concentrations quickly increased to supersaturated conditions. Supersaturation is a factor of temperature, depth and dissolved oxygen in the water, but a value of 8.6mg/L was chosen as the cut-off point for this study (values >8.6 mg/L were considered supersaturated). The sudden increase in DO could have been caused by an algal bloom in the upper harbor and is probably not an effect of

dredge related activities or sensor malfunction given that the signal shows up at more than one mooring station. Fluctuations in DO were weakly noticeable at SAL but not at NCS during this time.



**Figure 11. Example of Rapid Changes in Dissolved Oxygen, August 31–September 9, 2011**

Water temperature in the 2011 active work zone ranged from a minimum of 7.5 °C, recorded at station NCS on April 16, to a maximum of 29.34°C, recorded at station SAL on July 22. Figure 12 presents the average water temperature for each calendar month at station SAK over the course of the deployment (April 12 – October 24, 2011).



**Figure 12. Average Monthly Water Temperature at the SAK Fixed-Station in-situ YSI sonde, April 12 – October 24, 2011.**

#### 5.4 COLLECTION OF DISCRETE WATER SAMPLES

Discrete water samples were collected seven times during the 2011 environmental monitoring season (Table 3). Sample collections occurred May 19, June 27, June 28, August 15, August 30, September 12, and October 24, 2011. All discrete water sample collections were planned Level I and Level II events; there were no Level III sample collection events. Under the protocols outlined in Section 2.1, the sampling team functioned in an adaptive sampling mode to track near-field turbidity plumes within the compliance transects, and utilized real-time in-situ data to guide monitoring and sample collection. Level II – Baseline samples collected on May 19 were used to establish reference conditions for the harbor and confirm the validity of in-situ measurements. On June 27 and 28, Level I - Startup water samples were collected over the first two days of the dredging season at reference stations and at stations 300 feet down-current of remediation activity over both flood and ebb tidal cycles. A complete suite of samples were collected for the Level I – Startup events, which were analyzed for toxicity, TSS, turbidity, dissolved and total PCBs. Additional samples for TSS and turbidity only were collected in August, September and October at two reference locations and at locations 300 feet down-current of active remediation efforts. These samples were collected in order to produce a robust correlation between turbidity and TSS at the end of the monitoring season.

##### 5.4.1 Level II - Baseline Water Quality Samples

The first sampling event was conducted on May 19, 2011 as part of the Baseline monitoring and sampling performed before the start of the dredge season (Table 3).

These samples were analyzed for turbidity and TSS only. The primary objective of the Baseline sampling is to establish baseline conditions in the planned work zone. A secondary objective is to reaffirm the relationship between turbidity and suspended solids, and verify the accuracy of the in-situ monitoring sensors. Samples were collected at the two reference stations and within the planned active dredge zone during both a flood and an ebb tide.



**Table 3. Summary of discrete water sampling events**

Sampling Event	Date	Sample ID	Sample Description
Level II - Baseline	5/19/2011	WQ-_*_-001-051911	1000 ft South of Area L
		WQ-_*_-002-051911	Area L
		WQ-_*_-003-051911	1000 ft North of Area G
		WQ-_*_-004-051911	Area G
Level I - Startup	6/27/2011	WQ-_*_-001-062711	1000 ft North of Area G Dredge
		WQ-_*_-002-062711	300 ft South of Area K Dredge and Debris Removal
		WQ-_*_-003-062711	1000 ft South of Area L
		WQ-_*_-004-062711	300 ft North of Area G Dredge
Level I - Startup	6/28/2011	WQ-_*_-001-062811	1000 ft North of Area G Dredge
		WQ-_*_-002-062811	300 ft South of Area K Dredge and Debris Removal
		WQ-_*_-003-062811	1000 ft South of Area L
		WQ-_*_-004-062811	300 ft North of Area K Dredge and Debris Removal
Level II TSS & Turbidity	8/15/2011	WQ-_*_-001-081511	1000 ft South of Area L
		WQ-_*_-002-081511	300 ft North of Area K Debris Removal
		WQ-_*_-003-081511	1000 ft North of Area N
		WQ-_*_-004-081511	200-250 ft South of Area K Debris Removal
Level II TSS & Turbidity	8/30/2011	WQ-_*_-001-083011	800 ft South of Area L
		WQ-_*_-002-083011	300 ft North of Area N Dredge and Debris Removal
		WQ-_*_-003-083011	1000 ft North of Area N
		WQ-_*_-004-083011	300 ft South of Area N Dredge & Debris Removal
		WQ-_*_-005-083011	300 ft South of Area N Dredge & Debris Removal
Level II TSS & Turbidity	9/12/2011	WQ-_*_-001-091211	600 ft South of Area L
		WQ-_*_-002-091211	150 ft W/NW of Area N Dredge
		WQ-_*_-003-091211	1000 ft North of Area N
		WQ-_*_-004-091211	150 ft South of Area K Debris Removal
Level II TSS & Turbidity	10/24/2011	WQ-_*_-001-102411	500 ft North of Area G
		WQ-_*_-002-102411	300 ft South of Area K
		WQ-_*_-003-102411	300 ft South of Area L
		WQ-_*_-004-102411	300 ft North of Coggeshall Street

\* three digit code for type of analysis required (TUR for turbidity, TOX for toxicity, TPC for total PCBs, DPC for dissolved PCBs, TSS for total suspended solids)

#### *5.4.2 Level I – Startup Water Quality Samples*

Water quality samples were collected June 27-28, 2011 as part of the Level I – Startup monitoring performed at the start of the 2011 dredge season. These samples were analyzed in order to assess the protectiveness of the project’s turbidity criterion during dredging activities, to reestablish confidence in the sampling protocol, and to examine the background conditions at the reference stations. Samples were analyzed for turbidity, TSS, PCBs (total and dissolved), and toxicity; a sample for metals analysis was collected and archived, but not analyzed. Samples were collected during dredging and debris removal activities in Areas G and K. Water quality samples were collected at four locations during these two events: 1) 300 feet north of activity during a flood tide, 2) 300 feet south of activity during an ebb tide, 3) the southern flood reference station, and 4) the northern ebb reference station (Table 3).

#### *5.4.3 Level II – TSS & Turbidity Correlation Water Quality Samples*

Level II - TSS and turbidity samples were collected on August 15, August 30, September 12, and October 24, 2011. Each event consisted of sampling 300 feet down-current from active work during both flood and ebb tides and collecting flood and ebb reference samples in order to produce a more robust understanding of the relationship between TSS and turbidity in the New Bedford estuary. The greater purpose of these samples was to produce a robust correlation between turbidity and TSS at the end of the monitoring season.

### **5.5 LABORATORY TESTING SUMMARY**

As in previous years monitoring, several analytes were identified as specific parameters of interest to assess the impacts of remedial dredging on water quality. Total suspended solids (TSS) and turbidity are good indicators of the amount of sediment in the water column, and are a useful means of estimating how much sediment has been resuspended by remediation activities. Analyzing for total and dissolved PCBs allows for examination of the concentration on both sediment-borne and water-borne PCBs, the primary contaminant of concern. Determining toxicity is perhaps the most direct method of quantifying the threat to sensitive marine organisms associated with sediment-borne and water-borne contaminants. These analytes compose the full suite of parameters that were investigated using specified analytical protocols.

#### *5.5.1 Total Suspended Solids and Turbidity*

Total Suspended Sediment concentrations from the May 19, 2011 Level II - Baseline sampling event range from 2.2 to 5.7 mg/L. Turbidity readings measured from the in-situ water quality monitoring sonde during sampling are comparable with the lab-based turbidity results (Table 4). The sample-based turbidity results from AAL are generally higher than the instrument-based turbidity readings. These differences can be attributed to the fact that two different, albeit very similar, parcels of water were tested by each technique, even though the pump intake used to collect lab samples was mounted adjacent to the in-situ optical sensor.

Level I – Startup water quality samples collected on June 27-28, 2011 contained TSS concentrations ranging from 1.8 – 28.7 mg/L. The lowest values were from samples collected 1000’ north of Area G and the highest came from 300 feet down-current of Area K dredge and debris removal. Instrument-based turbidity observations made during sample collection are comparable to the sample-based AAL results (Table 4). High concentrations of TSS directly correlate to higher turbidity values. This correlation is presented in Figure 13 for all samples, including Level II – TSS & turbidity samples collected on 8/15, 8/30, 9/12 and 10/24.

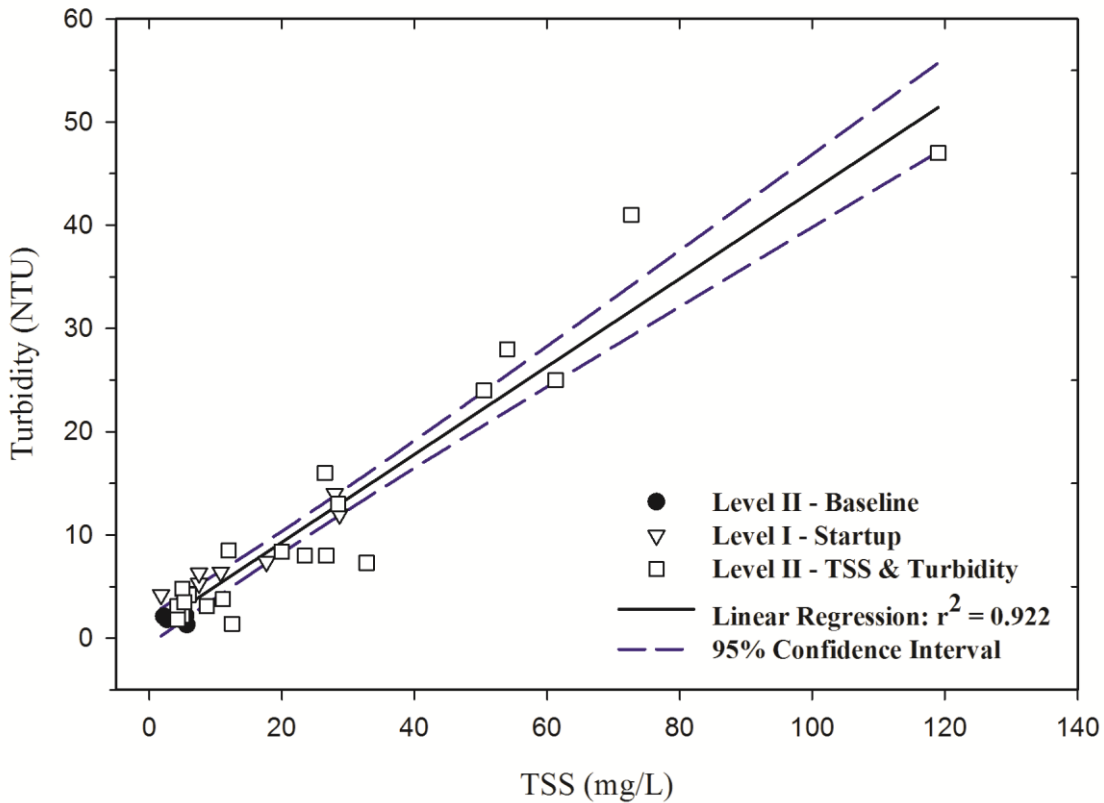


Figure 13. Correlation between TSS and Turbidity results from 2011 samples

**Table 4. Summary of TSS and turbidity results**

Sampling Event	Date	Sample ID	Sample Description	Lab Results		In-situ Measurements
				TSS (mg/L)	Turbidity (NTU)	Turbidity (NTU)
Level II - Baseline	5/19/2011	WQ-__-001-051911	1000 ft South of Area L	5.7/6	1.3/1.3	0.2-1.3
		WQ-__-002-051911	Area L	5.5/2.8	2.2/2	0.8-1.8
		WQ-__-003-051911	1000 ft North of Area G	2.7	1.8	0.8
		WQ-__-004-051911	Area G	2.2	2.1	0.8-1.0
Level I - Startup	6/27/2011	WQ-__-001-062711	1000 ft North of Area G Dredge	6.2	4.5	3.2-6.4
		WQ-__-002-062711	300 ft South of Area K Dredge and Debris Removal	28/24	14/15	8.3-16.8
		WQ-__-003-062711	1000 ft South of Area L	7.5	5.3	0.9-5.4
		WQ-__-004-062711	300 ft North of Area G Dredge	7.5	6.3	2.8-5.3
Level I - Startup	6/28/2011	WQ-__-001-062811	1000 ft North of Area G Dredge	1.8	4.2	10-12
		WQ-__-002-062811	300 ft South of Area K Dredge and Debris Removal	28.7/19.1	12/12	6.1-62
		WQ-__-003-062811	1000 ft South of Area L	10.8	6.4	2.6-10.3
		WQ-__-004-062811	300 ft North of Area K Dredge and Debris Removal	17.7	7.4	5.1-23.9
Level II TSS & Turbidity	8/15/2011	WQ-__-001-081511	1000 ft South of Area L	11.1	3.8	1.9-3.0
		WQ-__-002-081511	300 ft North of Area K Debris Removal	32.8	7.3	2.1-3.3
		WQ-__-003-081511	1000 ft North of Area N	8.7	3.1	1.3-2.8
		WQ-__-004-081511	200-250 ft South of Area K Debris Removal	28.5/26.5	13/16	1.6-24.7
Level II TSS & Turbidity	8/30/2011	WQ-__-001-083011	800 ft South of Area L	6	4.2	0.7-2.3
		WQ-__-002-083011	300 ft North of Area N Dredge and Debris Removal	20	8.4	1.3-14.5
		WQ-__-003-083011	1000 ft North of Area N	26.7	8	3.5-5.5
		WQ-__-004-083011	300 ft South of Area N Dredge & Debris Removal	61.3/50.5	25/24	0.8-27.3
		WQ-__-005-083011	300 ft South of Area N Dredge & Debris Removal	72.7	41	11.1-60.3
Level II TSS & Turbidity	9/12/2011	WQ-__-001-091211	600 ft South of Area L	12.5	1.4	0
		WQ-__-002-091211	150 ft W/NW of Area N Dredge	54	28	5.5-16.9
		WQ-__-003-091211	1000 ft North of Area N	12/23.5	8.5/8	1.7-6.1
		WQ-__-004-091211	150 ft South of Area K Debris Removal	119	47	6.1-18.4
Level II TSS & Turbidity	10/24/2011	WQ-__-001-102411	500 ft North of Area G	5	2.2	1
		WQ-__-002-102411	300 ft South of Area K	4.3	3.1	0.3
		WQ-__-003-102411	300 ft South of Area L	5	4.8	0.1
		WQ-__-004-102411	300 ft North of Coggeshall Street	4.3	1.8	0.3

\* three digit code for type of analysis required (TUR for turbidity)

### *5.5.2 Polychlorinated Biphenyl Congeners (NOAA-18)*

Polychlorinated biphenyl analysis for the NOAA-18 congeners was performed for the two Level I – Startup sampling events (June 27 – 28). Results are presented in Table 5 as total concentrations of the NOAA-18 congeners. For all congener analyses resulting in a non-detect, a value of zero is used in determining the sum of the NOAA-18 congeners (USEPA, 1998). Results for individual congeners are reported with all complete analytical data in Appendix C. Dissolved phase samples were filtered using glass fiber filters (0.45 µm pore size) and the filtrate was captured for analysis. Concentrations of the NOAA-18 PCB congeners ranged from 0.213 µg/L to 15.161 µg/L in the total (unfiltered) water samples, and from 0.211 µg/L to 3.949 µg/L in the dissolved phase (filtered) samples (Table 5). Dissolved phase samples contained lower concentrations than the total, unfiltered samples. The sum of the NOAA-18 congeners, for both dissolved and total samples, were generally lower in the reference sample sites, and as expected, the summed concentrations were highest in the dredge area, down-current of active remediation activities.

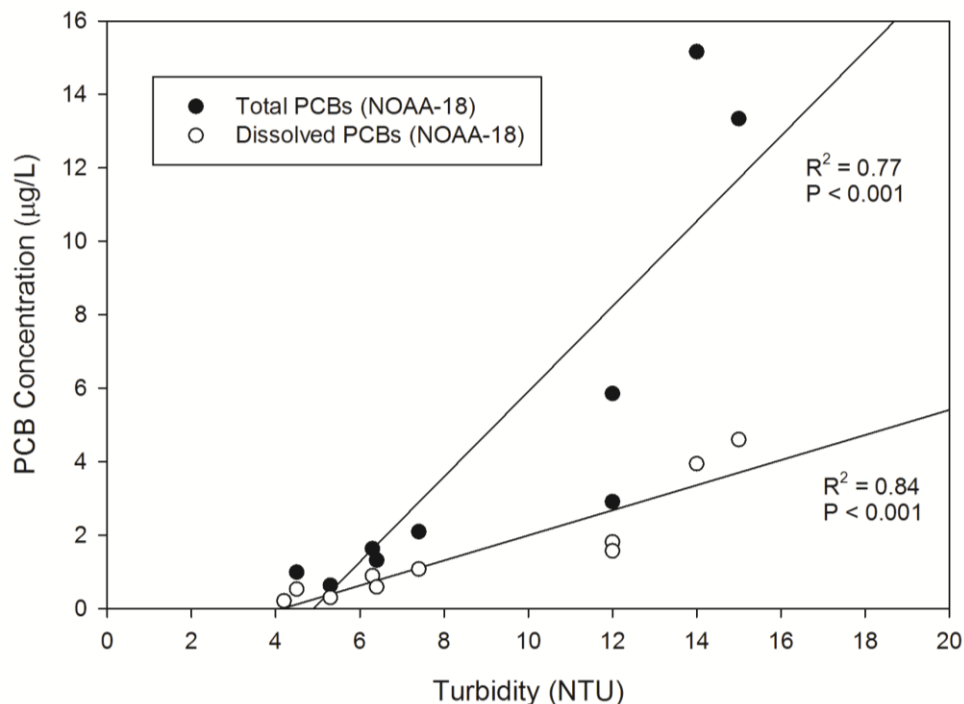
Using the New Bedford Harbor Environmental Management Information System (EMIS), historical PCB data from water quality samples collected within the active work zone show good agreement with data collected in 2011. Total NOAA-18 PCB congener results from 2004-2010 average 5.74 µg/L and Dissolved NOAA-18 PCB congener results from 2004-2010 average 1.06 µg/L (these averages exclude outliers).

**Table 5. Summary of Total and Dissolved PCB (NOAA-18 Congeners) results**

Sampling Event	Date	Sample ID	Sample Description	Lab Results		
				Turbidity (NTU)	PCBs- Total NOAA-18 Congeners (µg/L)	PCBs- Dissolved NOAA-18 Congeners (µg/L)
Level I - Startup	6/27/2011	WQ- *_ -001-062711	1000 ft North of Area G Dredge	4.5	0.995	0.532
		WQ- *_ -002-062711	300 ft South of Area K Dredge & Debris Removal	14 / 15	15.161 / 13.343	3.949 / 4.603
		WQ- *_ -003-062711	1000 ft South of Area L	5.3	0.632	0.302
		WQ- *_ -004-062711	300 ft North of Area G Dredge	6.3	1.633	0.895
Level I - Startup	6/28/2011	WQ- *_ -001-062811	1000 ft North of Area G Dredge	4.2	0.213	0.211
		WQ- *_ -002-062811	300 ft South of Area K Dredge & Debris Removal	12 / 12	5.857 / 2.909	1.811 / 1.572
		WQ- *_ -003-062811	1000 ft South of Area L	6.4	1.317	0.591
		WQ- *_ -004-062811	300 ft North of Area K Dredge & Debris Removal	7.4	2.095	1.077

\* three digit code for type of analysis required (e.g., TPC for Total PCBs and DPC for Dissolved PCBs)

A correlation between turbidity and Total PCBs is statistically significant ( $P < 0.006$ ) when plotting turbidity against Total NOAA-18 congeners and Dissolved NOAA-18 congeners (Figure 14). This suggests that monitoring turbidity is an effective means of estimating contaminant mobility in New Bedford Harbor on a day-to-day basis.



**Figure 14. Correlation between Turbidity and Total NOAA-18 Congeners, and Dissolved NOAA-18 Congeners.**

### 5.2.3 Toxicity

Testing included the following bioassays: 1) a 48-hour acute assay conducted with the mysid shrimp *Americamysis bahia*, 2) a 7-day chronic bioassay conducted with *Americamysis bahia*, and 3) a 60-minute chronic fertilization bioassay conducted with the purple sea urchin, *Arbacia punctulata*. Toxicity exposure bioassays were performed on site water samples collected for the two Level I – Startup events (June 27 and June 28) and results are summarized in Table 6. Results are presented for the acute and chronic (sub-lethal) test endpoints: survival, growth, and reproduction. Results for test endpoints for each sample were compared statistically to those from both the event-specific site reference water and the laboratory control sample. Full results and data reports from ESI are provided in Appendix D.

Chronic tests generally provide a better understanding of the toxic effects on marine organisms because they imitate long-term exposure times which can occur in the natural system. However, chronic tests assume that no dilution occurs and that test organisms remain in the same volume of water during the whole test period (7 days). These are not likely to be accurate in New Bedford estuary, so greater emphasis was placed on results from bioassays with short testing duration, specifically the *A. punctulata* bioassays. These tests are likely to be a faithful representation of actual water quality effects in the New Bedford estuary due to the short exposure time.

Review of the data associated with these series of assays documented a single protocol deviation. The *A. punctulata* fertilization assays were started outside of the recommended sample holding time. The delay in starting the assays was related to poor

fertilization rates in the laboratory control treatment which necessitated repeating the assays. The lab ran the initial fertilization assays and results showed that fertilization in the laboratory control treatment was below the 70% specified by the method. Once a new batch of adult urchins arrived, a new round of assays was initiated and fertilization rates exceeded minimum acceptability criteria. Urchins used in the first two series of assays were from the general laboratory population and had been used in assays without any instances of low control fertilization rates. As there had been no change in holding conditions, there was no reason to presuppose that gametes from the adult urchins would have failed to meet fertilization acceptability criteria. It is ESI's Study Director's opinion that the holding time violation had no impact on the outcome of the assays, based on several criteria: trace metal toxicity is considered to be relatively stable over the time frame under consideration. Other contaminants, such as organic compounds, PCBs and PAHs are unlikely to exhibit significant changes in concentration or toxicity over the short term. The remaining probable group of potential toxicants (volatile organics) is also unlikely to have an impact due to extended holding, as the majority of compounds would have likely been lost to the atmosphere through the plastic container between sampling and arrival at the lab.

Lab controls for *A. punctulata* fertilization in Level I – Startup samples were lower than controls from 2010. Normally, control fertilization ranges between 90-100% (controls in 2010 were between 92 -99%), but 2011 lab controls ranged between 85-91%. Level I – Startup water quality samples collected on June 27, 2011 suggest a trend of reproductive failures by *A. punctulata* under 60-minute acute exposure to the sample collected from the southern flood reference station (1000 feet south of Area L). The sample collected during active dredging (300 feet south of Area K) on the ebb tide is also significantly less than the laboratory control sample, however this may be a statistical artifact since any fertilization over 70% is considered to be non-toxic. Results from chronic survival/growth and acute survival bioassays of *A. bahia* were not statistically different from the lab control samples, though both parameters tended to be higher than the lab control at all sites.

Level I – Startup water quality samples collected on June 28, 2011 show an even greater prevalence of fertilization failures among *A. punctulata* under acute exposure to sample water collected from the ebb reference (1000 feet north of Area G), the active dredge zone during ebb (300 feet south of Area K), and especially the flood reference (1000 feet south of Area L) which only recorded a mean fertilization of 7.8%. Results from chronic survival/growth and survival bioassays of *A. bahia* were not statistically different from the lab control samples.

Results from Level I – Startup toxicity sampling suggest that changes to water quality brought about by remediation activities are not negatively affecting survival or growth of *A. bahia* and other marine crustaceans. However, the results of the *A. punctulata* bioassays suggest that fertilization in bivalves may be negatively impacted. These failures can be extrapolated to other marine species that breed in a similar manner to *A. punctulata*, such as the quahog, ribbed mussel and other species that reproduce by essentially random chance of sperm cells meeting an unfertilized egg in the water column.



Samples collected at reference sites showed evidence of toxic effects despite being collected at least 1000 feet away from active work. Reasons for this are unknown, but *A. punctulata* fertilization assays are very sensitive to changes in water quality and there could be sources of toxicity other than the remedial dredging. Given the history of the harbor this may be the most likely reason. With respect to the assay itself, assay acceptability is usually tied to the laboratory control sample. In the case of reference site samples, the laboratory control exceeded minimum control standards and exhibited a low coefficient of variability, therefore assays provide good useable data.

**Table 6. Summary of toxicity results for Level I – Startup samples**

Sampling Event	Date	Sample ID (WQ-TOX-)	Sample Description	Lab Results			
				Turbidity (NTU)	Sea Urchin ( <i>A. punctulata</i> )	Mysid ( <i>A. bahia</i> )	
					mean fertilization (%)	7-day mean survival (%)	7-day mean biomass (mg/mysid)
Level I - Startup	6/27/2011	001-062711	1000 ft North of Area G Dredge	4.5	83.7	92.5	0.695
		002-062711	300 ft South of Area K Dredge and Debris Removal	14	79.7	85.0	0.379
		003-062711	1000 ft South of Area L	5.3	28.8	87.5	0.31
		004-062711	300 ft North of Area G Dredge	6.3	85.3	85.0	0.492
Level I - Startup	6/28/2011	001-062811	1000 ft North of Area G Dredge	4.2	33.7	80.0	0.293
		002-062811	300 ft South of Area K Dredge and Debris Removal	12	29.0	85.0	0.328
		003-062811	1000 ft South of Area L	6.4	7.8	92.5	0.451
		004-062811	300 ft North of Area K Dredge and Debris Removal	7.4	75.8	82.5	0.465

5.5.4 Quality Control

Complete laboratory QC data from AAL and ESI are included in the respective laboratory reports, which are provided in Appendices C and D of this report. In general, the quality of the data was acceptable and the analytical methods were in control. For example, target parameters were undetected in the method/procedural blanks, indicating that the methods were free of contamination. Results for the laboratory-based QC samples, such as LCS and MS/MSD samples were acceptable for all test parameters, indicating that the laboratory procedures were in control. Field-based QC samples (i.e.

field duplicate samples and equipment blanks) were also acceptable, indicating sampling methods were also in control.

## **6.0 DISCUSSION**

The water quality monitoring program was developed to characterize the aqueous environment, to limit potential ecologically harmful impacts of remedial operations on water quality, and to limit redistribution of contaminated sediments. Achieving these goals required utilizing a variety of monitoring techniques:

- Adaptive boat-based monitoring with the use of in-situ instruments to track sediment plumes in real-time
- Collection of water samples for analytical testing, which were used to establish baseline water quality conditions and assess project compliance criteria
- Continuous in-situ data collection using fixed-station instrument moorings at strategically selected locations. Data were collected autonomously to provide water quality data when boat-based monitoring was not possible
- Observational monitoring of water quality conditions with respect to fish and wildlife impacts, used to minimize ecological risk factors

### **6.1 FISHERY AND WILDLIFE OBSERVATIONS**

Field staff consistently recorded visual observations regarding fish migration and wildlife behavior throughout the 2011 environmental monitoring and remedial dredging season. Large numbers of fish were observed in the upper harbor, between Sawyer Street and the northern reaches of the estuary, south of the Wood Street Bridge. Lower trophic level fish and juveniles were consistently observed schooling throughout the estuary, particularly in the vicinity of the Wood Street Bridge and Dredge Area K. Larger predatory fish such as striped bass and bluefish were often seen feeding on the smaller fish. On occasion, in late summer, stressed fish were observed during hypoxic conditions and water temperatures near 30°C. The stressed fish were most often observed in the top layer of water where dissolved oxygen concentrations were slightly higher than in deeper water. Small fish were also observed in every other part of the active work zone in highly variable water quality conditions, even ones with low DO. Fewer than 10 dead fish were observed during the entire monitoring period, and no large-scale fish kill events occurred during the 2011 dredge season. The fish mortality that did occur is likely attributable to predation or the poor ambient water quality conditions (low DO concentrations, high temperature) that naturally occur during the late summer months. There appeared to be no restriction of movement or migration of fish within or around the dredge areas.

Birds such as great blue herons, green herons, gulls, swans, cormorants, egrets, terns, osprey, as well as other water fowl were observed living and feeding in the estuary surrounding all active dredge areas. Abundant waterfowl were observed during August in the northern dredge areas. These birds appeared to be feeding on small fish. The species most frequently present were cormorants, gulls, and terns. Pairs of swans were observed throughout the summer, feeding in the marsh grass and shallow water on the eastern shore of the Acushnet River, in Pierce Mill Cove, and south of Wood Street.

## **6.2 SEDIMENT RESUSPENSION RELATED TO REMEDIAL DREDGING ACTIVITIES**

In general, there were three activities with potential to generate suspended sediment plumes; 1) dredging, 2) debris removal, and 3) support operations. Direct field reconnaissance information collected in close proximity to dredge operations allowed field personnel to determine which activities had the greatest potential to contribute to turbidity plumes. These findings were generally consistent with previous monitoring years.

The distribution of turbidity plumes in the 2011 active work zone was often limited to areas of shallow water, where bottom perturbation by work-related vessels or the debris removal excavator was common. Suspended sediment plumes exhibited elevated turbidity levels immediately adjacent to the source, but rapidly decreased with distance. The shallow water (and resulting lower flow) in the active work zone is thought to have helped contain plume dispersion. Only twice was a plume with turbidity greater than 50 NTU observed deeper than 4 feet: 1) on July 18, 2011 a plume with maximum turbidity of 56.2 NTU was observed at 5.43 feet depth (maximum depth was 10.1 feet) while monitoring 150 feet north of Area K dredge; 2) A plume with 60 NTU maximum was observed at 4.33 feet beneath the surface (maximum depth was 8.4 feet) while monitoring 300 feet north of Area K debris removal on September 15, 2011.

The hydraulic dredging operation created virtually no detectable sustained sediment plumes above 50 NTU, as evidenced by both boat-based and continuous in-situ turbidity monitoring data. In the event that debris became fouled in the auger-head of the dredge and required manual removal, the auger would be lifted to the water surface. If high winds or strong tidal flow drew surface water across the sediment-covered auger, a localized plume of turbidity and often a light to heavy sheen was observed down-wind or down-current of the dredge. Regardless of the source, turbidity plumes of >100 NTU were spatially limited to <100 feet of the source and temporally short-lived in general, though turbidity plumes could persist for several hundred feet. Additionally, during period of high winds, the use of support vessels was necessary to keep the dredge moving in line with the dredge cables. During these circumstances, and in shallow areas, the supporting push-boat propeller turbulence disturbed sediments and created plumes of elevated turbidity. This was especially common in dredge Area N, where nearly all support boat activity caused localized high turbidity plumes down-current. Due to the close proximity of the support boat to the oil boom surrounding Area N, often the propeller wash would travel underneath the boom bringing with it high turbidity and moderate to heavy sheen. This was observed on 8/15, 9/1 and 9/12.

Suspended sediment plumes related to debris removal activities were the most common cause for elevated turbidity. These plumes tended to occur in pulses. Rapid increases and decreases in turbidity readings, or “spikes” were observed in conjunction with the debris removal rake being lifted through the water column and releasing sediments. Constant communication with the mechanical excavator operators performing debris removal showed that when this work was done carefully and slowly, plumes were less frequent and of lower turbidity. Frequent breaks would allow suspended sediments to settle before the operator continued with a subsequent pass of the excavator’s rake.

The placement and removal of sheet pilings also had the potential to produce plumes of suspended sediments. This type of support operation was observed late in the 2011 dredge season during the setup of Area N for dredging. The WHG survey vessel was unable to monitor adjacent to sheet piling installation due to numerous mechanical and natural obstacles, but monitoring showed that this activity had no far-reaching impacts on turbidity. Removal of sheet pilings during demobilization activities was not monitored with boat-based efforts, and in-situ moorings were not able to attribute changes in turbidity to any specific type of activity. During demobilization (9/19 – 9/30) three of four moorings showed an increase in turbidity, none of which exceeded 90 NTU. Peaks at SWS during this time occurred during off-hours and cannot be a result of remediation. SAK and NCS showed an increase in turbidity occurring over several days but values remained < 60 NTU.

Short-term, pulsed, suspended sediment plumes were observed in the in-situ fixed-station data record. Turbidity spikes (30 – 100+ NTU) occurred during operational activity, but usually represented only one or two readings at a time (15–30 minute period). Turbidity spikes and fluctuations of varying magnitude were also recorded during non-working hours; these turbidity spikes are not attributed to dredging operations. There is the possibility that this phenomenon is indirectly caused by dormant equipment (e.g., dredges, barges, scows) that is disturbing the bottom as wave action moves the equipment up and down in shallow water. Spikes were observed on both incoming and outgoing tides and a wave forcing mechanism such as the one described above, could create turbidity pulses with a low frequency period, independent of tidal flow. Turbidity spikes could also be caused by weather events, CSO discharge, or a blockage of the turbidity sensor.

### **6.3 RECOMMENDATIONS FOR FUTURE SAMPLING EVENTS**

Recommendations for future sampling events include utilizing cages made of copper mesh to reduce biofouling on fixed-station mooring instrumentation. These cages can be constructed to fit around the pre-existing sensor guards to discourage biological growth. Copper tape can also be used on the sensors themselves. Fixed-station moorings should be checked with increased regularity for obstructions and to ensure proper functioning. Prior to redeployment each week, fixed station moorings will be verified to be functioning properly, which includes confirming that sensor wipers for dissolved oxygen and turbidity are rotating under their own power.

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## **REFERENCES**

- Jacobs Engineering Group. 2011. 2011 Fish Migration Impact Plan, New Bedford Harbor Remedial Action. New Bedford Harbor Superfund Site. Prepared under Contract DACW33-03-D0006 Task Order No. 0007 for the U.S. Army Corps of Engineers New England District, Concord, MA.
- USEPA. 1998. Record of Decision of the Upper and Lower Harbor Operable Unit: New Bedford Superfund Site, New Bedford, Massachusetts. United States Environmental Protection Agency Region 1. September 1998.
- Woods Hole Group. 2010a. Water Quality Monitoring Summary Report 2009 Remedial Dredging. New Bedford Harbor Superfund Site, New Bedford, MA. Prepared under Contract W912WJ-09-D-0001 Task Order No 0010 for the U.S. Army Corps of Engineers New England District, Concord, MA.
- Woods Hole Group. 2011a. Environmental Monitoring, Sampling and Analysis Water Quality Monitoring Field Sampling Plan. New Bedford Harbor Superfund Site, New Bedford, MA. Prepared under Contract W912WJ-09-D-0001 Task Order No 0010-04 for the U.S. Army Corps of Engineers New England District, Concord, MA.
- Woods Hole Group. 2011b. Environmental Monitoring, Sampling and Analysis Quality Assurance Project Plan Addendum. New Bedford Harbor Superfund Site, New Bedford, Massachusetts. Prepared under Contract W912WJ-09-D-0001 Task Order No 0010-04 for the U.S. Army Corps of Engineers New England District, Concord, MA.

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**APPENDIX A. WATER QUALITY MONITORING FIELD LOGS  
AND DAILY REPORTS (ON CD)**



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**APPENDIX A WATER QUALITY MONITORING FIELD LOGS AND  
DAILY REPORTS**

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New Bedford Harbor Water Quality Monitoring  
Daily Field Report

Date: 05/19/11  
 Weather: Overcast, 50's, Foggy  
 Tides:  

High	@	0957
Low	@	1539
High	@	2220

Monitoring Period:

From: 0815 To: 1210

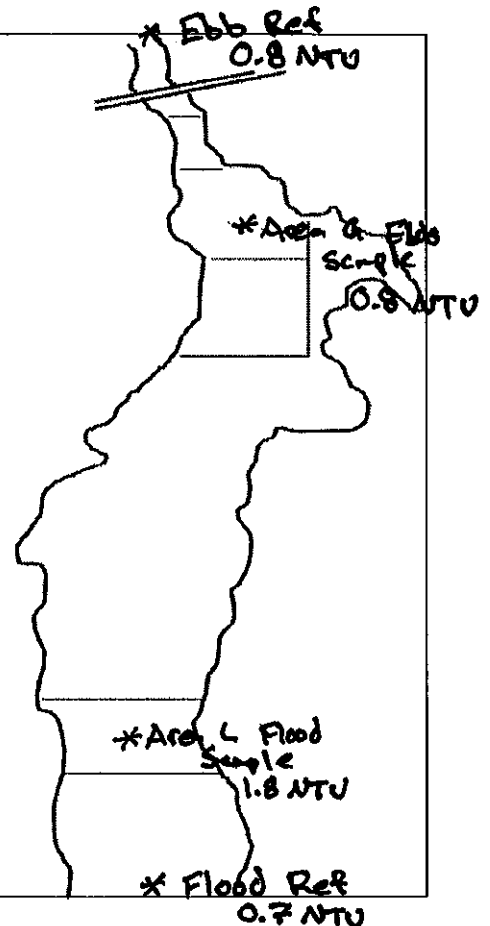
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

- Moving barges from lower harbor (Area B) to Area C Dock

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref.	0.2-1.3	7.8-8.3	1-9.6
Area L	0.8-1.8	7.8-9.0	1-7
Ebb Ref.	0.8	6.4-8.9	1-3.8
Area A	0.8-1.0	6.8-7.5	1-3.2



Oil Sheen/Debris:

Floating Debris

Wildlife Observations:

Jellyfish, Gulls, Terns, Egrets, Swans

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	<u>4 samples</u>	Turbidity (1L)	<u>4 samples</u>
Total PCB (1L)	<u>-</u>	Dissolved PCB (2x1L)	<u>-</u>
Toxicity (5 gal)	<u>-</u>	Metals (500ml)	<u>-</u>

Notes: TSS + Turbidity samples taken @ 4 locations, 2 flood + 2 Ebb.  
- All WQ moorings cleaned + data downloaded

Sampling Crew:

D. Walsh, D. Bailey, M. Walsh

Chief Scientist Signature:

[Signature]



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location	—
Dredging Description	—
Survey Vessel	R/V George Hampson
Chief Scientist	D. Walsh
Sampling Technician	D. Bailey
Vessel Captain	M. Walsh
Other Personnel	—
Weather Conditions	Overcast, 50's, Foggy

Date	5/19/11
Page	1 of 1

Tide Information	
High	0957
Low	0342
High	2220
Low	1539

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Flood Ref	0906	41°39.791	70°55.024	10.1	1.097	0.2	8.27	24.70	15.01	
1000' S Area L	0907	"	"	"	4.012	0.8	7.97	28.06	14.57	
	0908	"	"	"	6.03	1.1	7.92	28.07	14.56	
	0910	"	"	"	9.60	1.3	7.87	28.13	14.54	
Flood Samples	0920	41°39.791	70°55.024	10.1	6.50	0.7	7.88	28.02	14.61	*depth of highest turbidity at the time
Flood Area L	0928	41°39.998	70°55.047	8.3	1.062	0.8	9.04	12.71	16.49	
	0930	"	"	"	3.982	1.8	7.90	28.03	14.60	
	0931	"	"	"	7.032	1.8	7.86	28.06	14.59	
Area L Flood Sample	0933	41°39.998	70°55.047	10.1	7.029	1.8	7.85	28.06	14.59	*depth of highest turbidity
Area L Flood Drop	0935	41°39.998	70°55.047	10.1	7.029	1.8	7.84	28.08	14.59	
Ebb Ref	1134	41°40.816	70°55.030	4.6	1.006	0.8	8.91	2.59	15.62	
1000' N of Area Ref G Sample	1135	"	"	"	3.81	0.8	6.49	26.47	14.90	
Ref G Sample	1138	41°40.816	70°55.036	"	3.606	0.9	6.19	26.62	14.90	*depth of highest turbidity
Ebb Area G	1147	41°40.567	70°54.952	4.1	1.014	1.0	7.54	6.20	15.61	
	1148	"	"	"	3.295	0.9	7.11	27.14	14.97	
Area G sample taken	1153	41°40.567	70°54.952	4.1	2.079	0.8	6.80	25.30	15.06	*depth of highest turbidity

4-4  
Water Quality Monitoring Summary Report  
WQ12WJ-0901D-001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 06/27/2011

Weather: Sunny, partly cloudy, 70-80 F, wind NW to SW 10-15

Tides:

High	@	0529
Low	@	1040
High	@	1755
Low	@	2359

Monitoring Period: 0

From: 09:30 To: 15:15

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Active dredging and debris removal in Area K  
Active dredging in Area G (afternoon)

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
<u>Ebb 1000' Ref</u>	<u>3.2-6.4</u>	<u>3.82-6.63</u>	<u>0.89-2.02</u>
<u>Area J ebb</u>	<u>8.3-16.8</u>	<u>4.32-5.84</u>	<u>0.86-3.99</u>
<u>Flood 1000' Ref.</u>	<u>0.9-5.4</u>	<u>4.70-11.67</u>	<u>1.05-7.76</u>
<u>Area G dredge</u>	<u>2.8-5.3</u>	<u>6.10-8.40</u>	<u>0.82-2.54</u>

Oil Sheen/Debris:

Slight sheen in Area K

Wildlife Observations:

Gulls, swans, ducks

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L) <u>WQ-TSS-###-062711</u>	Turbidity (1L) <u>WQ-TUR-###-062711</u>
Total PCB (1L) <u>WQ-TPC-###-062711</u>	Dissolved PCB (2x1L) <u>WQ-DPC-###-062711</u>
Toxicity (5 gal) <u>WQ-TSS-###-062711</u>	Metals (500ml) <u>WQ-MET-###-062711</u>

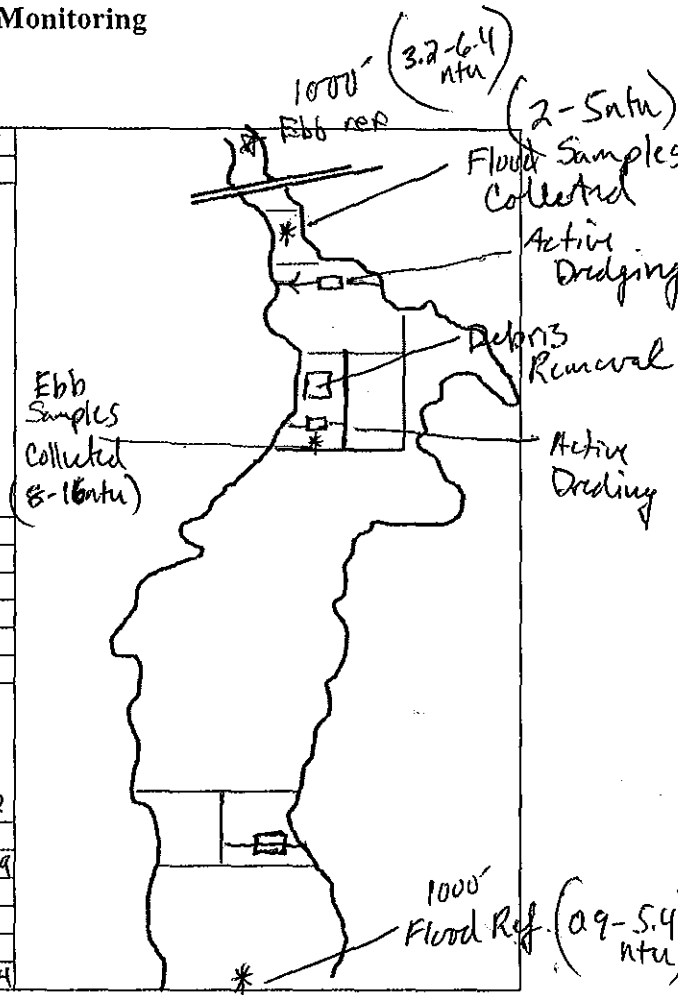
Notes: First day of monitoring and active dredging  
- at direction of USACE, collected water quality samples  
- Turbidity values throughout dredge areas were low (3.0-11.6 NTU)

Sampling Crew:

D. Walsh, D. Bailey, M. Walsh, D. Stuart, M. Koenig (USACE)

Chief Scientist Signature:

[Signature]



300 ft South of Dredge  
300 ft N of



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area K, Debris Removal in K  
R/V George Hampson  
D. Walsh  
D. Bailey, D. Stuart  
M. Walsh  
M. Koenig  
Sunny 80's light wind variable

Date 06/27/11  
Page 1 of 1

Tide Information	
High	0529
Low	1040
High	1755
Low	2359

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Ebb Ref.	10:23	41°40.729	70°55.015	3.0	0.895	3.2	6.63	26.41	22.20	
1000' N of	10:25	" "	" "	"	2.015	6.4	3.82	27.32	21.97	
Area G	10:30	" "	" "	3.0	2.015	5.3	3.76	27.30	21.97	-All samples collected
Ebb Sampling station	11:00	41°40.339	70°54.992	5.1	0.860	16.8	5.84	27.37	22.19	* Highest turbidity levels
	11:01	" "	" "	"	2.481	9.1	4.99	28.28	21.79	
	11:03	" "	" "	"	3.991	8.3	4.32	28.73	21.61	
Flood Ref. station, 1000' N of Area L	13:20	41°39.794	70°55.025	8.4	1.045	0.9	11.67	24.54	24.61	
	13:32	" "	" "	"	3.537	5.1	7.78	27.41	22.92	
	13:33	" "	" "	"	7.762	5.4	4.70	29.20	21.36	* Collected samples at this depth
Flood Sampling station	14:18	41°40.666	70°54.990	3.5	0.822	2.8	8.40	29.94	24.64	
		" "	" "	"	2.519	6.4	9.	19.43	26.	
	14:20	41°40.666	70°54.990		2.537	5.3	6.10	22.02	24.22	* Collected samples at this depth

Water Quality Monitoring Summary Report  
W912WJ-0901D-000



New Bedford Harbor Water Quality Monitoring  
Daily Field Report

Date: 6/28/2011  
 Weather: Partly sunny, breeze 5-10 mph SE, 70-80 F  
 Tides:  

High	@	06:18
Low	@	11:33
High	@	18:40

Monitoring Period:

From: 0856 To: 1330

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Dredging and debris removal in Dredge Areas  
G and K only

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
<u>1000' Ebb Ref.</u>	<u>10.0-12.0</u>	<u>2.77-9.99</u>	<u>0.84</u>
<u>300' South of Dredge Area K</u>	<u>6.2-62.0</u>	<u>5.49-9.79</u>	<u>0.86</u>
<u>Flood Ref. 1000' South of Area L</u>	<u>2.6-10.3</u>	<u>4.56-13.18</u>	<u>5.97</u>
<u>300' North of Area K</u>	<u>5.1-27.9</u>	<u>2.89-13.29</u>	<u>1.95</u>

Oil Sheen/Debris:

None seen

Wildlife Observations:

Gulls, ducks, cormorants, swans

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L) <u>WQ-TSS-###-062811</u>	Turbidity (1L) <u>WQ-TUR-###-062811</u>
Total PCB (1L) <u>WQ-TPC-###-062811</u>	Dissolved PCB (2x1L) <u>WQ-DPC-###-062811</u>
Toxicity (5 gal) <u>WQ-TOX-###-062811</u>	Metals (500ml) <u>WQ-MET-###-062811</u>

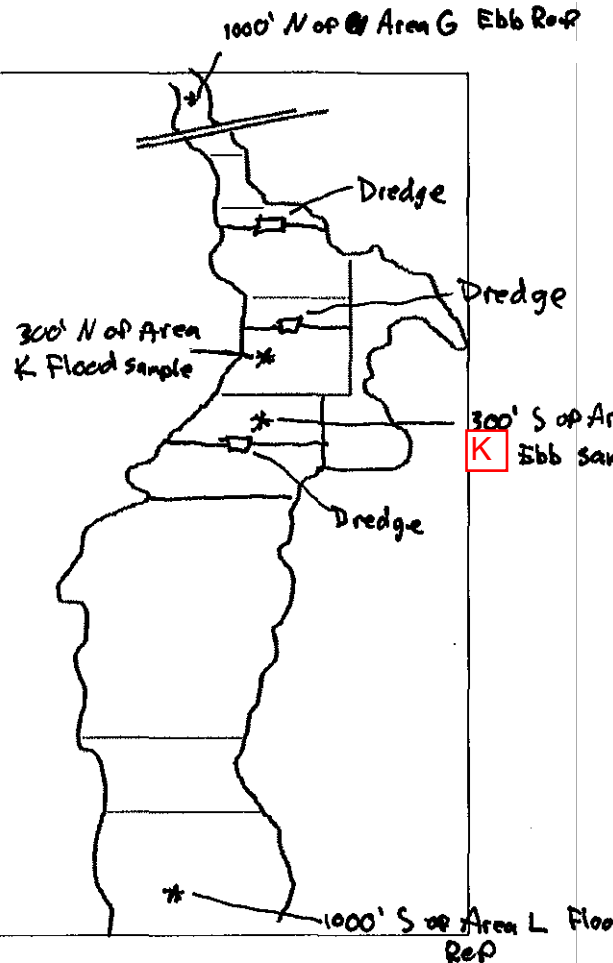
Notes: All field and reference samples collected under the guidelines agreed upon by USACE.

Sampling Crew:

D. Stuart, D. Bailey, M. Walsh

Chief Scientist Signature:

D. Stuart







## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location: New Bedford Harbor  
 Dredging Description: Active Dredging + debris removal in Areas G, J  
 Survey Vessel: R/V George Hampton  
 Chief Scientist: D. Stuart  
 Sampling Technician: D. Bailey  
 Vessel Captain: M. Walsh  
 Other Personnel: \_\_\_\_\_  
 Weather Conditions: Partly sunny, 70-80 F, breeze S-10 SE/SW

Date: 6/28/2011  
 Page: 1 of 1

Tide Information	
High	06:18
Low	11:33
High	18:40
Low	

Station Name	Time	Latitude	Longitude	Water Depth #	Sample Depth #	Turbidity NTU	DO	Salinity	Temp C	Notes
1000 ft North of Dredge Area E	09:25	41° 40.726	070° 55.013	4.4 #	0.756	16.0	5.99	16.40	23.13	
	09:29				2.316	12.0	2.77	27.03	22.97	
	09:34				0.844	11.5	5.48	17.34	22.89	
300 ft South of Area J Ebb Sampling Station	10:24	41° 40.337	070° 54.979	5.5	0.612	14.9	9.79	14.85	24.99	Turbidity Range during sampling; 6.1-62 NTU
	10:25				2.001	4.2	7.53	26.55	23.74	
	10:27				3.501	3.7	5.49	28.04	22.93	
1000 ft South of Area L Flood reference	12:27	41° 39.788	070° 55.023	8.5	0.795	2.6	13.18	19.84	26.38	Turbidity range during sampling; 4.9-6.1 NTU
	12:28				2.987	5.8	8.20	27.54	23.31	
	12:30				6.070	10.3	4.56	28.96	22.17	
300 ft North of Area K Flood Sampling Station	13:09	41° 40.440	070° 54.960	7.7	0.990	7.1	13.29	14.31	27.64	Turbidity during sampling; 12.8-27.8 NTU
	13:10				1.951	23.9	10.46	17.16	25.88	
	13:11				3.970	8.1	6.10	27.44	22.89	
	13:12				6.112	5.1	2.89	28.18	21.69	

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 06/29/11

Weather: Overcast, 70s, chance of rain, very windy in afternoon

Tides:

Low	@	0042
High	@	<del>1224</del> 0705
Low	@	<del>1927</del> 1224
High		1927

Monitoring Period:

From: 0850 To: 1535

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

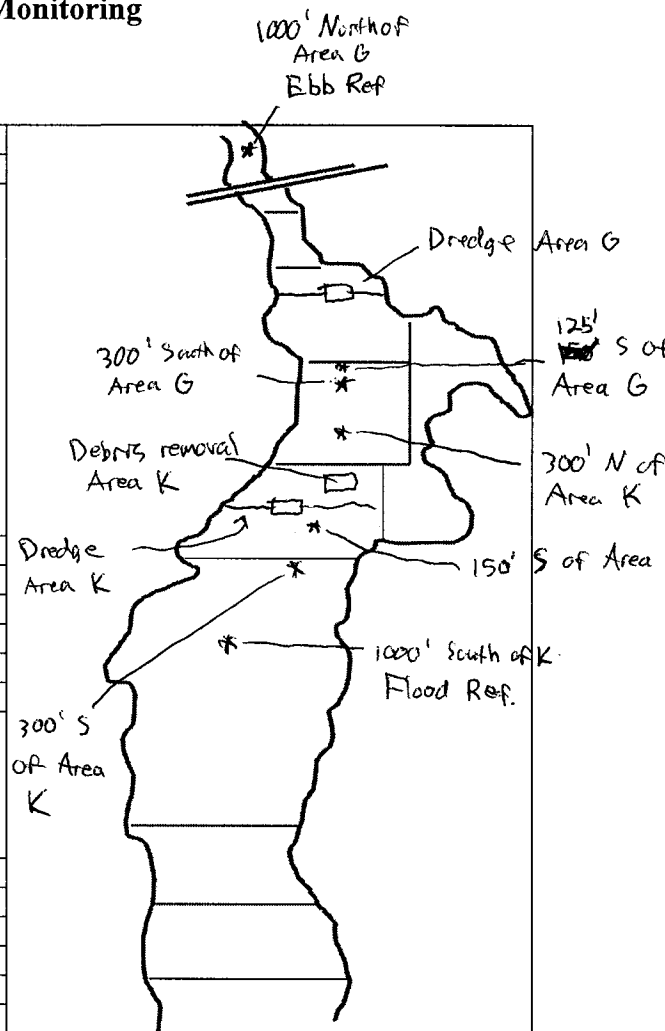
0925-0956	Monitor <del>the</del> south of dredging in Area G
0950-1010	Monitor south of debris removal in Area K
<del>1010-1030</del>	<del>Monitor south of dredging in Area G</del>
1230-1300	Monitor North of dredge Area K
1300-1310	Flood Reference
1310-1330	Monitor North of Area K

No dredging being done; no monitoring from 1010 to 1230

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
100ft South of debris Area K	7-20	3-4	0.95-3.4
125' S of Area G	5-13.1	2.91-8.06	0.86-3.52
150 ft S of Area K	8.8-36.9	3.44-5.67	1.00-4.76
300 ft N of Area K	5.4-11.8	3.16-7.92	0.89-4.69

oil sheen 1150



Oil Sheen/Debris:

light oil sheen and odor at debris removal Area K / Heavy sheen observed w/in Area K inside and outside of booms, probably due to combined dredge + debris removal

Wildlife Observations:

Gulls, ducks, osprey, egret, swan, a few fish jumps

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Turbidity values at reference stations ranged from 4.9 to 11 for Ebb and Flood references. Monitoring at Areas K and G, north and south of activities, showed no exceedances; turbidities ranged from 5.4-12.5 at a distance 300 ft from activity and only up to 37 NTU at ~150 ft from activity. Heavy sheen was noticed

Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

*David Stuart*

inside and out of boom in Area K during the afternoon. Dredge and debris teams were advised to reduce pace of activity and recommend installing another



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Active dredging in G, K  
Debris Removal in N, K, installing boom in Area N  
George Hampson  
D. Stuart  
-  
M. Walsh  
-  
Overcast, 70s, chance of rain

Date 6/29/11  
Page 1 of 2

Tide Information	
High	07:05
Low	12:24
High	19:27
Low	00:42

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
North of Area G	0854	41° 40.726	070° 55.018	5.4	0.652	5.4	6.95	19.81	24.55	Ebb Ref.
⊥	0855	⊥	⊥	⊥	2.501	7.6	3.50	26.48	23.62	⊥
⊥	0856	⊥	⊥	⊥	4.311	8.0	2.77	27.24	23.42	⊥
125 ft South of Dredge G, Ebb	0924	41° 40.581	070° 54.971	4.3	1.050	13.1	4.57	23.51	24.14	Ebb
⊥	0925	⊥	⊥	4.3	3.516	8.4	2.91	28.00	23.15	⊥
⊥	0932	41° 40.565	070° 54.984	4.2	0.863	5.0	8.06	16.33	24.40	⊥
150 ft South of debris removal Area K	0955	41° 40.375	070° 54.958	6.2	1.004	8.8	5.67	23.43	24.27	⊥
⊥	0957	⊥	⊥	⊥	3.050	36.9	3.94	28.22	22.96	⊥
⊥	0958	⊥	⊥	⊥	4.755	9.5	4.10	28.68	23.15	⊥
300 ft South of debris removal, Area K	1008	41° 40.365	070° 54.962	6.7	0.995	6.4	6.61	23.05	24.45	⊥
⊥	1009	⊥	⊥	⊥	2.665	19.5	4.24	28.03	23.08	⊥
⊥	1010	⊥	⊥	⊥	4.983	7.9	4.22	28.73	23.13	⊥
<del>300 ft South of dredge in Area K</del>	<del>1236</del>	<del>41° 40.346</del>	<del>070° 54.973</del>	<del>5.6</del>	<del>0.890</del>	<del>11.8</del>	<del>7.92</del>	<del>20.01</del>	<del>24.70</del>	<del>Low slack → F</del>
300 ft North of activity in Area K	1237	41° 40.455	070° 54.946	6.7	0.890	11.8	7.92	20.01	24.70	Low slack → F
⊥	1237	⊥	⊥	⊥	2.993	5.4	4.52	28.16	23.05	⊥
⊥	1238	⊥	⊥	⊥	4.692	5.4	3.16	28.31	22.86	⊥

A-10

Water Quality Monitoring Summary Report  
W9128J-090D-0001



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Active dredging in Areas G, K  
Debris removal in Areas N, K installing booms in Area N  
R/V George Hampson  
D. Stuart  
M. Walsh  
Overcast, 70s, chance of rain

Date 6/29/11  
Page 2 of 2

**Tide Information**

High 1927  
Low 0042  
High 0705  
Low 1224

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000 Ft South of Area K - Flood Ref ┆	1306	41° 40.177	070° 55.013	3.5	0.975	4.9	9.88	20.14	25.54	Flood.
┆	1308	┆	┆	┆	2.626	11.1	5.70	28.23	23.53	
300 Ft North of Dredging in Area K	1330	41° 40.449	070° 54.940	7.9	0.752	12.7	8.70	13.40	26.45	
	1331				3.379	6.6	4.76	28.12	23.27	



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 6/30/11

Weather: Sunny, 80s, wind 10-20 mph from N/NW

Tides:	Low	@	0113
	High	@	0749
	low	@	1257
	High	@	2008

Monitoring Period:

From: 0900 To: 1540

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

0900-1030 Active dredging in Area G

0900-1100 Debris removal in Area K

1115- Dredging in Area K

1115-1425 Debris removal in Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
600' North of Area G Ebb Reference	3.6-7.7	3.11-9.75	0.98-2.42
300' South of Area K debris removal	3.1- <del>4.2</del> 4.2	4.94-7.95	0.75-4.45
200' South of Area K debris removal west	15.1-36.0	5.62-8.38	0.85-1.85
300' North of Area K transect	5-36	6.5-8.5	2

Oil Sheen/Debris:

Slight sheen 300' S of Area K debris removal; sheen observed outside of containment in Area K ~200 ft South and East of dredge/debris removal with slight odor

Wildlife Observations:

Jellyfish, Gulls, ducks, Swans

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Turbidities within dredge area K remained low (single digits) but noticeable sheen is observed within the dredge area as well as outside the booms. Transects from shore to the extent of dredge Area K (North of K) showed higher turbidities (up to 90 NTU) but it was determined to be caused by submerged pipeline disturbing bottom sediment and not a result of dredge/debris removal activities. All 4 WHG moorings recovered

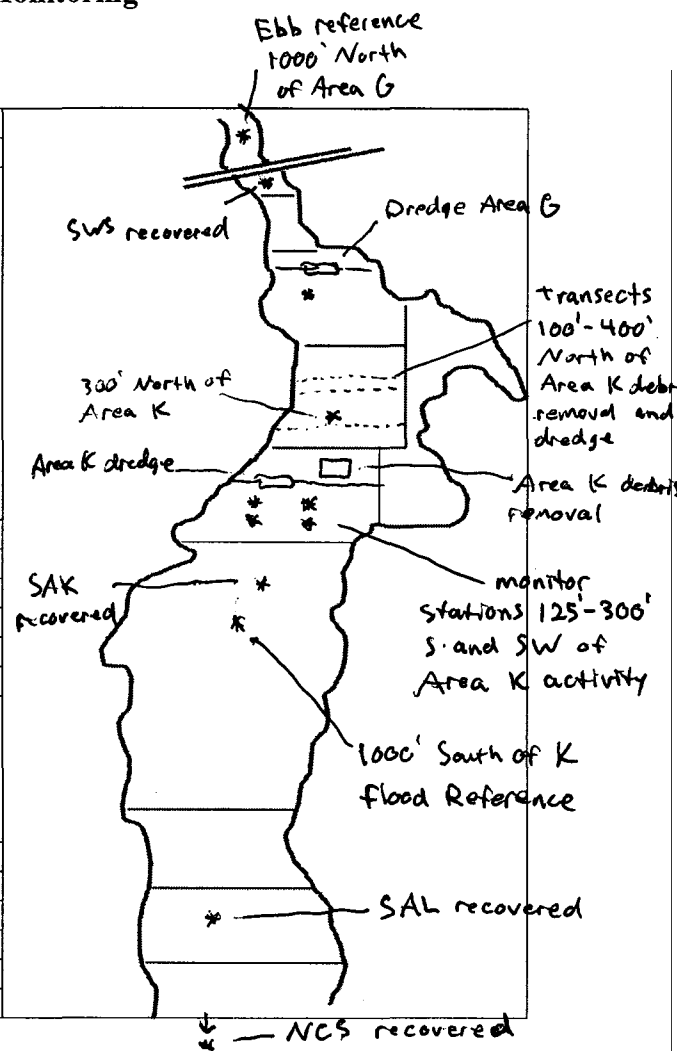
Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

Dave Stuart

but will not be redeployed until after July 4th.





## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Active dredging in Areas G, K  
Debris removal in Area K  
George Hampson  
D. Stuart  
-  
M. Walsh  
-  
Sunny, 80s wind 10-20 mph from N/NW

Date 6/30/11  
Page 1 of 2

**Tide Information**

~~High~~ L 0113  
~~Low~~ H 0749  
High L 1257  
~~Low~~ H 2008

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
<del>125 ft South of Area K debris removal</del>	0956	41° 40.359	070° 54.975	10	7.702	8.0	4.61	29.06	23.34	Ebb   Flood
125 ft South of Area K debris removal	0955	↓	↓	↓	4.361	5.2	4.77	28.84	23.47	
↓	0957	↓	↓	↓	1.76	9.6	8.60	24.42	24.25	
200 ft SW of debris removal area K	1002	41° 40.357	070° 54.999	5.5	0.850	15.1	8.38	24.15	24.40	
	1003	↓	↓	4.4	1.845	36.0	5.62	28.02	23.77	
300 ft South of Area K debris removal	1011	41° 40.352	070° 54.976	6.1	0.750	3.1	7.95	22.86	24.54	
	1013	↓	↓	↓	2.710	4.2	5.72	28.64	23.54	
	1014	↓	↓	↓	4.453	3.7	4.94	28.97	23.36	
1000' North of Area G Ebb Reference	1113	40° 40.721	070° 55.019	3.8	0.978	3.6	8.75	26.21	25.07	
	1114	↓	↓	↓	2.421	7.7	3.11	27.55	23.88	
125' South of Area K dredging	1142	~	~	2.5	0.705	12.6	9.92	25.07	25.65	
	1144			3.8	0.695	13.0	10.05	25.71	25.20	
1000' South of Area K - Flood Ref	1145			4.1	1.710	10.7	6.97	28.00	24.03	
	1345	41° 40.121	070° 55.062	4.1	0.953	10.3	9.37	27.72	25.52	
↓	1346	↓	↓	↓	2.835	8.7	7.58	29.35	23.37	

A-13

Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas G, K  
Debris removal in Area K.  
George Hampson  
D. Stuart  
-  
M. Walsh  
-  
Sunny, 80s, wind 10-20mph from N/NW

Date 6/30/11  
Page 2 of 2

Tide Information  
High L 0113  
Low H 0749  
High L 1257  
Low H 2008

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp
~300' North of Area K <del>transect</del>	1403				~2	~5-36	~6.5-8.5	~26-27	~24-25
~200' North of Area K transect	1417				~1.3	~50-60	~6.5-7.2	~26-27	~25-26
~150' North of Area K dredge	1435				1.3	~20-50			

All taken during Flood  
Notes  
Eastern  
transect from shore to edge  
of dredge Area K  
} pipeline was disturbing  
bottom sediment

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/6/11  
 Weather: Sunny, 80s, breezy  
 Tides: High @ 0005  
Low @ 0532  
High @ 1239  
Low @ 1802

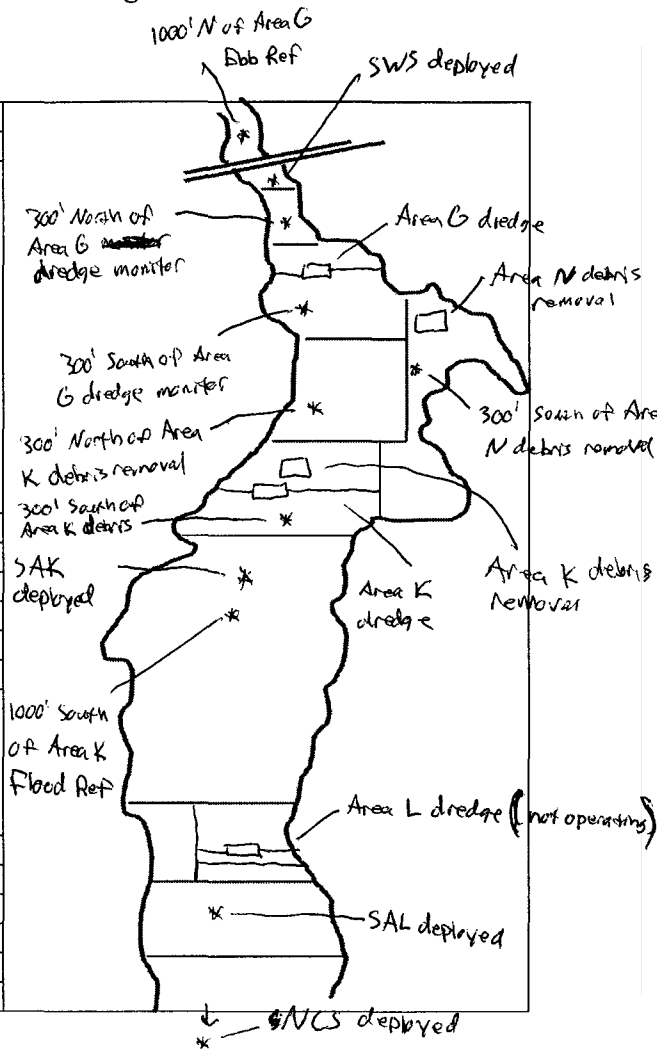
Monitoring Period:  
 From: 0915 To: 1540

Tidal Stages: (HWS) (Ebb) LWS (Flood)

Dredging Activity:  
Dredging in Area G  
Debris removal in Area K  
Debris removal in Area N  
Debris removal in Area K

**Turbidity Summary:**

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
300' N of Area G dredge	6.5-22.4	1.42-10.62	1.5-7.1
300' N of Area K debris removal	6.2-10.9	1.20-9.87	2.09-8.05
300' S of Area G dredge	6.3-8.9	3.17-11.17	1.59-5.96
300' S of Area N debris removal	10.2-13.5	8.44-13.85	1.00-3.51



Oil Sheen/Debris:  
Light sheen on water North of Area K debris removal (flood) and SW of Area N debris removal (ebb)

Wildlife Observations:  
Terns, gulls, cormorants, swans

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: All moorings redeployed after being removed for servicing over the holiday weekend. All areas of remediation activity were successfully monitored except Area N on flood tide. The maximum distance the survey vessel could have gotten from the barge was approx. 50 ft.

Sampling Crew: D. Stuart, D. Rogers  
 Chief Scientist Signature: Dave Stuart





## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location: Dredging in Area G  
 Dredging Description: Debris removal in Areas K, N  
 Survey Vessel: George Hampson  
 Chief Scientist: D. Stuart  
 Sampling Technician: -  
 Vessel Captain: D. Rogers  
 Other Personnel: -  
 Weather Conditions: Sunny, 80s

Date: 7/6/01  
 Page: 1 of 2

Tide Information	
High	0005
Low	0532
High	1239
Low	1802

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' Flood Ref - South of Area G	1013	41° 40.435	070° 54.942	9.6	1.011	2.8	10.24	25.61	26.70	Flood
I	1015	I	I	I	3.076	3.8	8.44	27.31	25.73	
I	1016	I	I	I	5.487	3.8	5.14	29.46	24.74	
I	1017	I	I	I	8.007	6.7	2.12	29.54	24.19	
300' North of Area G dredging	1128	41° 40.665	070° 54.995	8.0	1.550	6.5	10.62	25.19	26.50	
I	1129	I	I	I	3.527	10.6	8.52	26.93	26.00	
I	1131	I	I	I	5.439	7.3	2.85	28.50	25.78	
I	1132	I	I	I	7.121	7.9	1.42	28.67	25.41	
I	1155	I	I	I	4.620	22.4	4.91	27.54	26.10	
300' North of Debris removal Area K	1224	41° 40.472	070° 54.960	10.3	2.086	8.8	9.87	26.26	26.68	
I	1226	I	I	I	4.060	8.9	7.13	27.49	25.64	
I	1227	I	I	I	6.091	6.2	5.59	28.71	25.43	
I	1229	I	I	I	8.052	9.5	1.20	29.43	24.38	
I	1303	I	I	I	3.011	10.9	6.82	27.10	26.06	
200' South of Area G Dredging	1340	41° 40.561	070° 54.969	7.5	1.588	8.9	11.17	25.19	26.84	High water slack Ebb

A-16

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area G  
Debris removal in Areas K, N  
George Hampson  
D. Stuart  
—  
D. Rogers  
—  
Sunny, 80's, breezy from S

Date: 7/6/11  
Page: 2 of 2

**Tide Information**

High: 0005  
Low: 0532  
High: 1239  
Low: 1802

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
700' South of Area G dredging	1342	41° 40.561	070° 54.969	7.5	4.032	7.4	7.99	27.66	25.98	Ebb
┆	1344	┆	┆	┆	5.955	6.3	3.11	28.83	25.41	
1000' North of Area G reference	1411	41° 40.734	070° 55.013	6.4	1.521	4.5	8.95	25.58	26.99	
┆	1413	┆	┆	┆	3.076	10.8	6.80	27.46	26.06	
┆	1415	┆	┆	┆	4.996	11.8	1.34	28.23	26.08	
300' South of Area N debris removal	1446	41° 40.502	070° 54.873	4.9	1.002	13.5	13.85	22.66	28.75	
┆	1447	┆	┆	┆	2.042	10.2	11.82	25.75	27.28	
┆	1449	┆	┆	┆	3.505	13.1	8.44	27.01	26.12	
300' South of Area K debris removal	1525	41° 40.357	070° 54.995	5.3	1.083	8.0	10.36	27.02	27.45	
┆	1526	┆	┆	┆	2.520	7.6	10.12	27.14	27.34	
┆	1528	┆	┆	┆	3.991	6.2	6.31	28.12	25.92	

Water Quality Monitoring Summary Report  
W912WJ-0901D-0101



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/8/11  
 Weather: Cloudy, 70s, fog, rain likely  
 Tides: 

High	@	0156
Low		0715
High	@	1433
Low	@	2014

Monitoring Period:

From: 0740 To: 1420

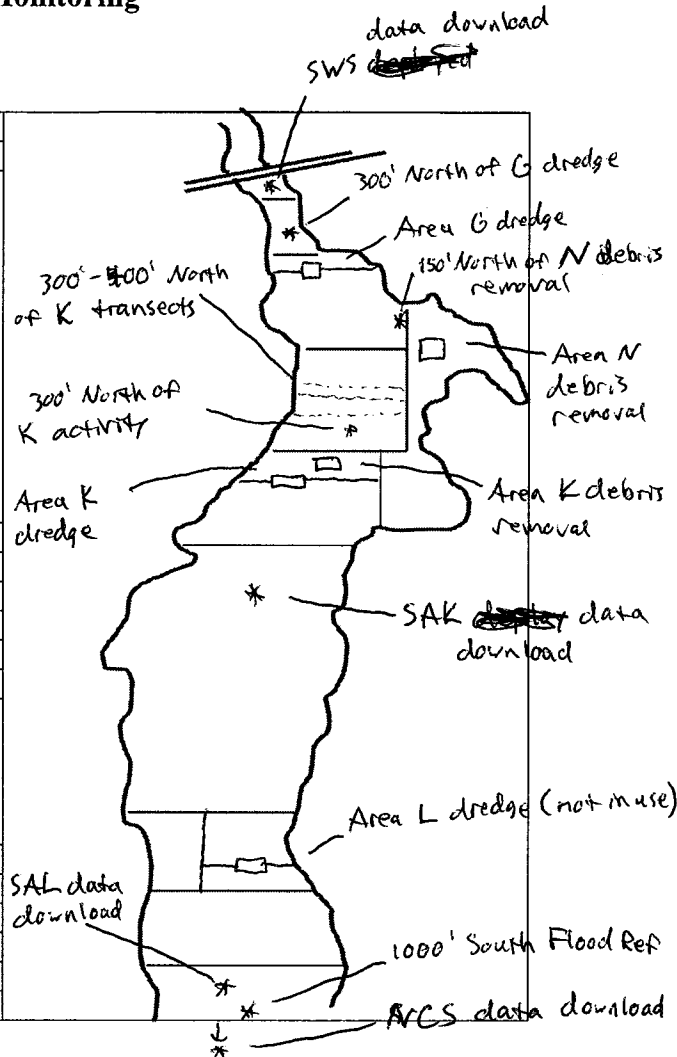
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Area K: dredging and debris removal  
Area G: dredging  
Area N: debris removal

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
1000' South Flood Ref	3.3-13.4	4.14-5.08	1.98-6.00
5' North of Area K debris	4.4-16.0	0.16-4.84	1.53-6.02
300' North of Area G dredge	9.1-20.4	1.90-5.42	1.50-4.99
150' North of Area N debris	7.8	4.78	2.85



Oil Sheen/Debris:

Very light sheen north of Area G inside booms / light sheen north of Area K outside booms after T-storm

Wildlife Observations:

Gulls, egret, swans, ducks, cormorants, blue heron

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Thunderstorm caused work to stop from 0915-1100. Surface water for the rest of monitoring period was moving seaward despite flood tide. Surface layer of fresher (salinity < 5ppt) water approx. 1 foot thick and slightly higher turbidity. No exceedances, no samples taken.

Sampling Crew:

D. Stuart, D. Rogers

Chief Scientist Signature:

Daed Stuart



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location	Dredging in Areas K, G
Dredging Description	Debris removal in Areas K, N
Survey Vessel	George Hampson
Chief Scientist	D. Stuart
Sampling Technician	-
Vessel Captain	D. Rogers
Other Personnel	-
Weather Conditions	Cloudy, 70s, rain likely T-storm

Date	7/8/11
Page	1 of 2

Tide Information	
High	0156
Low	0715
High	1433
Low	2014

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Flood of Area L Ref - 1000' South	0754	41° 39.780	70° 55.022	7.4	1.975	3.4	5.08	28.83	25.81	Flood
┆	0755	┆	┆	┆	4.010	3.3	4.46	29.77	25.48	
┆	0757	┆	┆	┆	5.997	13.4	4.14	30.10	25.25	
300' North of Debris + dredging in Area K	0844	41° 40.460	70° 54.958	6.5	1.528	4.4	3.14	27.92	26.35	
┆	0845	41° 40.460	70° 54.958	┆	3.085	8.6	2.26	28.87	25.75	
┆	0847	┆	┆	┆	5.006	7.1	0.16	29.57	25.10	
┆	1122	41° 40.458	70° 54.943	7.4	1.558	16.0	4.84	20.69	24.96	
┆	1124	┆	┆	┆	3.012	13.9	2.61	25.21	25.34	
┆	1127	┆	┆	┆	6.018	8.7	1.58	28.72	25.55	
300' North of Area K transect	1150				1-3	11-16	2.2-3.4			
350' North of Area K transect	1155				1-3	12-14	2.5-4.0			
400' North of Area K transect	1157				1-3	14-24	3.9-5.7			
300' North of Area G dredge	1210	41° 40.648	70° 54.985	6.0	1.501	15.7	5.42	16.63	24.82	
┆	1213	┆	┆	┆	3.117	10.0	3.14	24.26	25.44	
┆	1215	┆	┆	┆	4.989	8.1	1.90	25.95	25.60	

A-19

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Areas K, G  
 Debris removal in Areas K, V  
 George Hampson  
 D. Stuart  
 -  
 D. Rogers  
 -  
 Cloudy, 70s, rain, T-storms

**Date** 7/8/11  
**Page** 2 of 2

Tide Information	
High	0156
Low	0715
High	1433
Low	2014

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
300' North of Area G dredging	1259	41° 40.648	70° 54.985	6.0	4.541	20.9	2.36	25.48	25.55	Flood
150' North of Area M debris removal	1343	41° 40.552	70° 54.873	5.4	2.851	7.8	4.78	26.20	25.40	Flood

 A-20  
Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/11/11  
 Weather: Sunny, 80s-90s, wind from S-SW  
 Tides:  

High	@	<u>0457</u>
Low	@	<u>1034</u>
High	@	<u>1728</u>

Monitoring Period:  
 From: 0830 To: 1545

Tidal Stages: HWS (Ebb) (LWS) (Flood)

Dredging Activity:  
Area G = dredging  
Area K = dredging, debris removal  
Area N = debris removal

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	2.3-2.4	10.82-11.59	1.47-2.27
Ebb Ref	4.9	2.62	1.48
300' South of G dredge	7.6-52.8	3.35-6.63	0.48-1.54
350' North of K dredge	3.0-20.6	0.30-8.14	1.32-6.50

Oil Sheen/Debris:  
None observed

Wildlife Observations:  
Many ducks, cormorants, gulls, small fish in the water

Samples Collected for Laboratory Analysis - Sample IDs:

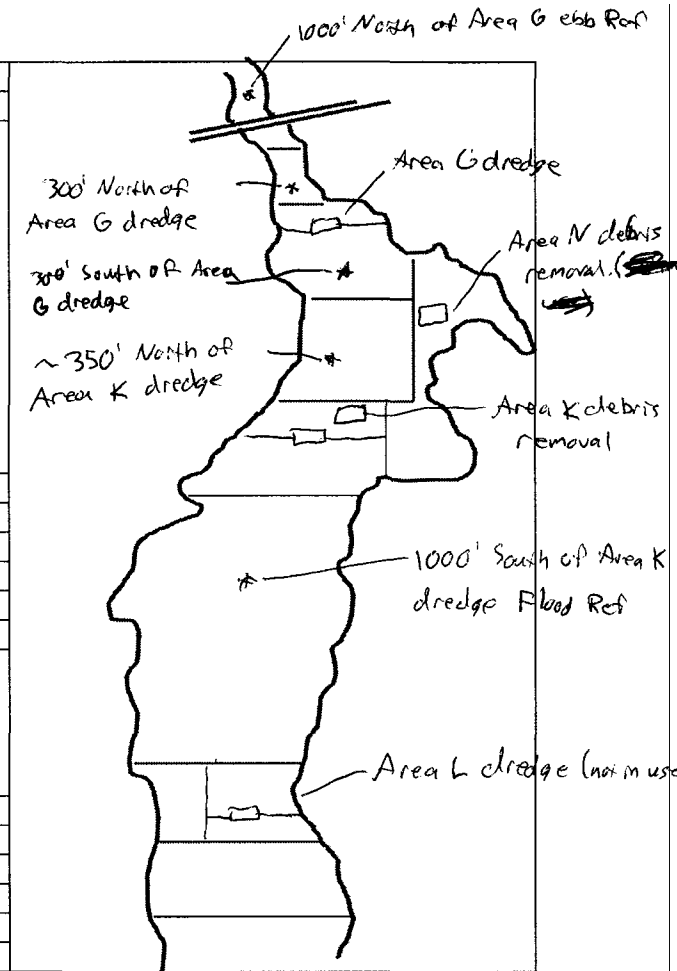
TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: High turbidities measured 300' South of Area G dredge at ~1.5 ft depth on ebb tide may be due to boat traffic over a shallow section just up-current (~50 ft) of monitoring station. Dredge pipe may have been dragging/bouncing on bottom as well. Turbidities measured ~50 ft from dredge were 8-20 NTU (not recorded)

Sampling Crew: D. Stuart, D. Rogers

Chief Scientist Signature: Dacl Stuart

Booms and floating pipeline prevented us from getting closer than 350 ft from Area K dredging.





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas G, K  
Debris removal in Areas K, N  
George Hampson  
D. Stuart  
-  
D. Rogers  
-  
Sunny, 80s-90s-wind from S-SE

Date: 7/11/11  
Page: 1 of 2

Tide Information	
High	0457
Low	1034
High	1728
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes	
Ebb ReR; 1000' North of Area G dredge	0923	41° 40.719	70° 55.021	2.9	1.476	4.9	2.62	21.86*	24.93	Ebb	
300' South of Area G dredge	0953	41° 40.547	70° 54.932	3.3	0.980	7.6	6.63	4.01	24.88	L	
	1003				1.558	38.1	3.96	5.57	24.37	May be propeller stirring up bottom or dredge pipe being dragged/bouncing	
	1010				1.566	40.1	3.35	11.06	24.70		
	1020				1.585	37.9	3.89	9.20	24.74	on bottom	
	1030				1.582	52.8	4.34	6.74	24.76	Ebb/Low slack	
300' North of Area K dredge	1048	41° 40.457	70° 54.949	6.5	1.542	20.6	4.00	12.61	24.90	Flood	
	1050				2.991	3.3	2.07	27.78	25.65		
	1052				4.978	3.0	0.30	28.86	24.66		
	1116				1.953	17.9	3.53	7.71	24.97		
	1132				1.951	12.6	6.07	6.85	25.28		
	1150				6.9	1.495	9.7	7.46	7.32		26.77
	1155				2.949	5.5	3.09	25.75	25.70		
	1157				4.946	3.8	0.55	28.68	24.85		
	1218				1.320	17.1	7.75	7.21	27.28		

Ebb

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location	Dredging in Areas G, K
Dredging Description	<del>Debris</del> Debris removal in Areas K, N
Survey Vessel	George Hampson
Chief Scientist	D. Stuart
Sampling Technician	-
Vessel Captain	D. Rogers
Other Personnel	-
Weather Conditions	Sunny, 80s-90s, wind from S-SE

Date	7/11/11
Page	2 of 2

Tide Information	
High	0457
Low	1034
High	1728
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Flood Rap. loc: south of Area K dredge	1229	41° 40.220	70° 55.023	3.4	1.466	2.4	11.59	17.42	27.08	Flood
↓	1232	↓	↓	↓	2.268	2.3	10.82	17.80	26.85	
350' north of Area K dredge	1310	41° 40.457	70° 54.949	7.7	1.444	10.9	8.14	7.43	27.72	
↓	1324	↓	↓	↓	3.005	20.3	3.87	19.47	26.11	
↓	1326	↓	↓	↓	5.070	5.9	0.43	28.31	25.07	
↓	1330	↓	↓	↓	6.498	5.3	0.45	28.68	24.49	
300' north of Area G dredge	1420	41° 40.640	70° 54.986	4.4	1.027	5.1	7.92	2.09	28.01	
↓	1422	↓	↓	↓	2.018	6.6	7.49	2.25	27.72	
↓	1424	↓	↓	↓	3.532	17.0	1.92	18.40	25.77	
↓	1445	↓	↓	↓	3.498	11.1	6.68	17.38	26.36	
↓	1455	↓	↓	↓	3.496	10.9	6.95	17.96	26.42	

A-23

Water Quality Monitoring Summary Report  
W912WJ-090D-0001





# New Bedford Harbor Water Quality Monitoring Daily Field Report

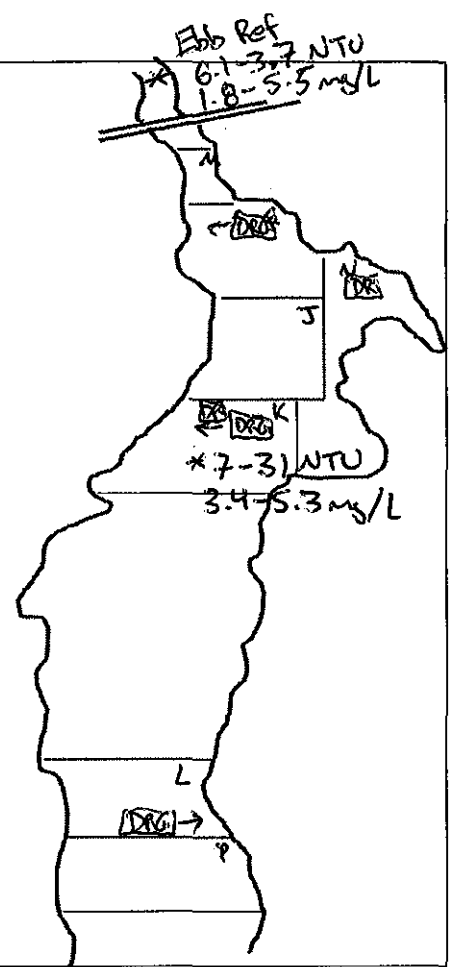
Date: 7/15/11  
 Weather: Sunny, NW wind 5-10 knts  
 Tides:  
High @ 0831  
Low @ 1424  
High @ 2050

Monitoring Period:  
 From: 0730 To: 1415  
 Tidal Stages: HW Ebb LWS Flood

Dredging Activity:  
Morning:  
Debris Removal Area N  
Debris Removal / Dredging Area K  
Midday:  
Debris Removal Area K + N  
Dredging Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Ebb Ref (1000'N)	3.7-6.1	1.8-5.5	1-5
300' N of Area N	2.7-12.3	3.7-5.2	1-6
300'S of DR/DRG in Area K	7.3-31.4	3.4-5.3	0.9-5.3



Oil Sheen/Debris: Slight sheen south of debris removal in Area K, sheen extends 1000' south.

Wildlife Observations: Swans, Egrets, Cormorants, Gulls, small fish (Silversides)

Samples Collected for Laboratory Analysis - Sample IDs:

<del>TSS (1L)</del>	<del>Turbidity (1L)</del>
<del>Total PCB (1L)</del>	<del>Dissolved PCB (2x1L)</del>
<del>Toxicity (5 gal)</del>	<del>Metals (500ml)</del>

Notes: High turbidity values seen when 100-200' from dredge and debris removal in Area K (>50 NTU), as we drift back to 300' turbidity dropped to <30 NTU. Higher turbidity levels were seen at lower tides in Area K.

Sampling Crew: D. Bailey, M. Walsh  
 Chief Scientist Signature: [Signature]



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

DR North Cove, Area K  
DRG Area K NW corner  
R/V George Hampson  
D. Bailey  
—  
M. Walsh  
—  
Sunny, 70s, Wind NW 5 knots

Date 7/15/11  
Page 1 of   

Tide Information	
High	0831
Low	1424
High	2050
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Ebb Ref	0758	41°40.721	70°55.021	6.30	1.075	5.3	5.51	24.62	24.89	
1000' North	0759	" "	" "	"	2.751	3.7	4.18	26.63	25.34	
	0800	" "	" "	"	5.019	6.1	1.83	27.56	25.03	
300' S of	0856	41°40.375	70°55.028	5.4	1.125	11.4	5.30	23.65	24.49	-Sheen on water
DR + DRG	0858	" "	" "	"	2.147	18.8	4.23	25.63	24.34	coming from
Area K	0859	" "	" "	"	4.261	7.3	3.40	28.67	24.44	Debris Removal
	0956	41°40.375	70°55.028	5.0	1.633	31.4	4.35	26.71	24.62	
	1148	41°40.360	70°55.017	3.1	0.900	28.3	4.85	27.28	25.16	
	1149	" "	" "	"	2.090	24.1	4.28	28.47	24.56	

4-23  
Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/18/2011  
 Weather: SUNNY, PARTLY CLOUDY, light winds (SW, 10knts)  
 Tides:  
HIGH @ 10:42  
LOW @ 16:24

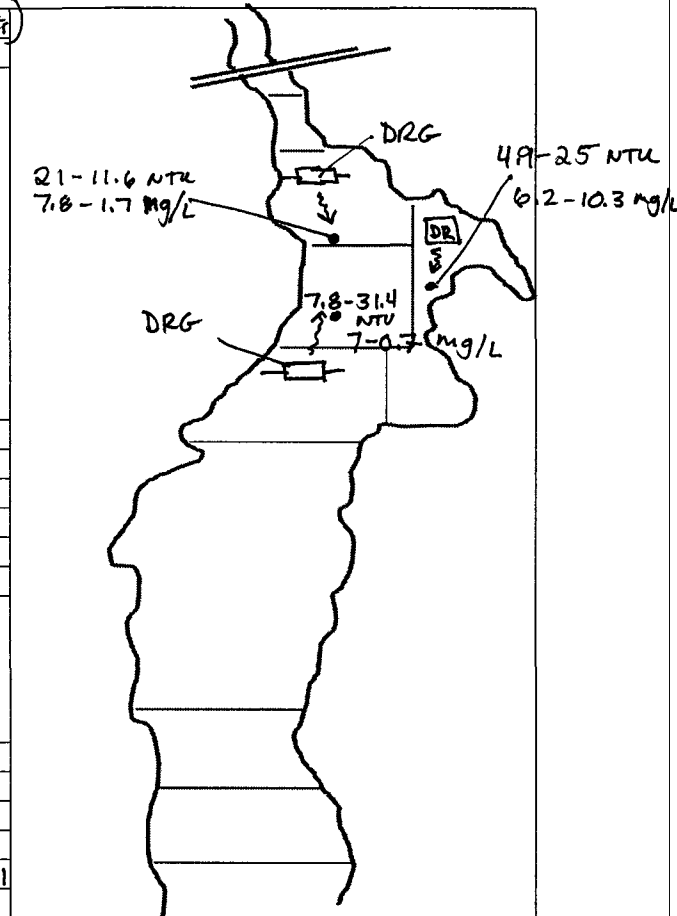
Monitoring Period:

From: 0859 To: 1600

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

DREDGE IN AREA K - morning  
DREDGE IN AREA G - Afternoon  
Debris Removal in Area N - Afternoon



Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
FLOOD REF. (PROFILE RANGE)	2.1-4.4	5.15-6.38	1-9'
100' N of Dredge in Area K (Flood): (surface-bottom)	7.8-31.4	7.12-0.71	1-8.9'
Ebb REF. (surf.-bottom)	10.0-5.2	8.04-6.35	0.7-3.51
350' S of Dredge in Area G (ebb) (surface to bottom)	21.2-11.6	7.8-1.7	0.8-4.2

Oil Sheen/Debris:

NONE OBSERVED

Wildlife Observations:

SWANS, snowy egret, tern, gull, cormorants; small juvenile fish (minnows)

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes:  
~~PROB FOR AREA G excavation; no wa impacts observed.~~

- occasional high turbidity values observed (50-60 NTU), but these values were short lived and believed to be caused by the DREDGE pipeline disturbing the bottom close to the monitoring position (within 100-150').
- D.O. concentration approached 0 mg/L @ bottom in Area J, and was <2.0 near bottom on average.

Sampling Crew: M. WALSH, D. WALSH ; USACE OBSERVERS: J. Mackay, T. Randall

Chief Scientist Signature: Dan Walsh



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

AREA K, AREA G,  
R/V GEORGE HAMPSON  
D. WALSH  
D. WALSH, M. WALSH  
M. WALSH  
I. RANDALL, J. Mackay - observing from USACE  
SUNNY, WINDS SW 5-10 knots (0900)

Date July 18, 2011  
Page 1 of 2

Tide Information	
High	10:42
Low	16:24
High	
Low	

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
FLOOD REF	8:59	41 39.798	70 55.013	10.3'	1.04'	2.1	6.38	28.17	24.76	
"	0900	"	"	"	4.11	1.7	5.78	29.21	24.42	
"	0903	"	"	"	9.00	4.4	5.15	29.42	24.28	
100' NoFDRG	1025	41 40.440	70 54.956	11.2'	0.96'	7.8	7.12	15.75	24.73	on pipeline
"	1027	"	"	"	3.02	12.4	6.48	24.80	25.24	on pipeline
"	1030	"	"	"	8.86	31.4	0.71	—	—	ON PIPELINE
150' NoFDRG	1039	41 40.452	70 54.944	10.1'	0.76'	12.5	7.84	9.67	25.00	
"	1041	"	"	"	3.14	6.0	5.73	25.29	25.34	
"	1042	"	"	"	5.43	50.2	3.46	27.72	25.20	
"	1043	"	"	"	7.82	11.5	1.49	28.52	24.96	
"	1044	"	"	"	9.12	9.2	0.53	28.74	24.72	
EBB REF	1104	41 40.560	70 54.933	6.4'	0.73'	10.0	8.04	6.51	25.90	IN AREA G, Floating Pipeline preventing
"	1105	"	"	"	2.49	5.7	6.98	23.94	24.98	VESSEL FROM
"	1106	"	"	"	3.51	5.2	6.35	25.31	25.07	upstream to Nor
										REF SITE.

A-27

Water Quality Monitoring Summary Report  
W9128.J-090D-0001



## New Bedford Harbor Water Quality Monitoring *In situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Area G, Area N  
Dredging in Area G, Debris Removal in Area N  
R/V George Sampson  
D. WALSH  
D. WALSH / M. WALSH  
M. WALSH  
N/A  
SW WIND 10-15 KNOTS, Sunny w/ CLOUDS

Date: 7/18/2011  
Page: 2 of 2

Tide Information	
High	10.42
Low	16.24
High	
Low	

Station Name	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
200' South of D.L., Area N	1222	41°40.505	70°54.863	4.2'	0.64	10.5	10.25	6.42	26.93	AREA N Debris Removal
"	1223	"	"	"	3.01	4.9	6.22	25.63	25.19	
"	1259	"	"	"	0.957	25.1	7.86	10.73	26.59	"
350' South of Dredge in Area G	1454	41°40.527	70°54.946	5.5'	0.78	21.2	7.80	8.90	27.25	ACTIVE DRG IN AREA G.
"	1455	"	"	"	2.50	13.7	3.45	25.25	25.49	"
"	1456	"	"	"	4.23	11.6	1.70	28.65	24.83	"
"	1511	"	"	"	0.7-1.0	55-65				ACTIVE DRG in AREA G; possible Pipeline disturbing bottom closer to Monitoring station
~500' South of ACTIVE DRG - G	1535	41°40.523	70°54.934	4.8'	0.77	21.9	7.24	8.24	27.79	
"	1536	"	"	"	2.05	18.4	2.75	25.32	25.53	
"	1537	"	"	"	3.17	9.3	1.93	28.34	24.97	

Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/19/11  
 Weather: Sunny, 80s, wind from N 5-10 knots  
 Tides: Low 0431  
 H @ 1125  
 L @ 1643  
 H @ 2346

Monitoring Period:

From: 0915 To: 1600

Tidal Stages: (HWS) Ebb LWS (Flood)

Dredging Activity:

Morning: Dredging in Areas Q, K, G  
 Afternoon: Dredging in Area G  
 Debris removal in Area L

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
300' North of Area Q Dredge	1.3-2.2	4.57-6.15	1.61-5.73
150' North of Area Q Dredge	1.5-2.3	4.88-6.60	1.50-5.73
1000' South of Area Q Dredge	0.8-0.9	5.12-5.41	4.97-18.01
1000' North of Area Q Dredge	1.2-2.4	5.19-7.66	1.99-6.08
100-200' Transects East of Q	2.0-3.1	~8.00	1.00-2.00
300' South of Area Q dredge	1.7-6.9	4.42-7.65	1.70-6.46
300' South of Area G dredge	6.0-25.8	1.69-3.84	2.00-6.00

Oil Sheen/Debris:

None observed

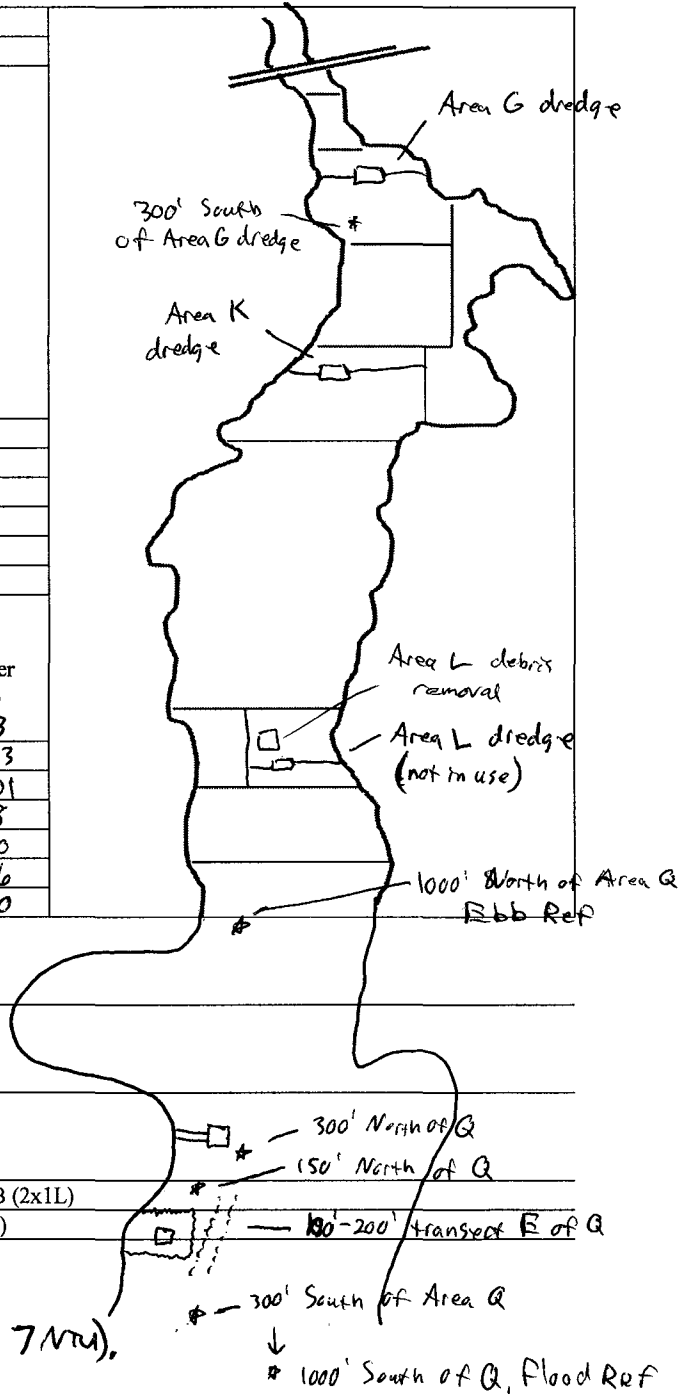
Wildlife Observations:

Gulls, Swans, minnows, cormorants

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Mechanical dredging in Area Q. Turbidity measured around mechanical dredge were low (< 7 NTU). Monitoring focused mainly on Area Q



Sampling Crew:

D. Stuart, L. Perry

Chief Scientist Signature:

Daed Stearns



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas Q, K, G  
Debris removal in Area L  
TG+B Carolina Skiff  
D. Stuart  
-  
L. Perry  
-  
Sunny, 80s, wind from N 5-10 knots

Date 7/19/11  
Page 1 of 2

Tide Information	
High L	0431
Low H	1125
High L	1643
Low H	2340

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
100' South of Area Q Mech. dredging	0935	41° 39.401	70° 55.043	7.20 ft	4.976	0.9	5.41	29.49	24.50	Flood Ref, Flood
↓	0937	↓	↓	↓	9.997	0.8	5.41	29.56	24.46	↓
↓	0939	↓	↓	↓	<del>15.881</del>	0.8	5.34	29.75	24.37	↓
↓	0941	↓	↓	↓	18.012	0.9	5.12	29.72	24.39	↓
200' North of Area Q & dredge	0954	41° 39.572	70° 55.097	6.6	1.608	1.5	6.15	26.26	24.98	Flood
↓	0956	↓	↓	↓	2.906	1.3	5.52	28.53	24.53	↓
↓	0958	↓	↓	↓	5.734	2.2	4.57	29.49	24.31	↓
↓	1031	↓	↓	↓	5.643	2.0	4.71	29.58	24.30	↓
150' North of Area Q dredging	1059	41° 39.550	70° 55.116	6.8	1.504	1.5	6.60	26.14	25.27	↓
↓	1101	↓	↓	↓	2.921	1.5	6.31	26.86	25.06	↓
↓	1103	↓	↓	↓	5.732	2.3	4.88	29.24	24.45	↓
↓	1124	↓	↓	↓	4.561	1.6	5.06	29.43	24.36	High Slack
100' North of Area Q & - Ebb Ref	1157	41° 39.725	70° 55.034	8.8	1.991	2.4	7.66	27.33	25.36	Ebb
↓	1158	↓	↓	↓	4.030	1.2	5.72	29.47	24.40	↓
↓	1200	↓	↓	↓	6.080	1.5	5.19	29.72	24.27	↓

A-30

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Areas Q, K, G  
 Debris removal in Area L  
 Carolina Skiff (TG+B)  
 D. Stuart  
 -  
 L. Perry  
 -  
 Sunny, 80s, wind ~ 5-10 knots

**Date** 7/19/11  
**Page** 2 of 2

Tide Information	
High L	0431
Low H	1125
High L	1643
Low H	2340

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Transsects around Area Q	~1210				1-2	2.0-3.1	~8.00			Ebb, ~100-150' East of Area Q
300' South of Area Q	1216	41° 39.473	70° 55.106	7.2	1.701	2.1	7.65	23.88	26.39	Ebb
	1218				3.003	1.9	6.60	26.92	25.33	
	1226				5.040	1.7	5.30	29.03	24.57	
	1222				6.461	6.9	4.42	29.56	24.37	
	1250				5.312	3.0	5.16	29.01	24.60	
300' South of Area Q dredge	1345	41° 40.542	70° 54.952	7.7	2.003	12.6	3.84	27.45	25.57	
	1347				4.004	6.0	2.02	28.52	25.01	
	1350				5.996	11.6	2.69	28.66	24.89	
	1415				2.958	25.8	2.44	28.16	25.21	
	1445				3.09	22.2	1.69	27.94	25.29	
	1515			7.4	2.938	22.9	1.72	27.80	25.31	

A-31

 Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



Date: 7/20/11

Weather: Sunny, high 80s, breeze from S

Tides:

L	@	0458
H	@	1210
L	@	1717

Monitoring Period:

From: 0730 To: 1445

Tidal Stages: HWS (Ebb) LWS (Flood)

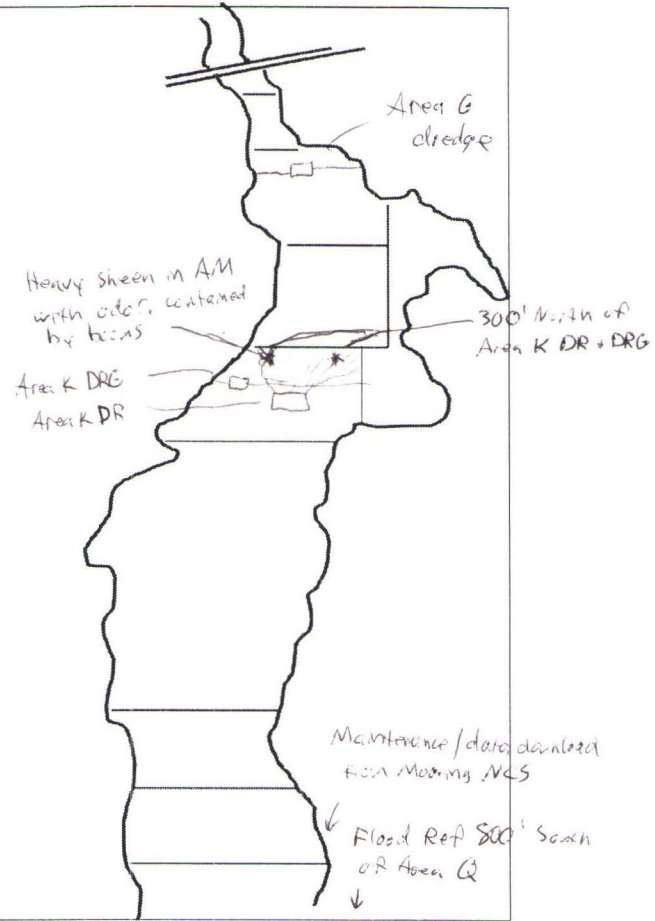
Dredging Activity:

Morning: Dredging in Areas K, G  
Debris removal in Area K

Afternoon: Dredging in Area G

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
800' South of Area Q Flood Ref	1.4-2.1	4.84-6.63	2.09-6.43
300' North of Area K DR + DRG	11.4-65.8 10.8-23.8	0.80-5.43 1.98-4.70	1.39-5.44 1.03-5.06



Oil Sheen/Debris:

Heavy sheen in Area K 300' North of DR, contained within booms, heavy odor

Wildlife Observations:

Ducks, gulls, swans, cormorant

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Heavy sheen at Area K was result of too-rapid debris removal: when DR stopped so did sheen. Even slow debris removal caused sheens downcurrent. Upon entering Area K a layer of high turbidity (30-70 NTU) was observed at 1-2.5 ft depth 300' North. Turbidity peaked at 98 NTU for a moment, at which time debris crews were asked to slow their pace. Turbidity remained high (20-60 NTU)

Sampling Crew:

D. Stuart, L. Perry

Chief Scientist Signature:

*Dave Stuart*

even after debris removal stopped for 1 hour. Dredge pipeline was located between debris removal and monitoring boat, and was observed moving every 50 feet. *likely* have contributed to the high turbidity values seen.



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Areas K, G  
 Debris removal in Area K  
 Carolina Skiff - TG+B  
 D. Stuart  
 -  
 L. Perry  
 -  
 Sunny, high 80's.

**Date** 7/20/11  
**Page** 1 of 1

**Tide Information**  
**High**  
**Low** 0458  
**High** 1210  
**Low** 1717

Delivery Order 0010-04 March 2012  
 A-33  
 Water Quality Monitoring Summary Report W912WJ-090D-0001

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes				
800' South of Area G Flood Ref	0753	41° 39.705	70° 55.068	8.6	2.092	2.1	6.63	26.37	24.44	Flood Ref, Flood				
I	0756	I	I	I	4.059	1.6	5.23	28.82	24.61	I				
	0758				6.734	1.4	4.84	29.28	24.61					
	0825				1.560	65.8	3.91	27.48	25.87					
300' North of Area K dredge & debris removal	0827	I	I	I	3.047	13.4	2.86	28.65	25.26	I				
	0829				5.744	11.4	0.80	28.77	24.95					
	0915				1.371	58.0	4.80	26.44	25.90		Debris removal stepped at 0905			
	0932				1.414	42.6	4.50	25.62	26.20					
	0948				1.388	27.0	5.43	26.81	25.99					
	1001				<del>61° 40.421</del>	<del>70° 54.983</del>	8.5	1.391	28.6		5.26	26.27	26.31	
	1032				41° 40.421	70° 54.983	6.3	1.025	15.7		9.70	23.44	26.84	Debris removal begins at 1030
	1034							2.980	10.8		4.91	28.15	25.56	I
	1036							5.055	14.3		1.98	28.56	25.18	
	1055							1.785	23.8		6.57	26.31	26.16	
1116				1.779	19.6	7.39	25.88	26.51						
I	1129	I	I	I	1.522	23.4	8.78	25.42	26.85	I				



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/25/11  
 Weather: Mostly cloudy, 70s-80s, E breeze, chance of rain  
 Tides: H @ 0354  
L @ 0831  
H @ 1627  
L @ 2141

Monitoring Period:

From: 0815 To: 1430

Tidal Stages: HWS Ebb LWS Flood

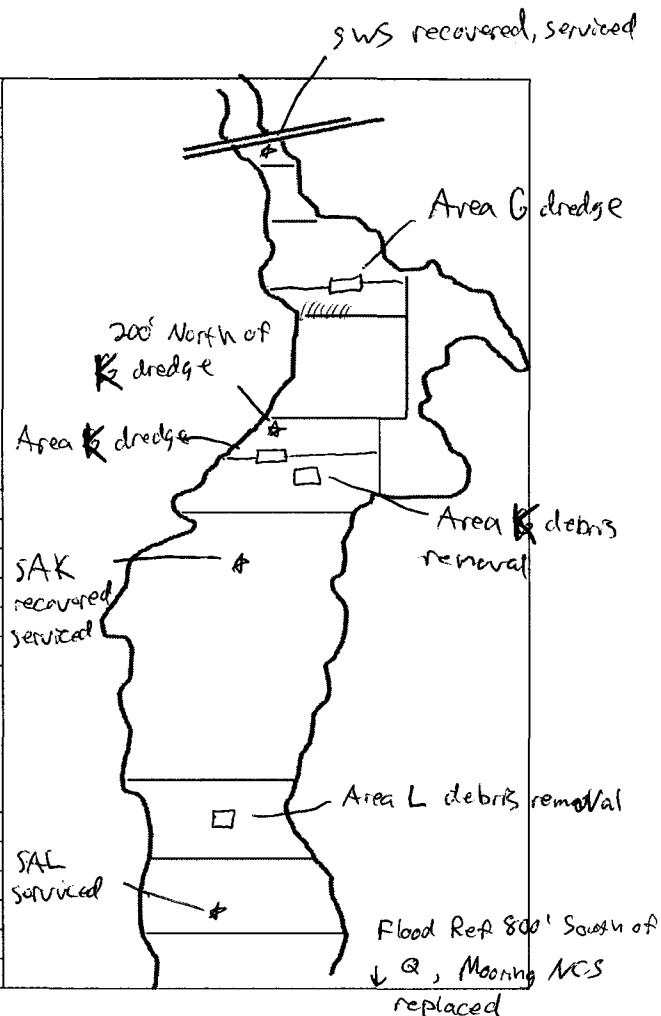
Dredging Activity:

Morning: Dredging in Areas Q, K, G  
Debris removal in Area K

Afternoon: Dredging in Area G

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
<u>Flood Ref 800' S of Q</u>	<u>1.1-3.0</u>	<u>3.99-6.09</u>	<u>1.52-4.03</u>
<u>200' North of K dredge</u>	<u>13.2-56.8</u>	<u>2.39-3.06</u>	<u>1.05-3.00</u>



Oil Sheen/Debris:

very light sheen south of G dredge

Wildlife Observations:

Gulls, terns, Kingfishers, cormorants, many ducks, small fish

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes:

Majority of time was spent servicing, cleaning and calibrating in-situ moorings. In afternoon, only work being done was in Area G. No exceedances, no samples.

Sampling Crew:

D. Stuart, D. Rogers

Chief Scientist Signature:

Dave Stuart



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Areas Q, K, G  
 Debris removal in Area ~~Q~~ K  
 George Hampson  
 D. Stuart  
 -  
 D. Rogers  
 -  
 Mostly cloudy, 70-80s, chance of rain

**Date** 7/25/11  
**Page** 1 of 1

Tide Information	
High	0354
Low	0831
High	1627
Low	2141

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity NTU	DO mg/L	Salinity	Temp	Notes
Flood Ref - 800' South of Area Q	0834	41° 39.410	70° 55.079	<del>4.9</del>	1.516	1.1	6.09	26.55	24.76	Flood
	0836				3.112	1.1	4.88	27.90	25.04	
	0838				4.030	3.0	3.99	28.21	25.06	
800' North of Area K dredge	1020	41° 40.414	70° 54.987	4.0	1.098	26.7	3.06	26.90	25.95	
	1022				3.004	13.2	2.39	27.92	26.14	
	1045				1.476	56.8	2.97	27.04	25.97	

A-33

 Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/28/2011

Weather: Sunny CLM 75° / light variable

Tides:

High	@	0635 / 3.4'
Low	@	1144 / 0.3'
High	@	1856 / 4.3'

Monitoring Period:

From: 0850 To: 1630

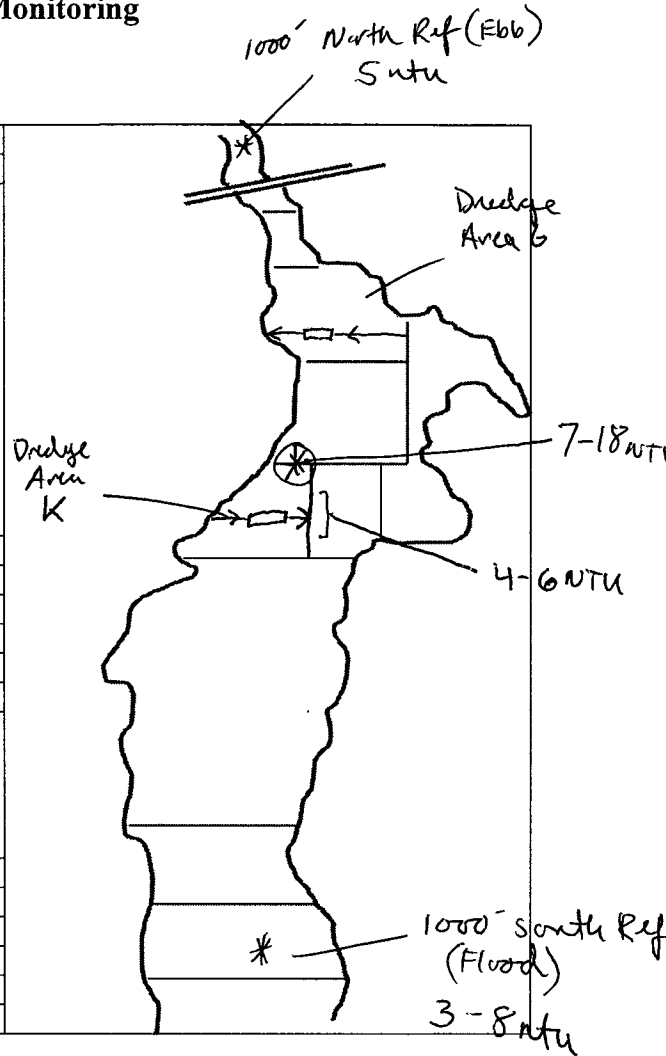
Tidal Stages: HWS (Ebb) (LWS) (Flood)

Dredging Activity:

Morning Area G and Area K / No Active Debris Removal  
Mid-day Area K / No Debris Removal  
Afternoon Area K / No Debris Removal

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
<u>A. -K 200' south of Dredge</u>	<u>4-7</u>	<u>6.5-7.5</u>	<u>0.6-2.5</u>
<u>Area K 300' North of Dredge</u>	<u>7-13</u>	<u>3.3-5.2</u>	<u>0.6-6.0</u>
<u>Area K 300' North of Dredge</u>	<u>5-18</u>	<u>3-9</u>	<u>1-3'</u>
<u>Vessel moving Area K East Boundary</u>	<u>4-6</u>	<u>7-9</u>	<u>0.6-2.8</u>



Oil Sheen/Debris:

Very light sheen observed within boom on Area K

Wildlife Observations:

Occasional small schools of minnows, gulls, Ducks, Egrets, Terns, Cormorants, SWANS

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Very little activity on the water today. Stop and Go dredging in areas G and K, throughout morning and afternoon. No Debris removal. Turbidity values were low throughout the upper harbor and Dredge Areas ranging from single digits to the high teens. No Active Debris Removal on Area G.

Sampling Crew:

M. Walsh, D. Rogusz

Chief Scientist Signature:

Mark Walsh



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Area G (South) / Area K (middle)  
East to West / West to East  
G. Hampson  
M. Walsh  
D. Rogers  
D. Rogers  
Sunny Clear 75° / Wind Light + Variable

Date 7/28/2011  
Page 1 of 2

Tide Information	
High	06:35 - 3.4'
Low	11:44 - 0.3'
High	18:58 - 4.3'
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' North Ebb Ref (NCS)	0944	41°40.737'	070°55.021	3.1	0.621	4.9	3.25	28.77	26.18	
	0945			<del>2.05</del>	2.05	5.1	3.88	28.89	25.92	
200' South of Dredge Area K	1049			4.9	0.650	5.3	7.16	27.02	27.05	Ebb
					<del>2.000</del>	5.6				
	1050			<del>3.02</del>	3.02	4.3	6.81	28.94	25.62	
	1055	41°40.335	070°54.781		1.452	7.1	7.48	28.34	26.60	
	1156				1.097	7.2	7.86	28.45	26.78	
1000' South Ref Flood	1215	41°39.921	070°55.003	4.0	0.665	3.8	8.48	28.57	27.02	Flood
	1219				2.07	5.8	7.44	29.22	25.59	
	1220			<del>3.01</del>	3.01	8.3	6.78	29.29	25.37	
300' North of Dredge Area K	1356			7.2	0.76	11.4	8.22	27.51	27.79	
	1358				3.00	12.9	6.44	28.94	25.61	
	1400				6.01	7.2	3.32	29.00	25.36	
	1403			7.2	2.265	18.9	6.89	28.03	26.99	
	1433			7.6	1.951	16.3	7.68	28.72	27.09	

A-37

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Area K (middle)  
 Stop + Go West to East  
 G. Hampson  
 M. Walsh  
 D. Rogers  
 D. Rogers  
 mostly cloudy 75-80 / Light southerly breeze

Date 7/28/2011  
 Page 2 of 2

Tide Information	
High	0635 - 3.4'
Low	1144 - 0.3'
High	1858 - 4.3'
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
vessel moving	1450				0.6 2.8	4 - 6 m	9.4 mg/L	28.31	27.72	East Boundary Area K (Flood)
300' North of Dredge Area K	1500	41° 40.436	070° 54.749	7.9	1.945	12.7	8.97	28.32	27.46	
" "	1530			8.6	1.940	15.2	9.20	28.30	27.45	
" "	1550			8.7	2.218	18.2	9.02	28.25	27.49	

 A-38  
Water Quality Monitoring Summary Report  
W912WJ-0901D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 7/28/2011

Weather: Sunny CLM 75° / light variable

Tides:

High	@	0635 / 3.4'
Low	@	1144 / 0.3'
High	@	1856 / 4.3'

Monitoring Period:

From: 0850 To: 1630

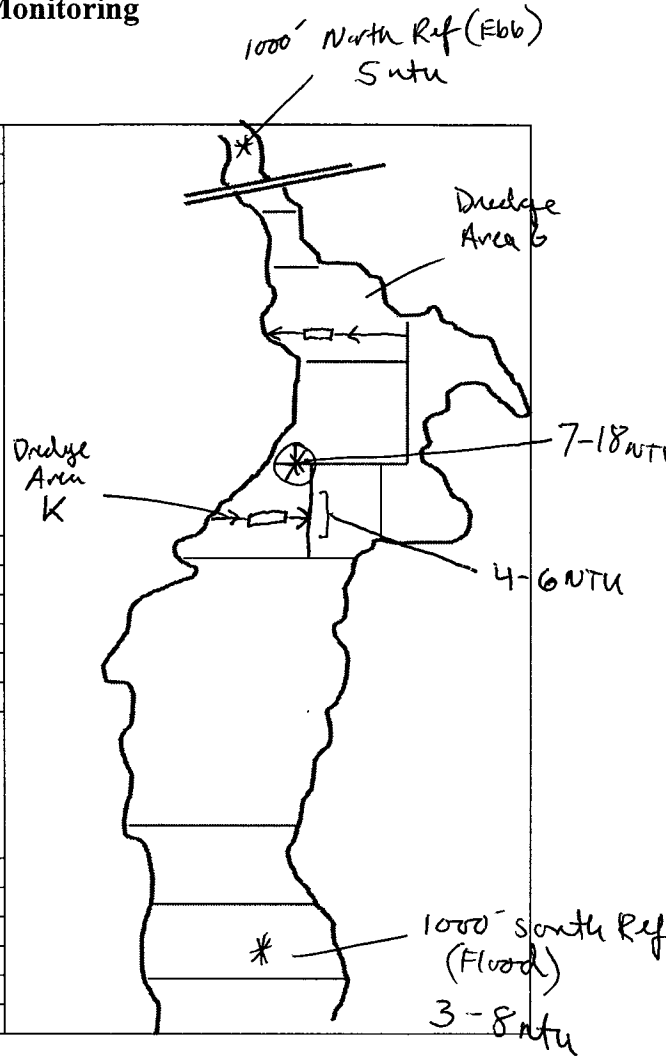
Tidal Stages: HWS (Ebb) (LWS) (Flood)

Dredging Activity:

Morning Area G and Area K / No Active Debris Removal  
Mid-day Area K / No Debris Removal  
Afternoon Area K / No Debris Removal

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
A. -K 200' south of Dredge	4-7	<b>6.8-7.9</b>	<b>0.7-3.0</b>
Area K 300' North of Dredge	7-13	3.3-5.2	0.6-6.0
Area K 300' North of Dredge	5-18	3-9	1-3'
Vessel moving Area K East Boundary	4-6	<b>7-9.4</b>	0.6-2.8



Oil Sheen/Debris:

Very light sheen observed within boom on Area K

Wildlife Observations:

Occasional small schools of minnows, gulls, Ducks, Egrets, Terns, Cormorants, SWANS

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes:

Very little activity on the water today. Stop and Go dredging in areas G and K, throughout morning and afternoon. No Debris removal. Turbidity values were low throughout the upper harbor and Dredge Areas ranging from single digits to the high teens. No Active Debris Removal on Area G.

Sampling Crew:

M. Walsh, D. Rogers

Chief Scientist Signature:

Mark Walsh





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Area G (South) / Area K (middle)  
 East to West / West to East  
 G. Hampson  
 M. Walsh  
 D. Rogers  
 D. Rogers  
 Sunny Clear 75° / Wind Light + Variable

Date 7/28/2011  
 Page 1 of 2

Tide Information	
High	06:35 - 3.4'
Low	11:44 - 0.3'
High	18:58 - 4.3'
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' North Ebb Ref (NCS)	0944	41°40.732'	070°55.021	3.1	0.621	4.9	3.25	28.77	26.18	
	0945			<del>2.05</del>	2.05	5.1	3.88	28.89	25.92	
200' South of Dredge Area K	1049			4.9	0.650	5.3	7.16	27.02	27.05	Ebb
					<del>2.000</del>	5.6				
	1050			<del>3.02</del>	3.02	4.3	6.81	28.94	25.62	
	1055	41°40.335	070°54.781		1.452	7.1	7.48	28.34	26.60	
	1156				1.097	7.2	7.86	28.45	26.78	
1000' South Ref Flood	1215	41°39.921	070°55.003	4.0	0.665	3.8	8.48	28.57	27.02	Flood
	1219				2.07	5.8	7.44	29.22	25.59	
	1220			<del>3.01</del>	3.01	8.3	6.78	29.29	25.37	
300' North of Dredge Area K	1356			7.2	0.76	11.4	8.22	27.51	27.79	
	1358				3.00	12.9	6.44	28.94	25.61	
	1400				6.01	7.2	3.32	29.00	25.36	
	1403			7.2	2.265	18.9	6.89	28.03	26.99	
	1433			7.6	1.951	16.3	7.68	28.72	27.09	

A-40

 Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Area K (middle)  
 Stop + Go West to East  
 G. Hampson  
 M. Walsh  
 D. Rogers  
 D. Rogers  
 mostly cloudy 75-80 / Light southerly breeze

Date: 7/28/2011  
 Page: 2 of 2

Tide Information	
High	0635 - 3.4'
Low	1144 - 0.3'
High	1858 - 4.3'
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
vessel moving	1450				0.6 2.8	4 - 6 m	9.4 mg/L	28.31	27.72	East Boundary Area K (Flood)
300' North of Dredge Area K	1500	41° 40.436	070° 54.749	7.9	1.945	12.7	8.97	28.32	27.46	
" "	1530			8.6	1.940	15.2	9.20	28.30	27.45	
" "	1550			8.7	2.218	18.2	9.02	28.25	27.49	

 A-1  
 Water Quality Monitoring Summary Report  
 W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/1/11  
 Weather: Sunny, 80-90, breeze from S-SW  
 Tides: L 0259  
 H @ 0944  
 L @ 1515  
 H @ 2204

Monitoring Period:

From: 0800 To: 1515

Tidal Stages:  HWS  Ebb LWS  Flood

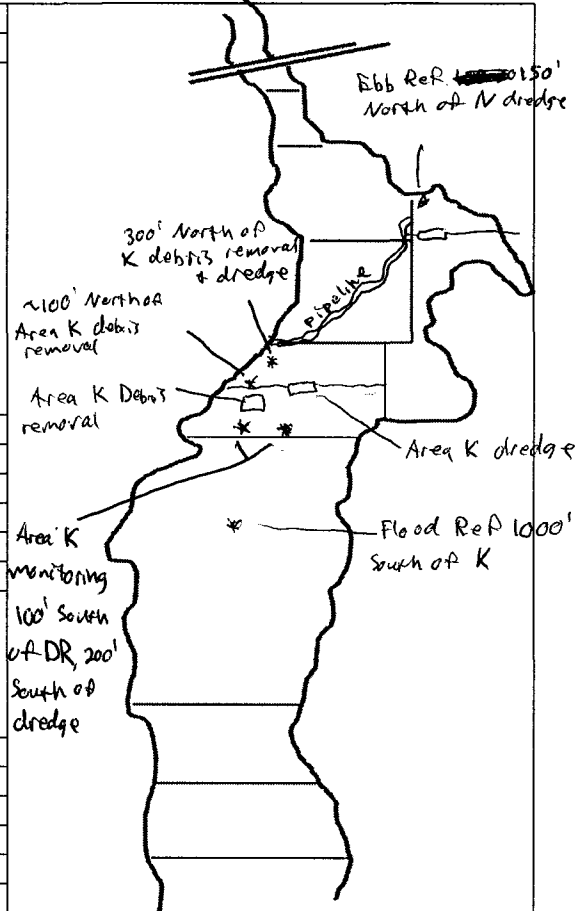
Dredging Activity:

Morning: Dredging in Area K  
 Debris removal in Area K

Afternoon: Dredging in Area K  
 Debris removal in Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	1.3-3.2	5.47-6.24	1.04-5.45
Ebb Ref	2.6-8.4	6.54-8.46	1.00-5.05
300' North of K activity	3.8-22.0	6.58-7.28	1.52-6.42
200' South of K dredge	6.5-8.3	6.96-8.07	1.94-6.47
100' South of K debris removal	<b>6.5-102.5</b>	6.11-9.26	<del>1.69-6.01</del> 1.69-6.01



Oil Sheen/Debris:

Light sheen upto 300' North of Area K activity during flood, light odor, contained by booms

Wildlife Observations:

Gulls, terns, egret, fish jumping, ~~swans~~ swans, cormorants

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes:

Floating pipeline prevented survey vessel from reaching upper reaches of estuary. All monitoring performed within guidelines of field sampling plan. Peak turbidities observed just south of Area K dredge but quickly dropped to lower background levels (10-25 NTU). No exceedances, no samples taken

Sampling Crew:

D. Stuart, D. Rogers

Chief Scientist Signature:

*Dach Stewart*



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area K  
Debris Removal in Area K  
George Hampson  
D. Stuart  
-  
D. Rogers  
-  
Sunny, 80-90 breeze, chance of T-storm in afternoon

Date 8/1/11  
Page 1 of 2

Tide Information	
High L	0259
Low H	0944
High L	1515
Low H	2204

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity NTU	DO mg/L	Salinity	Temp	Notes
100' South of Area K dredge + debris removal	0828	41° 40.151	70° 55.031	6.4	1.040	1.3	6.24	29.14	25.69	Flood
⊥	0830	⊥	⊥	⊥	3.009	1.3	5.96	29.37	25.58	⊥
⊥	0832	⊥	⊥	⊥	5.450	3.2	5.47	29.51	25.49	⊥
300' North of Area K activity	0851	41° 40.413	70° 54.488	7.8	1.515	3.8	7.28	28.69	26.72	⊥
⊥	0853	⊥	⊥	⊥	4.0019	11.5	7.09	28.93	25.93	⊥
⊥	0855	⊥	⊥	⊥	6.420	22.0	6.77	29.07	25.87	⊥
⊥	0913	⊥	⊥	⊥	6.050	19.9	6.58	29.05	25.91	⊥
⊥	0937	⊥	⊥	⊥	5.982	19.6	6.67	29.00	25.91	⊥
150' North of Area K dredge - Ebb Red	0957	41° 40.563	70° 54.875	6.4	0.998	2.6	8.46	26.84	26.80	High slack / Ebb
⊥	0959	⊥	⊥	⊥	2.512	5.9	7.44	28.65	26.59	⊥
⊥	1001	⊥	⊥	⊥	5.048	8.4	6.54	28.81	26.15	⊥
~100' North of Area K debris removal	0945				1-2.5	10.1-30.2				<del>High</del> High slack, moving south
100-200' South of Area K activity	1056	41° 40.329	70° 54.994	8.1	1.941	8.3	8.07	28.73	27.21	Ebb
⊥	1058	⊥	⊥	⊥	4.028	8.0	7.23	29.10	26.12	⊥
⊥	1100	⊥	⊥	⊥	6.467	6.5	6.91	29.17	25.95	⊥

Water Quality Monitoring Summary Report  
W912WJ-0901D-0607



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area K  
Debris removal in Area K  
George Hampson  
D. Stuart  
-  
D. Rogers  
-  
10-20 knot  
Sunny, clear, 80-90, wind from S, chance of T-storm in PM

Date 8/1/11  
Page 2 of 2

Tide Information	
High	0259
Low	0944
High	1515
Low	2204

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
100' South of Area K debris removal	1125	41° 40.326	70° 55.012	8.0	1.998	7.5	8.51	28.82	26.89	Ebb
	1127				4.018	43.4	6.69	29.03	26.13	
	1129				6.013	20.0	6.30	29.22	25.95	
	1150-1200				3.923	7.6-102.5	6.11	28.92	26.26	Ebb, Turb. range over 10 min.
	1230-1240			6.0	3.918	18.0-32.4	8.11	28.73	26.97	" " " " "
	1320-1330			5.1	3.886	<del>11.0-65.4</del> 72.4	7.17	28.82	27.00	" " " " "
	1415-1425			4.4	1.694	27.2-29.7	8.98	28.43	28.16	" " " " "
	1445-1455			4.2	1.687	11.9-48.4	9.26	28.34	28.33	" " " " "
										very light sheen, <del>not visible</del>

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/4/11

Weather: Sunny, clear, 70-80s, wind from NE 5-10 knots

Tides:

L	@	0512
H	@	1215
L	@	1749

Monitoring Period:

From: 0750 To: 1435

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Morning: Dredging in Area K  
Debris removal in Area K (two teams)

Afternoon: Dredging in Area N  
Debris removal in Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	3.7-6.4	5.44-6.11	1.49-3.08
Ebb Ref	5.2-6.4	5.09-7.07	2.06-5.95
300' North of K DR/DRG	22.8-37.8	5.52-5.80	1.53-4.84
200-250' North of N DRG	13.3-19.6	4.97-5.60	1.52-3.56
50-150' South of Q vibracoring	7.0-7.6	7.9	2.37-3.5

Oil Sheen/Debris:

None observed

Wildlife Observations:

Gulls, small fish jumping, egret, blue heron, ducks

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

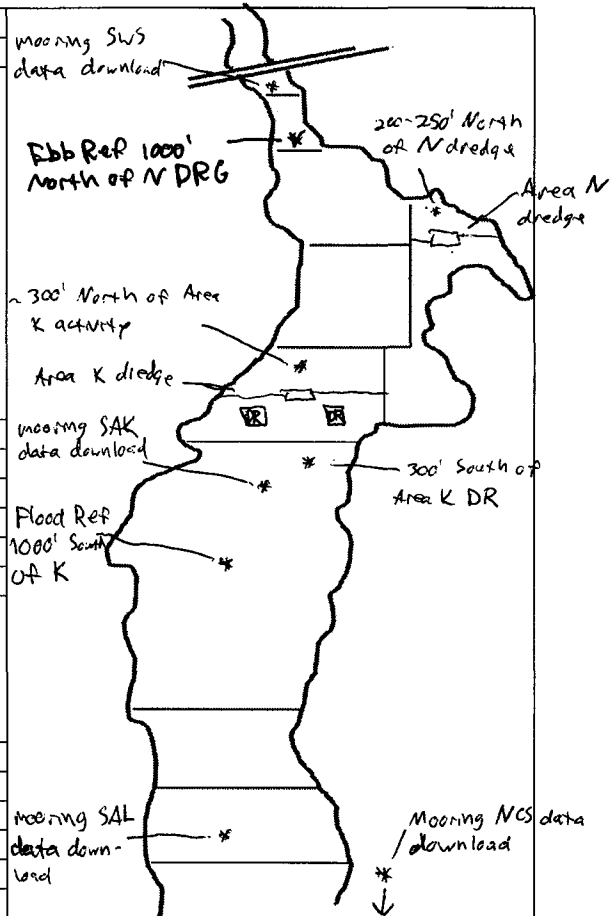
Notes: All 4 moorings had data downloaded, all cleaned and functioning properly. Monitoring vibracoring in Area Q produced no observable signs of disturbance. Monitoring North of N dredge was made difficult by pipeline encroaching on vessel location: crews moved pipeline later.

Sampling Crew:

P. Stuart, D. Rogers

Chief Scientist Signature:

*Dach Stuart*





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas K, N  
Debris removal in Area K  
George Hampson  
D. Stuart  
-  
D. Rogers  
-  
Sunny, 70-80s, wind from NE

Date 8/4/11  
Page 1 of 2

Tide Information	
High	
Low	0512
High	1215
Low	1749

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
100' South of Area K East Ref	0810	41° 40.119	70° 55.048	4.2	1.485	3.7	6.11	29.18	25.52	Flood
↓	0812	↓	↓	↓	3.084	6.4	5.44	29.43	25.62	↓
300' South of Area K debris removal East	0826	41° 40.284	70° 54.478	4.3	1.558	6.6	5.72	29.82	25.35	↓
↓	0829	↓	↓	↓	2.991	10.0	5.81	29.19	25.54	↓
300' North of Area K DRG + DR	0905	41° 40.395	70° 54.985	5.6	1.525	22.8	5.71	28.57	25.58	Flood, At this location the dredge pipeline is less than 50 feet from survey vessel
↓	0907	↓	↓	↓	3.150	24.1	5.62	28.82	25.56	↓
↓	0909	↓	↓	↓	4.630	37.8	5.52	29.05	25.61	↓
↓	0944	↓	↓	↓	4.837	33.0	5.80	29.06	25.73	↓
300-250' North of Area N dredge	1034	41° 40.554	70° 54.850	4.7	1.518	13.3	5.60	28.93	25.99	Flood, pipeline is <20 feet away and moves often
↓	1036	↓	↓	↓	3.528	17.9	4.97	28.99	25.83	↓
↓	1105	↓	↓	↓	3.542	19.6	5.25	28.98	25.81	↓
↓	1131	↓	↓	↓	3.555	19.5	5.13	29.02	25.77	↓
100' North of N dredge Ebb Ref	1223	41° 40.635	70° 54.990	8.2	2.062	6.4	7.07	29.05	26.26	High Slack/Ebb
↓	1226	↓	↓	↓	3.995	6.4	5.52	29.12	26.11	↓
↓	1228	↓	↓	↓	5.954	5.2	5.09	29.19	26.15	↓

A-70

Water Quality Monitoring Summary Report  
W912WJ-090D-0001







# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/8/2011  
 Weather: Overcast, Fog, Wind Light + Variable / North @ 5-10  
 Tides:  

<u>0340</u>	<u>3.3'</u>	@	<u>0340</u>
	<u>0.4'</u>	@	<u>0715</u>
	<u>4.2'</u>	@	<u>1615</u>

Monitoring Period:  
 From: 0830 To: 1545

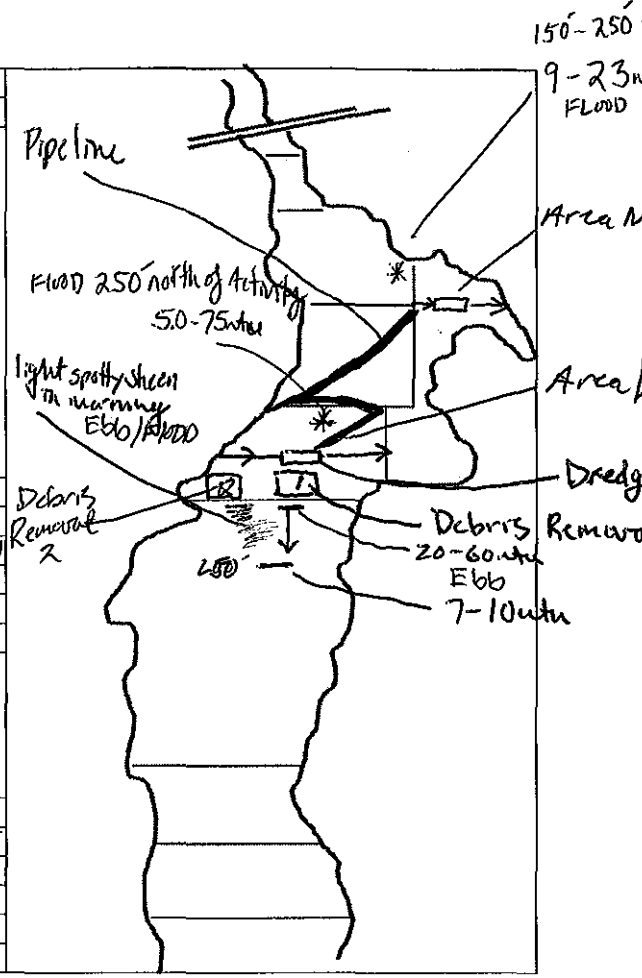
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:  
Dredging/Debris Removal Southern Half of Area K  
working in Close Proximity Step + Go Activity  
1230 Second Debris Removal moves into Area K  
1300 Dredging Stops in Area K Crew moves to Area N

**Turbidity Summary:**

50  
ft

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
<u>South Boundary Area K</u>	<u>20-60</u>	<u>3.0-3.8</u>	<u>0.5-1.6</u>
<u>250' South of DR/Driftage</u>	<u>7-10</u>	<u>3.0-3.8</u>	<u>0.5-2.2</u>
<u>250' North of DR/Driftage</u>	<u>5-20</u>	<u>3.0-4.5</u>	<u>0.5-2.25</u>



Oil Sheen/Debris:  
Spotty, Light Sheen observed South of Area K outside Brown

Wildlife Observations:  
Many Small Fish observed jumping/feeding in morning hours. Cormorants, Egrets, Gulls, Terns

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Some vessel navigation hindered due to pipeline and tides. Step and go Dredging and Debris Removal occurred mainly in Southern Area K with a short period of Dredging in Area N. Turbidity levels were in the Low Range throughout 3.0 - 25.0. Short lived spikes were occasionally noticed within close proximity to Dredge/Debris Removal and around the pipeline supporting the activity in Area K. (20-80ntu). Dissolved Oxygen levels ranged -

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

from 3.0 mg/L at depth to 6.0 mg/L at surface.



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

*South*

Area K South Portion / Debris Removal <sup>^</sup> Border Area K  
West to East Stop + Go  
G. Hampson  
M. WALSH  
D. Rogers  
D. Rogers  
Cloud, Overcast, Light variable wind/north @ 5-10

Date 8/8/2011  
Page 1 of 2

Tide Information	
High	3.3' @ 0340
Low	0.4' @ 0915
High	4.2' @ 1615
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
400' North East of Area K	0849	41°40.462	070°54.890	5.4	0.610	3.6	3.71	26.92	24.50	Not Able to Reach 1000' north
Area K	0851				2.506	2.1	<del>3.73</del>	28.23	24.32	Due to Pipeline and Tide
Ebb Background	0852				4.50	3.4	3.03	28.54	24.29	
<del>Area K</del>										
50' South of Debris Removal	0904			2-4	1.5'	20-60	3.5	25.56	24.31	vessel moving Ebb Slack
200' South of Debris Removal	0910			2-4	1.8'	8-20	3.6	27.80	24.36	vessel moving Ebb Slack
250' South of Debris Removal / Dredge	0920	41°40.270	070°55.012	3.6	0.582	9.8	3.86	26.94	24.44	vessel stationary
	0922	"	"	3.6	2.212	7.5	3.64	27.98	24.39	" "
250' North of Dredge and Debris Removal	0947	41°40.387	070°54.969	4.7	0.681	5.1	4.47	27.27	24.57	Flood Dredge / Debris Rem.
Area K	0948			4.7	2.25	3.8	4.00	27.88	24.46	" " Inactive
" "	1003	"	"	4.8	2.502	24.2	3.28	27.76	24.44	Dredge Active
" "	1020	"	"	5.0	1.500	23.8	3.39	27.34	24.49	Dredge and Debris Removal Active Close proximity to pipeline
" "	1117	"	"	5.2	1.517	15.2	4.15	27.63	24.70	" "
300' North of Dredge and Debris Rem.	1148			5.4	0.657	10.7	5.12	24.59	25.37	Flood
" "	1149				2.571	11.9	4.33	28.23	24.75	
" "	1156				3.500	79.7	3.55	28.60	24.58	Sitting on top of shifting pipeline

A-49

Report  
Water Quality Monitoring Summary  
W912WJ-090D-0001



New Bedford Harbor  
Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Area K South Portem / Debris Removal South Boston Area K / Dredging Area N  
West to East / Stop + Go  
G. Hampson  
M. Walsh  
D. Rogers  
D. Rogers  
—  
Mostly Cloudy / Wind North 5-10

Date: 3/5/2011  
Page: 2 of 2

Tide Information	
High	3.3' @ 0340
Low	0.4' @ 0915
High	4.2' @ 1615
Low	

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
175' North East of Dredge and Debris	1202	41°40.372	70°54.965	7.8	0.621	16.2	4.86	27.17	24.90	Flood
" "	1203				2.597	39.7	4.50	28.27	24.66	" "
	1205				6.598	30.5	4.41	28.50	24.59	" "
	1218			7.9	2.571	6.4	4.54	28.63	24.62	" "
" "	1242			8.0	2.456	4.8	5.16	28.62	24.72	" "
100' North of Dredge	1304			8.0	2.184	23.5	5.14	28.63	24.72	Flood
Area N	1346			4.8	0.615	9.7	5.77	28.21	25.13	" "
250' North West of Dredge	1349				2.55	14.8	4.05	28.36	24.86	
	1350				3.52	14.9	3.84	28.46	24.62	
150' North of Dredge Area N	1400			4.8	2.504	16.2	4.72	28.40	24.89	
" "	1444			5.0	2.381	11.3	5.97	28.08	25.26	
250' North East of Dredge / Debris Rem.	1500			7.7	1.00	7.7	8.39	26.36	26.09	
Area K	1502				3.01	3.0	6.91	28.51	24.94	
	1505				6.07	3.4	4.77	28.78	24.61	

A-30

Water Quality Monitoring Summary Report  
W912WJ-0901D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/11/11  
 Weather: Sunny, 70s, fog in AM, breeze from W  
 Tides:  

L	@	0109
H	@	0631
L	@	1256
H	@	1856

Monitoring Period:  
 From: 0735 To: 1415

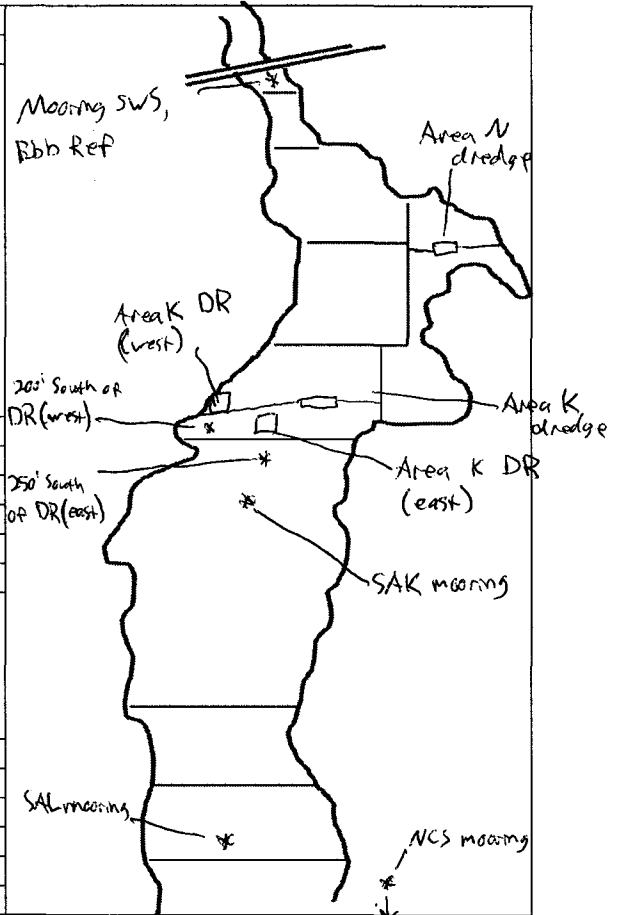
Tidal Stages: HWS (Ebb) (LWS) (Flood)

Dredging Activity:  
 AM: Dredging in Areas N, K  
 Debris removal in Area K

Afternoon: Debris removal in K  
 dredging in K

**Turbidity Summary:**

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Ebb Ref	4.0-5.0	1.94-3.36	2.05-4.50
200' S of K DR (west)	3.6-26.1	2.71-9.41	1.03-3.44
250' S of K DR (both)	2.1-14.5	3.49-9.07	0.97-2.90
350' S of K DR + DRG	8.2-11.6	2.69-3.18	3.27-3.37



Oil Sheen/Debris: (both)  
 None observed

Wildlife Observations:  
 Ducks, many small fish, cormorants, gulls, Swan

**Samples Collected for Laboratory Analysis - Sample IDs:**

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Turbidity remained low even 200' from DR in Area K. An ephemeral plume of high turbidity\* passed survey vessel while monitoring 200' south of western DR in Area K but it was shortlived and readings returned to lower values. No exceedances recorded, no samples taken

Sampling Crew: D. Stuart, D. Rogers

Chief Scientist Signature: *Dave Stuart*

\* up to 70 NTU



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas N, K  
Debris removal in Area K (two teams)  
George Hampson  
D. Stuart  
-  
D. Rogers  
-  
Sunny, fog in AM, 70s

Date 8/11/11  
Page 1 of 1

Tide Information	
High L	0109
Low H	0631
High L	1256
Low H	1856

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Ebb Ref - 1000' North of N dredge	0754	41° 40.684	70° 54.998	6.3	2.051	<del>4.0</del> 4.0	3.36	27.23	26.45	Ebb
↓	0756	↓	↓	↓	4.502	5.0	1.94	27.67	26.07	
200' South of Area K DR (west)	0914	41° 40.330	70° 55.036	4.7	1.030	3.6	4.41	26.19	26.72	
↓	0916	↓	↓	↓	2.517	14.5	2.71	27.68	26.05	
↓	0930	↓	↓	↓	2.533	6.1	4.36	27.49	26.17	
↓	0945	↓	↓	↓	3.444	26.1	2.47	28.05	25.85	
250' South of Area K debris removal	1022	41° 40.280	70° 55.014	<del>4.4</del> 4.4	0.974	6.2	4.99	27.40	26.19	
↓	1024	↓	↓	↓	2.897	2.1	3.49	28.07	25.76	
↓	1026	↓	↓	↓	1.587	7.3	4.59	27.62	26.11	
↓	1045	↓	↓	↓	1.686	14.5	5.60	27.48	26.16	
↓	1115	↓	↓	↓	1.754	13.6	9.07	26.67	26.43	
350' South of Area K debris removal (west) and dredge	1145	↓	↓	5.1	3.367	8.2	3.18	28.11	25.77	
↓	1200	↓	↓	↓	3.268	11.6	2.69	28.26	25.62	

A-32

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/15/11  
 Weather: Rain, very rainy, 70's, wind from NE 5-15 knt  
 Tides:  
 L 0303  
 H @ 0927  
 L @ 1508  
 H @ 2145

Monitoring Period:

From: 0830 To: 1330

Tidal Stages: (HWS) (Ebb) LWS (Flood)

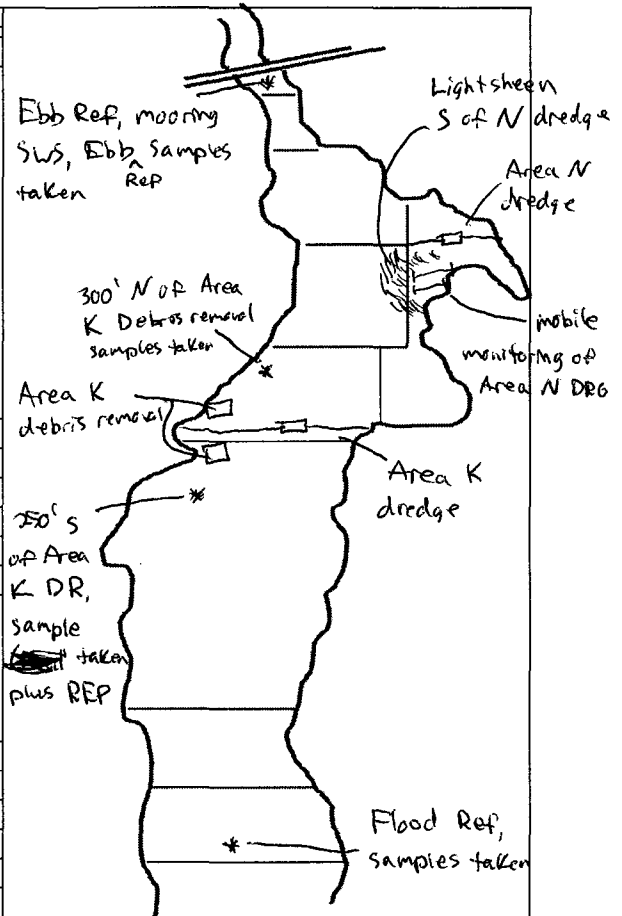
Dredging Activity:

AM: Dredging in Area N  
 Debris removal in Area K

AM: Dredging in Area K  
 Debris removal in Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	1.9-3.0	4.60-4.70	1.00-9.00
Ebb Ref	1.3-2.8	3.34-3.54	1.09-6.24
300' North of K DR	2.1-3.3	3.87-4.93	1.09-7.48
150'-200' South of N DR	7.6-9.3	4.01-4.12	1.61-2.29
250' S of K DR+DRG	1.6-24.7	3.76-4.20	0.83-5.08



Oil Sheen/Debris:

light sheen with no odor ~~seen~~ seen W-SW of Area N dredge outside of booms

Wildlife Observations:

Gulls, cormorants, ducks, blue herons, many fish jumping

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L) WR-TSS-###-MMDDYY Turbidity (1L) WR-TUR-###-MMDDYY  
 Total PCB (1L) Dissolved PCB (2x1L)  
 Toxicity (5 gal) Metals (500ml)

Notes: Samples for TSS + Turbidity taken at 4 sites plus REPLICATE (REP), in order to produce robust understanding of water quality. Turbidity and DO values were low everywhere, even ~100 ft from Area N dredge (not recorded). Mooring SWS had its data downloaded, other moorings left in water for weather reasons. No exceedances observed, ~~observed~~

Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

Dick Stuart



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Dredging in Area N  
 Debris removal in Area K  
 George Hampson  
 D. Street  
 M. Walsh  
 M. Walsh  
 -  
 Rain, 70s, wind from NE 5-10

Date 8/15/11  
 Page 1 of 1

Tide Information	
High L	0303
Low H	0927
High L	1508
Low H	2145

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
000' South of Area N - Flood Ref	0851	41° 39.804	70° 55.030	10.4	1.001	1.9	4.70	29.11	24.35	Flood
↓	0852	↓	↓	↓	5.066	2.1	4.60	29.29	24.37	↓
↓	0854	↓	↓	↓	8.995	3.0	4.67	29.41	24.35	↓
300' North of K debris removal	0924	41° 40.399	70° 54.997	8.3	1.092	2.9	4.93	26.89	24.35	↓
↓	0925	↓	↓	↓	3.645	3.3	4.74	28.04	24.51	High slack
↓	0926	↓	↓	↓	7.775	2.1	3.87	28.98	24.70	↓
150-200' South of N dredge	0958			5.1	<del>2.141</del>	<del>2.76</del>	4.12	27.87	24.84	Ebb, boat moving
↓	0959			↓	2.285	9.3	4.01	27.55	24.85	↓
1000' North of Area N - Ebb Ref	1024	41° 40.687	70° 55.011	7.2	1.088	1.6	3.34	27.56	25.55	Ebb
↓	1025	↓	↓	↓	2.995	1.3	3.52	27.91	25.16	↓
↓	1029	↓	↓	↓	6.243	2.8	3.54	28.42	25.18	↓
500' South of K Debris removal	1100	41° 40.272	70° 55.666	6.3	0.829	24.7	4.20	29.92	24.32	↓
↓	1102	↓	↓	↓	1.645	8.4	3.85	27.80	24.61	↓
↓	1103	↓	↓	↓	3.085	1.6	3.90	29.02	24.59	↓
↓	1104	↓	↓	↓	5.075	2.1	3.76	29.13	24.58	↓

Delivery Order 0010-04 March 2012  
 Water Quality Monitoring Summary Report W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

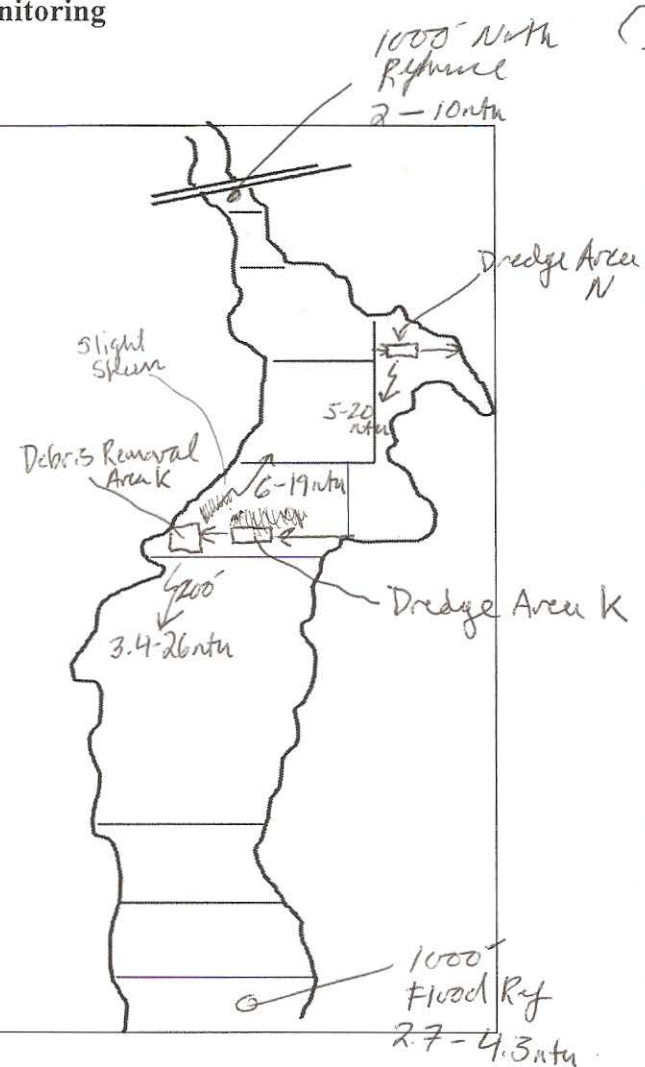
Date: 8/19/11  
 Weather: Partly Cloudy wind SW @ Skts  
 Tides:  

<u>0.3'</u>	@	<u>0446</u>
<u>3.6'</u>	@	<u>1215</u>
<u>0.7'</u>	@	<u>1714</u>

Monitoring Period:  
 From: 0915 To: 1600

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:  
Moving East to West in Area K / West to East Area N  
Debris Removal South West Corner of Area K  
Late Afternoon East to West Area N



**Turbidity Summary:**

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood 1000' South Ref	2.7 - 4.3	7.55 - 5.30	0.6 - 4.9 / 6.7
Flood 300' North of Debris Removal	6.3 - 19.3	4.74 - 3.84	0.7 - 4.9
Ebb 1000' North Ref	2.2 - 10.7	10.43 - 1.91	0.5 - 6.2
Ebb 200' South of Dredge Area N	5.6 - 20.7	8.92 - 3.80	0.7 - 5.9
Ebb 200' South of Debris Removal Area K	3.4 - 26.5	13.0 - 6.5	0.8 - 5.0

Oil Sheen/Debris: Moderate sheen contained within boom Area K / slight sheen associated with Debris Removal Area K

Wildlife Observations: Gulls, Osprey, occasional Fish, Cormorants, Egrets, Terns

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Very low Turbidity values observed throughout all tides and within close proximity to Dredge / Debris Removal activity. Turbidity values rarely exceeded 20 ntu beyond 200 feet from activity. Surface Dissolved Oxygen levels appeared to be slightly elevated averaging between 9-12 mg/l.

Sampling Crew: M. Walsh, D. Roger  
 Chief Scientist Signature: Michael Walsh





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

East to West Southwest Corner Area K / Middle of Area N  
Step Aboard Go East to West Area K / West to East Area N  
George Hampson  
M. Walsh  
D. Rogers  
D. Rogers  
Sunny/Partly Cloudy Wind: SW @ 5 kts.

Date 8/19/11  
Page 1 of 2

**Tide Information**  
High 3.6 @ 12:15  
Low 0.3 @ 4:46  
High  
Low 0.7 @ 17:14

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' South Ref	1006	41°39.918	-70°55.014	6.7	0.681	4.3	7.55	27.79	25.45	Flooding / Taken at SAL morning
	1008	↓	↓		2.51	4.0	8.47	28.70	24.91	
	1009	↓	↓		4.98	2.7	5.30	31.05	24.69	
300' North of Deposits Removal Area K	1054	41°40.389	-70°55.002	5.6	0.784	6.3	9.66	11.99	24.55	
	1055	↓	↓		2.001	12.2	8.25	24.30	24.87	
	1057	↓	↓		4.021	9.2	3.84	27.82	25.29	
" "	1102	↓	↓		1.984	19.3	7.87	23.89	24.84	
	1127	↓	↓		2.008	8.4	9.74	24.02	24.92	
	1206	↓	↓	8.2	2.650	16.4	8.60	26.82	25.18	
1000' North Ref	1248	41°40.680	-70°54.999	7.4	0.584	2.2	7.65	1.37	25.23	Ebb / Taken at SW morning
	1249	↓	↓		2.510	9.1	10.43	22.29	25.28	
	1250	↓	↓		5.031	6.0	3.5	27.66	25.43	
200' South of Dredge Area N	1252	↓	↓		6.25	10.7	1.91	27.96	25.36	
	1300	41°40.471	-70°54.884	7.6	0.798	6.0	10.92	10.70	26.81	
	1301				2.999	8.1	8.92	26.49	25.18	
	1302				5.987	7.2	3.80	29.06	25.09	

A-56

Water Quality Monitoring Summary Report  
W912WJ-0901D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Middle South Area N  
west to East / Stop + Go  
George Hampson  
M. Walsh  
D. Rogers  
D.D. Rogers  
Partly Cloudy wind S. west @ 12-18 kts

Date 8/19/11  
Page 2 of 2

Tide Information	
High	3.6 @ 12:15
Low	0.3 @ 4:46
High	
Low	0.7 @ 17:14

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
200' south of Dredge Area N	13:07			7.6	2.844	5.6	8.70	26.62	25.14	Ebb
200' south of Dredge Area N	13:44			7.5	2.832	20.7	8.34	23.39	25.46	
200' south of Dredge Area N	14:00	41°40.279	-70°55.039	6.1	0.982	13.7	13.04	21.33	26.47	
Area K	14:01				2.497	6.5	12.25	24.21	26.33	
	14:07				5.620	3.4	6.50	29.96	25.16	
	14:19			5.8	0.878	26.5	12.82	19.45	26.28	
	14:54			5.5	0.891	9.9	13.01	16.75	26.31	
	15:18			5.2	0.876	11.0	13.14	17.45	26.77	

4-57  
Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/22/11

Weather: Partly cloudy, 70-80s, wind from NE 5-15 knots

Tides:	H	@	0218
	L	@	0653
	H	@	1454
	L	@	1944

Monitoring Period:

From: 0910 To: 1530

Tidal Stages: HWS Ebb LWS Flood

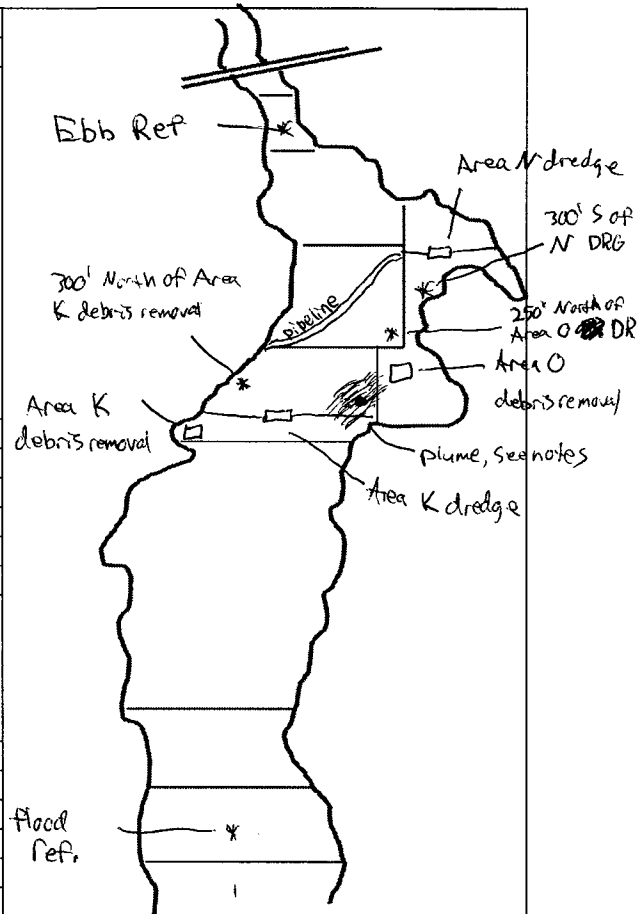
Dredging Activity:

AM: Dredging in Area K  
Debris removal in Areas K, O

Afternoon: Dredging in Areas K, N  
Debris removal in Areas K, O

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	2.6-3.2	5.24-7.00	0.97-5.92
Ebb Ref	6.4-9.4	3.71-4.19	0.54-3.01
300' N of K DR	18.1-40.5	2.06-5.48	0.68-3.02
250' N of O DR	5.7-23.3	1.23-4.64	1.04-5.07
300' N of K DR	8.7-16.1	3.73-5.08	0.98-3.02
200' SW of O DR	<del>8.7-80</del>		
	8.7-80		



Oil Sheen/Debris:

None observed

Wildlife Observations:

Gulls, terns, cormorants, swans, duck

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Plume observed SW of Area O debris removal on flood tide. turbidity ranged from 18-80 depending on distance from DR. Plume was in top 1-1.5" of water. Plume was moving SW with surface waters in fresher water. Plume remained after DR in Area O stopped, but was greatly diminished in size and turbidity values. No exceedances, no samples taken.

Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

*Doel Stuart*



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

6

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area K, N  
Debris removal in Areas K, O  
George Hampson  
D. Stuart  
M. Walsh  
M. Walsh  
-  
Partly cloudy, 70-80s, wind from ~~SW~~ NW 5-15 knots

Date 8/22/11  
Page 1 of 2

Tide Information	
High	0218
Low	0653
High	1454
Low	1944

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
300' South of Area K - flood Ref	0920	41° 39.850	70° 54.994	6.9	0.972	3.2	7.00	17.62	24.73	Flood
↓	0922	↓	↓	↓	3.016	2.6	5.42	29.69	25.32	
↓	0924	↓	↓	↓	5.921	3.1	5.24	29.99	25.26	
300' North of Area K debris removal	0942	41° 40.377	70° 55.011	4.4	0.679	40.1	5.48	17.85	25.31	
↓	0943	↓	↓	↓	3.020	18.1	2.06	27.38	25.57	
↓	1000	↓	↓	↓	1.284	40.5	2.10	23.10	25.52	
250' North of Area O debris removal	1046	41° 40.438	70° 54.884	<del>7.0</del>	1.035	5.7	4.64	18.86	25.51	Average 8-18 NTU
↓	1047	↓	↓	↓	2.999	5.8	2.18	28.18	25.63	at this site at
↓	1049	↓	↓	↓	5.068	10.1	1.23	28.67	25.57	~4' depth
↓	1128	↓	↓	↓	4.320	23.3	1.46	26.68	25.58	
300' North of Area K debris removal	1200	41° 40.378	70° 55.010	4.4	0.975	8.7	5.08	24.91	25.95	
↓	1201	↓	↓	↓	3.021	15.4	3.73	27.80	25.65	
↓	1236	↓	↓	↓	2.527	16.1	4.72	28.54	25.76	
200' SW of Area O debris removal	1359				0.089	8.7	5.86	21.29	26.81	← At far end of plume
					Surface	18-80				↓ away from DR

← 1 ft

↳ boat moving around in plume

Delivery Order 0010-04  
March 2012

4-50

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location: Dredging in Areas K, N  
 Dredging Description: Debris Removal in Areas K, O  
 Survey Vessel: George Hampson  
 Chief Scientist: D. Stuart  
 Sampling Technician: M. Walsh  
 Vessel Captain: M. Walsh  
 Other Personnel: -  
 Weather Conditions: Partly cloudy, 70-80s, wind from NW 5-15 knots

Date: 8/22/11  
 Page: 2 of 2

Tide Information	
High	0218
Low	0653
High	1454
Low	1944

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' North of Area N dredge - Ebb/Ref	1457	41° 40.674	70° 54.990	4.4	0.541	9.4	3.71	24.50	26.66	High slack / Ebb
↓	1458	↓	↓	↓	3.011	6.4	4.19	28.87	25.89	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> Dredge not running  <div style="font-size: 2em; margin-left: 10px;">↓</div> </div>
300' Southern Area N dredge	1507	41° 40.463	70° 54.878	7.1	1.005	9.2	5.49	24.95	26.71	
↓	1509	↓	↓	↓	3.008	3.4	6.14	29.13	25.82	
↓	1510	↓	↓	↓	5.523	4.4	5.65	29.69	25.64	
										<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> Dredging began at  1520, no change in  readings </div>

Delivery Order 0010-04 March 2012  
 Water Quality Monitoring Summary Report W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/25/11

Weather: mostly sunny, clouds, 80s, strong wind from S

Tides:	H	@	0516
	L	@	1017
	H	@	1742
	L	@	<del>2011</del> 2324

Monitoring Period:

From: 0830 To: 1435

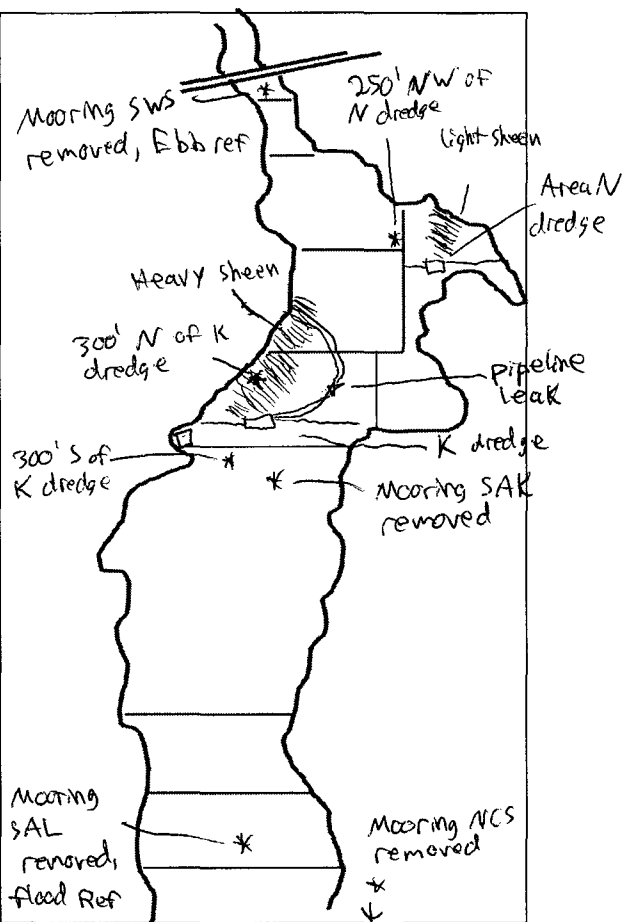
Tidal Stages: HWS (Ebb) (LWS) (Flood)

Dredging Activity:  
Dredging in Areas K, N stop + go

Sheet piling removal around Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Ebb Ref	0.5-8.5	2.73-7.24	0.56-2.53
Flood Ref	2.6-3.6	4.27-5.74	0.76-6.00
300' S of K dredge	2.8-3.6	5.03-5.29	0.76-4.27
200-300' N of K dredge	10-35		0.5-2
250' N of N dredge	11.1-52.4	7.00-7.87	0.53-2.90



Oil Sheen/Debris:  
Heavy sheen with oily and H<sub>2</sub>S odor north of K dredge, light sheen N of N dredge

Wildlife Observations:  
Green Herons, cormorants, gulls, terns, egrets, ducks, ~~fish~~ minnows

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Heavy sheen observed N of K dredge on flood, inside + outside of booms, no associated high turbidity (values remained 10-35 in or out of sheen). Dredging paused and more boom added N of K. More sheen (still heavy, with strong odor) observed after dredging began again. Dredging in K continued until pipeline burst/leaked, after which dredging immediately stopped and moved to Area N. Pipeline floated to surface awaiting repair.

Sampling Crew: D. Stuart, M. Walsh

Chief Scientist Signature: *David Stuart*

High turbidity ~~values~~ (which were short-lived and infrequent) at Area N may have been a result of wind and waves in shallow (< 3ft) water.



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas K, N stop + go  
Moving sheet piles near Area K  
G. Hampson  
D. Stuart  
M. Walsh  
M. Walsh  
—  
Mostly sunny, 80s, strong wind from S

Date 8/25/11  
Page 1 of 1

Tide Information	
High	0516
Low	1017
High	1742
Low	2324

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes	
100' North of N-Ebb Ref ↓	0850	41° 40.690	70° 55.006	3.8	0.550	0.5	7.24	1.82	21.65	@ SWS mooring, Ebb	
	0851	↓	↓	↓	2.525	8.5	2.73	25.22	25.66	↓	
300' South of Area K dredge ↓	0931	41° 40.293	70° 55.025	5.2	0.755	2.8	5.29	25.57	24.27	No work being done on water,	
	0932	↓	↓	↓	4.270	3.1	5.03	25.66	24.18	Ebb	
	0955	—————→									Dredging in Area K resumes
	1015	↓	↓	↓	3.991	3.6	5.06	25.63	24.27	Ebb/low slack	
300' South of Area K Flood ref ↓	1045	41° 39.917	70° 55.042	7.1	0.759	2.6	5.74	26.20	24.28	Flood	
	1047	↓	↓	↓	5.995	3.6	4.27	27.54	24.21	↓	
200-300' North of Area K dredge ↓	~1120			3-6	0.5-2	<del>10-25</del> 5-35				moving in sheen, flood	
	~1130			3-6	0.5-2	10-25				outside of sheen, flood	
250' North of Area N dredge ↓	1251	41° 40.548	70° 54.887	3.2	0.525	11.1	7.71	19.03	25.68	Flood	
	1252				2.904	11.6	7.00	20.21	25.46	↓	
	1321				1.257	18.4	7.87	19.45	25.66	↓	
	1353				1.219	52.4	7.13	19.27	26.18	↓ May be caused by wind + waves	

Delivery Order 0010-04  
March 2012

Water Quality Monitoring Stationarity Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 8/30/11  
 Weather: Sunny, 80s, wind from N 5-15 mph  
 Tides: L 0235  
H @ 0919  
L @ 1501  
H @ 2141

Monitoring Period:

From: 0844 To: 1418

Tidal Stages: (HWS) (Ebb) LWS (Flood)

Dredging Activity:

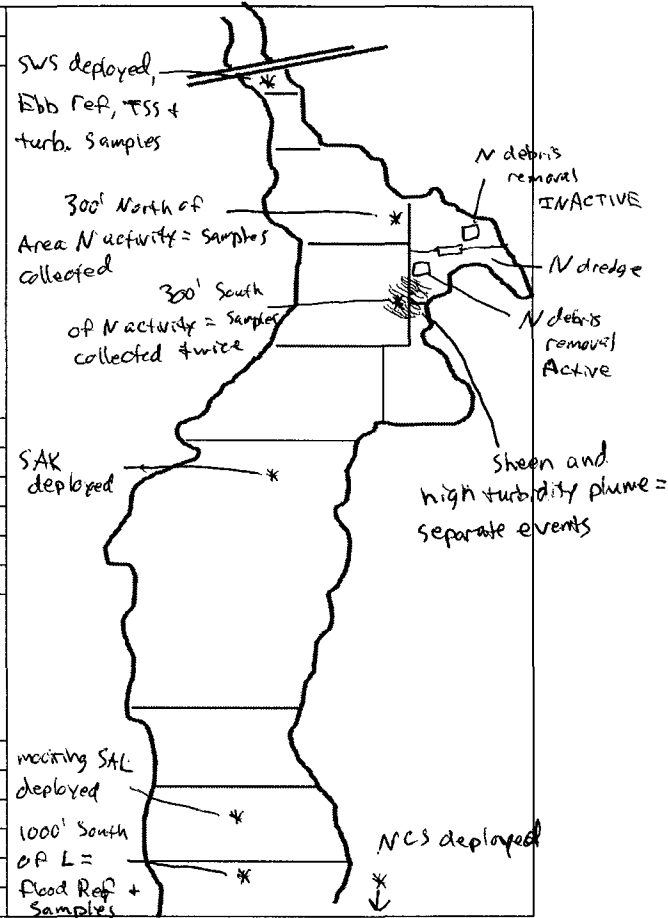
AM: Dredging in Area N (stop + go)  
Debris Removal in Area N

Afternoon: Dredging in Area N (stop + go)  
Debris removal in Area N

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	0.7-2.3	4.68-4.98	1.07-11.05
Ebb Ref	3.5-5.5	3.06-6.94	1.22-6.31
300' North of N DR/DRG	1.3-14.5	3.30-4.95	1.13-6.32
300' South of N DR/DRG	0.8-33.5	3.67-5.57	0.57-7.59
300' South of N DR/DRG	~30-100	not recorded	0-1 ?
300' South of N DR/DRG	40-65	not recorded	1.5-2 ?

see Notes ←



Oil Sheen/Debris:

Moderate sheen in booms @ N on ebb, some escaping outside of booms

Wildlife Observations:

Osprey, ducks, terns, gulls, many fish jumping in AM and afternoon, green heron, blue heron

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L) WQ-TSS-###-083011	Turbidity (1L) WQ-TUR-###-083011
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: All 4 moorings redeployed after being removed for hurricane. Bi-weekly TSS and Turbidity samples collected at 5 locations. Moderate sheen escaping Area N booms to south during ebb, slight H<sub>2</sub>S odor. High turbidity measured at surface for several minutes after Area N debris removal was relocated. Suspect the barge heavily disturbed bottom in transit. After debris removal began, between 1.5-2 ft depth

Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

Dave Stuart

300' South of N turbidity was 40-65 NTU. At same location at other depths turbidity was 10-30 NTU. No exceedances observed





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Area N (stop + go)  
 Debris removal in Area N  
 George Hampson  
 D. Stuart  
 M. Walsh  
 M. Walsh  
 -  
 Sunny, 80s, wind from N 5-10 mph

**Date** 8/30/11  
**Page** 1 of 2

Tide Information	
High L	0235
Low H	0919
High L	1501
Low H	2141

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
800' South of Area N - Flood ref	0853	41° 39.787	70° 55.018	12.5	1.066	0.7	4.98	29.12	23.11	Flood, samples taken
I	0854	I	I	I	6.108	1.2	4.80	29.39	23.16	I
I	0856	I	I	I	11.045	2.3	4.68	29.42	23.18	I
300' North of N DR + DRG	0914	41° 40.533	70° 54.885	7.6	1.125	5.8	4.95	26.28	23.05	I
I	0915	I	I	I	3.501	2.5	3.62	27.36	23.15	I
I	0916	I	I	I	6.320	1.3	3.30	27.56	23.15	I
I	0940	I	I	I	1.310	14.5	4.50	26.24	23.44	High Slack
1000' North of N DR + DRG - Ebb Ref	1000	41° 40.689	70° 55.009	7.2	1.215	5.5	6.94	24.78	23.63	Ebb, samples taken
I	1002	I	I	I	2.983	4.4	4.51	26.55	23.76	I
I	1003	I	I	I	6.312	3.5	3.06	27.03	23.79	I
300' South of N DR + DRG	1022	41° 40.454	70° 54.888	9.5	0.570	22.4	5.15	26.26	23.69	Ebb, samples taken
I	1024	I	I	I	2.015	27.3	4.31	26.62	23.29	I
I	1025	I	I	I	3.001	1.8	4.15	27.29	22.93	I
I	1027	I	I	I	7.592	0.8	3.67	28.22	23.16	I
I	1111	I	I	I	0.657	33.5	4.24	26.67	23.91	I

 Water Quality Monitoring Summary Report  
W912HWJ-090D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Dredging in Area N (stop + go)  
 Debris removal in Area N  
 George Hampson  
 D. Stuart  
 M. Walsh  
 M. Walsh  
 -  
 Sunny, 80s, wind from N 5-10 mph

Date 8/30/11  
 Page 2 of 2

Tide Information	
High L	0235
Low H	0919
High L	1501
Low H	2141

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
300' South of A DR + DRG	1218	41° 40.454	70° 54.888	7.0	0.575	11.1	5.57	25.87	24.19	Ebb
⊥	1244	⊥	⊥	⊥	1.718	56.1	3.63	27.06	23.85	Ebb, samples taken
⊥	1311	⊥	⊥	⊥	1.796	60.3	3.81	27.08	23.77	Ebb, range 30-60 NCS
300' S of Area K	1323	41° 40.279	70° 54.986	4.1	0.571	12.2	6.07	25.92	25.46	Ebb, SAK
⊥	1323	⊥	⊥	⊥	3.155	7.8	5.20	27.53	23.69	⊥
300' South of Area	1340	41° 39.921	70° 55.004	3.8	0.566	4.9	5.59	27.35	24.13	Ebb, SAL
⊥	1341	⊥	⊥	⊥	2.700	<del>3.9</del> 3.9	4.88	28.27	23.73	⊥
NCS mooring - 800' south of Q	1355	41° 39.415	70° 55.062	8.6	1.001	1.6	5.86	27.25	24.65	Ebb, NCS
⊥	1357	⊥	⊥	⊥	7.054	1.5	5.65	28.27	23.97	⊥

 Water Quality Monitoring Summary Report  
WQ12-HJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 4/1/11  
 Weather: Sunny, mid -70s, breeze from E  
 Tides: 

L	@	0404
H	@	1058
L	@	1641
H	@	2321

Monitoring Period:

From: 0820 To: 1500

Tidal Stages: HWS Ebb LWS Flood

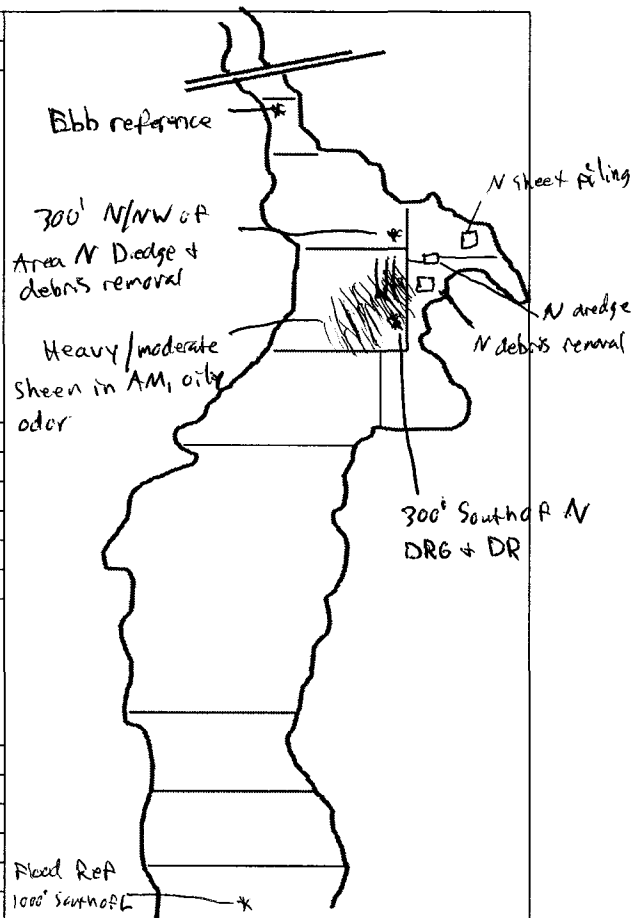
Dredging Activity:

AM: Dredging in Area N (stop + go)  
Debris removal in Area N  
Installing sheet piles in Area N

PM: Dredging in Area N (stop + go)  
Debris removal in Area N

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	0.1-0.7	4.64-5.03	1.16-8.02
Ebb Ref	4.4-5.5	3.55-17.41	1.04-6.01
Area N transects (west edge)	6-20.5	3-6	0.5-2
250' North of N DRG + DR	8.4-13.4	2.73-5.58	0.38-5.22
300' South of N DRG + DR	7.4-21.6	3.51-6.37	1.06-8.45



Oil Sheen/Debris:

Heavy/moderate sheen in Area N and extending to Area K, oily odor, boom was not closed on west edge

Wildlife Observations:

Herring, Dogey?  
Many Osprey feeding, many fish jumping, gulls, terns, ducks, cormorants, swan, minnows

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: observed two dead fish (~1ft long) en route to monitor Area N. Sheen originated from Area N dredge and debris removal and escaped containment because boom on western edge was left open. No associated turbidity with sheen (6-18 NTU) inside or out of sheen. Dissolved oxygen at ebb reference was extremely high (17.41 mg/L), water at ebb reference was reddish in color, and we suspect a biological bloom is responsible. Remediation was entirely within Area N during monitoring period. No exceedances observed, no samples collected.

Sampling Crew:

D. Stuart, M. Walsh

Chief Scientist Signature:

Dave Stuart



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area N (stop + go)  
Debris removal in Area N, drawing sheet piles in Area N  
George Hampson  
D. Stuart  
M. Walsh  
M. Walsh  
-  
Sunny, mid-70s, breeze from E

Date 9/1/11  
Page 1 of 2

Tide Information	
High L	0404
Low H	1058
High L	1641
Low H	2351

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
1000' South of L - Flood Ref	0834	41° 39.801	70° 55.025	4.2	1.160	0.1	5.03	28.86	23.60	Flood
↓	0835	↓	↓	↓	4.055	0.3	4.79	29.45	27.88	↓
↓	0836	↓	↓	↓	8.021	0.7	4.64	29.48	23.89	↓
Transsects along West edge of Area N	0915				0.5-2	6-20.5	<del>3-6</del>			Flood, boat moving
250' North of N dredge + debris rem.	0936	41° 40.531	70° 54.888	6.0	1.087	10.3	3.23	27.52	24.05	Flood
↓	0932	↓	↓	↓	5.215	12.9	2.73	28.15	24.02	↓
↓	1014	↓	↓	↓	1.312	8.4	5.58	27.32	24.50	↓
↓	1052	↓	↓	↓	0.380	13.4	4.04	27.73	24.72	High Slack
Ebb ref - 1000' N of Area N	1148	41° 40.689	70° 55.002	7.3	1.040	5.0	17.41	25.36	25.74	Ebb
↓	1149	↓	↓	↓	3.054	5.5	8.52	27.74	24.58	↓
↓	1150	↓	↓	↓	6.013	4.4	3.55	27.94	24.51	↓
300' South of Area N debris rem.	1207	41° 40.439	70° 54.844	10.1	1.064	21.6	4.66	27.92	25.19	↓
↓	1208	↓	↓	↓	3.006	7.4	4.57	28.27	24.26	↓
↓	1209	↓	↓	↓	8.451	8.3	3.51	28.84	24.20	↓
↓	1245	↓	↓	↓	1.160	10.0	5.63	27.88	25.34	↓

Delivery Order 0010-04  
March 2012

A-67

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



New Bedford Harbor  
Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area N (stop + go)  
Debris removal in Area N, sheet piling in Area N (AM only)  
George Hampson  
D. Stewart  
M. Walsh  
M. Walsh  
-  
Sunny, 70-80s, wind from S

Date 4/1/11  
Page 2 of 2

Tide Information	
High L	0404
Low H	1058
High L	1641
Low H	2321

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
300' South of Area N dredge + debris rem.	1330	41° 42.439	70° 54.894	6.2	1.175	12.8	6.37	27.44	25.68	Ebb
↓	1415	↓	↓	↓	2.648	16.0	4.90	28.28	24.55	↓
↓	1450	↓	↓	↓	2.731	13.7	3.84	28.42	24.60	↓

Delivery Order 0010-04 March 2012  
 Water Quality Monitoring Summary Report W912WJ-0900D-0001  
 A-68



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 4/7/11

Weather: Overcast, rain, 60s

Tides:

H	@	<u>0426</u>
L	@	<u>1115</u>
H	@	<u>1656</u>

Monitoring Period:

From: 0930 To: 1520

Tidal Stages: HWS (Ebb) (LWS) (Flood)

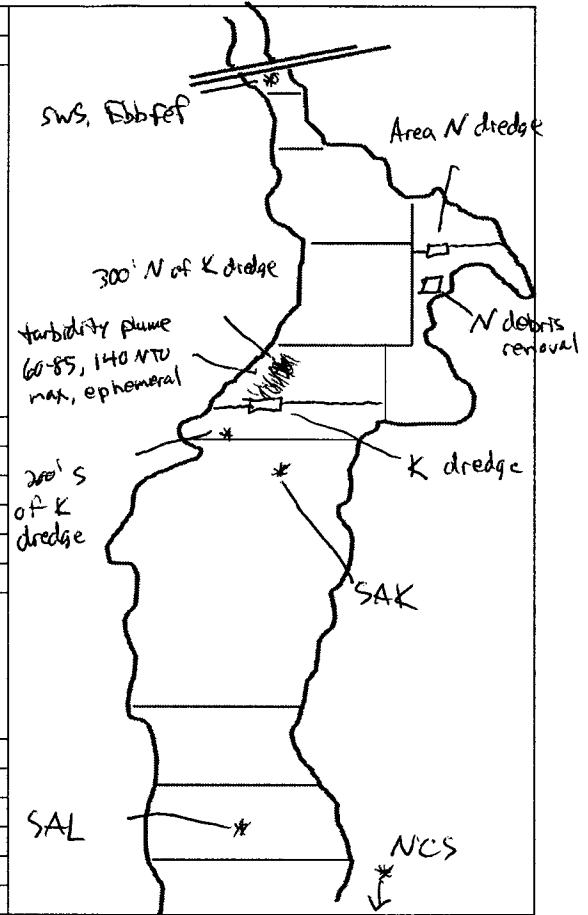
Dredging Activity:

AM: dredging in Area K

PM: dredging in Areas K, N  
debris removal in Area N

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Ebb Ref	<u>1.0-1.8</u>	<u>3.14-3.75</u>	<u>0.77-1.55</u>
Flood Ref	<u>0.2-7.1</u>	<u>3.86-7.47</u>	<u>1.99-4.07</u>
200' S of K dredge	<u>8.9-32.3</u>	<u>1.83-4.36</u>	<u>1.02-2.99</u>
300' N of K dredge	<u>4.1-18.9</u>	<u>1.08-4.46</u>	<u>1.56-2.51</u>
	<u>60-85, 140 max</u>	<u>plume</u>	<u>0.5-1.5</u>
	<u>7-22</u>	<u>after plume, dredge stopped</u>	
	<u>12-30</u>	<u>dredge active</u>	



Oil Sheen/Debris:

None observed

Wildlife Observations:

Gulls, terns, ducks, egrets, herons, cormorants, fish jumping, Osprey

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	/	Turbidity (1L)	/
Total PCB (1L)	/	Dissolved PCB (2x1L)	/
Toxicity (5 gal)	/	Metals (500ml)	/

Notes: Monitoring in Area K only, Area N work began as survey vessel departed. All H moorings had data downloaded. Ephemeral turbidity plume N of Area K may have been due to moving pipeline or support boat propeller wake/wash. Once dredging + support boat action ceased, plume stopped. Plume lasted ~~20-30~~ 5-10 minutes, with no sheen. Background readings after plume were 7-22 NTU, no effect on DO. No exceedances, no samples

Sampling Crew:

D. Stuart, D. Rogers

Chief Scientist Signature:

Dacl Stuart



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Dredging in Areas K, N  
 Debris removal in Area N  
 George Hampson  
 D. Stuart  
 -  
 D. Rogers  
 -  
 Overcast, rainy, 60s

Date 9/7/11  
 Page 1 of 1

### Tide Information

High 0426  
 Low 1115  
 High 1656  
 Low

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Ebb Ref - 1000' N of Area N	1001	41° 40.682	70° 55.004	2.7	0.772	1.0	3.75	5.59	19.20	Ebb
	1002	↓	↓	↓	1.545	1.8	<del>2.14</del> 23.14	14.94	20.60	↓
200' South of K dredge	1014	41° 40.326	70° 55.021	4.7	1.063	8.9	2.79	24.46	22.34	↓
	1015	↓	↓	↓	2.994	14.9	1.83	28.20	22.03	↓
	1103	↓	↓	↓	1.018	21.5	4.36	20.63	21.57	↓
	1106	↓	↓	↓	1.015	32.3	2.95	23.22	22.01	↓ Low slack
Flood Ref - 300' South of Area L	1200	41° 39.914	70° 55.018	5.1	1.994	7.1	7.47	25.37	21.79	Flood
	1201	↓	↓	↓	4.072	0.2	3.86	27.89	22.78	↓
300' North of K dredge	1230	41° 40.401	70° 54.998	5.5	1.082	18.9	2.51	26.02	22.59	↓
	1232	↓	↓	↓	2.997	8.4	1.82	27.92	22.98	↓
	1233	↓	↓	↓	4.456	4.1	1.56	28.15	23.01	↓
	1250	↓	↓	↓	0.5-1.5	60-85, 140 max				Flood, plume short lived
	1300-1320	↓	↓	↓	0.5-1.5	7-22	3.52			Flood, after plume, <del>no work</del>
	1420-1430	↓	↓	↓	1.092	12-30	3-4			Flood no work active
	1440	↓	↓	↓	1.097	34.4	<del>3.81</del> 3.81	25.72	22.60	↓

Delivery Order 0010-04 March 2012

Water Quality Monitoring Summary Report W912WJ509DD 05/06



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 9/9/11  
 Weather: Partly sunny, 70s, strong wind from N  
 Tides:  

L	@	0054
H	@	0611
L	@	1256
H	@	1934

Monitoring Period:  
 From: 0825 To: 1545

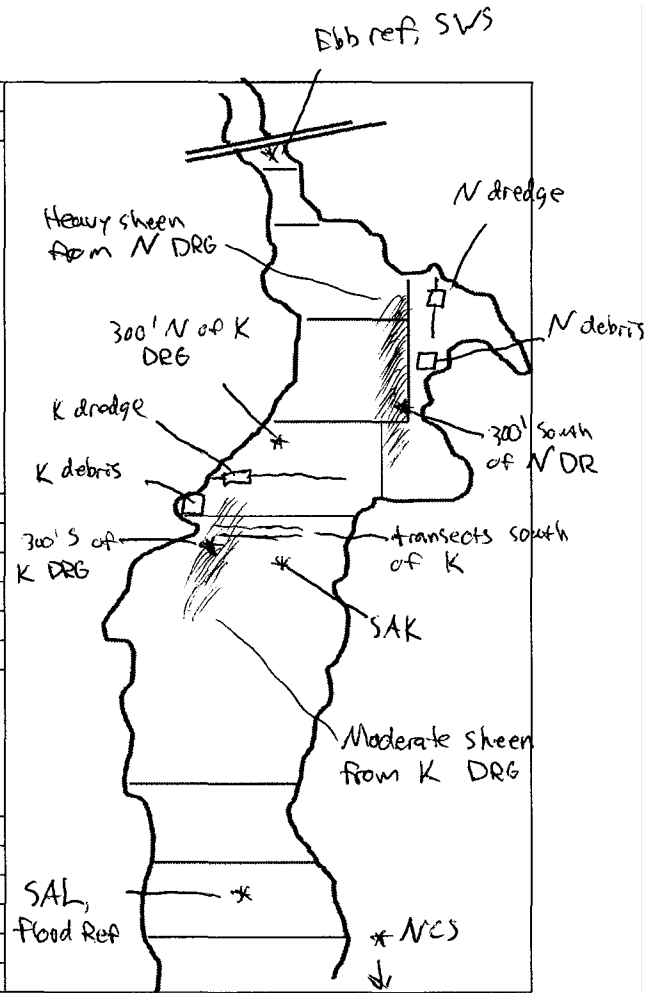
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:  
 AM: debris removal in Areas N, K  
 PM: debris removal in Area N  
 dredging in Area K

**Turbidity Summary:**

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Ebb Ref	0.0-3.2	1.80-6.03	1.03-5.00
Flood Ref	0.9-6.7	4.61-6.69	1.06-4.56
300' S of N DR	0.0-37.7	2.56-4.52	0.90-6.02
300' S of K dredge	5-17	3-4	0.5-1.5
"	2.3-17.5	3.51-4.98	0.48-3.23
300' N of K dredge	21.2-72.7	2.84-6.00	1.05-3.48

unreliable



Oil Sheen/Debris:  
 Heavy sheen originating from N dredge / Moderate sheen from K dredge

Wildlife Observations:  
 Gulls, terns, ducks, Red-tailed hawk, swan, many fish jumping

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: sheen from N dredge was a result of support boat propeller wake, high (>250 NTU) turbidity @ 100' from dredge dropping very rapidly with time and distance away. Sheen in Area K escaped boom (to the south) until crews installed extra boom on south end of Area K. Wind/waves plus tides were contributing to sheen escape. High turbidity North of K dredge not a result of dredging since the dredge was inactive and off.

Sampling Crew: D. Stuart, M. Walsh  
 Chief Scientist Signature: Daek Stuart

Turbidity here was likely a result of runoff/shoreline disturbance caused by wind and waves. All mooring data downloaded, no exceedances, no samples.





## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Dredging in Area K  
 Debris removal in Areas K, N  
 George Hampson  
 D. Stuart  
 M. Walsh  
 M. Walsh  
 ~  
 Partly sunny, 70s, strong wind from N

Date 9/9/11  
 Page 1 of 2

Tide Information	
High L	0054
Low H	0611
High L	1256
Low H	1834

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Ebb Ref - 1000' N of Area N - SWS	0846	41° 40.685	70° 55.004	6.4	1.025	0.0	6.03	3.89	18.23	Ebb
↓	0849	↓	↓	↓	5.007	3.2	1.80	25.24	21.61	
300' South of Area N debris removal	0903	41° 40.416	70° 54.890	7.7	1.005	20.1	4.52	14.25	19.78	
	0904				3.082	1.3	2.56	25.99	21.73	
	0905				6.022	0.0	2.82	27.14	21.80	
	0932				0.902	37.7	4.21	14.61	19.95	
	1101				6.5	0.912	19.7	3.26	20.06	
300' South of Area K dredge transects	1030-1045				0.5-1.5	5-17	3-4			
300' South of Area N debris removal	1100-1145	41° 40.416	70° 54.890	6.5	0.5-1.0	17- <del>34</del> 41	3-4			
↓	1158	↓	↓	↓	0.891	34.5	3.90	21.16	21.25	
300' South of Area K dredge	1219	41° 40.305	70° 55.018	4.7	0.984	6.5	4.50	18.14	21.41	Ebb
	1220				1.680	17.5	4.98	20.49	22.07	
	1221				2.384	9.4	4.29	22.78	21.96	
	1223				3.229	2.3	3.51	26.47	21.95	

Delivery Order 0010-04  
 March 2012

Water Quality Monitoring Summary Report  
 W912WJ-0900D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Dredging Location  
 Dredging Description  
 Survey Vessel  
 Chief Scientist  
 Sampling Technician  
 Vessel Captain  
 Other Personnel  
 Weather Conditions

Dredging in Area K  
 Debris removal in Areas N, K  
 George Hampson  
 D. Stuart  
 M. Walsh  
 M. Walsh  
 —  
 Partly sunny, 70s, strong wind from N

Date 9/9/11  
 Page 2 of 2

Tide Information	
High L	0054
Low H	0611
High L	1256
Low H	1834

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Flood Ref - at SAL mooring	1405	41° 39.920	70° 55.011	5.2	1.055	6.7	6.69	20.22	22.38	Flood
I	1406	I	I	I	2.549	2.6	5.99	20.50	21.68	
I	1407	I	I	I	4.556	0.9	4.61	24.52	21.22	
300' North of Area K dredge	1434	41° 40.401	70° 55.007	5.0	1.045	32.8	6.00	17.89	22.72	
I	1435	I	I	I	2.015	48.6	5.62	18.50	22.77	Dredge inactive
I	1437	I	I	I	3.475	21.2	2.84	26.73	21.92	
I	1449	I	I	I	1.975	52.8	5.25	18.64	22.51	
I	1501	I	I	I	1.945	72.7	4.91	18.92	22.54	

Delivery Order 0010-04 March 2012  
 Water Quality Monitoring Summary Report W912WJ-0900D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 9/12/11  
 Weather: overcast, 70s, wind from SW-NW  
 Tides: L @ 0203  
H @ 0817  
L @ 1416  
H @ 2036

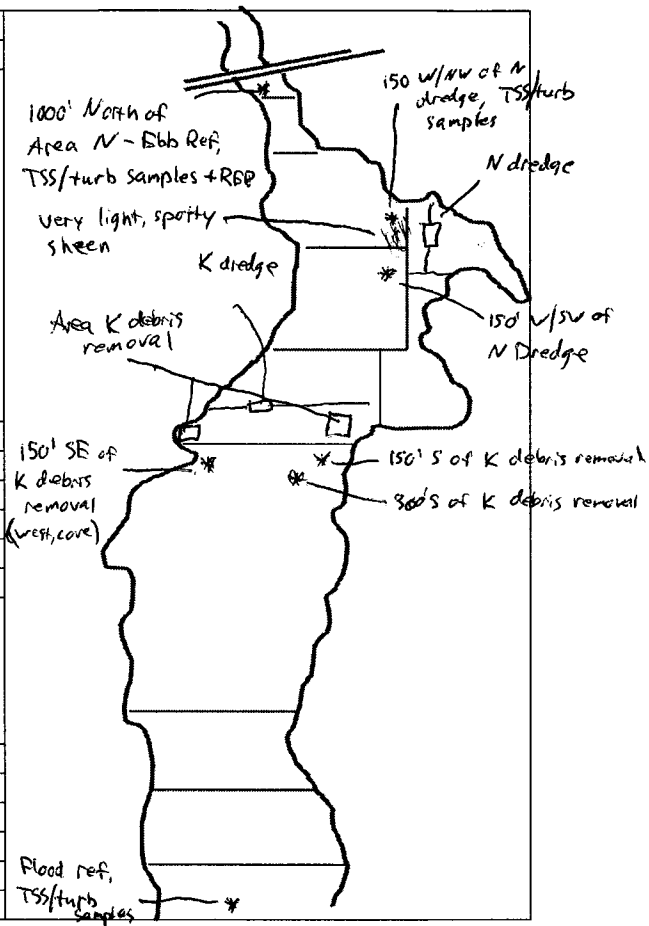
Monitoring Period:  
 From: 0725 To: 1420

Tidal Stages: (HWS) (Ebb) LWS (Flood)

Dredging Activity:  
AM: Dredging in Area N  
Debris removal in Area K  
PM: Dredging in Areas N, K  
Debris removal in Area K (x2)

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood Ref	0.0	5.0-7.32	1.07-9.02
Ebb Ref	1.7-6.1	1.28-2.25	1.04-5.01
150' W/NW of N dredge	5.5-16.9	1.48-3.81	0.97-4.68
150' SE of K DR (west, cove)	0.5-5.4	2.49-5.17	1.11- <del>6.08</del> 6.01
150' S of K DR (east)	6.1-18.4	2.55-5.59	1.01-3.00
300' S of K dredge	0.0-4.4	2.75-4.78	1.07-3.00



Oil Sheen/Debris:  
Very light, spotty sheen W-NW of Area N dredge on flood, probably from support boat propeller wash

Wildlife Observations:  
Gulls, green heron, ducks, minnows, swan, Kingfishers, Osprey, Squirrel, egret

Samples Collected for Laboratory Analysis - Sample IDs:

TSS (1L)	<u>WQ-TSS-####-091211</u>	Turbidity (1L)	<u>WQ-TUR-####-091211</u>
Total PCB (1L)	/	Dissolved PCB (2x1L)	/
Toxicity (5 gal)	/	Metals (500ml)	/

Notes: No turbidity or odor associated with very light sheen W/NW of Area N. Turbidity at 150' SE of Area K DR (west, cove) varied between 10-40 once on site with min/max of 0.8/244 NTU, but all extremes were short lived (< 5 min). Turbidity plumes were evident at 300' south of Area K debris removal (east) though after troubleshooting it was believed to be caused by a combination of general boat traffic (including WHG boat) and opposing surface + bottom currents in shallow water and not debris removal.

Sampling Crew: D. Stuart, M. Walsh  
 Chief Scientist Signature: Dick Stuart

Bi-weekly TSS and turbidity samples were collected, no exceedances observed.



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

**Dredging Location** Dredging in Areas N, K  
**Dredging Description** Debris removed in Area K(x2)  
**Survey Vessel** George Hampson  
**Chief Scientist** D. Stuart  
**Sampling Technician** M. Walsh  
**Vessel Captain** M. Walsh  
**Other Personnel** —  
**Weather Conditions** Overcast, 70s, wind from S, chance of T-storm

**Date** 9/12/11  
**Page** 1 of 2

Tide Information	
High L	0203
Low H	0817
High L	1416
Low H	2036

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
500' South of Area L Flood ref	0730	41° 39.796	70° 55.020	10.7	1.065	0.0	7.32	19.65	21.47	Flood, TSS/Turb samples
↓	0732	↓	↓	↓	4.997	0.0	5.43	27.84	21.82	↓
↓	0733	↓	↓	↓	9.024	0.0	5.00	28.37	21.86	↓
150' W-W of Area N Dredge	0813	41° 40.559	70° 54.892	5.8	0.967	5.5	3.81	12.40	20.55	TSS/Turb samples
↓	0814	↓	↓	↓	2.364	10.1	3.08	23.03	22.11	↓
↓	0815	↓	↓	↓	4.677	16.9	1.48	26.66	22.52	↓
Rbb ref - 1000' N of Area N	0903	41° 40.687	70° 55.002	6.3	1.041	1.7	2.25	13.71	20.53	Rbb TSS/turb samples
↓	0904	↓	↓	↓	2.528	6.1	2.13	20.21	21.96	↓
↓	0906	↓	↓	↓	5.005	2.3	1.28	26.33	22.55	↓
150' W/SW of Area N dredge	0941	41° 40.533	70° 54.889	6.3	1.982	7.8	4.20	23.96	22.15	↓
150' SE of Area K debris removal	1023	41° 40.301	70° 55.047	6.9	1.112	5.4	5.17	15.07	21.63	↓
↓	1025	↓	↓	↓	3.008	1.1	2.49	26.90	22.44	↓
↓	1026	↓	↓	↓	6.013	0.5	2.63	27.39	22.19	↓
150' S of Area K debris removal east	1126	41° 40.298	70° 54.957	4.6	1.009	6.1	5.59	15.92	22.20	TSS/turb, sample
↓	1127	↓	↓	↓	3.002	18.4	2.55	26.90	22.39	↓

Water Quality Monitoring Summary Report  
W91297-J-0900D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Areas N, K  
Debris removal in Area K (x2)  
George Hampson  
D. Stewart  
M. Walsh  
M. Walsh  
-  
Partly sunny, 70s, wind from SW-NW

Date 9/12/11  
Page 2 of 3

Tide Information	
High L	0203
Low H	0817
High L	1416
Low H	2036

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
300' SW of Area K debris removal (east)	1200-1250			4.3	1.15	10-40, <sup>180</sup> max	4-5	}		Ebb, many ephemeral plumes
	1310-1320			2.9	1.17	30-50, <sup>120</sup> max				Ebb, debris removal had stopped for 10 min
300' S of Area K dredge	<del>1338</del> 1338	41° 40.307	70° 55.020	4.6	1.074	4.4	4.78	23.99	22.64	→ general boat traffic believed to be cause of turbidity
	1340				3.000	0.0	2.75	27.11	22.38	Ebb

Water Quality Monitoring Summary Report  
W912WJ-090D-0001



# New Bedford Harbor Water Quality Monitoring Daily Field Report

Date: 9/15/11  
 Weather: Partly sunny; 70s, wind from S, chance of rain  
 Tides:  

L	@	0307
H	@	1015
L	@	1533
H	@	2232

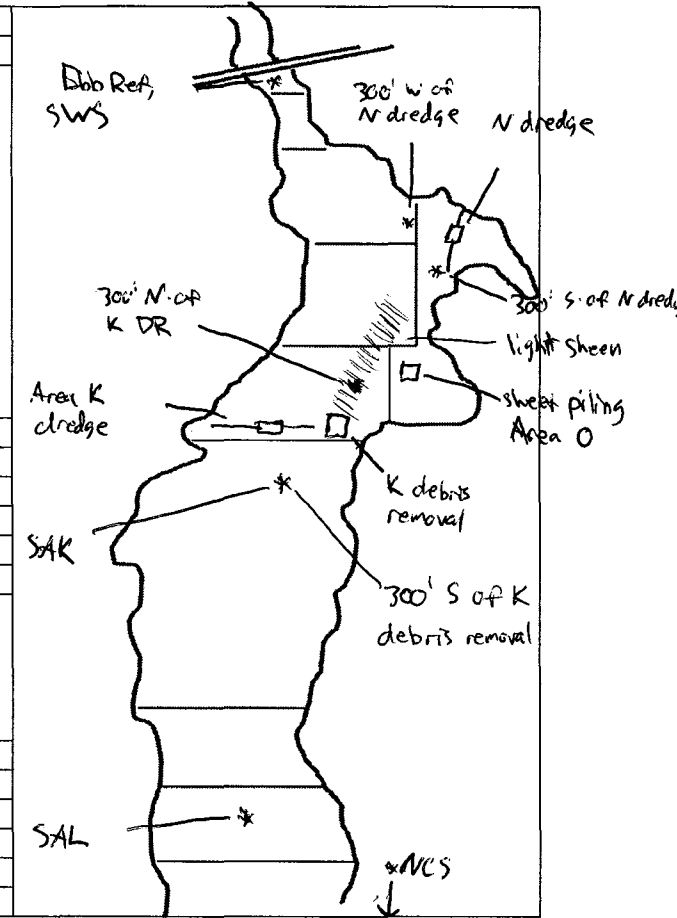
Monitoring Period:  
 From: 0740 To: 1430

Tidal Stages: (HWS) (Ebb) LWS (Flood)

Dredging Activity:  
AM: Dredging in Area N  
Debris ~~report~~ removal in Area K  
PM: Dredging in Area N  
Debris removal in Area K

Turbidity Summary:

Location	Turbidity range (NTU)	DO Conc range (mg/L)	Sensor/water Depth (ft)
Flood ref	0.3-0.4	7.07-8.80	2.01-4.02
Ebb ref	1.9-2.4	1.60-2.51	2.02-4.06
300' W of N dredge	5.0-17.0	4.49-5.49	1.13-4.00
300' N of K debris rem.	1.8-6.0	3.52-6.80	1.54-7.11
250' S of N dredge	2.8-7.2	2.42-9.22	1.04-5.06
300' S of K debris rem.	2.2-8.0	3.01-10.09	0.98-2.48



Oil Sheen/Debris:  
Moderate sheen between Area C dock and Coggeshall bridge on Flood AM, very light sheen N of K DR

Wildlife Observations:  
ducks, osprey, gulls, cormorants, swans, fish jumping near SWS, turkey vulture

Samples Collected for Laboratory Analysis - Sample IDs:  

TSS (1L)	Turbidity (1L)
Total PCB (1L)	Dissolved PCB (2x1L)
Toxicity (5 gal)	Metals (500ml)

Notes: Observed one dead fish en route to monitor Area N, approx 1.5' long, striped maybe. Sheen observed near Area C dock appeared to be traveling up river from beyond (south) of Coggeshall street. Sheen from Area K debris removal was persistent throughout monitoring period since wind + waves were pulling it around booms. Monitoring S of Area K debris removal proved difficult again due to currents and bottom agitation. No exceedances, no samples

Sampling Crew: D. Stuart, D. Rogers  
 Chief Scientist Signature: Daed Stuart



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

 Delivery Order 0010-04  
March 2012

**Dredging Location**  
**Dredging Description**  
**Survey Vessel**  
**Chief Scientist**  
**Sampling Technician**  
**Vessel Captain**  
**Other Personnel**  
**Weather Conditions**

Dredging in Area N  
 Debris removal in Area K, sheet pile installing in Area O  
 George Hampson  
 D. Stuart  
 D. Rogers  
 D. Rogers  
 -  
 Partly sunny, 70s, wind from S, chance of rain

**Date** 9/15/11  
**Page** 1 of

Tide Information	
High L	0307
Low H	1015
High L	1533
Low H	2232

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
Flood ref - at SAK mooring	0900	41° 39.937	70° 55.003	6.6	2.013	0.4	8.80	27.71	22.97	Flood
↓	0902	↓	↓	↓	4.021	0.3	7.07	27.20	23.00	
300' W of Area N dredge	0916	41° 40.562	70° 54.888	5.0	1.128	7.1	5.22	13.35	22.89	
↓	0917	↓	↓	↓	2.064	11.3	5.18	13.91	22.89	
↓	0918	↓	↓	↓	3.998	5.0	4.49	19.06	23.40	
↓	0939	↓	↓	↓	1.532	17.0	5.49	13.68	22.90	
300' North of Area K debris rem.	0945	41° 40.342	70° 54.917	8.4	1.544	4.9	6.80	16.47	23.25	turbidity changed rapidly
↓	0948	↓	↓	↓	4.325	28-60	4.44	22.51	23.25	
↓	0950	↓	↓	↓	7.107	1.8	3.52	27.10	23.31	
↓	0951	↓	↓	↓	4.228	9.4	5.32	22.49	23.21	
ebb ref - at SWS mooring	1130	41° 40.690	70° 55.010	6.4	2.021	1.9	2.51	14.87	23.03	ebb
↓	1131	↓	↓	↓	4.063	2.4	1.60	18.57	23.11	
250' South of Area N dredge	1141	41° 40.511	70° 54.853	6.3	1.044	8.9	9.22	15.19	23.90	
↓	1142	↓	↓	↓	3.047	13.2	6.12	18.14	23.36	
↓	1143	↓	↓	↓	5.058	2.8	2.42	26.67	23.30	

A-78

 Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



## New Bedford Harbor Water Quality Monitoring *In-situ* Data Log Sheet

Delivery Order 0010-04  
March 2012

Dredging Location  
Dredging Description  
Survey Vessel  
Chief Scientist  
Sampling Technician  
Vessel Captain  
Other Personnel  
Weather Conditions

Dredging in Area N  
Debris removal in Area K  
George Hampson  
D. Stuard  
D. Rogers  
D. Rogers  
-  
Partly sunny, 70s, wind from S, chance of rain

Date 9/15/11  
Page 2 of 2

Tide Information	
High L	0307
Low H	1015
High L	1533
Low H	2232

Location	Time	Latitude	Longitude	Water Depth	Sample Depth	Turbidity	DO	Salinity	Temp	Notes
250' S of Area N dredge	1140-1215	41°40.511	70°54.853	6.0	2.834	18-35, <sup>72</sup> max	5-6			Ebb
↓	1215-1245	↓	↓	↓	2.8	25-45	5-6			
↓	1245-1310	↓	↓	↓	2.8	12-28	5-6			
300' S of Area K debris removal	1356	41°40.281	70°54.994	5.5	0.975	11.3	10.09	17.10	24.72	
↓	1359	↓	↓	↓	2.039	20-80	4-5			←
↓	1409	↓	↓	↓	2.476	2,2	3.01	24.92	23.41	Probably bottom being agitated by currents and WHG boat

A-79  
Water Quality Monitoring Summary Report  
W912WJ-0900D-0001



**APPENDIX B. CONTINUOUS IN-SITU FIXED STATION WATER  
QUALITY TIME SERIES DATA (ON CD)**

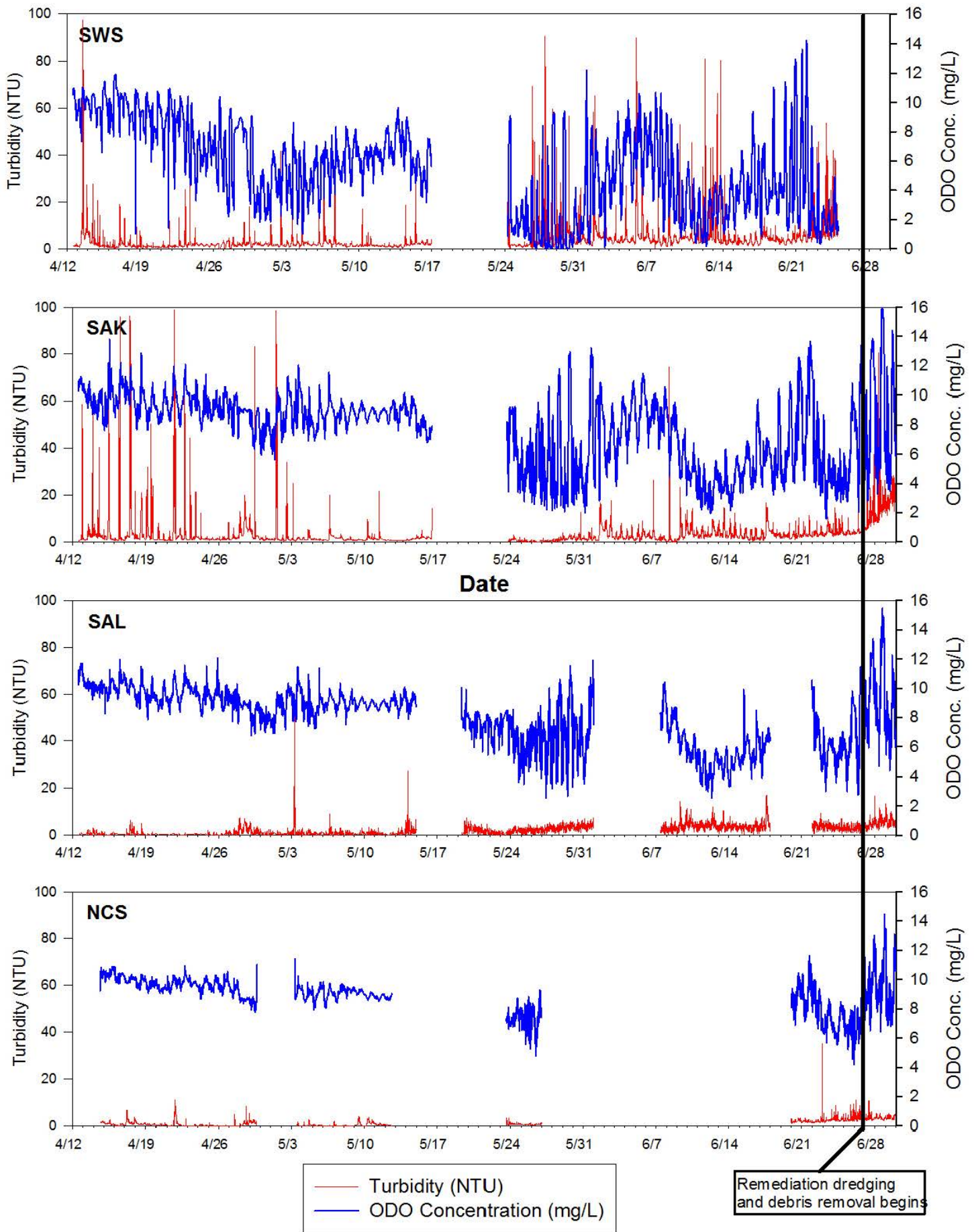
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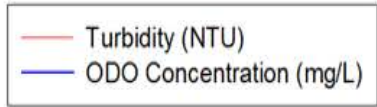
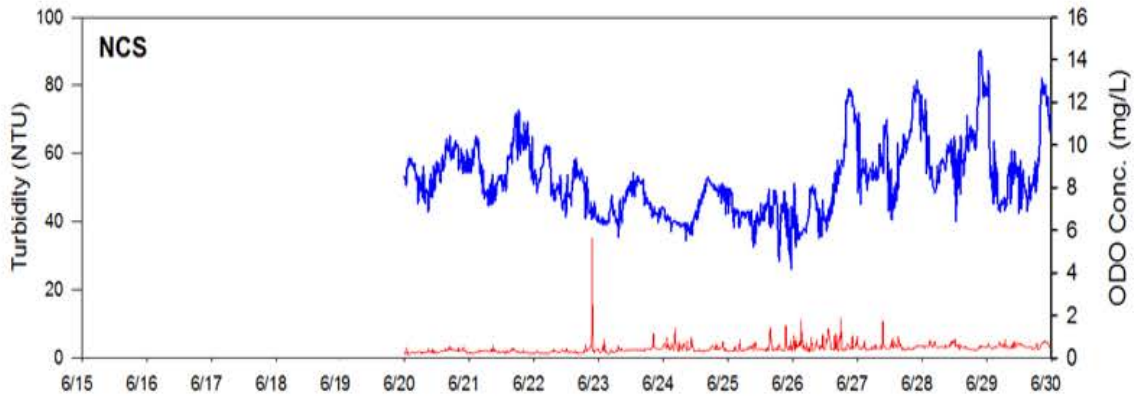
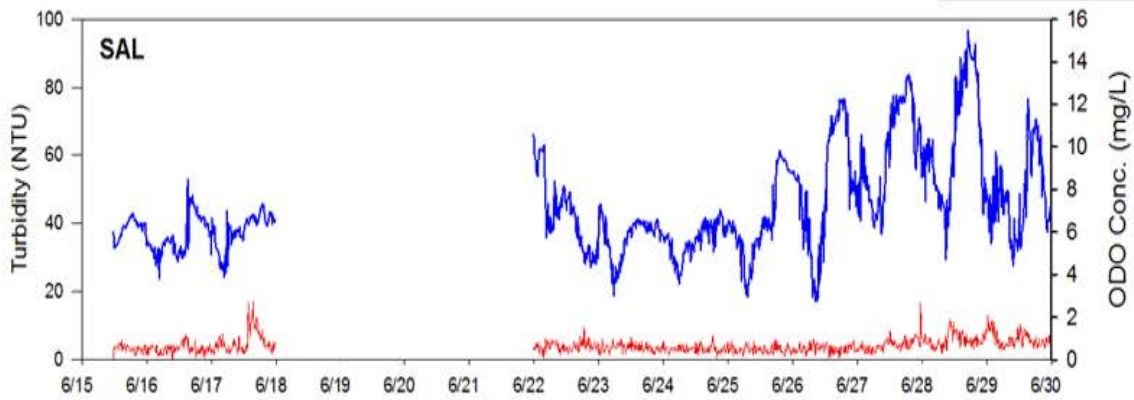
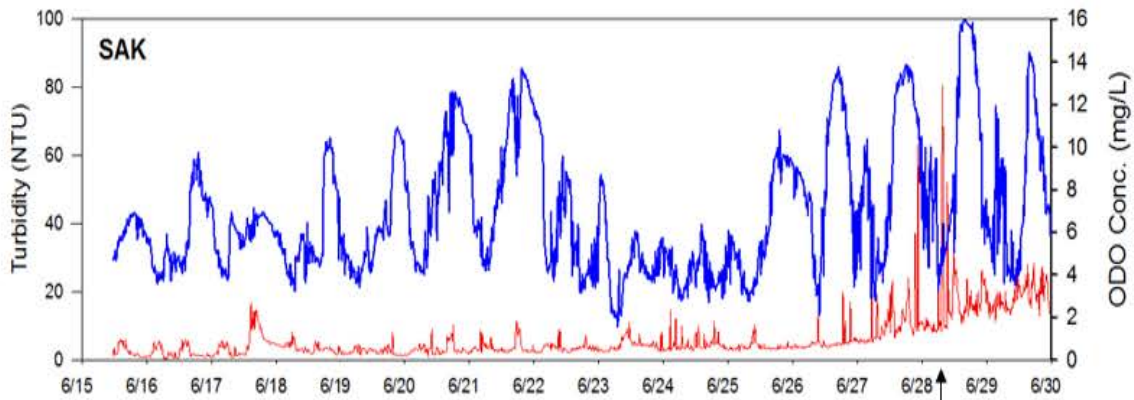
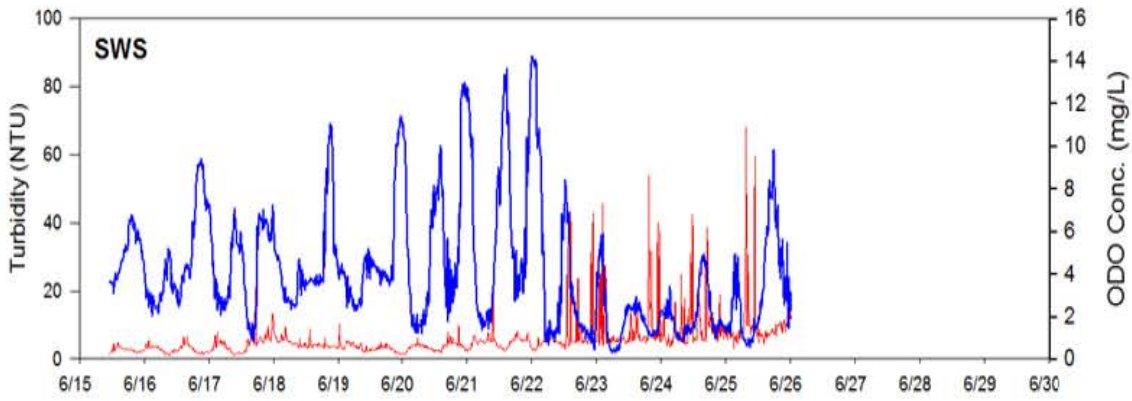
**APPENDIX B    CONTINUOUS *IN-SITU* FIXED STATION WATER  
QUALITY TIME SERIES DATA**

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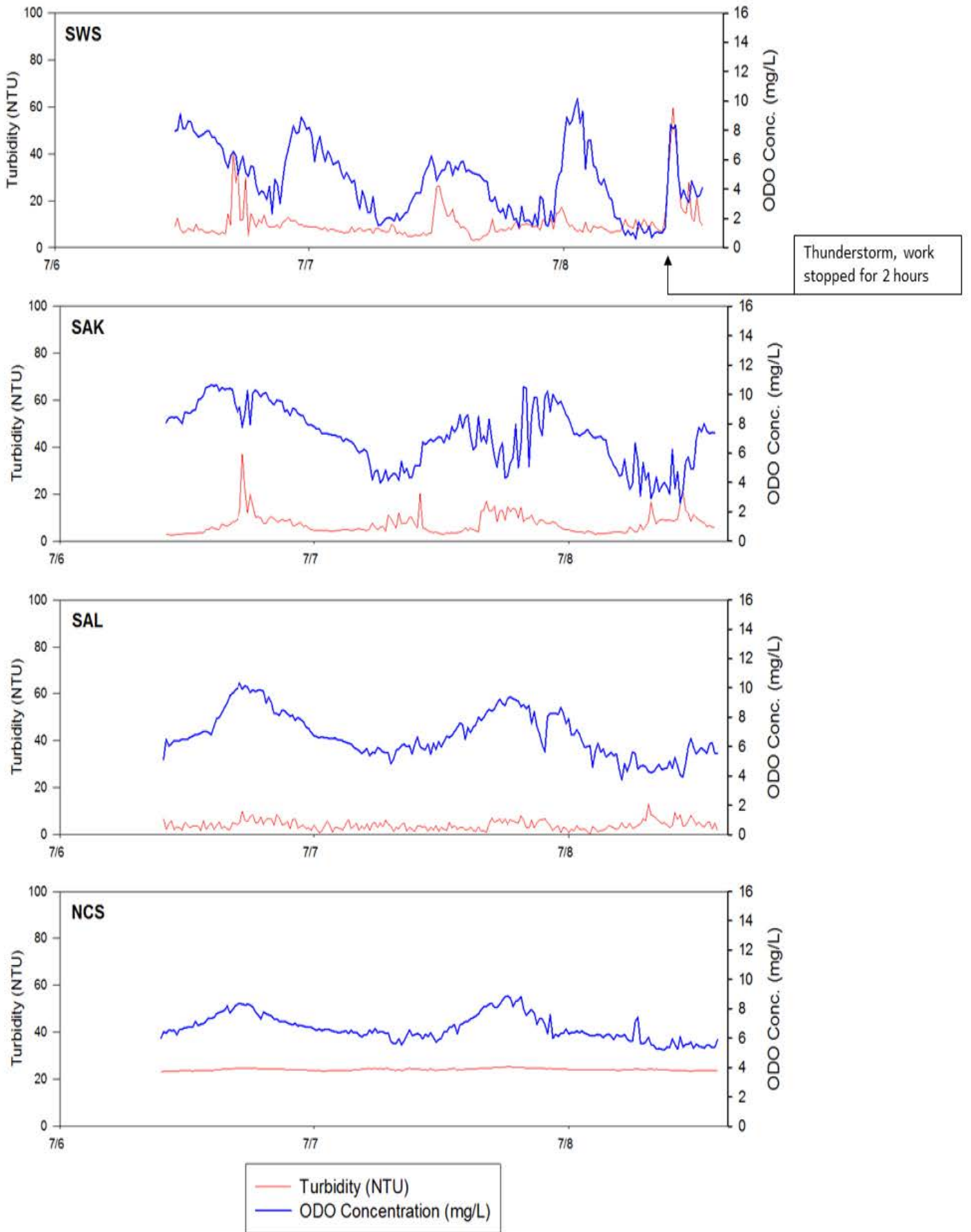
**Note:**

Not all peaks in the following turbidity profiles are labeled with a probable cause. Some peaks occurred during off-hours when no remedial activity was being performed: before 6/27/2011 or after 9/19/2011; before 6AM or after 6PM; on a Saturday or Sunday. Other peaks are not labeled because the tidal phase at the time was not likely to transport remedial effects towards the instrument. For example, on 8/23/2011 a peak value of 78 NTU was recorded at mooring SAK during a flood tide, when no work was being performed to the south of it. This peak could be a result of natural processes, but it is unlikely that water quality effects from remedial work to the north of the instrument caused the peak, and it was left unlabeled.

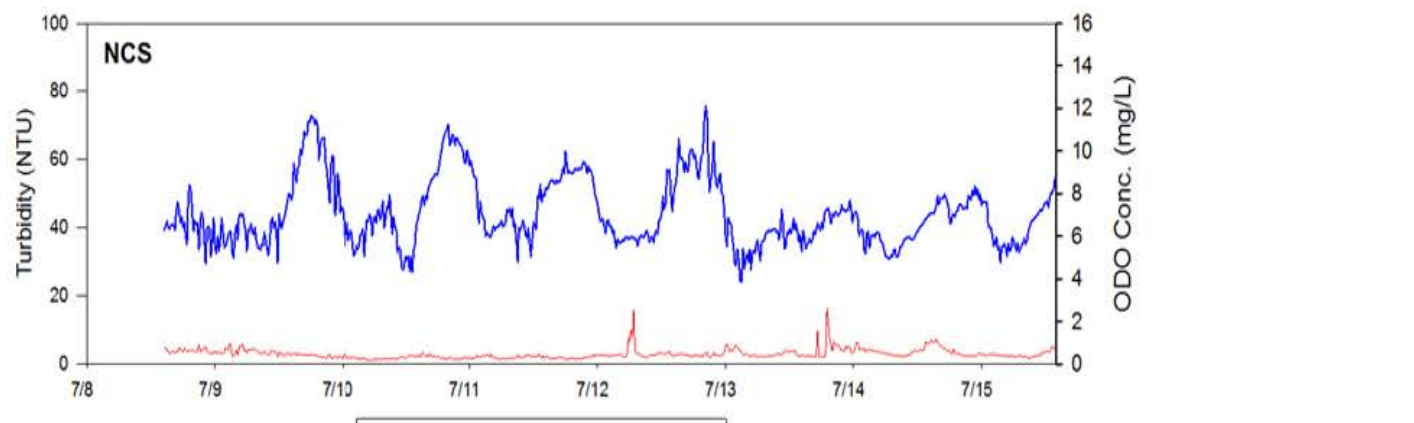
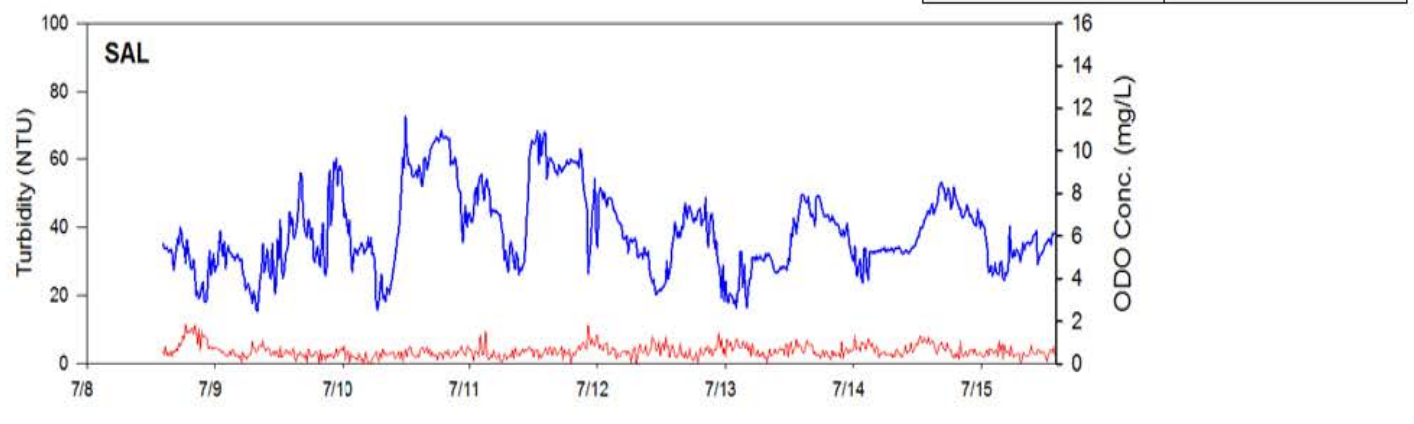
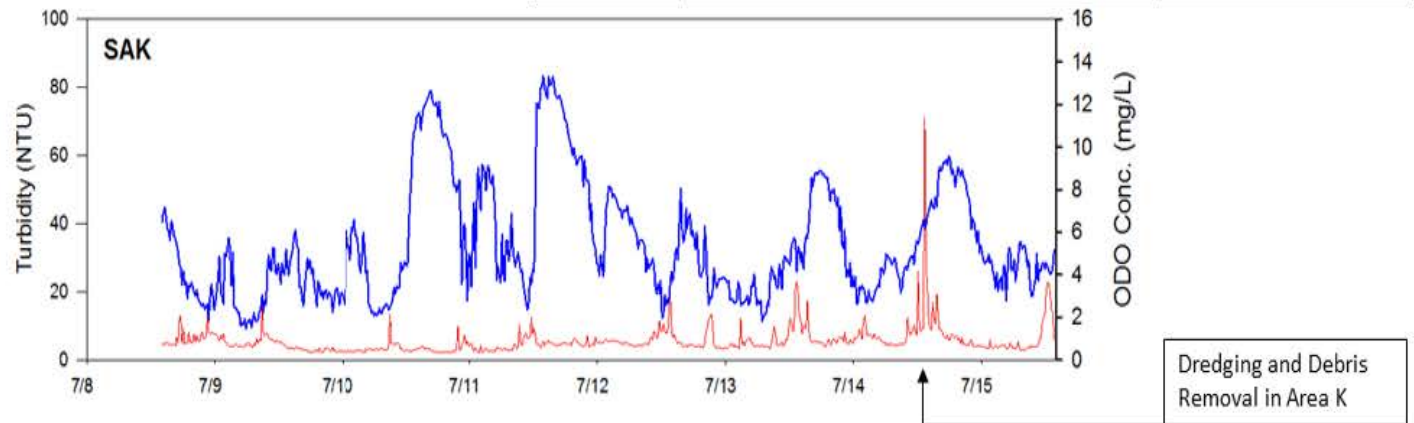
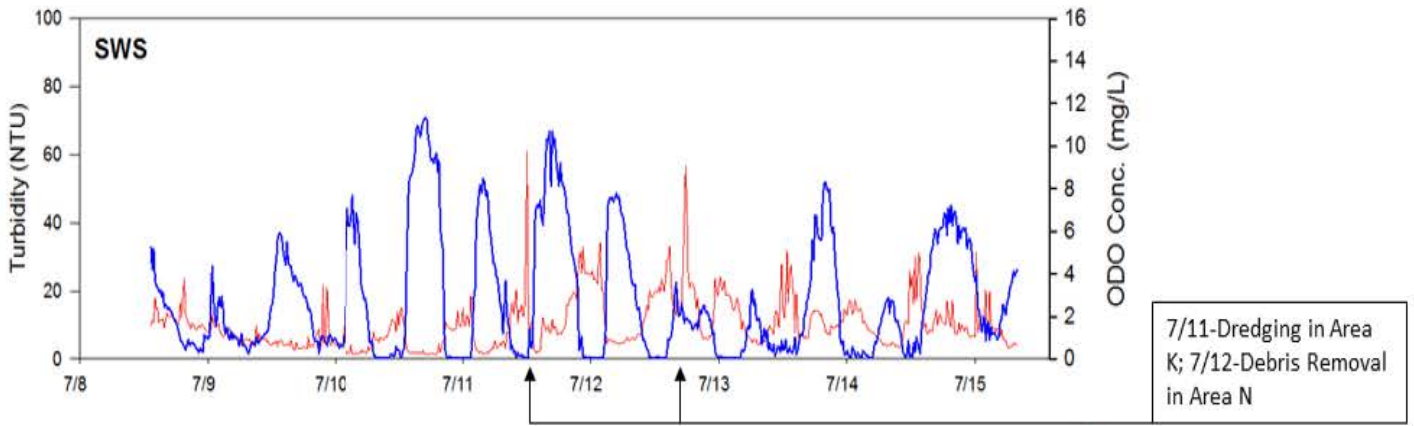




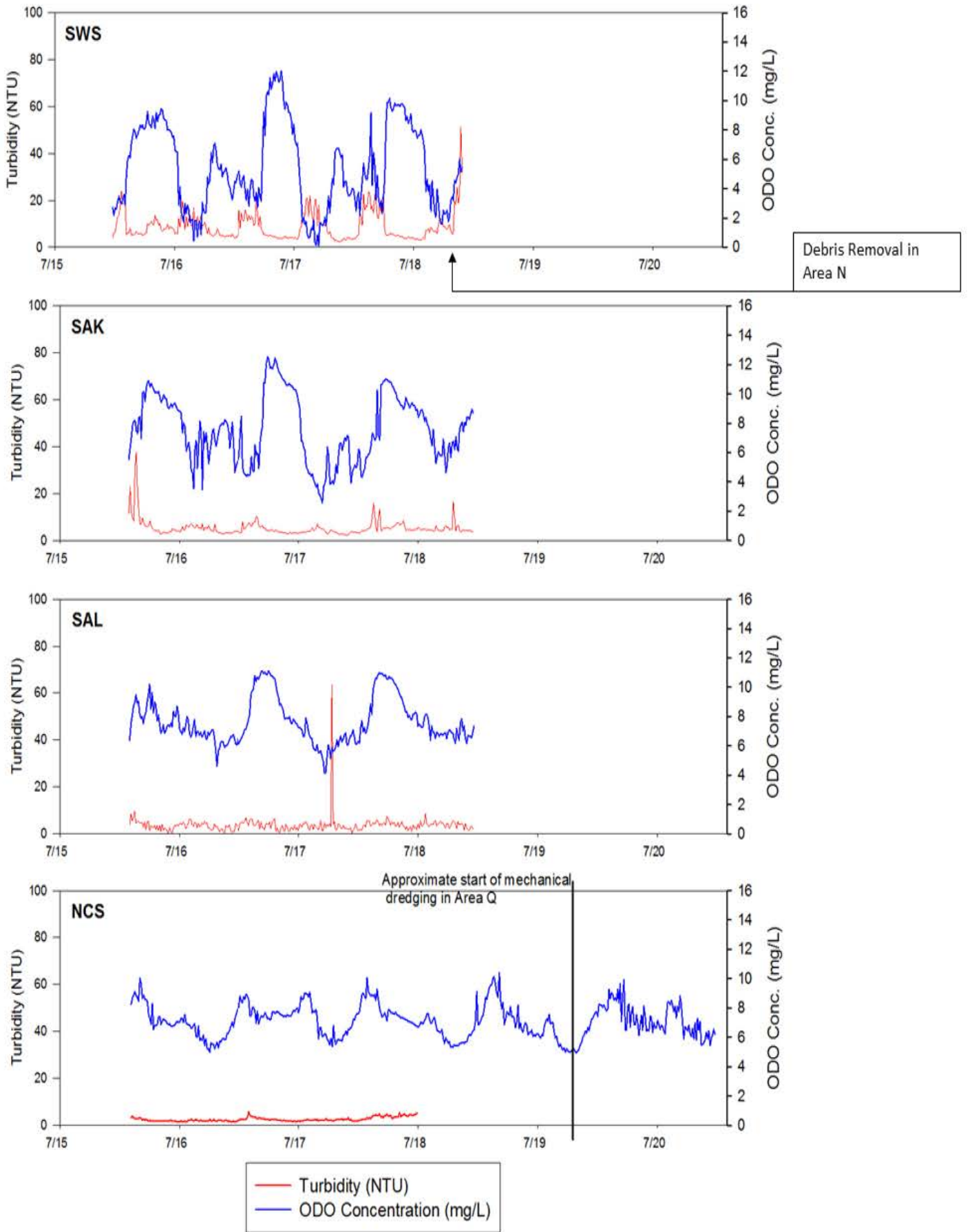
Dredging and Debris Removal in Area K

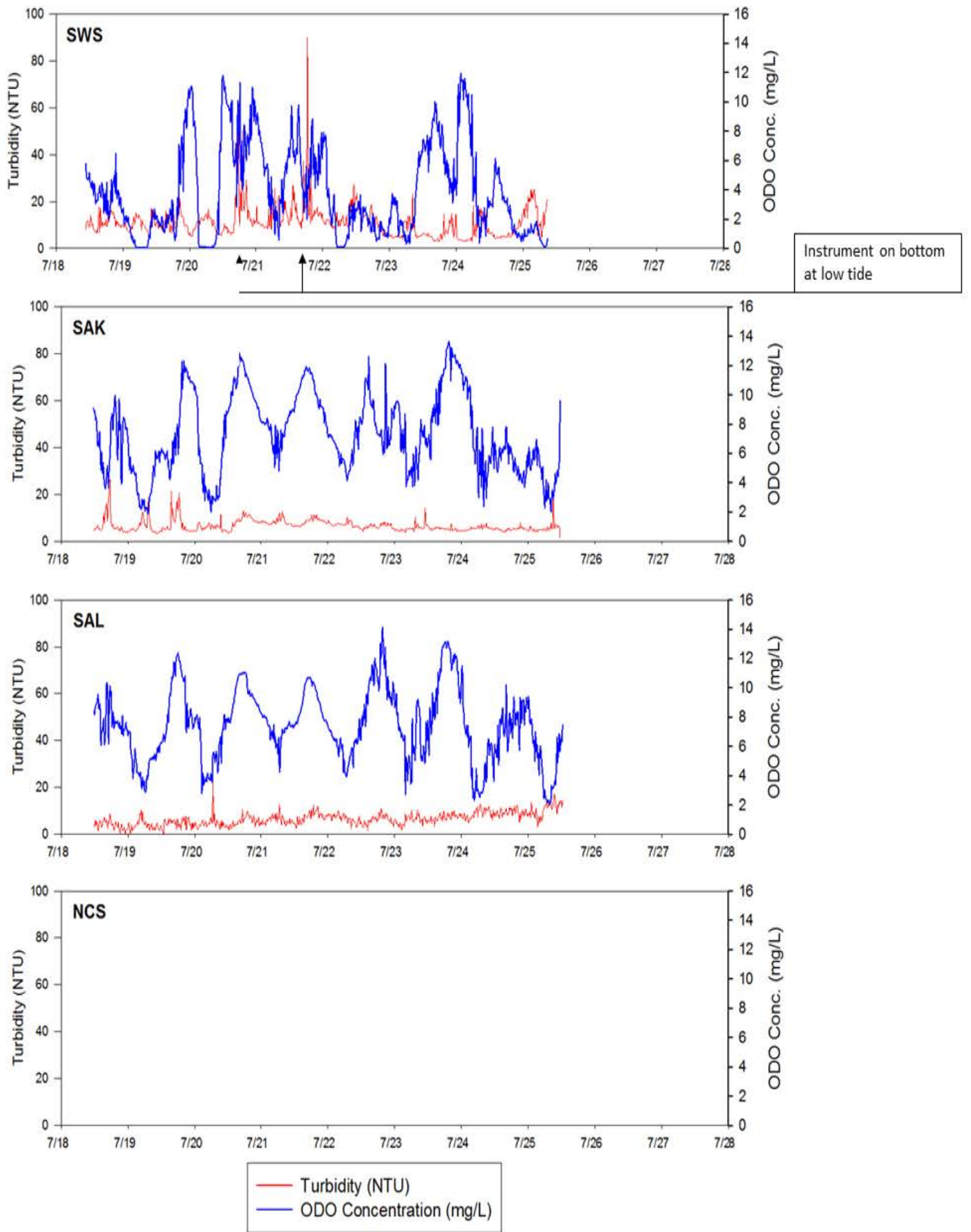


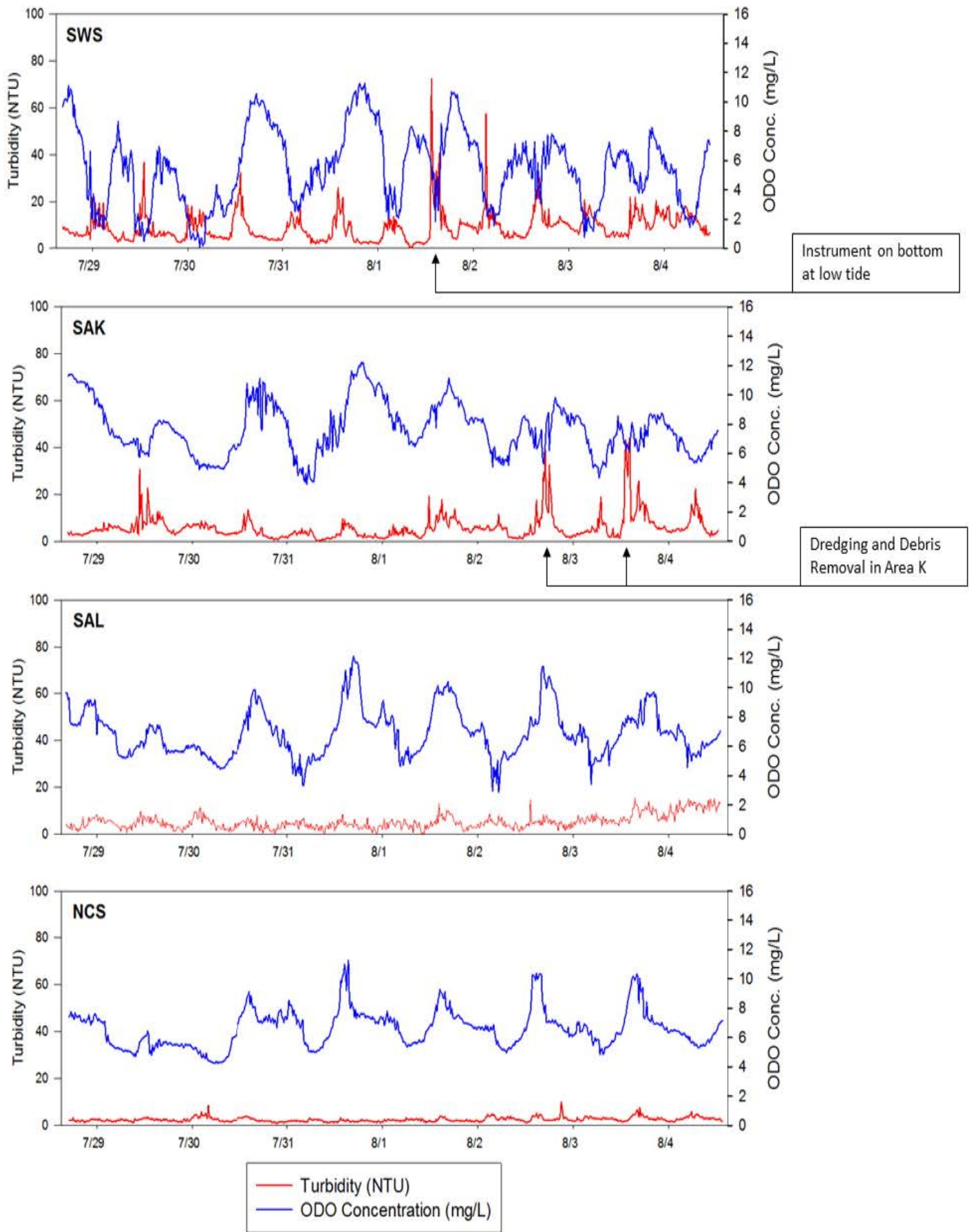


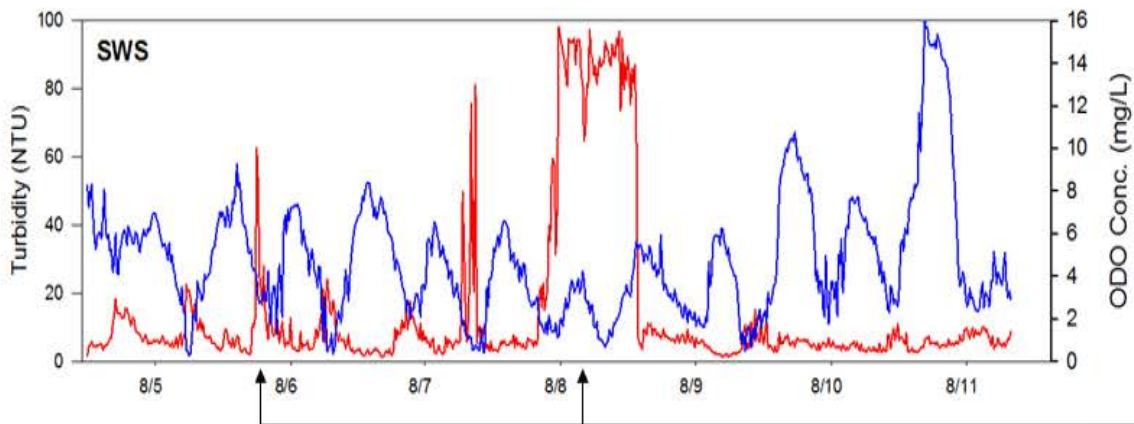


— Turbidity (NTU)  
 — ODO Concentration (mg/L)

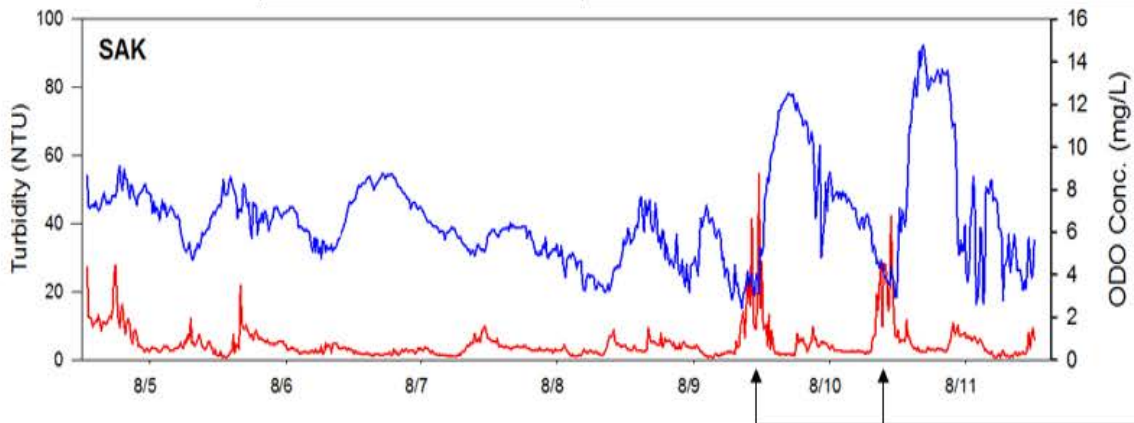




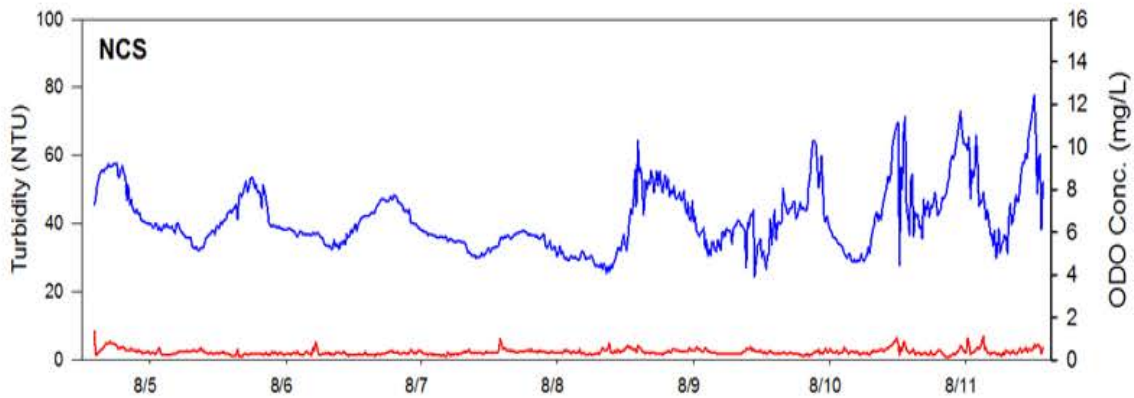
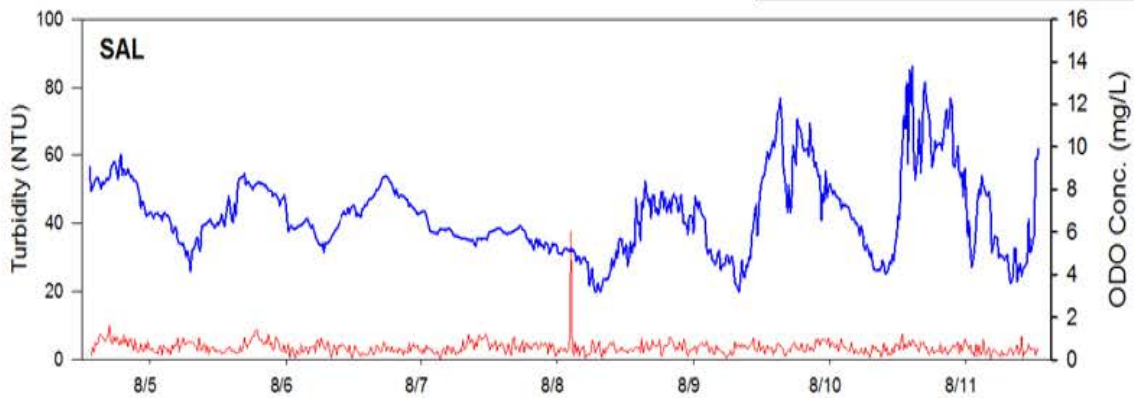




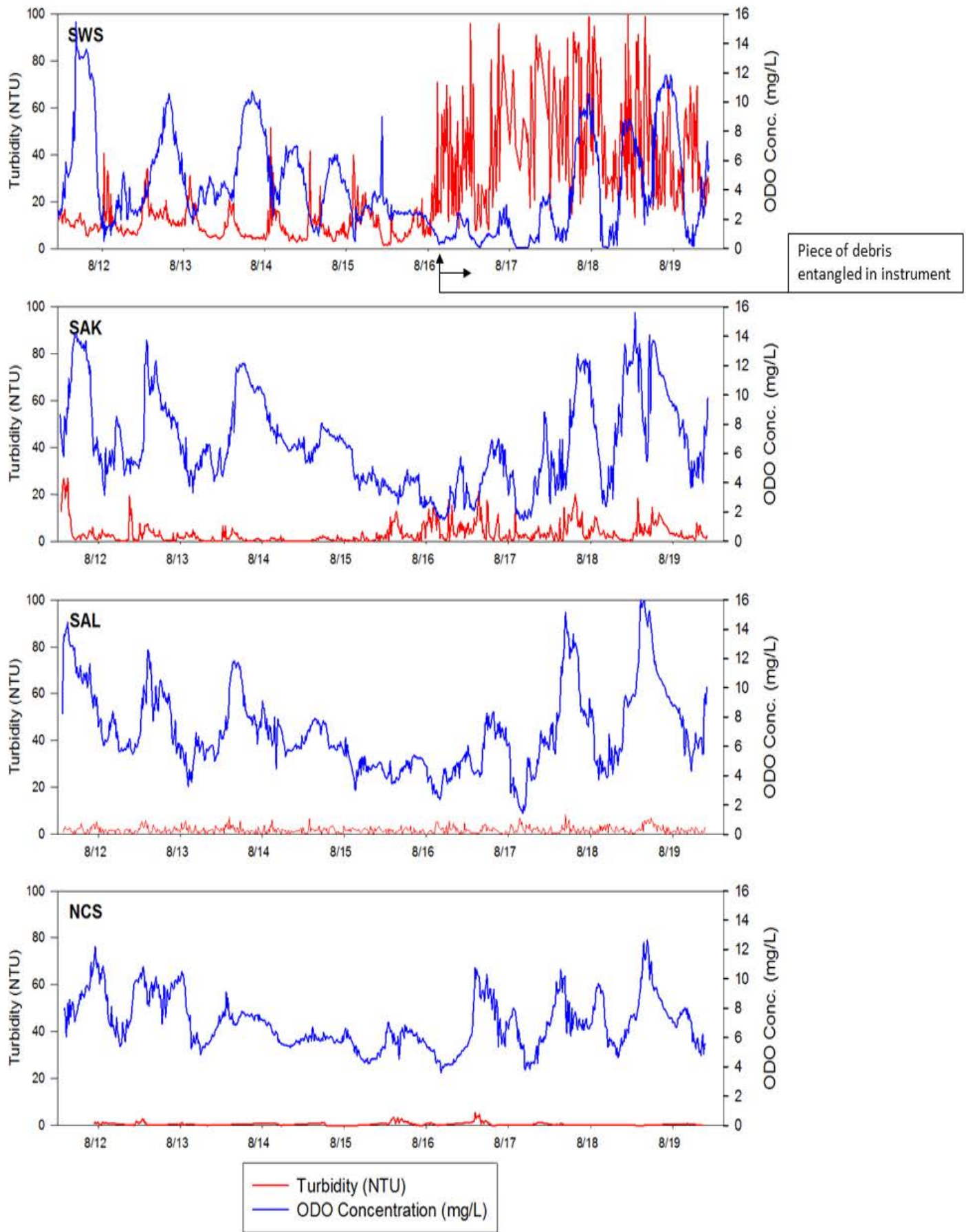
8/5: Instrument on bottom at low tide;  
8/7-8/8: Piece of debris caught on sensor

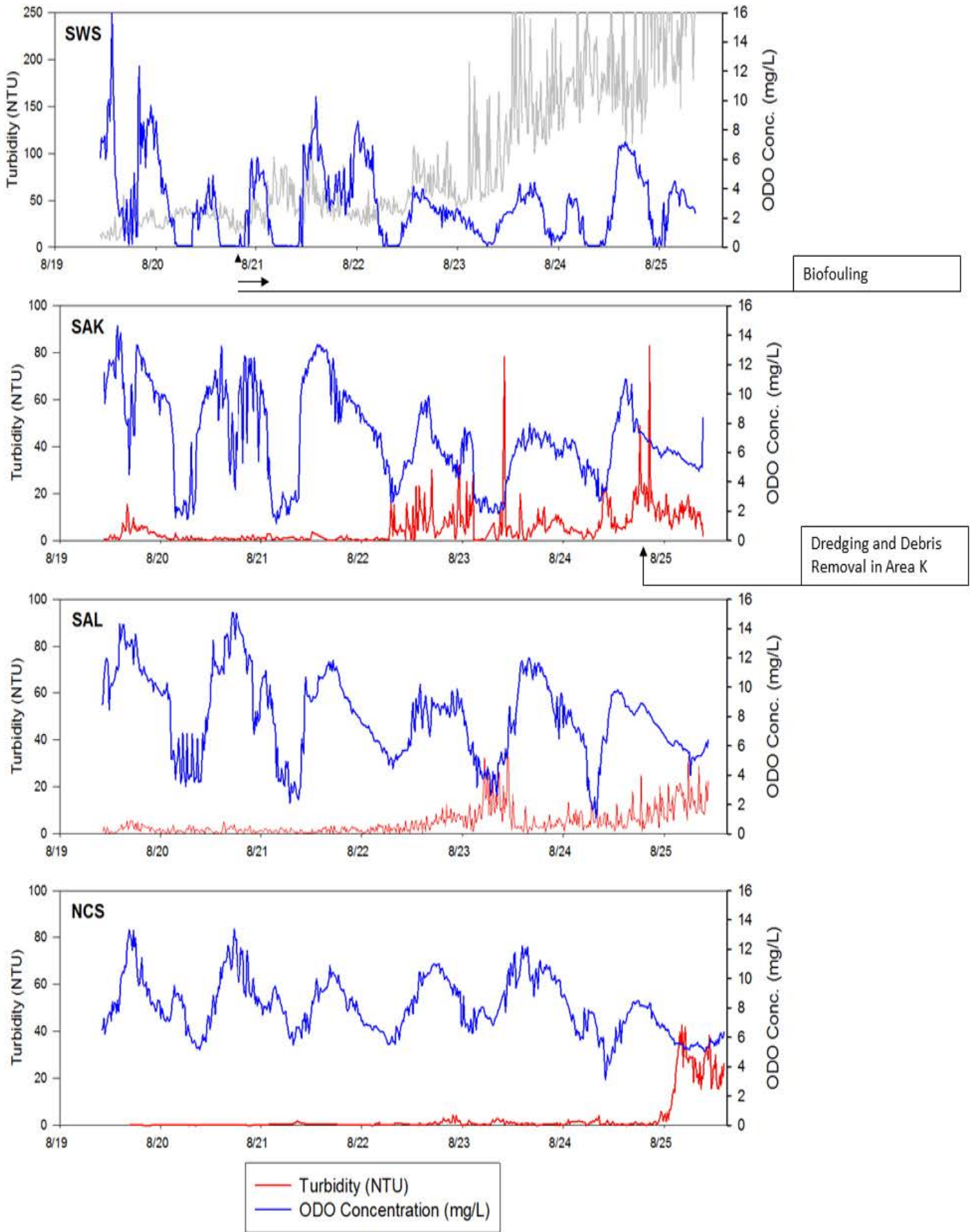


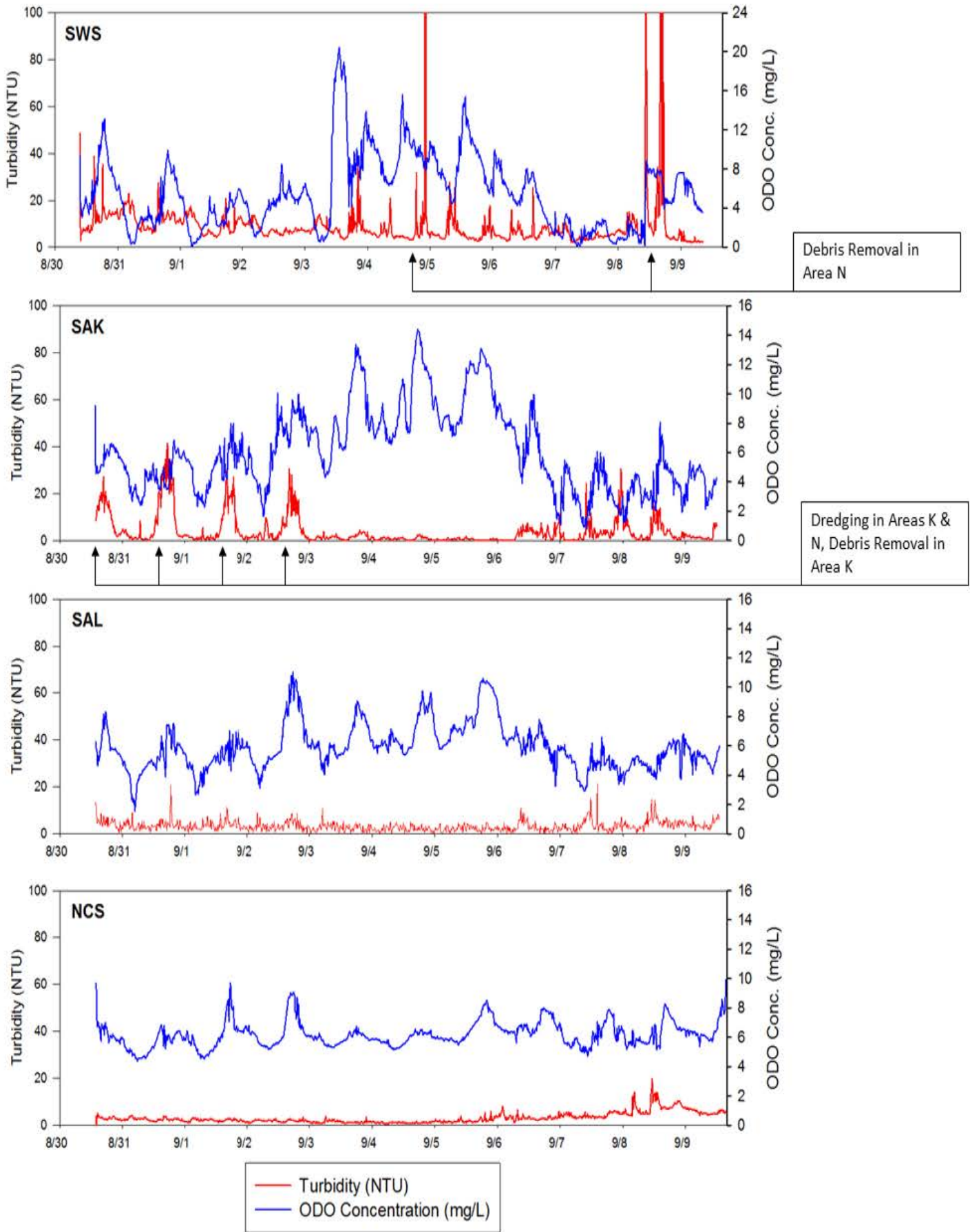
Dredging and Debris Removal in Area K



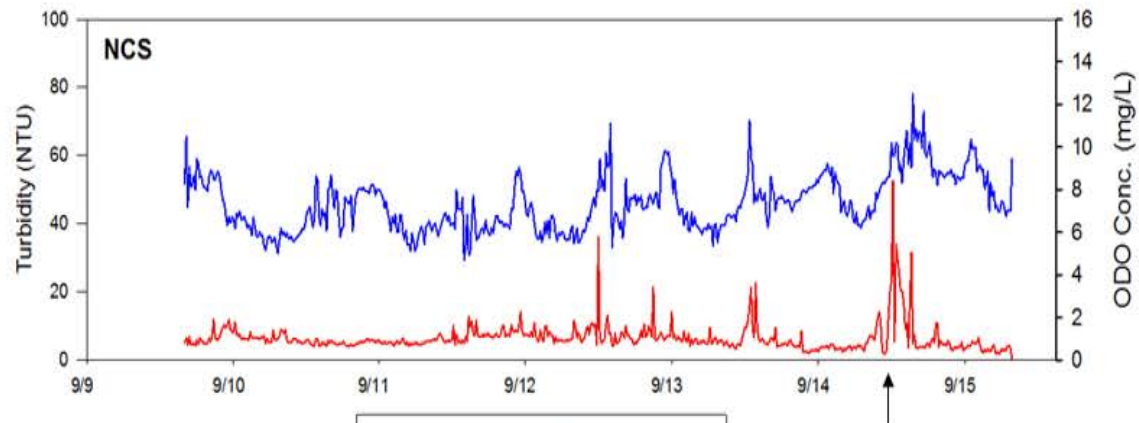
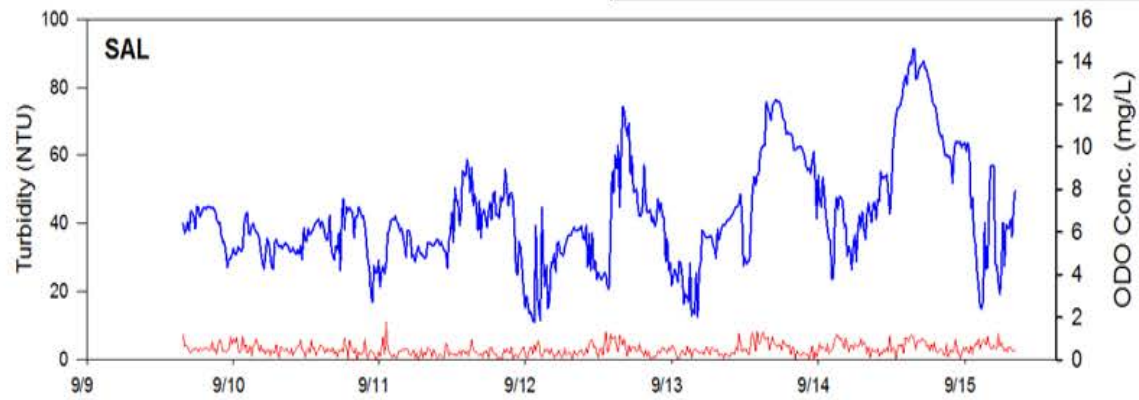
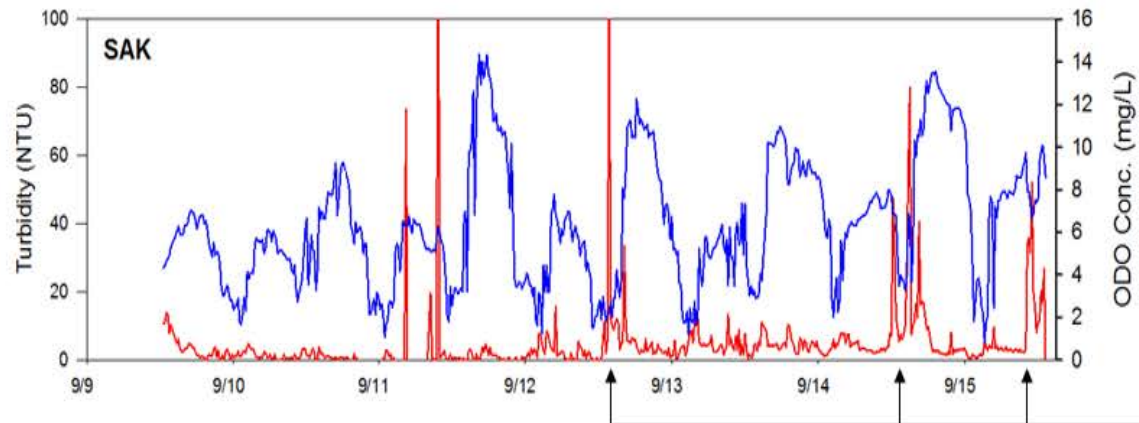
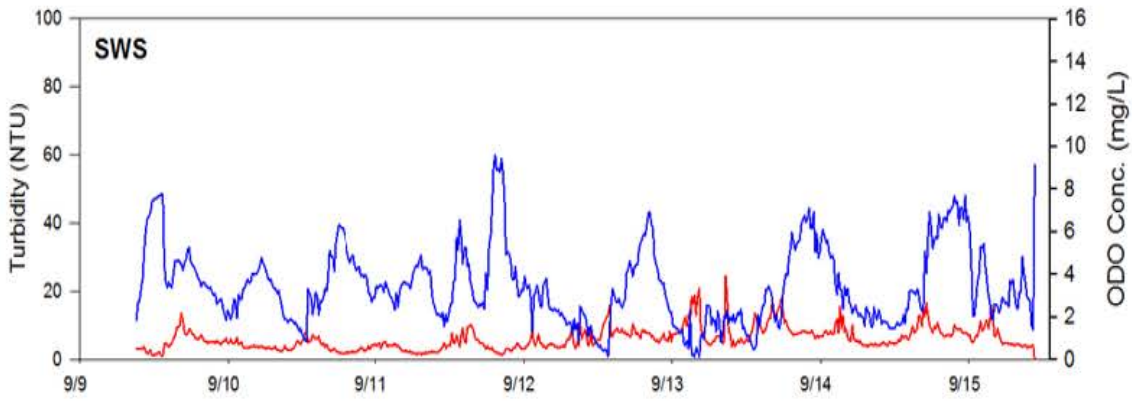
— Turbidity (NTU)  
— ODO Concentration (mg/L)



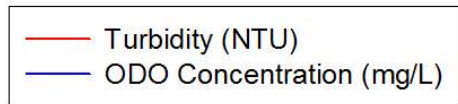
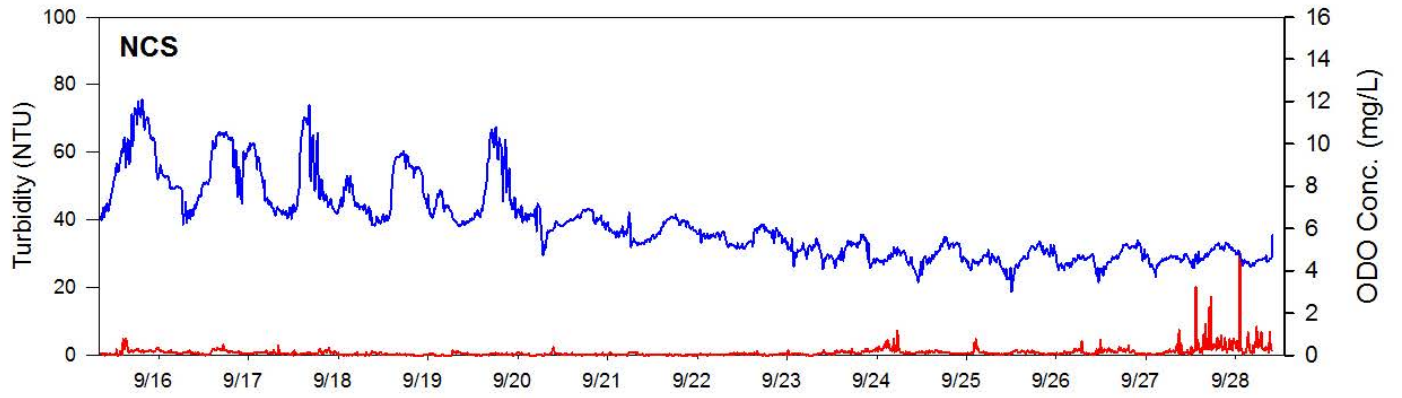
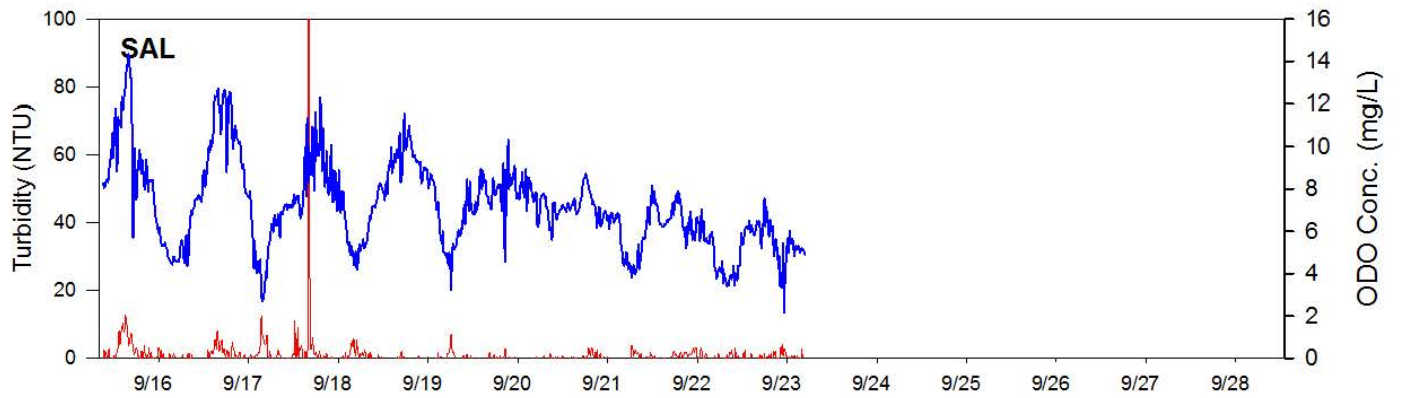
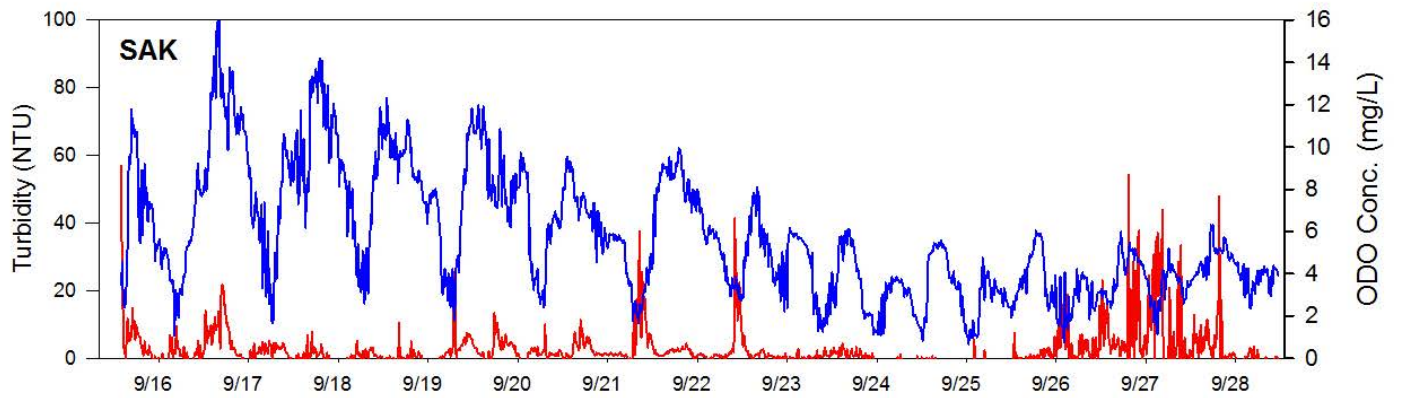
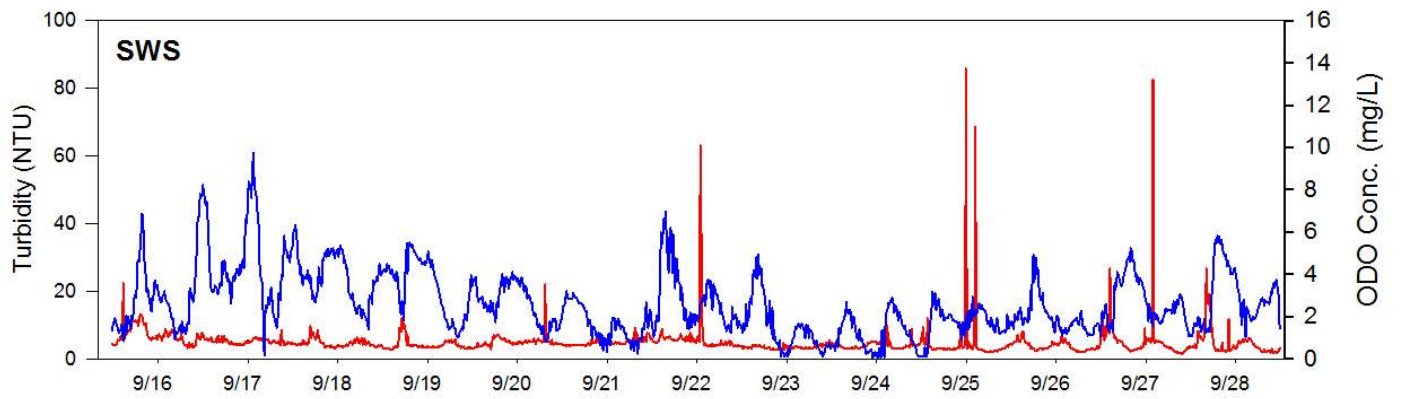


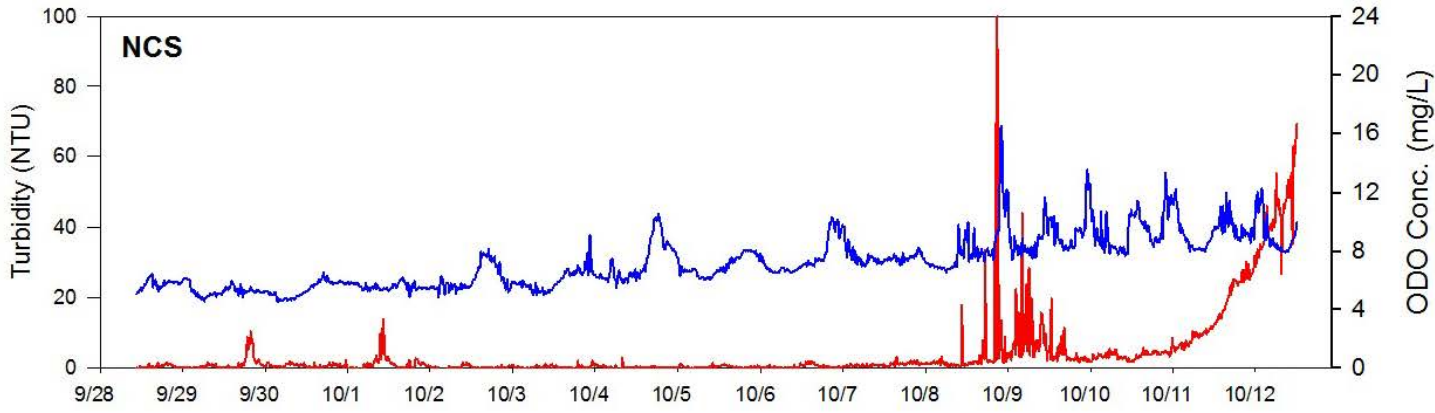
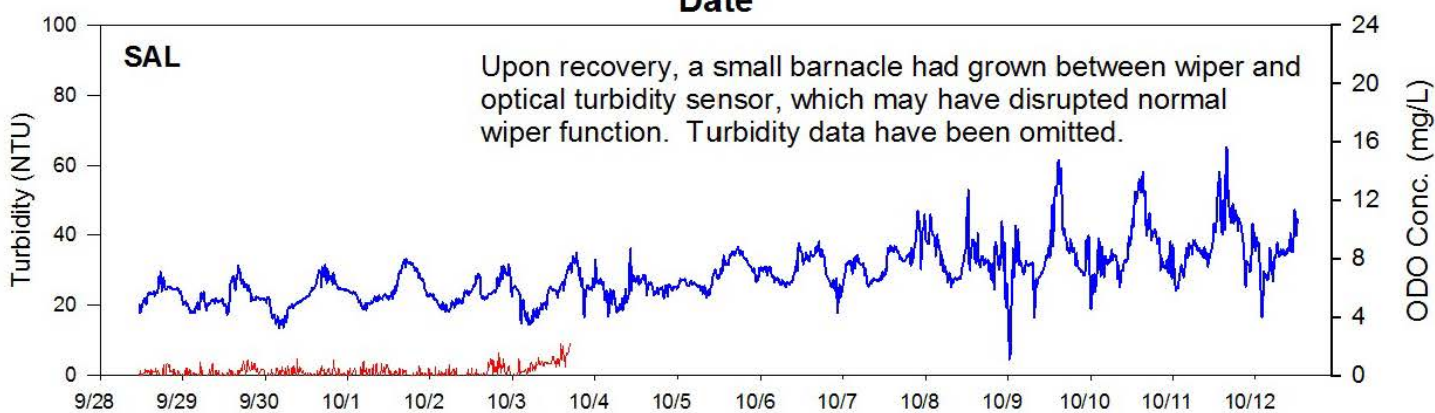
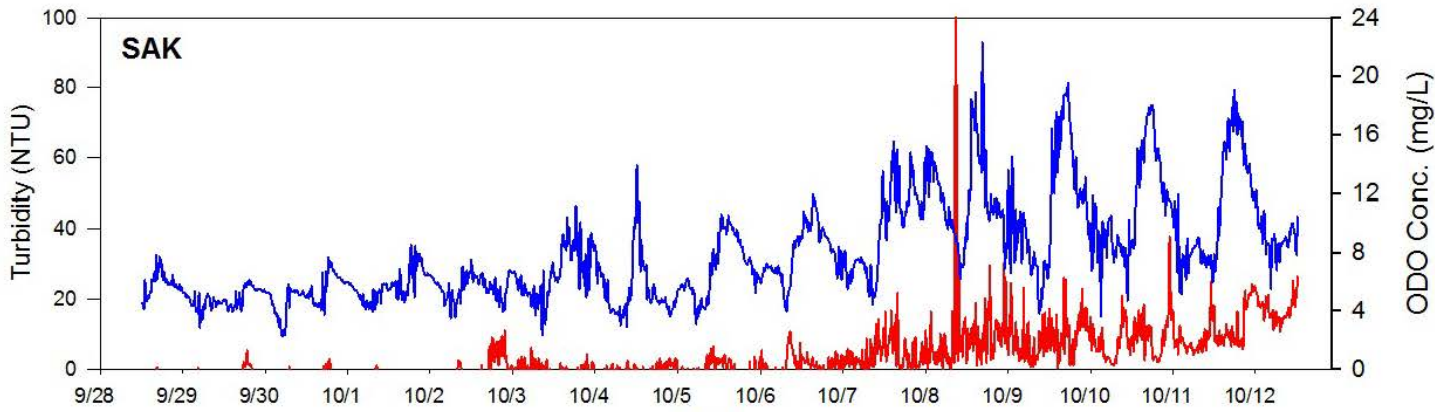
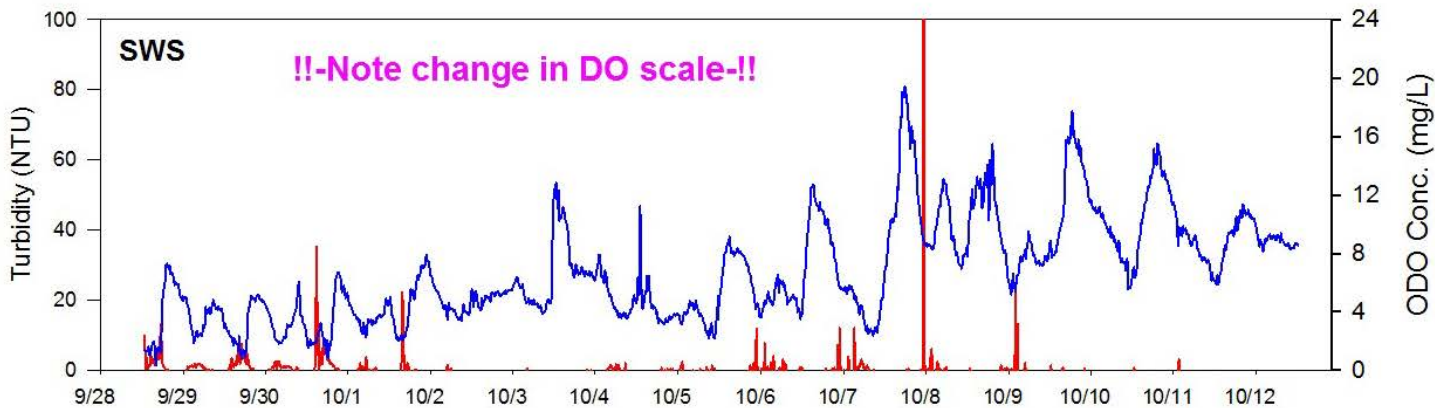


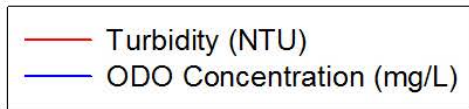
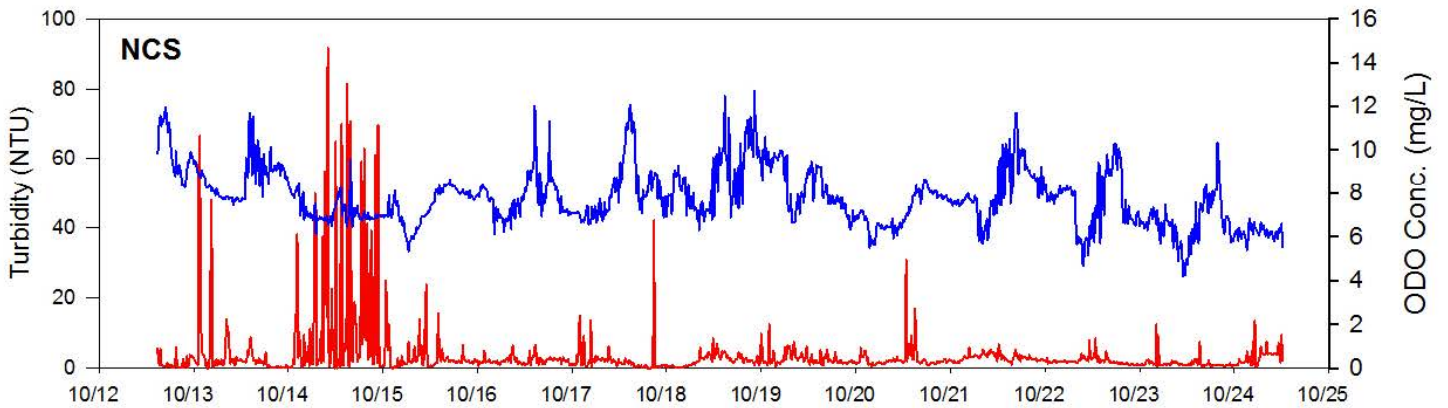
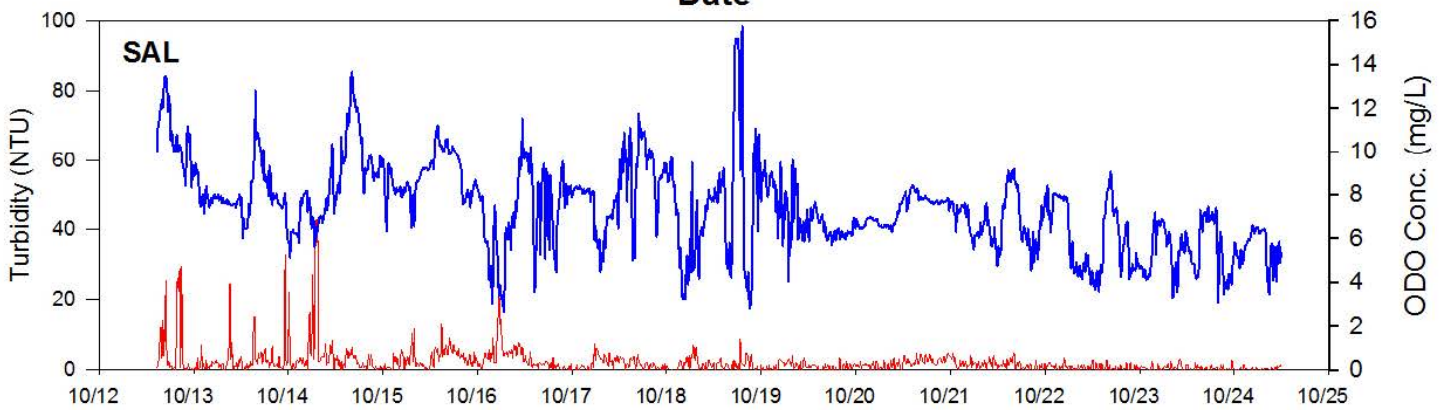
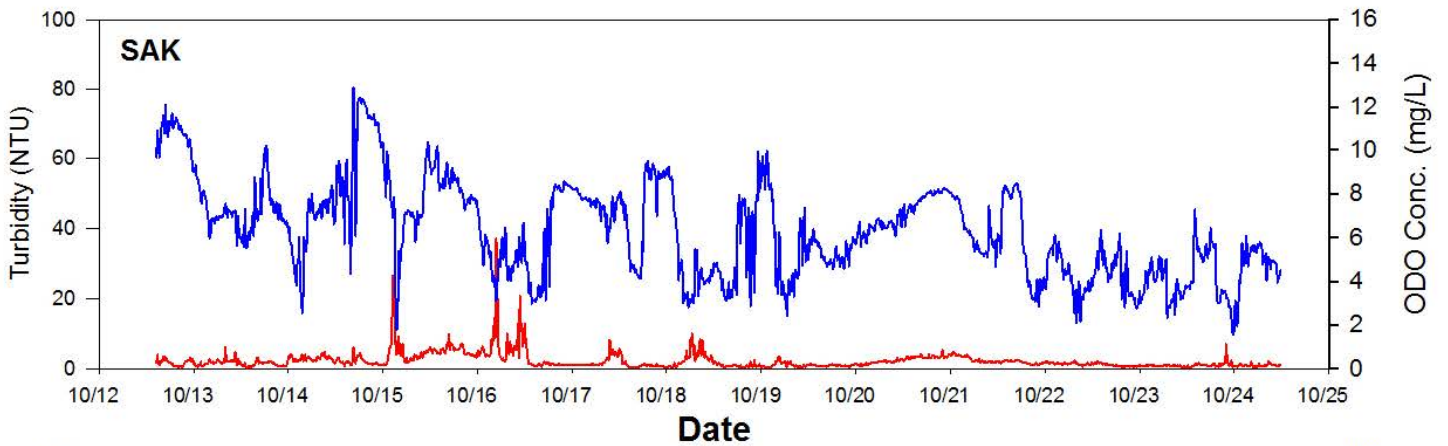
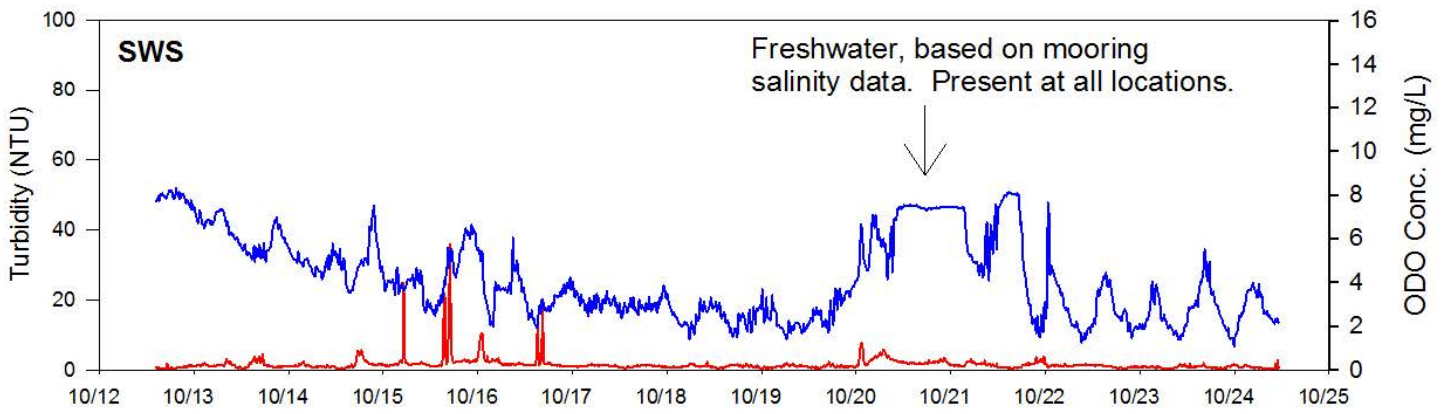




— Turbidity (NTU)  
 — ODO Concentration (mg/L)







**APPENDIX C. ALPHA ANALYTICAL LABORATORIES  
REPORTS AND ANALYTICAL DATA (ON CD)**

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**APPENDIX C    ALPHA ANALYTICAL LABORATORIES REPORTS  
AND ANALYTICAL DATA**

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## ANALYTICAL REPORT

Lab Number:	L1107072
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	2011 BASELINE
Project Number:	TO-0010-03
Report Date:	05/26/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1107072-01	WQ-TSS-001-051911	NEW BEDFORD, MA	05/19/11 09:20
L1107072-02	WQ-TUR-001-051911	NEW BEDFORD, MA	05/19/11 09:20
L1107072-03	WQ-TSS-002-051911	NEW BEDFORD, MA	05/19/11 09:33
L1107072-04	WQ-TUR-002-051911	NEW BEDFORD, MA	05/19/11 09:33
L1107072-05	WQ-TSS-002-051911 REP	NEW BEDFORD, MA	05/19/11 09:35
L1107072-06	WQ-TUR-002-051911 REP	NEW BEDFORD, MA	05/19/11 09:35
L1107072-07	WQ-TSS-003-051911	NEW BEDFORD, MA	05/19/11 11:38
L1107072-08	WQ-TUR-003-051911	NEW BEDFORD, MA	05/19/11 11:38
L1107072-09	WQ-TSS-004-051911	NEW BEDFORD, MA	05/19/11 11:53
L1107072-10	WQ-TUR-004-051911	NEW BEDFORD, MA	05/19/11 11:53

**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

---

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 05/26/11

# INORGANICS & MISCELLANEOUS

Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-01  
 Client ID: WQ-TSS-001-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:20  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.70		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-02  
 Client ID: WQ-TUR-001-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:20  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.3		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-03  
 Client ID: WQ-TSS-002-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:33  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.50		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-04  
 Client ID: WQ-TUR-002-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:33  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.2		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR





Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-05  
 Client ID: WQ-TSS-002-051911 REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:35  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.80		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-06  
 Client ID: WQ-TUR-002-051911 REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:35  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.0		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-07  
 Client ID: WQ-TSS-003-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:38  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.70		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-08  
 Client ID: WQ-TUR-003-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:38  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.8		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-09  
 Client ID: WQ-TSS-004-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:53  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.20		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-10  
 Client ID: WQ-TUR-004-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:53  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.1		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10 Batch: WG469112-1									
Turbidity	ND	NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG469826-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 Batch: WG469112-2								
Turbidity	102		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG469826-2								
Solids, Total Suspended	101		-		80-120	-		20



## Lab Duplicate Analysis

Batch Quality Control

Project Name: 2011 BASELINE

Project Number: TO-0010-03

Lab Number: L1107072

Report Date: 05/26/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 QC Batch ID: WG469112-3 QC Sample: L1107072-02 Client ID: WQ-TUR-001-051911						
Turbidity	1.3	1.3	NTU	0		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG469826-3 QC Sample: L1107072-01 Client ID: WQ-TSS-001-051911						
Solids, Total Suspended	5.70	6.00	mg/l	5		20

Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1107072-01A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-02A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-03A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-04A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-05A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-06A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-07A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-08A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-09A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-10A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)

**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

## GLOSSARY

### Acronyms

EPA	-Environmental Protection Agency.
LCS	-Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	-Laboratory Control Sample Duplicate: Refer to LCS.
LFB	-Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	-Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	-Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	-Matrix Spike Sample Duplicate: Refer to MS.
NA	-Not Applicable.
NC	-Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	-Not Ignitable.
RL	-Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	-Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	-Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** -Spectra identified as "Aldol Condensation Product".
- B** -The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** -Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** -Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** -Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** -The concentration may be biased high due to matrix interferences (i.e., co-elution) with non-target compound(s). The result should be considered estimated.
- H** -The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of

Report Format: Data Usability Report



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

#### *Data Qualifiers*

sample collection.

- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised March 23, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, EPA 200.8, SM2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 7470A, 9040B, 6020, 9010B, 9014 Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B, 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3630C, 3640A)

**New York Department of Health Certificate/Lab ID: 11627. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 9014, 9040B, 120.1, SM2510B, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health Certificate/Lab ID: LAO00299. *NELAP Accredited via LA-DEQ.***

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. *NELAP Accredited.***

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water*** (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense Certificate/Lab ID: L2217.01.**

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

## Client Information

Client: WOODSHOLE GROUP, INC.  
Address: 81 TECHNOLOGY PARK DR.  
E. PALMOUTH, MA 02536  
Phone: 508-540-0080  
Fax: 508-540-1001  
Email: DWALSH@WHGRP.COM  
 These samples have been previously analyzed by Alpha

## Project Information

Project Name: 2011 NEW BEDFORD BASLINE  
Project Location: NEW BEDFORD, MA  
Project #: TO-0010-03  
Project Manager: DAVE WALSH  
ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab: \_\_\_\_\_

ALPHA Job #: L1107072

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #: \_\_\_\_\_

## Regulatory Requirements/Report Limits

State/Fed Program: \_\_\_\_\_ Criteria: \_\_\_\_\_

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:  Project Specific LDD

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										SAMPLE HANDLING	TOTAL # BOTTLES		
		Date	Time			TSS	Turbidity												
L1107072-1	WQ-TSS-001-051911	5/19/11	09:20	SW	DRW	X												FLOOD REF. (SAL)	1
2	WQ-TUR-001-051911		09:20				X											FLOOD REF. (SAL)	1
3	WQ-TSS-002-051911		0933			X												FLOOD (AREA L)	1
4	WQ-TUR-002-051911		0933				X											FLOOD (AREA L)	1
5	WQ-TSS-002-051911 DUP		0935			X												FIELD DUPLICATE	1
6	WQ-TUR-002-051911 DUP		0935				X											FIELD DUPLICATE	1
7	WQ-TSS-003-051911		1138			X												EBB REF. (NWS)	1
8	WQ-TUR-003-051911		1138				X											EBB REF. (NWS)	1
9	WQ-TSS-004-051911		1153			X												EBB (AREA G)	1
10	WQ-TUR-004-051911		1153				X											EBB (AREA G)	1

Container Type: P P

Preservative: A A

Relinquished By: [Signature] Date/Time: 5/20/11 10:00  
 Received By: [Signature] Date/Time: 5/20/11 10:00  
5/20/11 1530 5/20/11 1530

**SAMPLE HANDLING**  
 Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do Preservation  
 Lab to do  
 (Please specify below)

Sample Specific Comments

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 Delivery Order 0010-04  
 March 2012





## ANALYTICAL REPORT

Lab Number:	L1109482
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR
Project Number:	TO-0010-04
Report Date:	07/12/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1109482-01	WQ-TPC-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-02	WQ-DPC-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-03	WQ-MET-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-04	WQ-TUR-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-05	WQ-TSS-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-06	WQ-TPC-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-07	WQ-DPC-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-08	WQ-MET-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-09	WQ-TUR-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-10	WQ-TSS-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-11	WQ-TPC-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-12	WQ-TPC-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-13	WQ-DPC-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-14	WQ-MET-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-15	WQ-TPC-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-16	WQ-DPC-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-17	WQ-MET-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-18	WQ-TUR-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-19	WQ-TSS-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-20	WQ-TPC-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-21	WQ-DPC-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-22	WQ-MET-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-23	WQ-TUR-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-24	WQ-TSS-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-25	WQ-DPC-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-26	WQ-MET-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-27	WQ-TUR-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-28	WQ-TSS-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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### Sample Receipt

Samples were received intact on June 27, 2011. Upon receipt, samples that were marked dissolved on the chain of custody were filtered through a 0.45 micron filter thereby creating the dissolved sample.

Equipment blank IDs were edited with client authorization to ensure unique IDs for each analysis. These IDs were created to be consistent with the nomenclature of the field samples.

### PCB Congeners by 8082

The PCB Congener analysis was performed utilizing dual column confirmation with the higher of the two values reported. Technical judgment was employed in the case of an observed interference. In each case that

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

### Case Narrative (continued)

interference was observed on one column, the value from the opposite column was reported regardless of whether it was the higher or lower value.

Samples L1109482-01, 20, 21 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1109482-06, 07, 11, 25 were re-analyzed on dilution in order to quantitate the sample within the calibration range. The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analyses were performed only for the compounds that exceeded the calibration range.

The WG476293-4/-5 MS/MSD, performed on L1109482-06, was not recovered for several compounds due to the high concentrations of these compounds detected in the sample utilized for the MS/MSD.

The WG476293-6/-7 MS/MSD recoveries, performed on L1109482-07, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476293-7 MSD RPDs, performed on L1109482-07, are above the acceptance criteria for C13-BZ#28 (97%) and C14-BZ#52 (120%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 07/12/11

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-01  
**Client ID:** WQ-TPC-001-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 10:08  
**Analyst:** JS

**Date Collected:** 06/27/11 10:30  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#18	0.22838		ug/l	0.00208	--	2
CI4-BZ#44	0.05034		ug/l	0.00208	--	2
CI4-BZ#66	0.03297		ug/l	0.00208	--	2
CI5-BZ#118	0.00938		ug/l	0.00208	--	2
CI5-BZ#105	ND		ug/l	0.00208	--	2
CI6-BZ#128	ND		ug/l	0.00208	--	2
CI7-BZ#180	ND		ug/l	0.00208	--	2
CI7-BZ#170	ND		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	108		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-01  
 Client ID: WQ-TPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 10:08  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.18791		ug/l	0.00208	--	2
CI3-BZ#28	0.24657		ug/l	0.00208	--	2
CI4-BZ#52	0.18293		ug/l	0.00208	--	2
CI5-BZ#101	0.02226		ug/l	0.00208	--	2
CI6-BZ#153	0.01175		ug/l	0.00208	--	2
CI6-BZ#138	0.00465		ug/l	0.00208	--	2
CI7-BZ#187	0.00324		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	108		30-150
DBOB	111		30-150



**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-02  
 Client ID: WQ-DPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/01/11 23:18  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#18	0.15408		ug/l	0.00111	--	1
CI4-BZ#44	0.03253		ug/l	0.00111	--	1
CI4-BZ#66	0.01413		ug/l	0.00111	--	1
CI5-BZ#118	0.00186		ug/l	0.00111	--	1
CI5-BZ#105	ND		ug/l	0.00111	--	1
CI6-BZ#138	ND		ug/l	0.00111	--	1
CI7-BZ#187	ND		ug/l	0.00111	--	1
CI6-BZ#128	ND		ug/l	0.00111	--	1
CI7-BZ#180	ND		ug/l	0.00111	--	1
CI7-BZ#170	ND		ug/l	0.00111	--	1
CI8-BZ#195	ND		ug/l	0.00111	--	1
CI9-BZ#206	ND		ug/l	0.00111	--	1
CI10-BZ#209	ND		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	94		30-150
DBOB	94		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-02  
 Client ID: WQ-DPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/01/11 23:18  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.12589		ug/l	0.00111	--	1
CI3-BZ#28	0.11065		ug/l	0.00111	--	1
CI4-BZ#52	0.08193		ug/l	0.00111	--	1
CI5-BZ#101	0.00893		ug/l	0.00111	--	1
CI6-BZ#153	0.00241		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	94		30-150
DBOB	94		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-06  
 Client ID: WQ-TPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 00:01  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	2.0906	E	ug/l	0.00100	--	1
CI3-BZ#18	2.8436	E	ug/l	0.00100	--	1
CI3-BZ#28	2.3287	E	ug/l	0.00100	--	1
CI4-BZ#52	2.0582	E	ug/l	0.00100	--	1
CI4-BZ#44	0.54214	E	ug/l	0.00100	--	1
CI4-BZ#66	0.56087	E	ug/l	0.00100	--	1
CI5-BZ#118	0.16585		ug/l	0.00100	--	1
CI7-BZ#187	0.04181		ug/l	0.00100	--	1
CI6-BZ#128	0.01918		ug/l	0.00100	--	1
CI7-BZ#180	0.03153		ug/l	0.00100	--	1
CI7-BZ#170	0.02164		ug/l	0.00100	--	1
CI8-BZ#195	0.00298		ug/l	0.00100	--	1
CI9-BZ#206	0.00536		ug/l	0.00100	--	1
CI10-BZ#209	ND		ug/l	0.00100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	108		30-150
BZ 198	90		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-06  
**Client ID:** WQ-TPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 00:01  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI5-BZ#101	0.28616	E	ug/l	0.00100	--	1
CI6-BZ#153	0.17175		ug/l	0.00100	--	1
CI5-BZ#105	0.02104		ug/l	0.00100	--	1
CI6-BZ#138	0.05558		ug/l	0.00100	--	1

DBOB	108	30-150
BZ 198	90	30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-06 D  
 Client ID: WQ-TPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 10:52  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	2.9353		ug/l	0.05000	--	50
Cl3-BZ#18	3.8404		ug/l	0.05000	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-06 D  
**Client ID:** WQ-TPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 10:52  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	3.0626		ug/l	0.05000	--	50
CI4-BZ#52	2.9641		ug/l	0.05000	--	50
CI4-BZ#44	0.79005		ug/l	0.05000	--	50
CI4-BZ#66	0.66035		ug/l	0.05000	--	50
CI5-BZ#101	0.37115		ug/l	0.05000	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-07  
**Client ID:** WQ-DPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 02:56  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.96764	E	ug/l	0.00111	--	1
CI3-BZ#18	1.1520	E	ug/l	0.00111	--	1
CI4-BZ#66	0.06685		ug/l	0.00111	--	1
CI5-BZ#105	ND		ug/l	0.00111	--	1
CI6-BZ#128	ND		ug/l	0.00111	--	1
CI7-BZ#180	0.00131		ug/l	0.00111	--	1
CI7-BZ#170	ND		ug/l	0.00111	--	1
CI8-BZ#195	ND		ug/l	0.00111	--	1
CI9-BZ#206	ND		ug/l	0.00111	--	1
CI10-BZ#209	ND		ug/l	0.00111	--	1

DBOB	67	30-150
BZ 198	87	30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-07  
**Client ID:** WQ-DPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 02:56  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	0.56662	E	ug/l	0.00111	--	1
CI4-BZ#52	0.46399	E	ug/l	0.00111	--	1
CI4-BZ#44	0.13368		ug/l	0.00111	--	1
CI5-BZ#101	0.02808		ug/l	0.00111	--	1
CI5-BZ#118	0.00575		ug/l	0.00111	--	1
CI6-BZ#153	0.00824		ug/l	0.00111	--	1
CI6-BZ#138	0.00243		ug/l	0.00111	--	1
CI7-BZ#187	0.00239		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	67		30-150
BZ 198	87		30-150



**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-07 D  
 Client ID: WQ-DPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 13:03  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	1.3342		ug/l	0.01111	--	10

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-07 D  
**Client ID:** WQ-DPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 13:03  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	1.1760		ug/l	0.01111	--	10
Cl3-BZ#28	0.68526		ug/l	0.01111	--	10
Cl4-BZ#52	0.50504		ug/l	0.01111	--	10

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-11  
 Client ID: WQ-TPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 05:07  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	1.7673	E	ug/l	0.00104	--	1
CI3-BZ#18	2.0393	E	ug/l	0.00104	--	1
CI3-BZ#28	1.9055	E	ug/l	0.00104	--	1
CI4-BZ#52	1.8626	E	ug/l	0.00104	--	1
CI4-BZ#44	0.48131	E	ug/l	0.00104	--	1
CI4-BZ#66	0.51467	E	ug/l	0.00104	--	1
CI5-BZ#118	0.15186		ug/l	0.00104	--	1
CI7-BZ#187	0.03979		ug/l	0.00104	--	1
CI6-BZ#128	0.01848		ug/l	0.00104	--	1
CI7-BZ#180	0.03062		ug/l	0.00104	--	1
CI7-BZ#170	0.02073		ug/l	0.00104	--	1
CI8-BZ#195	0.00268		ug/l	0.00104	--	1
CI9-BZ#206	0.00540		ug/l	0.00104	--	1
CI10-BZ#209	ND		ug/l	0.00104	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	100		30-150
BZ 198	91		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 05:07  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI5-BZ#101	0.26376	E	ug/l	0.00104	--	1
CI6-BZ#153	0.15738		ug/l	0.00104	--	1
CI5-BZ#105	0.02082		ug/l	0.00104	--	1
CI6-BZ#138	0.05162		ug/l	0.00104	--	1

DBOB	100	30-150
BZ 198	91	30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11 D  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 15:14  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	2.3584		ug/l	0.05208	--	50
Cl3-BZ#18	3.5664		ug/l	0.05208	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11 D  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 15:14  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	2.8619		ug/l	0.05208	--	50
CI4-BZ#52	2.4993		ug/l	0.05208	--	50
CI4-BZ#44	0.66312		ug/l	0.05208	--	50
CI4-BZ#66	0.57818		ug/l	0.05208	--	50
CI5-BZ#101	0.31651		ug/l	0.05208	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-12  
 Client ID: WQ-TPC-001-062711-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 05:51  
 Analyst: JS

Date Collected: 06/27/11 11:21  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.00453		ug/l	0.00104	--	1
CI3-BZ#18	0.00466		ug/l	0.00104	--	1
CI4-BZ#52	0.00130		ug/l	0.00104	--	1
CI4-BZ#44	ND		ug/l	0.00104	--	1
CI4-BZ#66	ND		ug/l	0.00104	--	1
CI5-BZ#101	ND		ug/l	0.00104	--	1
CI5-BZ#118	ND		ug/l	0.00104	--	1
CI5-BZ#105	ND		ug/l	0.00104	--	1
CI6-BZ#138	ND		ug/l	0.00104	--	1
CI7-BZ#187	ND		ug/l	0.00104	--	1
CI6-BZ#128	ND		ug/l	0.00104	--	1
CI7-BZ#180	ND		ug/l	0.00104	--	1
CI7-BZ#170	ND		ug/l	0.00104	--	1
CI8-BZ#195	ND		ug/l	0.00104	--	1
CI9-BZ#206	ND		ug/l	0.00104	--	1
CI10-BZ#209	ND		ug/l	0.00104	--	1

DBOB 90 30-150  
 BZ 198 97 30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-12  
**Client ID:** WQ-TPC-001-062711-EB  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 05:51  
**Analyst:** JS

**Date Collected:** 06/27/11 11:21  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.00116		ug/l	0.00104	--	1
Cl6-BZ#153	ND		ug/l	0.00104	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	90		30-150
BZ 198	97		30-150



**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-13  
 Client ID: WQ-DPC-001-062711-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 06:35  
 Analyst: JS

Date Collected: 06/27/11 11:21  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.00553		ug/l	0.00108	--	1
CI3-BZ#18	0.00398		ug/l	0.00108	--	1
CI4-BZ#52	0.00121		ug/l	0.00108	--	1
CI4-BZ#44	ND		ug/l	0.00108	--	1
CI4-BZ#66	ND		ug/l	0.00108	--	1
CI5-BZ#101	ND		ug/l	0.00108	--	1
CI5-BZ#118	ND		ug/l	0.00108	--	1
CI5-BZ#105	ND		ug/l	0.00108	--	1
CI6-BZ#138	ND		ug/l	0.00108	--	1
CI7-BZ#187	ND		ug/l	0.00108	--	1
CI6-BZ#128	ND		ug/l	0.00108	--	1
CI7-BZ#180	ND		ug/l	0.00108	--	1
CI7-BZ#170	ND		ug/l	0.00108	--	1
CI8-BZ#195	ND		ug/l	0.00108	--	1
CI9-BZ#206	ND		ug/l	0.00108	--	1
CI10-BZ#209	ND		ug/l	0.00108	--	1

DBOB 94 30-150  
 BZ 198 95 30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-13  
**Client ID:** WQ-DPC-001-062711-EB  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 06:35  
**Analyst:** JS

**Date Collected:** 06/27/11 11:21  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.00138		ug/l	0.00108	--	1
Cl6-BZ#153	ND		ug/l	0.00108	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	94		30-150
BZ 198	95		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-15  
**Client ID:** WQ-TPC-003-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 07:19  
**Analyst:** JS

**Date Collected:** 06/27/11 13:40  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	0.09572		ug/l	0.00105	--	1
CI3-BZ#28	0.13761		ug/l	0.00105	--	1
CI4-BZ#66	0.04475		ug/l	0.00105	--	1
CI5-BZ#118	0.02418		ug/l	0.00105	--	1
CI6-BZ#128	0.00458		ug/l	0.00105	--	1
CI7-BZ#180	0.00386		ug/l	0.00105	--	1
CI7-BZ#170	0.00305		ug/l	0.00105	--	1
CI8-BZ#195	ND		ug/l	0.00105	--	1
CI9-BZ#206	ND		ug/l	0.00105	--	1
CI10-BZ#209	ND		ug/l	0.00105	--	1

DBOB	106	30-150
BZ 198	95	30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-15  
**Client ID:** WQ-TPC-003-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 07:19  
**Analyst:** JS

**Date Collected:** 06/27/11 13:40  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.05443		ug/l	0.00105	--	1
CI4-BZ#52	0.13171		ug/l	0.00105	--	1
CI4-BZ#44	0.04685		ug/l	0.00105	--	1
CI5-BZ#101	0.03916		ug/l	0.00105	--	1
CI6-BZ#153	0.02288		ug/l	0.00105	--	1
CI5-BZ#105	0.00574		ug/l	0.00105	--	1
CI6-BZ#138	0.01242		ug/l	0.00105	--	1
CI7-BZ#187	0.00496		ug/l	0.00105	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	106		30-150
BZ 198	95		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-16  
 Client ID: WQ-DPC-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 08:02  
 Analyst: JS

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.03988		ug/l	0.00107	--	1
CI3-BZ#18	0.07211		ug/l	0.00107	--	1
CI3-BZ#28	0.07361		ug/l	0.00107	--	1
CI4-BZ#66	0.01409		ug/l	0.00107	--	1
CI5-BZ#118	0.00405		ug/l	0.00107	--	1
CI5-BZ#105	ND		ug/l	0.00107	--	1
CI7-BZ#187	ND		ug/l	0.00107	--	1
CI6-BZ#128	ND		ug/l	0.00107	--	1
CI7-BZ#180	ND		ug/l	0.00107	--	1
CI7-BZ#170	ND		ug/l	0.00107	--	1
CI8-BZ#195	ND		ug/l	0.00107	--	1
CI9-BZ#206	ND		ug/l	0.00107	--	1
CI10-BZ#209	ND		ug/l	0.00107	--	1

DBOB 102 30-150  
 BZ 198 104 30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-16  
**Client ID:** WQ-DPC-003-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 08:02  
**Analyst:** JS

**Date Collected:** 06/27/11 13:40  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl4-BZ#52	0.06057		ug/l	0.00107	--	1
Cl4-BZ#44	0.02222		ug/l	0.00107	--	1
Cl5-BZ#101	0.01057		ug/l	0.00107	--	1
Cl6-BZ#153	0.00325		ug/l	0.00107	--	1
Cl6-BZ#138	0.00185		ug/l	0.00107	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	102		30-150
BZ 198	104		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-20  
**Client ID:** WQ-TPC-004-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 15:58  
**Analyst:** JS

**Date Collected:** 06/27/11 14:23  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.26891		ug/l	0.00213	--	2
CI3-BZ#18	0.40817		ug/l	0.00213	--	2
CI5-BZ#105	ND		ug/l	0.00213	--	2
CI7-BZ#187	ND		ug/l	0.00213	--	2
CI6-BZ#128	ND		ug/l	0.00213	--	2
CI7-BZ#180	ND		ug/l	0.00213	--	2
CI7-BZ#170	ND		ug/l	0.00213	--	2
CI8-BZ#195	ND		ug/l	0.00213	--	2
CI9-BZ#206	ND		ug/l	0.00213	--	2
CI10-BZ#209	ND		ug/l	0.00213	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	100		30-150
DBOB	102		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-20  
 Client ID: WQ-TPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 15:58  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	0.32189		ug/l	0.00213	--	2
CI4-BZ#52	0.30327		ug/l	0.00213	--	2
CI4-BZ#44	0.09184		ug/l	0.00213	--	2
CI4-BZ#66	0.07533		ug/l	0.00213	--	2
CI5-BZ#101	0.05759		ug/l	0.00213	--	2
CI5-BZ#118	0.03392		ug/l	0.00213	--	2
CI6-BZ#153	0.03999		ug/l	0.00213	--	2
CI6-BZ#138	0.01554		ug/l	0.00213	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	100		30-150
DBOB	102		30-150



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-21  
 Client ID: WQ-DPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 16:42  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	0.27398		ug/l	0.00208	--	2
CI4-BZ#66	0.02262		ug/l	0.00208	--	2
CI5-BZ#105	ND		ug/l	0.00208	--	2
CI6-BZ#138	ND		ug/l	0.00208	--	2
CI7-BZ#187	ND		ug/l	0.00208	--	2
CI6-BZ#128	ND		ug/l	0.00208	--	2
CI7-BZ#180	ND		ug/l	0.00208	--	2
CI7-BZ#170	ND		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	102		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-21  
**Client ID:** WQ-DPC-004-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 16:42  
**Analyst:** JS

**Date Collected:** 06/27/11 14:23  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.20046		ug/l	0.00208	--	2
CI3-BZ#28	0.17384		ug/l	0.00208	--	2
CI4-BZ#52	0.14098		ug/l	0.00208	--	2
CI4-BZ#44	0.04238		ug/l	0.00208	--	2
CI5-BZ#101	0.01184		ug/l	0.00208	--	2
CI5-BZ#118	0.00460		ug/l	0.00208	--	2
CI6-BZ#153	0.00512		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	102		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-25  
 Client ID: WQ-DPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 10:13  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	1.2098	E	ug/l	0.00112	--	1
CI3-BZ#18	1.3205	E	ug/l	0.00112	--	1
CI3-BZ#28	0.75199	E	ug/l	0.00112	--	1
CI4-BZ#66	0.08217		ug/l	0.00112	--	1
CI5-BZ#118	0.00583		ug/l	0.00112	--	1
CI5-BZ#105	ND		ug/l	0.00112	--	1
CI6-BZ#128	ND		ug/l	0.00112	--	1
CI7-BZ#170	ND		ug/l	0.00112	--	1
CI8-BZ#195	ND		ug/l	0.00112	--	1
CI9-BZ#206	ND		ug/l	0.00112	--	1
CI10-BZ#209	ND		ug/l	0.00112	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

Lab ID: L1109482-25  
 Client ID: WQ-DPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 10:13  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI4-BZ#52	0.54656	E	ug/l	0.00112	--	1
CI4-BZ#44	0.15190		ug/l	0.00112	--	1
CI5-BZ#101	0.03099		ug/l	0.00112	--	1
CI6-BZ#153	0.00791		ug/l	0.00112	--	1
CI6-BZ#138	0.00267		ug/l	0.00112	--	1
CI7-BZ#187	0.00234		ug/l	0.00112	--	1
CI7-BZ#180	0.00127		ug/l	0.00112	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-25 D  
**Client ID:** WQ-DPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 17:25  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	1.4273		ug/l	0.01124	--	10
Cl3-BZ#18	1.3901		ug/l	0.01124	--	10

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11**SAMPLE RESULTS**

**Lab ID:** L1109482-25 D  
**Client ID:** WQ-DPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 17:25  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.90754		ug/l	0.01124	--	10
Cl4-BZ#52	0.59285		ug/l	0.01124	--	10

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8082  
Analytical Date: 07/01/11 20:23  
Analyst: JS

Extraction Method: EPA 3510C  
Extraction Date: 06/30/11 12:59

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-1					
Cl2-BZ#8	ND		ug/l	0.00100	--
Cl3-BZ#18	ND		ug/l	0.00100	--
Cl3-BZ#28	ND		ug/l	0.00100	--
Cl4-BZ#52	ND		ug/l	0.00100	--
Cl4-BZ#44	ND		ug/l	0.00100	--
Cl4-BZ#66	ND		ug/l	0.00100	--
Cl5-BZ#101	ND		ug/l	0.00100	--
Cl5-BZ#118	ND		ug/l	0.00100	--
Cl5-BZ#105	ND		ug/l	0.00100	--
Cl6-BZ#138	ND		ug/l	0.00100	--
Cl7-BZ#187	ND		ug/l	0.00100	--
Cl6-BZ#128	ND		ug/l	0.00100	--
Cl7-BZ#180	ND		ug/l	0.00100	--
Cl7-BZ#170	ND		ug/l	0.00100	--
Cl8-BZ#195	ND		ug/l	0.00100	--
Cl9-BZ#206	ND		ug/l	0.00100	--
Cl10-BZ#209	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	84		30-150
BZ 198	89		30-150

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8082  
 Analytical Date: 07/01/11 20:23  
 Analyst: JS

Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 12:59

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-1					
Cl6-BZ#153	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	84		30-150
BZ 198	89		30-150



### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 QC Batch ID: WG476293-4 WG476293-5 QC Sample: L1109482-06 Client ID: WQ-TPC-002-062711												
Cl2-BZ#8	2.9353	0.109	2.8221	0	Q	2.7510	0	Q	40-140	3		30
Cl3-BZ#18	3.8404	0.109	3.7740	0	Q	3.9021	57		40-140	3		30
Cl5-BZ#118	0.16585	0.109	0.26615	92		0.27482	100		40-140	3		30
Cl7-BZ#187	0.04181	0.109	0.13683	87		0.13682	87		40-140	0		30
Cl6-BZ#128	0.01918	0.109	0.12016	93		0.12086	94		40-140	1		30
Cl7-BZ#180	0.03153	0.109	0.13171	92		0.13254	93		40-140	1		30
Cl7-BZ#170	0.02164	0.109	0.12107	91		0.12105	91		40-140	0		30
Cl8-BZ#195	0.00298	0.109	0.10092	90		0.09973	89		40-140	1		30
Cl9-BZ#206	0.00536	0.109	0.11492	101		0.11508	101		40-140	0		30
Cl10-BZ#209	ND	0.109	0.09915	91		0.09959	92		40-140	0		30
Cl3-BZ#28	3.0626	0.109	2.9592	0	Q	3.0443	0	Q	40-140	3		30
Cl4-BZ#52	2.9641	0.109	2.8534	0	Q	2.8671	0	Q	40-140	0		30
Cl4-BZ#44	0.79005	0.109	0.82810	35	Q	0.83734	44		40-140	1		30
Cl4-BZ#66	0.66035	0.109	0.73478	68		0.74168	75		40-140	1		30
Cl5-BZ#101	0.37115	0.109	0.43712	61		0.44255	66		40-140	1		30
Cl6-BZ#153	0.17175	0.109	0.24502	67		0.24432	67		40-140	0		30
Cl5-BZ#105	0.02104	0.109	0.10890	81		0.10960	81		40-140	1		30
Cl6-BZ#138	0.05558	0.109	0.13160	70		0.14343	81		40-140	9		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25    QC Batch ID: WG476293-4 WG476293-5    QC Sample: L1109482-06    Client ID: WQ-TPC-002-062711

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
DBOB	108		79		30-150

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 QC Batch ID: WG476293-6 WG476293-7 QC Sample: L1109482-07 Client ID: WQ-DPC-002-062711												
Cl3-BZ#18	1.3342	0.107	1.3584	23	Q	1.7988	432	Q	40-140	28		30
Cl4-BZ#66	0.06685	0.107	0.16643	93		0.19529	119		40-140	16		30
Cl5-BZ#105	ND	0.107	0.11011	103		0.11672	108		40-140	6		30
Cl6-BZ#128	ND	0.107	0.10538	98		0.11181	104		40-140	6		30
Cl7-BZ#180	0.00131	0.107	0.10493	97		0.11168	103		40-140	6		30
Cl7-BZ#170	ND	0.107	0.10456	98		0.11070	103		40-140	6		30
Cl8-BZ#195	ND	0.107	0.10151	95		0.10760	100		40-140	6		30
Cl9-BZ#206	ND	0.107	0.11466	107		0.12194	113		40-140	6		30
Cl10-BZ#209	ND	0.107	0.10252	96		0.10901	101		40-140	6		30
Cl2-BZ#8	1.1760	0.107	1.1753	0	Q	1.4939	296	Q	40-140	24		30
Cl3-BZ#28	0.68526	0.107	0.80707	114		1.0252	316	Q	40-140	97	Q	30
Cl4-BZ#52	0.50504	0.107	0.59061	80		0.71136	192	Q	40-140	120	Q	30
Cl4-BZ#44	0.13368	0.107	0.21336	74		0.25302	111		40-140	17		30
Cl5-BZ#101	0.02808	0.107	0.12926	95		0.14197	106		40-140	9		30
Cl5-BZ#118	0.00575	0.107	0.11570	103		0.12310	109		40-140	6		30
Cl6-BZ#153	0.00824	0.107	0.10134	87		0.10864	93		40-140	7		30
Cl6-BZ#138	0.00243	0.107	0.11062	101		0.11865	108		40-140	7		30
Cl7-BZ#187	0.00239	0.107	0.10077	92		0.10783	98		40-140	7		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25    QC Batch ID: WG476293-6 WG476293-7    QC Sample: L1109482-07    Client ID: WQ-DPC-002-062711

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
BZ 198	97		102		30-150
DBOB	75		100		30-150

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3								
CI2-BZ#8	74		74		40-140	1		30
CI3-BZ#18	73		71		40-140	2		30
CI3-BZ#28	86		83		40-140	3		30
CI4-BZ#52	78		74		40-140	5		30
CI4-BZ#44	81		78		40-140	3		30
CI4-BZ#66	88		84		40-140	5		30
CI5-BZ#101	84		80		40-140	5		30
CI5-BZ#118	96		93		40-140	3		30
CI5-BZ#105	100		97		40-140	3		30
CI6-BZ#138	96		93		40-140	3		30
CI7-BZ#187	89		86		40-140	4		30
CI6-BZ#128	98		95		40-140	3		30
CI7-BZ#180	98		96		40-140	1		30
CI7-BZ#170	99		96		40-140	2		30
CI8-BZ#195	98		95		40-140	3		30
CI9-BZ#206	111		108		40-140	3		30
CI10-BZ#209	100		96		40-140	4		30

### Lab Control Sample Analysis

#### Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR

**Lab Number:** L1109482

**Project Number:** TO-0010-04

**Report Date:** 07/12/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		95		30-150
DBOB	88		88		30-150

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3

Cl6-BZ#153	84		82		40-140	2		30
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Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		95		30-150
DBOB	88		88		30-150

# INORGANICS & MISCELLANEOUS

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

**SAMPLE RESULTS**

Lab ID: L1109482-04  
 Client ID: WQ-TUR-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.5		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES





Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-05  
 Client ID: WQ-TSS-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	6.20		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-09  
 Client ID: WQ-TUR-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	14		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-10  
 Client ID: WQ-TSS-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	28.0		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-18  
 Client ID: WQ-TUR-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	5.3		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-19  
 Client ID: WQ-TSS-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.50		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-23  
 Client ID: WQ-TUR-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	6.3		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-24  
 Client ID: WQ-TSS-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.50		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

**SAMPLE RESULTS**

**Lab ID:** L1109482-27  
**Client ID:** WQ-TUR-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	15		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES





Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## SAMPLE RESULTS

Lab ID: L1109482-28  
 Client ID: WQ-TSS-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	24.0		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 04,09,18,23,27 Batch: WG476135-1									
Turbidity	ND	NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 05,10,19,24,28 Batch: WG476453-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 07/12/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 04,09,18,23,27 Batch: WG476135-2								
Turbidity	100		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 05,10,19,24,28 Batch: WG476453-2								
Solids, Total Suspended	99		-		80-120	-		20

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 07/12/11

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

## Cooler Information Custody Seal

## Cooler

A	Absent
D	Absent
B	Absent
C	Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109482-01A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-01B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02C	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-02D	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-03A	Plastic 500ml HNO3 preserved	D	<2	15.9	Y	Absent	HOLD(14)
L1109482-04A	Plastic 1000ml unpreserved	D	7	15.9	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-05A	Plastic 1000ml unpreserved	D	7	15.9	Y	Absent	A2-TSS-160(7)
L1109482-06A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06C	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06D	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07C	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-07D	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-07E	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-07F	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-07G	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07H	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-08A	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)
L1109482-08B	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)

\*Values in parentheses indicate holding time in days

Project Name: NEW BEDFORD HARBOR

Project Number: TO-0010-04

Lab Number: L1109482

Report Date: 07/12/11

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109482-09A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-10A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TSS-160(7)
L1109482-11A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-11B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-12A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-12B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13C	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-13D	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-14A	Plastic 500ml HNO3 preserved	B	<2	13.4	Y	Absent	HOLD(14)
L1109482-15A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-15B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16C	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-16D	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-17A	Plastic 500ml HNO3 preserved	B	<2	13.4	Y	Absent	HOLD(14)
L1109482-18A	Plastic 1000ml unpreserved	B	7	13.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-19A	Plastic 1000ml unpreserved	B	7	13.4	Y	Absent	A2-TSS-160(7)
L1109482-20A	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-20B	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21A	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21B	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21C	Glass 60mL unpreserved	C	N/A	16.9	Y	Absent	FILTER()
L1109482-21D	Glass 60mL unpreserved	C	N/A	16.9	Y	Absent	FILTER()
L1109482-22A	Plastic 500ml HNO3 preserved	C	<2	16.9	Y	Absent	HOLD(14)
L1109482-23A	Plastic 1000ml unpreserved	C	7	16.9	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-24A	Plastic 1000ml unpreserved	C	7	16.9	Y	Absent	A2-TSS-160(7)
L1109482-25A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-25B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-25C	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-25D	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-26A	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)
L1109482-27A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-28A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- |          |  |
|----------|--|
| <b>A</b> | - Spectra identified as "Aldol Condensation Product".  |
| <b>B</b> | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. |
| <b>C</b> | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.   |
| <b>D</b> | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.  |
| <b>E</b> | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.   |
| <b>G</b> | - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.   |
| <b>H</b> | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.   |
| <b>I</b> | - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.   |
| <b>M</b> | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.   |
| <b>P</b> | - The RPD between the results for the two columns exceeds the method-specified criteria.   |
| <b>Q</b> | - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less   |

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 07/12/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.





## Certificate/Approval Program Summary

Last revised March 23, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, EPA 200.8, SM2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 7470A, 9040B, 6020, 9010B, 9014 Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B, 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 9014, 9040B, 120.1, SM2510B, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.





# MANSFIELD CHAIN OF CUSTODY

PAGE 2 OF 4

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

## Client Information

Client: **WOODS HOLE GROUP, INC.**

Address: **81 TECHNOLOGY PARK DR.  
E. PALMOUTH, MA 02536**

Phone: **508-540-8080**

Fax: **508-540-1001**

Email: **DWALSH@WHGP.COM**

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials															
		Date	Time																	
11	WQ-TPC-002-062711-REP	6/27/11	11:06	SW	DRW	X														
6	WQ-TPC-002-062711-MS					X														
	WQ-TPC-002-062711-MSD					X														
25	WQ-DPC-002-062711-REP						X													
7	WQ-DPC-002-062711-MS						X													
	WQ-DPC-002-062711-MSD						X													
8	WQ-MET-002-062711-MSMSD							X												
26	WQ-MET-002-062711-REP							X												
27	WQ-TUR-002-062711-REP								X											
28	WQ-TSS-002-062711-REP													X						

Date Rec'd in Lab:

ALPHA Job #: **L1109482**

Report Information - Data Deliverables

FAX  EMAIL

ADEx  Add'l Deliverables

Billing Information

Same as Client info PO #:

## Project Information

Project Name: **NEWBEDFORD ENV. MONITORING**

Project Location: **NEWBEDFORD, MA**

Project #: **TO-0010-04**

Project Manager: **DAVE WALSH**

ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: Time:

## Regulatory Requirements/Report Limits

State/Fed Program Criteria

**ANALYSIS**

TPC (Total PCB Cong)  
DPC (Dissolved PCB Cong)  
METALS  
TURBIDITY  
TSS

**SAMPLE HANDLING**

Filtration \_\_\_\_\_

Done  
 Not needed  
 Lab to do  
 Preservation  
 Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

Container Type	A	A	P	P	P
Preservative	A	A	C	A	A

Relinquished By: *William J. [Signature]* Date/Time: **06/27/11 16:40**

Received By: *[Signature]* Date/Time: **6/27/11 1640**

C-94

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
Delivery Order 0010-04  
March 2012



# MANSFIELD CHAIN OF CUSTODY

PAGE 3 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Project Information

Project Name: **NEW BEDFORD ENV. MONITORING**  
 Project Location: **NEW BEDFORD, MA**  
 Project #: **TO-0010-04**  
 Project Manager: **DAVE WALSH**  
 ALPHA Quote #:

Date Rec'd in Lab:

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: **L1100482**

## Billing Information

Same as Client info PO #:

## Client Information

Client: **WOODS HOLE GROUP, INC.**  
 Address: **81 TECHNOLOGY PARK DR. E. PALMOUTH, MA 02536**  
 Phone: **508-540-8080**  
 Fax: **508-540-1001**  
 Email: **DWALSH@WHGRP.COM**

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: Time:

## Regulatory Requirements/Report Limits

State Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS					SAMPLE HANDLING	TOTAL # BOTTLES	
		Date	Time			TPC (TOTAL PCB Cong)	DPC (DISSOLVED PCB Cong)	METALS	Turbidity	TSS			
14	EB-001-062711	6/27/11	11:21	SW	DRW	X	X	X				EQUIPMENT BLANK	5
15	WQ-TPC-003-062711		13:40			X						FLOOD REF	2
16	WQ-DPC-003-062711		13:40				X						2
17	WQ-MET-003-062711		13:40					X					1
18	WQ-TUR-003-062711		13:40						X				1
19	WQ-TSS-003-062711		13:40							X			1
20	WQ-TPC-004-062711		14:23			X						FLOOD SAMPLE	2
21	WQ-DPC-004-062711		14:23				X						2
22	WQ-MET-004-062711		14:23					X					1
23	WQ-TUR-004-062711		14:23						X				1

**SAMPLE HANDLING**  
 Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do Preservation  
 Lab to do  
 (Please specify below)

Container Type: **A A P P P**  
 Preservative: **A A C A A**

Relinquished By: *William J. [Signature]* Date/Time: **06/27/11 16:40**  
 Received By: *[Signature]* Date/Time: **6/27/11 1640**

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. Delivery Order 0010-04 March 2012



# MANSFIELD CHAIN OF CUSTODY

PAGE 4 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Client Information

Client: WOODS HOLE GROUP, INC.  
 Address: 81 TECHNOLOGY PARK DR.  
E. PALMOUTH, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1001  
 Email: DWALSH@WHGRP.COM  
 These samples have been previously analyzed by Alpha

### Project Information

Project Name: NEW BEDFORD ENV. MONITORING  
 Project Location: NEW BEDFORD, MA  
 Project #: TO-0010-04  
 Project Manager: DAVE WALSH  
 ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab: \_\_\_\_\_

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: L1109482

### Billing Information

Same as Client info PO #: \_\_\_\_\_

### Regulatory Requirements/Report Limits

State/Fed Program: \_\_\_\_\_ Criteria: \_\_\_\_\_

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials											SAMPLE HANDLING	TOTAL # BOTTLES	
		Date	Time															
-24	WQ-TSS-004-062711	6/27/11	14:23	SW	DRW	X												1

ANALYSIS  
TSS

**SAMPLE HANDLING**  
 Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do  
 Preservation  
 Lab to do  
(Please specify below)

Container Type: P  
 Preservative: A

Relinquished By: [Signature] Date/Time: 06/27/11 16:40  
 Received By: [Signature] Date/Time: 6/27/11 1640  
 C-96

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 Delivery Order 0010-04  
 March 2012



## ANALYTICAL REPORT

Lab Number:	L1109501
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD ENV. MONITORING
Project Number:	TO-0010-04
Report Date:	07/13/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1109501-01	WQ-TPC-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-02	WQ-DPC-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-03	WQ-MET-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-04	WQ-TUR-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-05	WQ-TSS-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-06	WQ-TPC-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-07	WQ-DPC-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-08	WQ-MET-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-09	WQ-TUR-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-10	WQ-TSS-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-11	WQ-TPC-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-12	WQ-DPC-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-13	WQ-MET-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-14	WQ-TUR-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-15	WQ-TSS-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-16	WQ-TPC-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-17	WQ-DPC-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-18	WQ-MET-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-19	WQ-TPC-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-20	WQ-DPC-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-21	WQ-MET-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-22	WQ-TUR-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-23	WQ-TSS-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-24	WQ-TPC-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-25	WQ-DPC-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-26	WQ-MET-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-27	WQ-TUR-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-28	WQ-TSS-004-062811	NEW BEDFORD, MA	06/28/11 13:15



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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### Sample Receipt

Samples were received intact on June 28, 2011. Upon receipt, samples that were marked dissolved on the chain of custody were filtered through a 0.45 micron filter thereby creating the dissolved sample.

Equipment blank IDs were edited with client authorization to ensure unique IDs for each analysis. These IDs were created to be consistent with the nomenclature of the field samples.

### PCB Congeners by 8082

The PCB Congener analysis was performed utilizing dual column confirmation with the higher of the two values reported. Technical judgment was employed in the case of an observed interference. In each case that

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

### Case Narrative (continued)

interference was observed on one column, the value from the opposite column was reported regardless of whether it was the higher or lower value.

Samples L1109501-06, 07, 11, 12, 19, 24 and 25 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

The WG476527-4/-5 MS/MSD recoveries, performed on L1109501-06, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476527-5 MSD RPDs, performed on L1109501-06, are above the acceptance criteria for CI4-BZ#52 (37%) and CI4-BZ#66(32%).

The WG476527-6/-7 MS/MSD recoveries, performed on L1109501-07, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476527-7 MSD RPDs, performed on L1109501-07, are above the acceptance criteria for CI3-BZ#28 (38%), CI4-BZ#52 (48%) and CI4-BZ#44 (31%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 07/13/11

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-01  
 Client ID: WQ-TPC-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 16:05  
 Analyst: JS

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.04294		ug/l	0.00102	--	1
CI3-BZ#18	0.05593		ug/l	0.00102	--	1
CI4-BZ#66	0.00884		ug/l	0.00102	--	1
CI5-BZ#118	0.00232		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	87		30-150
DBOB	88		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-01  
**Client ID:** WQ-TPC-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 16:05  
**Analyst:** JS

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.03947		ug/l	0.00102	--	1
CI4-BZ#52	0.04347		ug/l	0.00102	--	1
CI4-BZ#44	0.01087		ug/l	0.00102	--	1
CI5-BZ#101	0.0050		ug/l	0.00102	--	1
CI6-BZ#153	0.00256		ug/l	0.00102	--	1
CI6-BZ#138	0.00115		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	87		30-150
DBOB	88		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-02  
**Client ID:** WQ-DPC-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 16:49  
**Analyst:** JS

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.04678		ug/l	0.00102	--	1
CI3-BZ#18	0.06375		ug/l	0.00102	--	1
CI3-BZ#28	0.03720		ug/l	0.00102	--	1
CI4-BZ#66	0.00626		ug/l	0.00102	--	1
CI5-BZ#118	0.00175		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI6-BZ#138	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	89		30-150
DBOB	91		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-02  
 Client ID: WQ-DPC-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 16:49  
 Analyst: JS

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI4-BZ#52	0.04005		ug/l	0.00102	--	1
CI4-BZ#44	0.01007		ug/l	0.00102	--	1
CI5-BZ#101	0.00379		ug/l	0.00102	--	1
CI6-BZ#153	0.00170		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	89		30-150
DBOB	91		30-150



**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-06  
 Client ID: WQ-TPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 01:21  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	1.0421		ug/l	0.01042	--	10
CI3-BZ#18	1.4164		ug/l	0.01042	--	10
CI5-BZ#105	ND		ug/l	0.01042	--	10
CI7-BZ#187	0.02499		ug/l	0.01042	--	10
CI6-BZ#128	ND		ug/l	0.01042	--	10
CI7-BZ#180	0.01555		ug/l	0.01042	--	10
CI7-BZ#170	ND		ug/l	0.01042	--	10
CI8-BZ#195	ND		ug/l	0.01042	--	10
CI9-BZ#206	ND		ug/l	0.01042	--	10
CI10-BZ#209	ND		ug/l	0.01042	--	10

DBOB 95 30-150  
 BZ 198 106 30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-06  
 Client ID: WQ-TPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 01:21  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	1.1577		ug/l	0.01042	--	10
CI4-BZ#52	1.2457		ug/l	0.01042	--	10
CI4-BZ#44	0.31458		ug/l	0.01042	--	10
CI4-BZ#66	0.24988		ug/l	0.01042	--	10
CI5-BZ#101	0.13244		ug/l	0.01042	--	10
CI5-BZ#118	0.07040		ug/l	0.01042	--	10
CI6-BZ#153	0.09833		ug/l	0.01042	--	10
CI6-BZ#138	0.02676		ug/l	0.01042	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	95		30-150
BZ 198	106		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-07  
**Client ID:** WQ-DPC-002-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/07/11 22:23  
**Analyst:** JS

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.50223		ug/l	0.00532	--	5
CI3-BZ#18	0.51264		ug/l	0.00532	--	5
CI4-BZ#66	0.03487		ug/l	0.00532	--	5
CI5-BZ#118	ND		ug/l	0.00532	--	5
CI5-BZ#105	ND		ug/l	0.00532	--	5
CI6-BZ#138	ND		ug/l	0.00532	--	5
CI7-BZ#187	ND		ug/l	0.00532	--	5
CI6-BZ#128	ND		ug/l	0.00532	--	5
CI7-BZ#180	ND		ug/l	0.00532	--	5
CI7-BZ#170	ND		ug/l	0.00532	--	5
CI8-BZ#195	ND		ug/l	0.00532	--	5
CI9-BZ#206	ND		ug/l	0.00532	--	5
CI10-BZ#209	ND		ug/l	0.00532	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	83		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-07  
 Client ID: WQ-DPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/07/11 22:23  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.34642		ug/l	0.00532	--	5
CI4-BZ#52	0.27594		ug/l	0.00532	--	5
CI4-BZ#44	0.06733		ug/l	0.00532	--	5
CI5-BZ#101	0.01359		ug/l	0.00532	--	5
CI6-BZ#153	0.00569		ug/l	0.00532	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	83		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-11  
 Client ID: WQ-TPC-002-062811-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/12/11 20:33  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.58113		ug/l	0.01020	--	10
CI3-BZ#18	0.86630		ug/l	0.01020	--	10
CI3-BZ#28	0.45713		ug/l	0.01020	--	10
CI4-BZ#52	0.51798		ug/l	0.01020	--	10
CI4-BZ#44	0.12249		ug/l	0.01020	--	10
CI4-BZ#66	0.10676		ug/l	0.01020	--	10
CI5-BZ#118	0.03203		ug/l	0.01020	--	10
CI5-BZ#105	ND		ug/l	0.01020	--	10
CI7-BZ#187	0.01602		ug/l	0.01020	--	10
CI6-BZ#128	ND		ug/l	0.01020	--	10
CI7-BZ#180	0.01708		ug/l	0.01020	--	10
CI7-BZ#170	ND		ug/l	0.01020	--	10
CI8-BZ#195	ND		ug/l	0.01020	--	10
CI9-BZ#206	ND		ug/l	0.01020	--	10
CI10-BZ#209	ND		ug/l	0.01020	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	91		30-150
BZ 198	103		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-11

Date Collected: 06/28/11 10:35

Client ID: WQ-TPC-002-062811-REP

Date Received: 06/28/11

Sample Location: NEW BEDFORD, MA

Field Prep: Not Specified

Matrix: Water

Extraction Method: EPA 3510C

Analytical Method: 1,8082

Extraction Date: 07/01/11 14:20

Analytical Date: 07/12/11 20:33

Analyst: JS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl5-BZ#101	0.06604		ug/l	0.01020	--	10
Cl6-BZ#153	0.04537		ug/l	0.01020	--	10
Cl6-BZ#138	0.01986		ug/l	0.01020	--	10

DBOB

91

30-150

BZ 198

103

30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-12  
 Client ID: WQ-DPC-002-062811-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 04:16  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.41074		ug/l	0.00526	--	5
CI3-BZ#18	0.53387		ug/l	0.00526	--	5
CI4-BZ#66	0.02686		ug/l	0.00526	--	5
CI5-BZ#105	ND		ug/l	0.00526	--	5
CI6-BZ#138	ND		ug/l	0.00526	--	5
CI7-BZ#187	ND		ug/l	0.00526	--	5
CI6-BZ#128	ND		ug/l	0.00526	--	5
CI7-BZ#180	ND		ug/l	0.00526	--	5
CI7-BZ#170	ND		ug/l	0.00526	--	5
CI8-BZ#195	ND		ug/l	0.00526	--	5
CI9-BZ#206	ND		ug/l	0.00526	--	5
CI10-BZ#209	ND		ug/l	0.00526	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	99		30-150
DBOB	99		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-12  
 Client ID: WQ-DPC-002-062811-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 04:16  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.25468		ug/l	0.00526	--	5
CI4-BZ#52	0.22178		ug/l	0.00526	--	5
CI4-BZ#44	0.05591		ug/l	0.00526	--	5
CI5-BZ#101	0.01050		ug/l	0.00526	--	5
CI5-BZ#118	ND		ug/l	0.00526	--	5
CI6-BZ#153	ND		ug/l	0.00526	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	99		30-150
DBOB	99		30-150



**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-16  
 Client ID: WQ-TPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 21:56  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.00327		ug/l	0.00102	--	1
CI3-BZ#28	ND		ug/l	0.00102	--	1
CI4-BZ#52	0.00243		ug/l	0.00102	--	1
CI4-BZ#44	ND		ug/l	0.00102	--	1
CI4-BZ#66	ND		ug/l	0.00102	--	1
CI5-BZ#101	ND		ug/l	0.00102	--	1
CI5-BZ#118	ND		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI6-BZ#138	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	0.00427		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-16

Date Collected: 06/28/11 12:45

Client ID: WQ-TPC-001-062811-EB

Date Received: 06/28/11

Sample Location: NEW BEDFORD, MA

Field Prep: Not Specified

Matrix: Water

Extraction Method: EPA 3510C

Analytical Method: 1,8082

Extraction Date: 07/01/11 14:20

Analytical Date: 07/06/11 21:56

Analyst: JS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#18	0.00315		ug/l	0.00102	--	1
Cl6-BZ#153	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-17  
 Client ID: WQ-DPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 22:39  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.00246		ug/l	0.00108	--	1
CI3-BZ#18	0.00276		ug/l	0.00108	--	1
CI3-BZ#28	ND		ug/l	0.00108	--	1
CI4-BZ#52	0.00151		ug/l	0.00108	--	1
CI4-BZ#44	ND		ug/l	0.00108	--	1
CI4-BZ#66	ND		ug/l	0.00108	--	1
CI5-BZ#101	ND		ug/l	0.00108	--	1
CI5-BZ#118	ND		ug/l	0.00108	--	1
CI5-BZ#105	ND		ug/l	0.00108	--	1
CI6-BZ#138	ND		ug/l	0.00108	--	1
CI7-BZ#187	ND		ug/l	0.00108	--	1
CI6-BZ#128	ND		ug/l	0.00108	--	1
CI7-BZ#180	ND		ug/l	0.00108	--	1
CI7-BZ#170	ND		ug/l	0.00108	--	1
CI8-BZ#195	ND		ug/l	0.00108	--	1
CI9-BZ#206	ND		ug/l	0.00108	--	1
CI10-BZ#209	ND		ug/l	0.00108	--	1

DBOB	103	30-150
BZ 198	98	30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-17

Date Collected: 06/28/11 12:45

Client ID: WQ-DPC-001-062811-EB

Date Received: 06/28/11

Sample Location: NEW BEDFORD, MA

Field Prep: Not Specified

Matrix: Water

Extraction Method: EPA 3510C

Analytical Method: 1,8082

Extraction Date: 07/01/11 14:20

Analytical Date: 07/06/11 22:39

Analyst: JS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl6-BZ#153	ND		ug/l	0.00108	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	103		30-150
BZ 198	98		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-19  
**Client ID:** WQ-TPC-003-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 05:00  
**Analyst:** JS

**Date Collected:** 06/28/11 12:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.17500		ug/l	0.00208	--	2
CI3-BZ#18	0.31034		ug/l	0.00208	--	2
CI4-BZ#66	0.06279		ug/l	0.00208	--	2
CI6-BZ#128	0.00614		ug/l	0.00208	--	2
CI7-BZ#170	0.00379		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	104		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-19  
 Client ID: WQ-TPC-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 05:00  
 Analyst: JS

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.27250		ug/l	0.00208	--	2
CI4-BZ#52	0.26158		ug/l	0.00208	--	2
CI4-BZ#44	0.08063		ug/l	0.00208	--	2
CI5-BZ#101	0.04688		ug/l	0.00208	--	2
CI5-BZ#118	0.02716		ug/l	0.00208	--	2
CI6-BZ#153	0.03089		ug/l	0.00208	--	2
CI5-BZ#105	0.00638		ug/l	0.00208	--	2
CI6-BZ#138	0.01508		ug/l	0.00208	--	2
CI7-BZ#187	0.00675		ug/l	0.00208	--	2
CI7-BZ#180	0.00494		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	104		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-20  
 Client ID: WQ-DPC-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/07/11 00:07  
 Analyst: JS

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.12976		ug/l	0.00105	--	1
CI3-BZ#18	0.15488		ug/l	0.00105	--	1
CI4-BZ#66	0.01803		ug/l	0.00105	--	1
CI5-BZ#118	0.00383		ug/l	0.00105	--	1
CI5-BZ#105	ND		ug/l	0.00105	--	1
CI7-BZ#187	ND		ug/l	0.00105	--	1
CI6-BZ#128	ND		ug/l	0.00105	--	1
CI7-BZ#180	ND		ug/l	0.00105	--	1
CI7-BZ#170	ND		ug/l	0.00105	--	1
CI8-BZ#195	ND		ug/l	0.00105	--	1
CI9-BZ#206	ND		ug/l	0.00105	--	1
CI10-BZ#209	ND		ug/l	0.00105	--	1

DBOB 105 30-150  
 BZ 198 92 30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-20  
**Client ID:** WQ-DPC-003-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/07/11 00:07  
**Analyst:** JS

**Date Collected:** 06/28/11 12:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.12994		ug/l	0.00105	--	1
CI4-BZ#52	0.10401		ug/l	0.00105	--	1
CI4-BZ#44	0.03167		ug/l	0.00105	--	1
CI5-BZ#101	0.01371		ug/l	0.00105	--	1
CI6-BZ#153	0.00392		ug/l	0.00105	--	1
CI6-BZ#138	0.00166		ug/l	0.00105	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	105		30-150
BZ 198	92		30-150



**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-24  
 Client ID: WQ-TPC-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 05:43  
 Analyst: JS

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.44247		ug/l	0.00515	--	5
CI3-BZ#18	0.62681		ug/l	0.00515	--	5
CI5-BZ#105	ND		ug/l	0.00515	--	5
CI7-BZ#187	0.00675		ug/l	0.00515	--	5
CI6-BZ#128	ND		ug/l	0.00515	--	5
CI7-BZ#180	ND		ug/l	0.00515	--	5
CI7-BZ#170	ND		ug/l	0.00515	--	5
CI8-BZ#195	ND		ug/l	0.00515	--	5
CI9-BZ#206	ND		ug/l	0.00515	--	5
CI10-BZ#209	ND		ug/l	0.00515	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	100		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-24  
**Client ID:** WQ-TPC-004-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 05:43  
**Analyst:** JS

**Date Collected:** 06/28/11 13:15  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.38325		ug/l	0.00515	--	5
CI4-BZ#52	0.35041		ug/l	0.00515	--	5
CI4-BZ#44	0.09561		ug/l	0.00515	--	5
CI4-BZ#66	0.06387		ug/l	0.00515	--	5
CI5-BZ#101	0.03614		ug/l	0.00515	--	5
CI5-BZ#118	0.01885		ug/l	0.00515	--	5
CI6-BZ#153	0.02510		ug/l	0.00515	--	5
CI6-BZ#138	0.00945		ug/l	0.00515	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	100		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-25  
**Client ID:** WQ-DPC-004-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 06:27  
**Analyst:** JS

**Date Collected:** 06/28/11 13:15  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.29583		ug/l	0.00211	--	2
CI3-BZ#18	0.38334		ug/l	0.00211	--	2
CI4-BZ#66	0.01779		ug/l	0.00211	--	2
CI5-BZ#118	0.00282		ug/l	0.00211	--	2
CI5-BZ#105	ND		ug/l	0.00211	--	2
CI6-BZ#138	ND		ug/l	0.00211	--	2
CI7-BZ#187	ND		ug/l	0.00211	--	2
CI6-BZ#128	ND		ug/l	0.00211	--	2
CI7-BZ#180	ND		ug/l	0.00211	--	2
CI7-BZ#170	ND		ug/l	0.00211	--	2
CI8-BZ#195	ND		ug/l	0.00211	--	2
CI9-BZ#206	ND		ug/l	0.00211	--	2
CI10-BZ#209	ND		ug/l	0.00211	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	97		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-25  
**Client ID:** WQ-DPC-004-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 06:27  
**Analyst:** JS

**Date Collected:** 06/28/11 13:15  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.17585		ug/l	0.00211	--	2
CI4-BZ#52	0.13410		ug/l	0.00211	--	2
CI4-BZ#44	0.03698		ug/l	0.00211	--	2
CI5-BZ#101	0.00784		ug/l	0.00211	--	2
CI6-BZ#153	0.00324		ug/l	0.00211	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	97		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8082  
 Analytical Date: 07/06/11 11:43  
 Analyst: JS

Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-1					
Cl2-BZ#8	ND		ug/l	0.00100	--
Cl3-BZ#18	ND		ug/l	0.00100	--
Cl3-BZ#28	ND		ug/l	0.00100	--
Cl4-BZ#52	ND		ug/l	0.00100	--
Cl4-BZ#44	ND		ug/l	0.00100	--
Cl4-BZ#66	ND		ug/l	0.00100	--
Cl5-BZ#101	ND		ug/l	0.00100	--
Cl5-BZ#118	ND		ug/l	0.00100	--
Cl5-BZ#105	ND		ug/l	0.00100	--
Cl6-BZ#138	ND		ug/l	0.00100	--
Cl7-BZ#187	ND		ug/l	0.00100	--
Cl6-BZ#128	ND		ug/l	0.00100	--
Cl7-BZ#180	ND		ug/l	0.00100	--
Cl7-BZ#170	ND		ug/l	0.00100	--
Cl8-BZ#195	ND		ug/l	0.00100	--
Cl9-BZ#206	ND		ug/l	0.00100	--
Cl10-BZ#209	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	95		30-150

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8082  
 Analytical Date: 07/06/11 11:43  
 Analyst: JS

Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-1					
Cl6-BZ#153	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	95		30-150

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-4 WG476527-5 QC Sample: L1109501-06 Client ID: WQ-TPC-002-062811												
Cl2-BZ#8	1.0421	0.102	0.74845	0	Q	1.0089	0	Q	40-140	30		30
Cl3-BZ#18	1.4164	0.102	1.0403	0	Q	1.0974	0	Q	40-140	5		30
Cl5-BZ#105	ND	0.102	0.09389	92		0.09417	92		40-140	0		30
Cl7-BZ#187	0.02499	0.102	0.10733	81		0.10981	83		40-140	2		30
Cl6-BZ#128	ND	0.102	0.10156	100		0.10243	100		40-140	1		30
Cl7-BZ#180	0.01555	0.102	0.10645	89		0.11150	94		40-140	5		30
Cl7-BZ#170	ND	0.102	0.10332	101		0.10201	100		40-140	1		30
Cl8-BZ#195	ND	0.102	0.09740	95		0.09419	92		40-140	3		30
Cl9-BZ#206	ND	0.102	0.10985	108		0.10972	108		40-140	0		30
Cl10-BZ#209	ND	0.102	0.10687	105		0.10716	105		40-140	0		30
Cl3-BZ#28	1.1577	0.102	0.81968	0	Q	1.0783	0	Q	40-140	27		30
Cl4-BZ#52	1.2457	0.102	0.81124	0	Q	1.1785	0	Q	40-140	37	Q	30
Cl4-BZ#44	0.31458	0.102	0.26797	0	Q	0.35790	42		40-140	29		30
Cl4-BZ#66	0.24988	0.102	0.22744	0	Q	0.31344	62		40-140	32	Q	30
Cl5-BZ#101	0.13244	0.102	0.15368	21	Q	0.19963	66		40-140	26		30
Cl5-BZ#118	0.07040	0.102	0.12708	56		0.15188	80		40-140	18		30
Cl6-BZ#153	0.09833	0.102	0.13389	35	Q	0.16437	65		40-140	20		30
Cl6-BZ#138	0.02676	0.102	0.11645	88		0.12084	92		40-140	4		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-4 WG476527-5 QC Sample: L1109501-06 Client ID: WQ-TPC-002-062811

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
BZ 198	102		100		30-150
DBOB	88		88		30-150



### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-6 WG476527-7 QC Sample: L1109501-07 Client ID: WQ-DPC-002-062811												
Cl2-BZ#8	0.50223	0.111	0.66500	146	Q	0.80011	286	Q	40-140	18		30
Cl3-BZ#18	0.51264	0.111	0.88854	338	Q	0.85028	324	Q	40-140	4		30
Cl4-BZ#66	0.03487	0.111	0.14576	100		0.15414	114		40-140	6		30
Cl5-BZ#118	ND	0.111	0.12002	108		0.11686	112		40-140	3		30
Cl5-BZ#105	ND	0.111	0.11618	104		0.11067	106		40-140	5		30
Cl6-BZ#138	ND	0.111	0.12002	108		0.11667	112		40-140	3		30
Cl7-BZ#187	ND	0.111	0.10882	98		0.10428	100		40-140	4		30
Cl6-BZ#128	ND	0.111	0.11602	104		0.11245	108		40-140	3		30
Cl7-BZ#180	ND	0.111	0.12428	112		0.11823	114		40-140	5		30
Cl7-BZ#170	ND	0.111	0.11335	102		0.10933	105		40-140	4		30
Cl8-BZ#195	ND	0.111	0.11140	100		0.10702	103		40-140	4		30
Cl9-BZ#206	ND	0.111	0.12828	115		0.12129	116		40-140	6		30
Cl10-BZ#209	ND	0.111	0.11629	105		0.11414	110		40-140	2		30
Cl3-BZ#28	0.34642	0.111	0.47731	118		0.55933	204	Q	40-140	38	Q	30
Cl4-BZ#52	0.27594	0.111	0.42505	134		0.49779	213	Q	40-140	48	Q	30
Cl4-BZ#44	0.06733	0.111	0.17830	100		0.19574	123		40-140	31	Q	30
Cl5-BZ#101	0.01359	0.111	0.12030	96		0.11976	102		40-140	NC		30
Cl6-BZ#153	0.00569	0.111	0.10657	91		0.10477	95		40-140	24		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25    QC Batch ID: WG476527-6 WG476527-7    QC Sample: L1109501-07    Client ID: WQ-DPC-002-062811

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
BZ 198	106		110		30-150
DBOB	101		113		30-150

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3								
CI2-BZ#8	77		79		40-140	3		30
CI3-BZ#18	75		78		40-140	3		30
CI3-BZ#28	89		92		40-140	2		30
CI4-BZ#52	77		80		40-140	5		30
CI4-BZ#44	82		83		40-140	1		30
CI4-BZ#66	87		86		40-140	1		30
CI5-BZ#101	82		81		40-140	2		30
CI5-BZ#118	93		93		40-140	0		30
CI5-BZ#105	96		95		40-140	1		30
CI6-BZ#138	90		90		40-140	0		30
CI7-BZ#187	87		84		40-140	4		30
CI6-BZ#128	93		92		40-140	1		30
CI7-BZ#180	93		91		40-140	2		30
CI7-BZ#170	93		92		40-140	2		30
CI8-BZ#195	91		89		40-140	2		30
CI9-BZ#206	103		101		40-140	2		30
CI10-BZ#209	92		90		40-140	2		30

### Lab Control Sample Analysis

#### Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING

**Lab Number:** L1109501

**Project Number:** TO-0010-04

**Report Date:** 07/13/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		97		30-150
DBOB	105		107		30-150

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3

Cl6-BZ#153	84		84		40-140	1		30
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Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		97		30-150
DBOB	105		107		30-150

# INORGANICS & MISCELLANEOUS

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

**Lab ID:** L1109501-04  
**Client ID:** WQ-TUR-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.2		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-05  
 Client ID: WQ-TSS-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	1.80		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

**Lab ID:** L1109501-09  
**Client ID:** WQ-TUR-002-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	12		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES





Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-10  
 Client ID: WQ-TSS-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	28.7		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-14  
 Client ID: WQ-TUR-002-062811-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	12		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

**Lab ID:** L1109501-15  
**Client ID:** WQ-TSS-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	19.1		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-22  
 Client ID: WQ-TUR-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	6.4		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-23  
 Client ID: WQ-TSS-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	10.8		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-27  
 Client ID: WQ-TUR-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	7.4		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-28  
 Client ID: WQ-TSS-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	17.7		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 04,09,14,22,27 Batch: WG476136-1									
Turbidity	ND	NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 05,10,15,23,28 Batch: WG476453-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 04,09,14,22,27 Batch: WG476136-2								
Turbidity	101		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 05,10,15,23,28 Batch: WG476453-2								
Solids, Total Suspended	99		-		80-120	-		20

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A	Absent
D	Absent
B	Absent
C	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109501-01A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-01B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-02D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-03A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-04A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-05A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)
L1109501-06A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06C	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06D	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07C	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07D	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07E	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07F	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07G	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07H	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-08A	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)
L1109501-08B	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109501-09A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-10A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TSS-160(7)
L1109501-11A	Amber 1000ml unpreserved	A	7	5.3	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-11B	Amber 1000ml unpreserved	C	7	4.8	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12A	Amber 1000ml unpreserved	A	7	5.3	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12B	Amber 1000ml unpreserved	C	7	4.8	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12C	Glass 60mL unpreserved	C	N/A	4.8	Y	Absent	FILTER()
L1109501-12D	Glass 60mL unpreserved	C	N/A	4.8	Y	Absent	FILTER()
L1109501-13A	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)
L1109501-14A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-15A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TSS-160(7)
L1109501-16A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-16B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17C	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-17D	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-18A	Plastic 500ml HNO3 preserved	D	<2	4.7	Y	Absent	HOLD(14)
L1109501-19A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-19B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-20D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-21A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-22A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-23A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)
L1109501-24A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-24B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-25D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-26A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-27A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-28A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

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**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised March 23, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, EPA 200.8, SM2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 7470A, 9040B, 6020, 9010B, 9014 Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B, 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3630C, 3640A)

**New York Department of Health Certificate/Lab ID: 11627. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 9014, 9040B, 120.1, SM2510B, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health Certificate/Lab ID: LAO00299. *NELAP Accredited via LA-DEQ.***

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. *NELAP Accredited.***

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water*** (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense Certificate/Lab ID: L2217.01.**

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.







# MANSFIELD CHAIN OF CUSTODY

PAGE 2 OF 4

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

### Client Information

Client: Woods Hole Group  
Address: 81 Technology Park  
East Falmouth, MA 02536  
Phone: 508-540-8080  
Fax: 508-540-1601  
Email: DWALSH@WHGRP.COM

### Project Information

Project Name: New Bedford Environmental Monitoring  
Project Location: New Bedford, MA  
Project #: TO-0010-04  
Project Manager: Dave Walsh  
ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: L1109501

### Billing Information

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program: (circled) Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
-11	WQ-TPC-002-062811-REP	6/28/11	10:35	SW	DB
-6	WQ-TPC-002-062811-MS	↓	↓	↓	↓
↓	WQ-TPC-002-062811-MSD				
-12	WQ-DPC-002-062811-REP				
-7	WQ-DPC-002-062811-MS				
↓	WQ-DPC-002-062811-MSD				
-8	WQ-MET-002-062811-MSMSD				
-13	WQ-MET-002-062811-REP				
-14	WQ-TUR-002-062811-REP				
-15	WQ-TSS-002-062811-REP				

ANALYSIS						SAMPLE HANDLING	TOTAL # BOTTLES
TPC (Total PCB cong)	DPC (Dissolved PCB cong)	Metals (archive)	Turbidity	TSS	Sample Specific Comments		
X					Ebb Sample QC	2	
X					↓	1	
X						1	
	X					2	
	X					1	
	X					1	
		X				1	
		X				1	
			X			1	
				X		1	

**SAMPLE HANDLING**  
Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do Preservation  
 Lab to do  
(Please specify below)

Container Type	A	A	P	P	P
Preservative	A	A	C	A	A

Relinquished By: <u>William J. [Signature]</u>	Date/Time: <u>6/28/11 15:30</u>	Received By: <u>[Signature]</u>	Date/Time: <u>6/28/11 15:30</u>
C-156			

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
Delivery Order 0010-04  
March 2012



# MANSFIELD CHAIN OF CUSTODY

PAGE 3 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Client Information

Client: Woods Hole Group Inc.  
 Address: 81 Technology Park Dr.  
E. Falmouth, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1001  
 Email: dwalsh@whgrp.com

## Project Information

Project Name: New Bedford Env. Monitoring  
 Project Location: New Bedford, MA  
 Project #: TO-0010-04  
 Project Manager: DAVE WALSH  
 ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

ALPHA Job #: L1109501

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS					SAMPLE HANDLING	TOTAL # BOTTLES				
		Date	Time			TPL (Total PCB congeners)	DPC (Dissolved PCB congeners)	METALS (As, Cd, Cr, Cu, Pb, Hg, Ni, Mn)	Turbidity	TSS			Sample Specific Comments			
16-18	EB-001-062811	6/28/11	1245	SW	DB	X	X	X				Equipment Blank	5			
19	WQ-TPL-003-062811	↓	1235	↓	↓	X						Flood Ref	2			
20	WQ-DPC-003-062811								X						2	
21	WQ-MET-003-062811										X				1	
22	WQ-TUR-003-062811											X			1	
23	WQ-TUR-003-062811												X		1	
24	WQ-TPL-004-062811					1315			X						Flood Sample	2
25	WQ-DPC-004-062811									X						2
26	WQ-MET-004-062811										X					1
27	WQ-TUR-004-062811											X				1

Container Type: A A P P P  
 Preservative: A A C A A

Relinquished By: William J. O'Neil Date/Time: 06/28/11 1530  
 Received By: [Signature] Date/Time: 6/28/11 1530  
 C-157

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 Delivery Order 0010-04  
 March 2012



**MANSFIELD CHAIN OF CUSTODY**

PAGE 4 OF 4

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

**Client Information**

Client: Woods Hole Group, INC  
Address: 81 Technology Park Dr.  
East Falmouth, MA 02536  
Phone: 508-540-8080  
Fax: 508-540-1001  
Email: DWALSH@WHGRP.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

**PLEASE NOTE**

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS	TSS								TOTAL # BOTTLES			
		Date	Time					Sample Specific Comments										
28	WQ-TSS-004-062811	6/28/11	1315	SW	DB	X												

**Project Information**

Project Name: New Bedford Env. Monitoring  
Project Location: New Bedford, MA  
Project #: TO-0010-04  
Project Manager: Dave Walsh  
ALPHA Quote #:

**Turn-Around Time**

Standard     RUSH (only confirmed if pre-approved!)

Date Due:                                  Time:

Date Rec'd in Lab:

**Report Information - Data Deliverables**

FAX                     EMAIL  
 ADEX                 Add'l Deliverables

ALPHA Job #: L1109501

**Billing Information**

Same as Client info    PO #:

**Regulatory Requirements/Report Limits**

State/Fed Program                          Criteria

**SAMPLE HANDLING**

Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do  
Preservation  
 Lab to do  
(Please specify below)

Container Type	P
Preservative	A

Relinquished By: <i>William J Walsh</i>	Date/Time 06/28/11 1530	Received By: <i>William J Walsh</i>	Date/Time 6/28/11 1530
C-158			

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. Delivery Order 0010-04  
-March 2012



## ANALYTICAL REPORT

Lab Number:	L1112520
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR ENV. MONITO
Project Number:	TO-0010-04
Report Date:	08/17/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1112520-01	WQ-TUR-001-081511	NEW BEDFORD, MA	08/15/11 09:00
L1112520-02	WQ-TSS-001-081511	NEW BEDFORD, MA	08/15/11 09:00
L1112520-03	WQ-TUR-002-081511	NEW BEDFORD, MA	08/15/11 09:25
L1112520-04	WQ-TSS-002-081511	NEW BEDFORD, MA	08/15/11 09:25
L1112520-05	WQ-TUR-003-081511	NEW BEDFORD, MA	08/15/11 10:40
L1112520-06	WQ-TSS-003-081511	NEW BEDFORD, MA	08/15/11 10:40
L1112520-07	WQ-TUR-004-081511	NEW BEDFORD, MA	08/15/11 11:25
L1112520-08	WQ-TSS-004-081511	NEW BEDFORD, MA	08/15/11 11:25
L1112520-09	WQ-TUR-004-081511-REP	NEW BEDFORD, MA	08/15/11 11:25
L1112520-10	WQ-TSS-004-081511-REP	NEW BEDFORD, MA	08/15/11 11:25

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 08/17/11

# INORGANICS & MISCELLANEOUS



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-01  
**Client ID:** WQ-TUR-001-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:00  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.8		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



Project Name: NEW BEDFORD HARBOR ENV. MONITO

Lab Number: L1112520

Project Number: TO-0010-04

Report Date: 08/17/11

**SAMPLE RESULTS**

Lab ID: L1112520-02  
 Client ID: WQ-TSS-001-081511  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 08/15/11 09:00  
 Date Received: 08/15/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	11.1		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-03  
**Client ID:** WQ-TUR-002-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	7.3		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-04  
**Client ID:** WQ-TSS-002-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	32.8		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-05  
**Client ID:** WQ-TUR-003-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 10:40  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.1		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-06  
**Client ID:** WQ-TSS-003-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 10:40  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	8.70		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-07  
**Client ID:** WQ-TUR-004-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	13		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-08  
**Client ID:** WQ-TSS-004-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	28.5		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP





Project Name: NEW BEDFORD HARBOR ENV. MONITO

Lab Number: L1112520

Project Number: TO-0010-04

Report Date: 08/17/11

**SAMPLE RESULTS**

Lab ID: L1112520-09  
 Client ID: WQ-TUR-004-081511-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 08/15/11 11:25  
 Date Received: 08/15/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	16		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-10  
**Client ID:** WQ-TSS-004-081511-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	26.5		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONI  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG484885-1										
Turbidity	ND		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10 Batch: WG484887-1										
Solids, Total Suspended	ND		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP

**Lab Control Sample Analysis**

Batch Quality Control

Project Name: NEW BEDFORD HARBOR ENV. MONITO

Lab Number: L1112520

Project Number: TO-0010-04

Report Date: 08/17/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG484885-2								
Turbidity	108		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 Batch: WG484887-2								
Solids, Total Suspended	85		-		80-120	-		20

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1112520-01A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-02A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-03A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-04A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-05A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-06A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-07A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-08A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-09A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-10A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.





## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Client Information

Client: Wood Hole Group  
 Address: 81 Technology Park Dr.  
East Falmouth, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1001  
 Email: DWALSH@WHGRP.COM

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Project Specific EDD & Report.

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										SAMPLE HANDLING	TOTAL # BOTTLES	
		Date	Time			Turbidity	TSS											
L112520-1	WQ-TUR-001-081511	8/15/11	0900	SW	DS	X											2.2 ntu At Collection Time	1
2	WQ-TSS-001-081511		0900				X											1
3	WQ-TUR-002-081511		0925			X											5.5-6.5 ntu At Collection Time	1
4	WQ-TSS-002-081511		0925				X											1
5	WQ-TUR-003-081511		1040			X											3-6 ntu at Collection Time	1
6	WQ-TSS-003-081511		1040				X											1
7	WQ-TUR-004-081511		1125			X											12-18 ntu at Collection Time	1
8	WQ-TSS-004-081511		1125				X											1
9	WQ-TUR-004-081511-REP		1125			X											12-18 ntu at Collection Time	1
10	WQ-TSS-004-081511-REP		1125				X										12+	1

### SAMPLE HANDLING

- Filtration \_\_\_\_\_
  - Done
  - Not done
  - Lab to do
  - Lab to do
  - Lab to do
- (Please specify below)

Sample Specific Comments

Container Type	P	P														
Preservative	A	A														

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 Delivery Order 0010-04  
 March 2012

Relinquished By:	Date/Time	Received By:	Date/Time
	8/15/11, 18:26		8-15-11 18:26

C-181



## ANALYTICAL REPORT

Lab Number:	L1113423
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR ENV. MONITO
Project Number:	TO-0010-04
Report Date:	09/06/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1113423-01	WQ-TSS-001-083011	NEW BEDFORD, MA	08/30/11 08:58
L1113423-02	WQ-TUR-001-083011	NEW BEDFORD, MA	08/30/11 08:58
L1113423-03	WQ-TSS-002-083011	NEW BEDFORD, MA	08/30/11 09:18
L1113423-04	WQ-TUR-002-083011	NEW BEDFORD, MA	08/30/11 09:18
L1113423-05	WQ-TSS-003-083011	NEW BEDFORD, MA	08/30/11 10:05
L1113423-06	WQ-TUR-003-083011	NEW BEDFORD, MA	08/30/11 10:05
L1113423-07	WQ-TSS-004-083011	NEW BEDFORD, MA	08/30/11 11:08
L1113423-08	WQ-TUR-004-083011	NEW BEDFORD, MA	08/30/11 11:08
L1113423-09	WQ-TSS-004-083011-REP	NEW BEDFORD, MA	08/30/11 11:08
L1113423-10	WQ-TUR-004-083011-REP	NEW BEDFORD, MA	08/30/11 11:08
L1113423-11	WQ-TSS-005-083011	NEW BEDFORD, MA	08/30/11 12:38
L1113423-12	WQ-TUR-005-083011	NEW BEDFORD, MA	08/30/11 12:38

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 09/06/11

# INORGANICS & MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-01  
**Client ID:** WQ-TSS-001-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 08:58  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	6.00		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-02  
**Client ID:** WQ-TUR-001-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 08:58  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.2		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-03  
**Client ID:** WQ-TSS-002-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 09:18  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	20.0		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-04  
**Client ID:** WQ-TUR-002-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 09:18  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.4		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-05  
**Client ID:** WQ-TSS-003-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 10:05  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	26.7		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-06  
**Client ID:** WQ-TUR-003-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 10:05  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.0		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-07  
**Client ID:** WQ-TSS-004-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	61.3		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-08  
**Client ID:** WQ-TUR-004-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	25		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-09  
**Client ID:** WQ-TSS-004-083011-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	50.5		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-10  
**Client ID:** WQ-TUR-004-083011-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	24		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-11  
**Client ID:** WQ-TSS-005-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 12:38  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	72.7		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-12  
**Client ID:** WQ-TUR-005-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 12:38  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	41		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONI  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10,12 Batch: WG487075-1										
Turbidity	ND		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09,11 Batch: WG487338-1										
Solids, Total Suspended	ND		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1113423**Project Number:** TO-0010-04**Report Date:** 09/06/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG487075-2								
Turbidity	106		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG487338-2								
Solids, Total Suspended	88		-		80-120	-		20

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1113423-01A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-02A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-03A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-04A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-05A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-06A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-07A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-08A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-09A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-10A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-11A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-12A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Florida Department of Health Certificate/Lab ID: E87814. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

## Project Information

Project Name: NEW Bedford Harbor Env. Monitoring

Project Location: New Bedford, MA

Project #: TO-0014-04

Project Manager: Dave Walsh

ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

ALPHA Job #: L1113423

## Billing Information

Same as Client info PO #:

## Client Information

Client: Woods Hole Group Inc.

Address: 51 Technology Park Dr.  
East Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: DWalsh@whgrp.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

## Regulatory Requirements/Report Limits

State / Fed Program Criteria

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	TSS	TURBIDITY	ANALYSIS	TOTAL # BOTTLES	Sample Specific Comments
		Date	Time							
1	WQ-TSS-001-083011	8/30/11	0858	SW	DS	X				1.6-2.4ntu observed in field
2	WQ-TUR-001-083011		0858				X			↓
3	WQ-TSS-002-083011		0918			X				5.6-7.7ntu observed in field
4	WQ-TUR-002-083011		0918				X			↓
5	WQ-TSS-003-083011		1005			X				4.8-5.5ntu observed in field
6	WQ-TUR-003-083011		1005				X			↓
7	WQ-TSS-004-083011		1108			X				20.5-26.7ntu observed in field
8	WQ-TUR-004-083011		1108				X			↓
9	WQ-TSS-004-083011-REP		1108			X				↓
10	WQ-TUR-004-083011-REP		1108				X			↓

Container Type P P  
Preservative A A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. Delivery Order 0010-04 March 2012

Relinquished By: Michael Walsh Date/Time: 8/30/11 1550

Received By: [Signature] Date/Time: 8/30/11 1550



# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Project Information

Project Name: *New Bedford Harbor Env. Monitoring*

Project Location: *New Bedford, MA*

Project #: *TO-0010-04*

Project Manager: *Dave Walsh*

ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: *L1113423*

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State: (Fed Program) Criteria:

## Client Information

Client: *Woods Hole Group Inc.*

Address: *81 Technology Park Dr. East Falmouth, MA 02536*

Phone: *508-540-8080*

Fax: *508-540-1001*

Email: *DWALSH@WHGRI.COM*

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										SAMPLE HANDLING	TOTAL # BOTTLES		
		Date	Time			TSS	Turbidity												
<i>11</i>	<i>WQ-TSS-005-083011</i>	<i>8/30/11</i>	<i>1238</i>	<i>SW</i>	<i>DS</i>	<i>X</i>												<i>40-45µm observed in field</i>	<i>1</i>
<i>12</i>	<i>WQ-TUR-005-083011</i>	<i>8/30/11</i>	<i>1238</i>	<i>SW</i>	<i>DS</i>	<i>X</i>												<i>↓</i>	<i>1</i>

- SAMPLE HANDLING**
- Filtration \_\_\_\_\_
  - Done
  - Not needed
  - Lab to do
  - Preservation
  - Lab to do
- (Please specify below)

Container Type	<i>P</i>	<i>P</i>
Preservative	<i>A</i>	<i>A</i>

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Michael Walsh</i>	<i>8/30/11 1550</i>	<i>[Signature]</i>	<i>8/30/11 1550</i>

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. Delivery Order 0010-04 March 2012



## ANALYTICAL REPORT

Lab Number:	L1114366
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR MONITORING
Project Number:	TO-0010-04
Report Date:	09/15/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1114366-01	WQ-TSS-001-091211	NEW BEDFORD, MA	09/12/11 07:36
L1114366-02	WQ-TUR-001-091211	NEW BEDFORD, MA	09/12/11 07:36
L1114366-03	WQ-TSS-002-091211	NEW BEDFORD, MA	09/12/11 08:07
L1114366-04	WQ-TUR-002-091211	NEW BEDFORD, MA	09/12/11 08:07
L1114366-05	WQ-TSS-003-091211	NEW BEDFORD, MA	09/12/11 09:09
L1114366-06	WQ-TSS-003-091211-REP	NEW BEDFORD, MA	09/12/11 09:09
L1114366-07	WQ-TUR-003-091211	NEW BEDFORD, MA	09/12/11 09:09
L1114366-08	WQ-TUR-003-091211-REP	NEW BEDFORD, MA	09/12/11 09:09
L1114366-09	WQ-TSS-004-091211	NEW BEDFORD, MA	09/12/11 11:33
L1114366-10	WQ-TUR-004-091211	NEW BEDFORD, MA	09/12/11 11:33

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 09/15/11



# INORGANICS & MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-01  
**Client ID:** WQ-TSS-001-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 07:36  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	12.5		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

Lab ID: L1114366-02  
 Client ID: WQ-TUR-001-091211  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 09/12/11 07:36  
 Date Received: 09/13/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.4		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-03  
**Client ID:** WQ-TSS-002-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 08:07  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	54.0		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



Project Name: NEW BEDFORD HARBOR MONITORING

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

**SAMPLE RESULTS**

Lab ID: L1114366-04  
 Client ID: WQ-TUR-002-091211  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 09/12/11 08:07  
 Date Received: 09/13/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	28		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-05  
**Client ID:** WQ-TSS-003-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	12.0		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-06  
**Client ID:** WQ-TSS-003-091211-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	23.5		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



Project Name: NEW BEDFORD HARBOR MONITORING

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

## SAMPLE RESULTS

Lab ID: L1114366-07  
 Client ID: WQ-TUR-003-091211  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 09/12/11 09:09  
 Date Received: 09/13/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.5		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES





**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-08  
**Client ID:** WQ-TUR-003-091211-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.0		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**SAMPLE RESULTS**

**Lab ID:** L1114366-09  
**Client ID:** WQ-TSS-004-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 11:33  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	119		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

Lab ID: L1114366-10  
 Client ID: WQ-TUR-004-091211  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 09/12/11 11:33  
 Date Received: 09/13/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	47		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



Project Name: NEW BEDFORD HARBOR MONITORIN

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

**Method Blank Analysis**  
Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,07-08,10 Batch: WG489789-1									
Turbidity	ND	NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 01,03,05-06,09 Batch: WG489792-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR

### Lab Control Sample Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR MONITORING

**Lab Number:** L1114366

**Project Number:** TO-0010-04

**Report Date:** 09/15/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,07-08,10 Batch: WG489789-2								
Turbidity	103		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05-06,09 Batch: WG489792-2								
Solids, Total Suspended	91		-		80-120	-		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR MONITORING

**Project Number:** TO-0010-04

**Lab Number:** L1114366

**Report Date:** 09/15/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02,04,07-08,10 QC Batch ID: WG489789-3 QC Sample: L1114366-02 Client ID: WQ-TUR-001-091211						
Turbidity	1.4	1.4	NTU	0		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05-06,09 QC Batch ID: WG489792-3 QC Sample: L1114366-01 Client ID: WQ-TSS-001-091211						
Solids, Total Suspended	12.5	13.5	mg/l	8		20

Project Name: NEW BEDFORD HARBOR MONITORING

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1114366-01A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-02A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-03A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-04A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-05A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-06A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-07A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-08A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-09A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-10A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report





**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health Certificate/Lab ID: 11627. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health Certificate/Lab ID: LAO00299. *NELAP Accredited via LA-DEQ.***

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. *NELAP Accredited.***

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water*** (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense Certificate/Lab ID: L2217.01.**

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

**Project Information**

Project Name: *New Bedford Harbor Monitoring*  
 Project Location: *New Bedford, MA*  
 Project #: *TO - 0010 - 04*  
 Project Manager: *Dave Walsh*  
 ALPHA Quote #:

**Turn-Around Time**

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

**Client Information**

Client: *Woods Hole Group Inc.*  
 Address: *81 Technology Park Dr. East Falmouth, MA 02536*  
 Phone: *508-540-8080*  
 Fax: *508-540-1001*  
 Email: *dwalsh@whgrp.com*

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

**PLEASE NOTE**  
 MS/MSD (at unit cost) will be omitted unless you check here:

<b>Date Rec'd in Lab:</b>	<b>ALPHA Job #:</b> <i>L1114366</i>
<b>Report Information - Data Deliverables</b>	<b>Billing Information</b>
<input type="checkbox"/> FAX <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/> ADEx <input type="checkbox"/> Add'l Deliverables	<input type="checkbox"/> Same as Client info <input type="checkbox"/> PO #:

**Regulatory Requirements/Report Limits**

State /Fed Program	Criteria

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										SAMPLE HANDLING	TOTAL # BOTTLES							
		Date	Time			TSS	Turbidity																	
L1114366 - 1	WQ-TSS-001-091211	9/12/11	0736	SW	DS	X																		
- 2	WQ-TUR-001-091211	9/12/11	0736				X															<i>Turbidity values in field 0.0ntu</i>		
- 3	WQ-TSS-002-091211	9/12/11	0807				X																	
- 4	WQ-TUR002-091211	9/12/11	0807				X																<i>Turbidity values in field 28-32 ntu</i>	
- 5	WQ-TSS-003-091211	9/12/11	0909				X																	
- 6	WQ-TSS-003-091211-REP	9/12/11	0909				X																	
- 7	WQ-TUR-003-091211	9/12/11	0909				X																<i>Turbidity values in field 5.2-8.9</i>	
- 8	WQ-TUR-003-091211-REP	9/12/11	0909				X																<i>↓</i>	
- 9	WQ-TSS-004-091211	9/12/11	1133				X																	
- 10	WQ-TUR-004-091211	9/12/11	1133				X																<i>Turbidity values in field 41-51 ntu</i>	

Container Type	<i>P</i>	<i>P</i>										
Preservative	<i>A</i>	<i>A</i>										

Relinquished By: *Dave Walsh* Date/Time: *9/13/11 12:00*

Received By: *[Signature]* Date/Time: *9/13/11 17:00*

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. Delivery Order 0010-04 March 2012



## ANALYTICAL REPORT

Lab Number:	L1117490
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD WATER QUALITY
Project Number:	TO-0010-04
Report Date:	11/01/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1117490-01	WQ-TUR-001-102411	NEW BEDFORD, MA	10/24/11 11:30
L1117490-02	WQ-TSS-001-102411	NEW BEDFORD, MA	10/24/11 11:30
L1117490-03	WQ-TUR-002-102411	NEW BEDFORD, MA	10/24/11 11:52
L1117490-04	WQ-TSS-002-102411	NEW BEDFORD, MA	10/24/11 11:52
L1117490-05	WQ-TUR-003-102411	NEW BEDFORD, MA	10/24/11 12:14
L1117490-06	WQ-TSS-003-102411	NEW BEDFORD, MA	10/24/11 12:14
L1117490-07	WQ-TUR-003-102411-REP	NEW BEDFORD, MA	10/24/11 12:14
L1117490-08	WQ-TSS-003-102411-REP	NEW BEDFORD, MA	10/24/11 12:14
L1117490-09	WQ-TUR-004-102411	NEW BEDFORD, MA	10/24/11 12:35
L1117490-10	WQ-TSS-004-102411	NEW BEDFORD, MA	10/24/11 12:35

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

---

### Report Submission

This report replaces the one issued previously. The report was reissued after L1117490-02 was re-analyzed.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 11/01/11



# INORGANICS & MISCELLANEOUS

Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

## SAMPLE RESULTS

Lab ID: L1117490-01  
 Client ID: WQ-TUR-001-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 11:30  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.2		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-02  
 Client ID: WQ-TSS-001-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 11:30  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	5.00		mg/l	1.00	NA	1	-	10/28/11 12:00	4,160.2	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-03  
 Client ID: WQ-TUR-002-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 11:52  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.1		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

Lab ID: L1117490-04  
 Client ID: WQ-TSS-002-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 11:52  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	4.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

Lab ID: L1117490-05  
 Client ID: WQ-TUR-003-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:14  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.8		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-06  
 Client ID: WQ-TSS-003-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:14  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	5.00		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-07  
 Client ID: WQ-TUR-003-102411-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:14  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.5		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP





Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-08  
 Client ID: WQ-TSS-003-102411-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:14  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	5.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

## SAMPLE RESULTS

Lab ID: L1117490-09  
 Client ID: WQ-TUR-004-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:35  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.8		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-10  
 Client ID: WQ-TSS-004-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:35  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	4.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG498100-1									
Turbidity	ND	NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 04,06,08,10 Batch: WG498340-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP
General Chemistry - Mansfield Lab for sample(s): 02 Batch: WG499221-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	10/28/11 12:00	4,160.2	SP

### Lab Control Sample Analysis

#### Batch Quality Control

**Project Name:** NEW BEDFORD WATER QUALITY

**Lab Number:** L1117490

**Project Number:** TO-0010-04

**Report Date:** 11/01/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG498100-2								
Turbidity	104		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 04,06,08,10 Batch: WG498340-2								
Solids, Total Suspended	84		-		80-120	-		20
General Chemistry - Mansfield Lab Associated sample(s): 02 Batch: WG499221-2								
Solids, Total Suspended	96		-		80-120	-		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD WATER QUALITY

**Project Number:** TO-0010-04

**Lab Number:** L1117490

**Report Date:** 11/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG498100-3 QC Sample: L1117490-01 Client ID: WQ-TUR-001-102411						
Turbidity	2.2	2.4	NTU	9		10
General Chemistry - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG499221-3 QC Sample: L1117490-02 Client ID: WQ-TSS-001-102411						
Solids, Total Suspended	5.00	5.50	mg/l	10		20

Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1117490-01A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-02A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-03A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-04A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-05A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-06A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-07A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-08A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-09A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-10A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- |           |   |
|-----------|---|
| <b>A</b>  | - Spectra identified as "Aldol Condensation Product".   |
| <b>B</b>  | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. |
| <b>C</b>  | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.  |
| <b>D</b>  | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.   |
| <b>E</b>  | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.  |
| <b>G</b>  | - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.  |
| <b>H</b>  | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.  |
| <b>I</b>  | - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.  |
| <b>M</b>  | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.  |
| <b>NJ</b> | - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.  |

Report Format: Data Usability Report





**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

**Data Qualifiers**

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

---



**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised September 19, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 245.7, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081B, 8082A, 8260B, 8270C, 8015D.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082A, 8081B.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Pennsylvania** Certificate/Lab ID: 68-02089 **NELAP Accredited**

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020A, 7471B, 7474. Organic Parameters: EPA 3050B, 3540C, 3630C, 8270C, 8081B, 8082A.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

### Project Information

Project Name: New Bedford Water Quality  
Project Location: New Bedford, MA  
Project #: TO-0010-04  
Project Manager: Dave Walsh  
ALPHA Quote #:

Date Rec'd in Lab:

### Report Information - Data Deliverables

FAX  
 EMAIL  
 ADEx  
 Add'l Deliverables

ALPHA Job #: L1117490

### Billing Information

Same as Client info PO #:

### Client Information

Client: Woods Hole Group  
Address: 81 Technology Park  
East Falmouth, MA 02536  
Phone: 508-540-8080  
Fax: 508-540-1001  
Email: DWALSH@WHGRP.COM

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: Time:

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

**ANALYSIS**  
*Turbidity*  
*TSS*

**SAMPLE HANDLING**  
Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do  
*Preservation*  
 Lab to do  
(Please specify below)

**TOTAL # BOTTLES**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										Sample Specific Comments	TOTAL # BOTTLES			
		Date	Time			Turbidity	TSS													
1	WQ-TUR-001-102411	10/24/11	1130	SW	DS	X												Turbidity = 1.0 NTU upon sampling	1	
2	WQ-TSS-001-102411		1130				X											Turbidity = 0.3 NTU upon sampling	1	
3	WQ-TUR-002-102411		1152			X													Turbidity = 0.1 NTU upon sampling	1
4	WQ-TSS-002-102411		1152			X												Turbidity = 0.3 NTU upon sampling		1
5	WQ-TUR-003-102411		1214			X														Turbidity = 0.3 NTU upon sampling
6	WQ-TSS-003-102411		1214			X												Turbidity = 0.3 NTU upon sampling		
7	WQ-TUR-003-102411-REP		1214			X													Turbidity = 0.3 NTU upon sampling	1
8	WQ-TSS-003-102411-REP		1214			X												Turbidity = 0.3 NTU upon sampling		1
9	WQ-TUR-004-102411		1235			X													Turbidity = 0.3 NTU upon sampling	1
10	WQ-TSS-004-102411		1235			X												Turbidity = 0.3 NTU upon sampling		1

Container Type	P P
Preservative	A A

Relinquished By: Date/Time: 10/25/11 1350

Received By: Date/Time: 10/25/11 1350

Date/Time: 10/25/11 1700

Date/Time: 10/25/11 1700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
Delivery Order 0010-04  
March 2012

**APPENDIX D. ENVIROSYSTEMS, INC. REPORTS AND  
ANALYTICAL DATA (ON CD)**

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**APPENDIX D      ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL  
DATA**



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**Biomonitoring of Surface Water Samples  
New Bedford Harbor  
New Bedford, Massachusetts**

**June 27, 2011 Sampling Event**

**NED ACOE Job Number: TO-0010-04**

**Task Order No.: ESI0007**

Prepared for:

Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

Prepared by:

EnviroSystems, Incorporated  
1 Lafayette Road  
Hampton, New Hampshire 03843

June 2011  
Reference Number: WHG NBH OU1 21128-11-06

# Biomonitoring of Surface Water Samples New Bedford Harbor, New Bedford, Massachusetts

June 27, 2011 Sampling Event  
NED ACOE Job Number: TO-0010-04

## 1.0 INTRODUCTION

This report provides a summary of data generated from acute and chronic exposure assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on five grab surface water samples collected on June 27, 2011 from specified areas in the harbor. Samples were collected in the vicinity of dredging operations under the supervision of Woods Hole Group, Inc. personnel from the Falmouth, Massachusetts office and were evaluated "As Received" without additional dilutions. Testing was based on programs and protocols developed by the US EPA (2002) and included the following assays; 48 hour acute and 7 day chronic assays conducted with the mysid shrimp, *Americamysis bahia*, and 60 minute chronic fertilization assays conducted with the purple sea urchin, *Arbacia punctulata*. Assay design included a laboratory control treatment. All assays were conducted by ESI at its Hampton, New Hampshire facility.

## 2.0 MATERIALS AND METHODS

### 2.1 General Methods

Toxicological and analytical protocols used in this program followed procedures primarily designed by the EPA to provide standard approaches for the evaluation of toxicological effects of discharges on aquatic organisms, and for the analysis of water samples. See Section 4.0 for a list of references.

### 2.2 Test Species

*A. bahia* were obtained from cultures maintained by Aquatic Research Organisms (ARO), Hampton, New Hampshire. Juvenile shrimp were collected daily, isolated, and placed in a rearing tank. Holding tanks were maintained in a flow-through culture mode at a temperature of  $25\pm 2^\circ\text{C}$ . At the start of the assays the mysids were <5 days old for the acute evaluation and 7 days old for the chronic evaluation. Juveniles were fed  $\leq 24$  hour old brine shrimp on a daily basis. Water temperature, salinity, and pH were monitored on a daily basis. Prior to testing, organisms were siphoned from the rearing tanks to a holding vessel, and then transferred to test chambers using a large bore pipet, minimizing the amount of water added to test solutions.

*A. punctulata* adults were from cultures maintained by ESI. Original stock was obtained from commercial supply. Male and female urchins are maintained in separate chambers as recommended by protocol (EPA 2002) and ESI. Adult urchins were induced to spawn by the injection of a potassium chloride solution. The viability of gametes obtained was determined prior to their addition to the test solutions. Eggs and/or sperm that would not result in a fertilized egg were rejected from the pool of gametes used in the assay.

### 2.3 Surface Water Samples and Laboratory Control Water

Five grab surface water samples were collected by Woods Hole Group, Inc. staff on June 27, 2011 in New Bedford Harbor. Samples were placed in 10 L polyethylene cubitainers for shipment to the laboratory. Sample receipt information is shown in Table 1.

Prior to testing, samples were evaluated to document salinity, conductivity, and total residual chlorine. Total residual chlorine was measured by amperometric titration (MDL 0.02 mg/L). When necessary, the salinity of samples for the *A. bahia* chronic exposure assays were adjusted to  $25\pm 2\%$  while samples used for the *A. punctulata* assays were adjusted to  $30\pm 2\%$  using commercial sea salts. Samples with "as received" salinity above these levels were not adjusted. A summary of "As Received" data are presented in Table 2.

Laboratory control water used for the mysid and sea urchin assays was collected from the Hampton/Seabrook Estuary. This water is classified as SA-1 and has been used to culture marine test organisms since 1981.

## 2.4 Bioassays

### 2.4.1 *Americamysis bahia* Acute Exposure Bioassay

The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity test was conducted at 25±1 °C with a photoperiod of 16:8 hours light:dark. Test chambers for the acute assay were 250 mL glass beakers containing 200 mL test solution in each of 4 replicates with 10 organisms/replicate. Survival and dissolved oxygen were measured daily in all replicates and pH, temperature, and salinity were measured daily in one replicate of each test treatment. Specific conductance was measured in one replicate of each test concentration at the start of the assay. Mysids were not fed during the assay.

### 2.4.2 *Americamysis bahia* Chronic Exposure Bioassay

Endpoints for the *A. bahia* bioassays were survival and growth. Chronic exposure screening assays were conducted in a static renewal test mode with renewals made at 24-hour intervals. The 7 day assays were conducted at a temperature of 26±1 °C with a photoperiod of 16:8 hours light:dark. Mysids were maintained in 250 mL beakers containing 150 mL of test solution. Approximately 100 mL of the test solution were replaced each day. The assay incorporated 8 replicates with 5 organisms/replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded in a composite sample of the “old” test solution and in the “new” test solution prior to being added to the test chamber. Incubator temperatures were also recorded on a daily basis.

During the test, mysids were fed ≤24 hour old *Artemia* nauplii. On Day 7 of the assay, surviving mysids were removed from test solutions, rinsed to remove any surface detritus and salts, and transferred to tared foils and dried for 24 hours at 104 °C. Foils were weighed to the nearest 0.01 mg. Mean dry biomass per individual were obtained by dividing the net dry weight of all surviving organisms by the number of organisms added at the start of the assay.

### 2.4.3 *Arbacia punctulata* Chronic Exposure Fertilization Assays

The endpoint for the *A. punctulata* bioassay was fertilization. Gametes were obtained by potassium chloride injection to induce spawning. Sperm were collected dry, diluted to achieve a concentration of approximately 5.0 x 10<sup>7</sup> sperm/mL in the surface water treatments. Actual sperm concentrations are provided on laboratory bench sheets in Appendix A. Sperm solutions were added to 5 mL aliquots of each sample being evaluated and allowed to remain in the test solutions for 60 minutes before the addition of unfertilized eggs. Each treatment incorporated a total of four (4) replicates. After 20 minutes exposure, the assay was terminated by the addition of 0.2 mL of preservative. Aliquots of preserved solution were counted to determine numbers of fertilized and unfertilized eggs. Fertilization was accepted based on the presence or absence of a fertilization membrane around the egg.

## 2.5 Data Analysis

Statistical analysis of acute and chronic exposure data was completed using CETIS, Comprehensive Environmental Toxicity Testing System, software. The program computes acute and chronic exposure endpoints based on EPA decision tree guidelines specified in individual test methods. For chronic exposure endpoints statistical significance was accepted at  $\alpha < 0.05$ . The laboratory control was used for both assays to determine whether there were significant reductions in survival or fertilization as compared to the site samples. If survival in the acute assay was greater than 90%, then a determination of “not significant” was made based on direct observation.

## 2.6 Quality Control

As part of the laboratory quality control program, standard reference toxicant assays are completed on a regular basis for each test species. These results, summarized in Table 3, provide relative health and response data while allowing for comparison with historic data sets.

## 2.7 Protocol Deviations

Review of the data associated with this series of assays documented a single protocol deviation. The *Arbacia punctulata*, fertilization assay was started outside of the recommended sample holding time. The delay in starting the assay was related to poor fertilization rates in the laboratory control treatment which necessitated repeating the assay. The lab ran the initial fertilization assay at 09:00 on the 28<sup>th</sup>, the morning after the samples arrived at the laboratory, June 27<sup>th</sup> at 17:00 pm, at this time the sample was approximately 16 hours old. Results of the test showed that fertilization in the laboratory control treatment was below the 70% specified by the method. The test was repeated on the 29<sup>th</sup> with a sample that was 40 hours old. Again, fertilization rates in the control treatment fell below the acceptable limits. At that time a new batch of adult urchins were ordered and the urchins arrived at the lab on the 30<sup>th</sup>. A new round of assays was initiated on the 30<sup>th</sup> and fertilization rates for this set of assays exceeded minimum acceptability criteria. Urchins used in the first two series of assays were from the general laboratory population and had been used in assays without any instances of low control fertilization rates. As there had been no change in holding conditions, there was no reason to presuppose that gametes from the adult urchins would have failed to meet fertilization acceptability criteria. It is ESI's Study Director's opinion that the holding time violation had no impact on the outcome of the assays. This is based on several criteria. If trace metals are considered to be a contaminant of concern their toxicity is relatively stable over the time frame under consideration. For organic compounds, PCBs and PAHs are unlikely to exhibit significant changes in concentration or toxicity over the short term. The remaining probable group of potential toxicants, volatile organics, are also unlikely to have an impact due to extended holding, as the majority of compounds would have likely been lost to the atmosphere through the plastic container between sampling and arrival at the lab.

## 3.0 RESULTS SUMMARY

Tables 4 and 5 provide summaries of survival, growth and fertilization endpoints and associated statistical analyses for *A. bahia* and *A. punctulata* for the June 27, 2011 sampling events. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

### 3.1 *Americamysis bahia* Acute Exposure Bioassay

Minimum test acceptability criteria for the acute exposure bioassay require  $\geq 90\%$  survival in the control concentration. Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

### 3.2 *Americamysis bahia* Chronic Exposure Bioassay

Minimum test acceptability criteria for the chronic exposure bioassay require  $\geq 80\%$  survival and a minimum weight of 0.2 mg per individual in the control concentrations. Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

### 3.3 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punctulata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

## 4.0 REFERENCES

APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20<sup>th</sup> edition. Washington D.C.

US EPA. 2002. *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*. Fourth Edition. EPA-821-R-02-012.

US EPA. 2002. *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. Fourth Edition. EPA-821-R-02-013.

**Table 1. Sample Receipt Summary.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Type of Sample	Matrix	Collection		Receipt	
				Date	Time	Date	Time
WQ-TOX-001-062711	21128-001	Grab	Water	06/27/11	1030	06/27/11	1900
WQ-TOX-002-062711	21128-002	Grab	Water	06/27/11	1106	06/27/11	1900
WQ-TOX-002-062711-REP	21128-003	Grab	Water	06/27/11	1106	06/27/11	1900
WQ-TOX-003-062711	21128-004	Grab	Water	06/27/11	1340	06/27/11	1900
WQ-TOX-004-062711	21128-005	Grab	Water	06/27/11	1423	06/27/11	1900

**Table 2 Summary of “As Received” Sample Physical and Chemical Characteristics.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Ammonia* (mg/L)	pH (SU)	Salinity (‰)	Total Residual Chlorine (mg/L)
WQ-TOX-001-062711	21128-001	<0.1	7.35	26	<0.02
WQ-TOX-002-062711	21128-002	<0.1	7.46	26	<0.02
WQ-TOX-002-062711-REP	21128-003	<0.1	7.66	25	<0.02
WQ-TOX-003-062711	21128-004	<0.1	7.56	28	<0.02
WQ-TOX-004-062711	21128-005	<0.1	8.23	16	<0.02

**COMMENTS:**

\* Ammonia samples were sub-sampled at ESI on June 28, 2011.

**Table 3 Reference Toxicant Summary.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Date	Endpoint	Value	Historic Mean/ Central Tendency	Acceptable Range	Reference Toxicant	
<i>A. bahia</i>						
06/21/11	Survival	LC-50 - 48 Hr	29.1*	22.1	16.8 - 27.4	SDS (mg/L)
06/21/11	Survival	C-NOEC	15.0	15.0	10.0 - 25.0	SDS (mg/L)
06/21/11	Growth	C-NOEC	15.0	10.0	5.0 - 15.0	SDS (mg/L)
.....						
<i>A. punctulata</i>						
06/09/11	Fertilization	C-NOEC	<1.0**	10.0	5.0 - 20.0	Copper (µg/L)
06/09/11	Fertilization	IC-25	20.4	29.1	0 - 69.8	Copper (µg/L)
.....						

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

\* Normal Acceptance Limits set at  $\pm 2$  Std Dev of historic mean; maximum limits are  $\pm 3$  Std of historic mean. The  $\pm 3$  limit is acceptable, but considered high. If  $\pm 3$  limit is utilized value is noted.

\*\* Normal Acceptance Limits for the NOEC endpoint are set at  $\pm 1$  concentration surrounding the central tendency. The NOEC for this series of reference toxicant assays is outside of acceptable range. However, as the IC-25 endpoint for the assay was within the acceptable limits of  $\pm 2$  Standard Deviations of historic mean the reference toxicant evaluation was considered to be acceptable.

**Table 4. Summary of Acute Exposure Assay: *A. bahia*.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Percent Survival	Significant Difference vs. Lab?
Laboratory Control	21128-000	100.0%	No
WQ-TOX-001-062711	21128-001	100.0%	No
WQ-TOX-002-062711	21128-002	95.0%	No
WQ-TOX-002-062711-REP	21128-003	97.5%	No
WQ-TOX-003-062711	21128-004	97.5%	No
WQ-TOX-004-062711	21128-005	97.5%	No

**Table 5. Summary of Chronic Exposure Assays: *A. bahia* and *A. punctulata*.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Sample ID	ESI Code	Reps	Mean	Min	Max	CV	Significant Difference vs	
							p Value	Lab
<i>Americamysis bahia</i>			Survival					
Laboratory Control	21128-000		80.0%	60.0%	100.0%	13.4%	-	-
WQ-TOX-001-062711	21128-001	8	92.5%	80.0%	100.0%	11.2%	0.9841	NO
WQ-TOX-002-062711	21128-002		85.0%	60.0%	100.0%	20.9%	0.7618	NO
WQ-TOX-002-062711-REP	21128-003		87.5%	80.0%	100.0%	11.8%	0.9108	NO
WQ-TOX-003-062711	21128-004		87.5%	60.0%	100.0%	17.0%	0.8734	NO
WQ-TOX-004-062711	21128-005		85.0%	60.0%	100.0%	16.6%	0.7874	NO
<i>Americamysis bahia</i>			Growth - Biomass					
Laboratory Control	21128-000		32.1%	19.4%	55.4%	34.9%	-	-
WQ-TOX-001-062711	21128-001	8	69.5%	40.2%	119.0%	45.5%	0.9965	NO
WQ-TOX-002-062711	21128-002		37.9%	29.0%	50.4%	20.5%	0.8757	NO
WQ-TOX-002-062711-REP	21128-003		39.0%	16.2%	86.2%	55.5%	0.7823	NO
WQ-TOX-003-062711	21128-004		31.0%	21.0%	40.4%	24.9%	0.4152	NO
WQ-TOX-004-062711	21128-005		49.2%	31.4%	87.8%	37.4%	0.9793	NO
<i>Americamysis bahia</i>			Growth - Dry Weight					
Laboratory Control	21128-000	8	40.0%	27.0%	69.2%	32.2%	-	-
<i>Arbacia punctulata*</i>			Portion Fertilized					
Laboratory Control	21128-000		88.0%	85.0%	91.0%	3.4%	-	-
WQ-TOX-001-062711	21128-001	4	83.7%	77.0%	89.0%	6.1%	0.0989	NO
WQ-TOX-002-062711	21128-002		79.7%	78.0%	83.0%	3.0%	0.0029	YES
WQ-TOX-002-062711-REP	21128-003		84.7%	82.0%	88.0%	3.3%	0.0791	NO
WQ-TOX-003-062711	21128-004		28.8%	17.0%	40.0%	34.6%	<0.0001	YES
WQ-TOX-004-062711	21128-005		85.3%	82.0%	88.0%	2.9%	0.1002	NO

**COMMENTS:**

\* The *A. punctulata* assay was run 3 days after the samples were collected, which is outside the recommended hold time of 36 hours.



**APPENDIX A**  
**SUPPORT DATA**

<b>Contents</b>	<b># Pages</b>
Methods Summary	1
Study 21128: Sample Date June 27, 2011	
<i>A. bahia</i> Bench Sheets & Statistical Analysis Report	25
<i>A. punctulata</i> Bench Sheets and Statistical Analysis Report	8
Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Records	6
Analytical Chemistry Report	1
Sample Receipt Records	1
Chain of Custody and Organism Shipping Information	1
Total Appendix Pages	43

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

Parameter	Method
<b>Acute Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-012 2002.0
<i>Daphnia pulex</i>	EPA-821-R-02-012 2021.0
<i>Pimephales promelas</i>	EPA-821-R-02-012 2000.0
<i>Americamysis bahia</i>	EPA-821-R-02-012 2007.0
<i>Menidia beryllina</i>	EPA-821-R-02-012 2006.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-012 2004.0
<b>Chronic Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013 1002.0
<i>Pimephales promelas</i>	EPA-821-R-02-013 1000.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-014 1004.0
<i>Menidia beryllina</i>	EPA-821-R-02-014 1006.0
<i>Americamysis bahia</i>	EPA-821-R-02-014 1007.0
<i>Arbacia punctulata</i>	EPA-821-R-02-014 1008.0
<i>Champia parvula</i>	EPA-821-R-02-014 1009.0
<b>Trace Metals:</b>	
Trace Metals	EPA 200.7/SW 6010 and EPA 200.8/SW 6020
Hardness	Standard Methods 20 <sup>th</sup> Edition - Method 2340 B
<b>Wet Chemistries:</b>	
Alkalinity	EPA 310.2
Chlorine, Residual	Standard Methods 20 <sup>th</sup> Edition - Method 4500CLD
Total Organic Carbon	Standard Methods 20 <sup>th</sup> Edition - Method 5310C
Specific Conductance	Standard Methods 20 <sup>th</sup> Edition - Method 2510B
Nitrogen - Ammonia	Standard Methods 20 <sup>th</sup> Edition - Method 4500NH3G
pH	Standard Methods 20 <sup>th</sup> Edition - Method 4500H+B
Solids, Total (TS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 B
Solids, Total Dissolved (TDS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 C
Solids, Total Suspended (TSS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 D
Dissolved Oxygen	Standard Methods 20 <sup>th</sup> Edition - Method 4500-O G

Please visit our web site at [www.envirosystems.com](http://www.envirosystems.com) for a copy of our NH NELAP Accreditation and Massachusetts State Certification.

ACUTE BIOASSAY DATA SUMMARY

STUDY: Z1128		"AS RECEIVED" EFFLUENT AND DILUENT CHEMISTRIES							
CLIENT: Woods Hole Group	TEST ORGANISM: <i>A. bahia</i>	TRC	TS/TSS	AMM	TOC	T.METAL	SAL	pH	S/C
SAMPLE: New Bedford Harbor	ORGANISM SUPPLIER/BATCH/AGE: See Organism Culture Sheet	EFF	See A. bahia Chronic						
		DIL							

CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0
LAB	A	10	10	10	6.9	6.0	7.1	8.13	7.79	8.00	24	25	25	25	25	25	38880
	B	10	10	10	6.9	5.9	7.1										
	C	10	10	10	6.9	5.7	7.1										
	D	10	10	10	6.9	5.7	7.0										
D-1101	A	10	10	10	6.2	5.8	6.9	7.49	7.61	8.01	24	25	25	26	26	27	40660
	B	10	10	10	6.2	5.7	7.0										
	C	10	10	10	6.2	5.8	7.0										
	D	10	10	10	6.2	5.9	7.0										
-002	A	10	10	10	6.8	2.8*	7.0	7.56	7.24	7.98	24	25	25	26	26	26	39980
	B	10	10	9	6.8	5.3	7.0										
	C	10	10	10	6.8	5.0	6.9										
	D	10	10	9	6.8	3.9	6.9										
-003	A	10	10	10	6.9	4.8	6.9	7.73	7.56	7.95	24	25	25	25	25	26	39320
	B	10	10	10	6.9	4.4	7.0										
	C	10	10	10	6.9	4.5	6.9										
	D	10	10	9	6.9	4.2	6.9										

DATE	6/24/11	6/30/11	6/28/11	4/29/11	6/30/11
TIME	1535	1405	1425	1510	1345
INITIALS	LB	CS	CS	W	CS

\* put on air 24 hrs

Master Quality Monitoring Summary Report





# Aquatic Research Organisms

rec  
6/28/11

## DATA SHEET

### I. Organism History

Species AMERICAMYSIS BABIA

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-25-11 Receipt date \_\_\_\_\_

Lot number 062511MS Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity 27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other ESL SLIZING DIET

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

### IV. Shipping Information

Client: ESI # of Organisms 48+

Carrier: \_\_\_\_\_ Date shipped 6-28-11

Biologist: Mark Donaghy

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#		
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)						
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Lab Control	A	5	5	5	5	4	4	4	4	6.0	6.6	6.9	7.1	6.9	6.4	6.7
	B	5	5	5	4	4	3	3	3	5.9	6.7	7.0	6.9	7.0	6.5	6.7
	C	5	5	4	4	4	4	4	4	5.9	6.8	6.9	7.3	7.2	6.6	6.6
	D	5	5	5	5	5	5	4	4	5.9	6.7	6.9	7.3	7.0	6.7	6.6
	E	5	5	5	5	5	5	5	4	5.5	6.8	6.7	7.0	6.6	6.7	6.6
	F	5	5	5	5	5	5	5	5	5.4	6.8	7.0	7.0	7.0	6.9	6.6
	G	5	5	5	5	5	4	4	4	4.9	6.8	6.6	7.1	6.9	7.0	6.8
	H	5	5	5	5	5	5	5	4	5.1	6.8	6.6	7.4	6.6	6.5	6.7
-001	A	5	5	5	5	5	5	5	5	5.4	6.8	6.9	6.9	6.8	6.7	8.6
	B	5	4	4	4	4	4	4	4	5.4	6.8	6.8	7.4	6.7	6.6	8.8
	C	5	5	5	5	5	5	5	5	3.9	6.9	6.7	7.1	6.7	6.9	9.9
	D	5	5	5	5	5	4	4	4	4.9	6.8	6.8	7.1	6.6	6.5	6.7
	E	5	5	5	5	5	5	5	5	4.2	6.8	6.7	7.1	6.7	6.6	6.6
	F	5	5	5	5	4	4	4	4	2.5	6.8	6.8	7.0	6.7	7.0	6.6
	G	5	5	5	5	6	5	5	5	6.0	6.8	6.8	7.1	6.6	7.1	6.6
	H	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.1	6.6	7.0	6.6
-002	A	5	5	5	4	5	4	4	3	4.5	6.8	6.7	7.1	6.9	6.6	7.3
	B	5	5	5	5	5	5	5	5	5.9	6.7	6.7	7.0	6.7	6.5	6.8
	C	5	5	5	5	5	5	5	5	4.2	6.8	6.7	7.0	6.6	6.7	6.7
	D	5	5	5	5	5	5	4	4	5.3	6.8	6.5	7.0	6.7	6.2	6.4
	E	5	5	5	5	5	5	5	5	4.4	6.8	6.6	7.0	6.7	6.4	6.4
	F	5	5	5	4	4	4	4	4	4.7	6.8	6.6	7.0	6.6	6.5	6.6
	G	5	5	5	5	5	5	5	5	4.9	6.8	6.7	7.1	6.6	6.7	6.2
	H	5	5	5	5	5	5	4	3	4.3	6.8	6.8	7.0	7.0	6.9	6.5
INC TEMP:		26	26	25	25	25	25	25	26	26						
DATE:		6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5	6/29						
TIME:		1455	1205	1045	1045	0915	1305	1245	1020							
INITIALS:		UB	CS	CS	UB	UB	SJ	SJ	CS							

UB  
7/1/11

\*put on air day 1

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#			
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)							
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
-003	A	5	5	5	5	5	5	5	4	4.5	6.8	6.6	7.0	6.6	6.5	7.3	
	B	5	5	5	5	4	4	4	4	4.5	6.9	6.7	7.0	6.5	6.4	6.5	
	C	5	5	5	5	5	5	5	4	4.5	6.8	6.6	7.0	6.6	6.3	6.1	
	D	5	5	5	5	5	5	5	4	4.3	6.8	6.6	7.0	6.5	6.7	7.5	
	E	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.0	6.6	6.8	6.9	
	F	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.0	6.9	6.7	6.6	
	G	5	5	5	4	4	4	4	4	5.3	6.8	6.8	6.6	6.7	6.6	6.9	
	H	5	5	5	5	5	5	5	5	5.0	6.8	6.6	6.8	6.6	6.8	6.5	
-004	A	5	5	5	5	5	5	5	5	5.2	6.8	6.5	6.9	6.6	6.4	6.7	
	B	5	5	5	5	5	4	4	3	4.2	6.7	6.6	7.0	6.7	6.6	6.7	
	C	5	5	5	5	5	5	5	5	4.9	6.7	6.6	7.0	6.6	6.7	6.6	
	D	5	5	5	5	4	4	4	4	4.8	6.7	6.6	7.0	6.8	6.9	6.8	
	E	5	5	5	5	5	5	5	5	4.9	6.7	6.6	7.2	6.6	7.0	6.8	
	F	5	5	5	5	5	5	5	4	6.6	6.7	6.6	7.1	6.6	6.8	6.6	
	G	5	5	5	5	5	5	5	5	5.8	6.7	6.6	7.0	6.7	6.7	6.7	
	H	5	5	5	5	5	5	4	4	4.9	6.8	6.6	7.1	6.8	6.6	6.8	
-005	A	5	5	5	5	5	5	5	5	5.3	6.8	6.5	7.0	6.6	6.5	6.7	
	B	5	5	5	5	5	5	4	4	5.6	6.8	6.5	6.9	6.7	6.3	6.7	
	C	5	5	5	5	5	5	5	5	5.8	6.9	6.5	7.0	6.8	6.6	6.7	
	D	5	5	5	5	5	5	5	4	5.9	6.8	6.4	7.1	6.6	6.4	6.7	
	E	5	5	5	5	5	5	5	4	6.2	6.8	6.4	7.0	6.7	6.4	7.1	
	F	5	4	4	4	4	3	3	3	6.2	6.7	6.4	7.0	6.7	6.5	6.8	
	G	5	5	5	5	5	5	5	4	6.0	6.7	6.4	7.0	7.1	6.3	6.7	
	H	5	5	5	5	5	5	5	5	5.9	6.8	6.4	7.0	6.6	6.4	7.2	
INC TEMP:		26	26	25	25	25	25	26	26								
DATE:		6/23/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5								
TIME:		1455	1205	1045	1055	0915	1305	1245	1020								
INITIALS:		UB	CS	CS	UB	UB	SJ	SJ	CS								

UB  
7/1/11

Larval Fish Dry Weight Summary Sheet

Study:	21128	
Client:	Woods Hole Group	
Date/Time/Init:	07/06/11 0915 CS	07/02/11 1025 LB
Conc	Fish and Foil (mg)	Tare Wt (mg)
Lab A	208.46	207.11
Lab B	207.21	206.24
Lab C	209.47	207.94
Lab D	210.04	208.51
Lab E	210.45	209.37
Lab F	208.07	206.25
Lab G	212.12	209.35
Lab H	208.99	207.2
001A	209.89	207.88
001B	213.87	207.94
001C	214.6	211.73
001D	210.67	208.02
001E	209.94	206.72
001F	210.06	208.04
001G	209.9	206.72
001H	213.69	207.77
002A	212.2	210.58
002B	211.72	209.75
002C	211.55	209.03
002D	211.32	209.87
002E	211.69	209.62
002F	208.41	206.74
002G	210.77	208.45
002H	208.43	206.89
003A	207.46	205.92
003B	205.51	204.7
003C	209.76	208.49
003D	210.41	208.42
003E	212.61	210.06
003F	214.17	209.86
003G	208.95	207.57
003H	206.96	205.2
004A	208.15	206.3
004B	209.9	208.47
004C	209.06	207.83
004D	210.39	208.37
004E	210.58	208.66
004F	210.85	209.72
004G	208.83	207.04
004H	209.45	208.4
005A	211.26	208.66
005B	209	206.04
005C	211.89	209.34
005D	208.29	206.72
005E	211.96	207.57
005F	208.35	206.54
005G	210.6	208.89
005H	208.38	206.29



**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:38 (p 1 of 1)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000		21128-001	0.9841	0.05	Non-Significant Effect	00-3041-5675	Equal Variance t Two-Sample Test
		21128-002	0.7618	0.05	Non-Significant Effect	01-7796-1607	Equal Variance t Two-Sample Test
		21128-003	0.9108	0.05	Non-Significant Effect	21-2893-6766	Equal Variance t Two-Sample Test
		21128-004	0.8734	0.05	Non-Significant Effect	14-3920-9434	Equal Variance t Two-Sample Test
		21128-005	0.7874	0.05	Non-Significant Effect	13-0638-1109	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-3041-5675	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
01-7796-1607	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
13-0638-1109	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
14-3920-9434	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
21-2893-6766	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria

7d Proportion Survived Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.76	0.84	0.6	1	0.0378	0.107	13.4%	0.0%
21128-001	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-15.6%
21128-002	8	0.85	0.784	0.916	0.6	1	0.0627	0.177	20.9%	-6.25%
21128-003	8	0.875	0.836	0.914	0.8	1	0.0366	0.104	11.8%	-9.37%
21128-004	8	0.875	0.819	0.931	0.6	1	0.0526	0.149	17.0%	-9.37%
21128-005	8	0.85	0.797	0.903	0.6	1	0.05	0.141	16.6%	-6.25%

7d Proportion Survived Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-001	1	0.8	1	0.8	1	0.8	1	1
21128-002	0.6	1	1	0.8	1	0.8	1	0.6
21128-003	0.8	0.8	0.8	0.8	1	1	0.8	1
21128-004	1	0.6	1	0.8	1	0.8	1	0.8
21128-005	1	0.8	1	0.8	0.8	0.6	0.8	1

**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:15 (p 2 of 2)  
**Test Code:** 62DA1398 | 16-5845-9032

Americamysis 7-d Survival, Growth and Fecundity Test										EnviroSystems, Inc.
<b>7d Proportion Survived Summary</b>										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.76	0.84	0.6	1	0.0378	0.107	13.4%	0.0%
21128-001	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-15.6%
21128-002	8	0.85	0.784	0.916	0.6	1	0.0627	0.177	20.9%	-6.25%
21128-003	8	0.875	0.836	0.914	0.8	1	0.0366	0.104	11.8%	-9.37%
21128-004	8	0.875	0.819	0.931	0.6	1	0.0526	0.149	17.0%	-9.37%
21128-005	8	0.85	0.797	0.903	0.6	1	0.05	0.141	16.6%	-6.25%
<b>Mean Dry Biomass-mg Summary</b>										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.279	0.363	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-001	8	0.695	0.577	0.813	0.402	1.19	0.112	0.316	45.5%	-117.0%
21128-002	8	0.379	0.35	0.408	0.29	0.504	0.0275	0.0777	20.5%	-18.1%
21128-003	8	0.39	0.309	0.471	0.162	0.862	0.0766	0.217	55.5%	-21.6%
21128-004	8	0.31	0.282	0.339	0.21	0.404	0.0274	0.0774	24.9%	3.27%
21128-005	8	0.492	0.423	0.561	0.314	0.878	0.065	0.184	37.4%	-53.3%
<b>Mean Dry Weight-mg Summary</b>										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.352	0.448	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-001	8	0.761	0.622	0.9	0.402	1.48	0.131	0.372	48.8%	-90.3%
21128-002	8	0.451	0.427	0.475	0.363	0.54	0.0225	0.0636	14.1%	-12.8%
21128-003	8	0.434	0.36	0.508	0.202	0.862	0.0704	0.199	45.9%	-8.49%
21128-004	8	0.361	0.325	0.396	0.246	0.505	0.0338	0.0955	26.5%	9.85%
21128-005	8	0.589	0.501	0.676	0.392	1.1	0.0831	0.235	39.9%	-47.2%
<b>7d Proportion Survived Detail</b>										
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8		
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8		
21128-001	1	0.8	1	0.8	1	0.8	1	1		
21128-002	0.6	1	1	0.8	1	0.8	1	0.6		
21128-003	0.8	0.8	0.8	0.8	1	1	0.8	1		
21128-004	1	0.6	1	0.8	1	0.8	1	0.8		
21128-005	1	0.8	1	0.8	0.8	0.6	0.8	1		
<b>Mean Dry Biomass-mg Detail</b>										
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8		
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358		
21128-001	0.402	1.19	0.574	0.53	0.644	0.404	0.636	1.18		
21128-002	0.324	0.394	0.504	0.29	0.414	0.334	0.464	0.308		
21128-003	0.308	0.162	0.254	0.398	0.51	0.862	0.276	0.352		
21128-004	0.37	0.286	0.246	0.404	0.384	0.226	0.358	0.21		
21128-005	0.52	0.592	0.51	0.314	0.878	0.362	0.342	0.418		
<b>Mean Dry Weight-mg Detail</b>										
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8		
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448		
21128-001	0.402	1.48	0.574	0.662	0.644	0.505	0.636	1.18		
21128-002	0.54	0.394	0.504	0.363	0.414	0.417	0.464	0.513		
21128-003	0.385	0.202	0.317	0.498	0.51	0.862	0.345	0.352		
21128-004	0.37	0.477	0.246	0.505	0.384	0.283	0.358	0.263		
21128-005	0.52	0.74	0.51	0.392	1.1	0.603	0.428	0.418		

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 1 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 13-0638-1109	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint13.6%	

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-005	-0.8215	1.761	14	0.1276	0.7874	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01417698	0.01417698	1	0.6748	0.4251	Non-Significant Effect
Error	0.2941186	0.02100847	14			
Total	0.3082955	0.03518545	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.787	8.885	0.4617	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9004	0.8408	0.0815	Normal Distribution

**7d Proportion Survived Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-005	8	0.85	0.7962	0.9038	0.6	1	0.05	0.1414	16.64%	-6.25%

**Angular (Corrected) Transformed Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-005	8	1.169	1.106	1.231	0.8861	1.345	0.05803	0.1641	14.04%	-5.37%

**7d Proportion Survived Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-005	1	0.8	1	0.8	0.8	0.6	0.8	1

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 2 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 14-3920-9434	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint14.1%	

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-004	-1.192	1.761	14	0.132	0.8734	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03189819	0.03189819	1	1.421	0.2531	Non-Significant Effect
Error	0.3143682	0.02245487	14			
Total	0.3462664	0.05435307	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.979	8.885	0.3880	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9266	0.8408	0.2153	Normal Distribution

**7d Proportion Survived Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-004	8	0.875	0.8184	0.9316	0.6	1	0.05261	0.1488	17.01%	-9.38%

**Angular (Corrected) Transformed Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-004	8	1.199	1.133	1.264	0.8861	1.345	0.06107	0.1727	14.41%	-8.05%

**7d Proportion Survived Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-004	1	0.6	1	0.8	1	0.8	1	0.8

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 3 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 21-2893-6766	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint11.4%	

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-003	-1.417	1.761	14	0.1083	0.9108	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03039269	0.03039269	1	2.008	0.1783	Non-Significant Effect
Error	0.2118715	0.01513368	14			
Total	0.2422642	0.04552637	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.007	8.885	0.9925	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9058	0.8408	0.0994	Normal Distribution

**7d Proportion Survived Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-003	8	0.875	0.8356	0.9144	0.8	1	0.0366	0.1035	11.83%	-9.38%

**Angular (Corrected) Transformed Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-003	8	1.196	1.15	1.243	1.107	1.345	0.04357	0.1232	10.3%	-7.86%

**7d Proportion Survived Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-003	0.8	0.8	0.8	0.8	1	1	0.8	1

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 4 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 01-7796-1607	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint16.0%	

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-002	-0.7319	1.761	14	0.1484	0.7618	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01521097	0.01521097	1	0.5357	0.4763	Non-Significant Effect
Error	0.3975583	0.02839702	14			
Total	0.4127693	0.04360799	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.767	8.885	0.2028	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8912	0.8408	0.0583	Normal Distribution

**7d Proportion Survived Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-002	8	0.85	0.7826	0.9174	0.6	1	0.06268	0.1773	20.86%	-6.25%

**Angular (Corrected) Transformed Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-002	8	1.171	1.093	1.249	0.8861	1.345	0.07221	0.2042	17.44%	-5.56%

**7d Proportion Survived Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-002	0.6	1	1	0.8	1	0.8	1	0.6

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 5 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

**Analysis ID:** 00-3041-5675      **Endpoint:** 7d Proportion Survived      **CETIS Version:** CETISv1.8.0  
**Analyzed:** 13 Jul-11 11:01      **Analysis:** Parametric-Two Sample      **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint11.4%	

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-001	-2.385	1.761	14	0.1083	0.9841	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.08608479	0.08608479	1	5.688	0.0318	Significant Effect
Error	0.2118715	0.01513368	14			
Total	0.2979563	0.1012185	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.007	8.885	0.9925	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9101	0.8408	0.1168	Normal Distribution

**7d Proportion Survived Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-001	8	0.925	0.8856	0.9644	0.8	1	0.0366	0.1035	11.19%	-15.62%

**Angular (Corrected) Transformed Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-001	8	1.256	1.209	1.303	1.107	1.345	0.04357	0.1232	9.81%	-13.22%

**7d Proportion Survived Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8
21128-001	1	0.8	1	0.8	1	0.8	1	1

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**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:40 (p 1 of 1)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000		21128-001	0.9965	0.05	Non-Significant Effect	20-4952-3650	Wilcoxon Rank Sum Two-Sample Test
		21128-002	0.8344	0.05	Non-Significant Effect	12-1260-7485	Equal Variance t Two-Sample Test
		21128-003	0.6542	0.05	Non-Significant Effect	15-6443-6524	Equal Variance t Two-Sample Test
		21128-004	0.2494	0.05	Non-Significant Effect	18-9556-6859	Equal Variance t Two-Sample Test
		21128-005	0.9926	0.05	Non-Significant Effect	10-7247-4612	Wilcoxon Rank Sum Two-Sample Test

Mean Dry Weight-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.352	0.448	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-001	8	0.761	0.622	0.9	0.402	1.48	0.131	0.372	48.8%	-90.3%
21128-002	8	0.451	0.427	0.475	0.363	0.54	0.0225	0.0636	14.1%	-12.8%
21128-003	8	0.434	0.36	0.508	0.202	0.862	0.0704	0.199	45.9%	-8.49%
21128-004	8	0.361	0.325	0.396	0.246	0.505	0.0338	0.0955	26.5%	9.85%
21128-005	8	0.589	0.501	0.676	0.392	1.1	0.0831	0.235	39.9%	-47.2%

Mean Dry Weight-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-001	0.402	1.48	0.574	0.662	0.644	0.505	0.636	1.18
21128-002	0.54	0.394	0.504	0.363	0.414	0.417	0.464	0.513
21128-003	0.385	0.202	0.317	0.498	0.51	0.862	0.345	0.352
21128-004	0.37	0.477	0.246	0.505	0.384	0.283	0.358	0.263
21128-005	0.52	0.74	0.51	0.392	1.1	0.603	0.428	0.418



**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 1 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 10-7247-4612	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Nonparametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	41.7%

Wilcoxon Rank Sum Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21128-000		21128-005	91		14	0	0.9926	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1423183	0.1423183	1	3.96	0.0664	Non-Significant Effect
Error	0.5029182	0.03592273	14			
Total	0.6452365	0.178241	15			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	3.32	8.89	0.1359	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.827	0.841	0.0064	Non-normal Distribution	

Mean Dry Weight-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-005	8	0.589	0.499	0.678	0.392	1.1	0.0831	0.235	39.9%	-47.2%

Mean Dry Weight-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-005	0.52	0.74	0.51	0.392	1.1	0.603	0.428	0.418

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 2 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 18-9556-6859	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	25.0%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-004	0.694	1.76	14	0.0999	0.2494	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.00620826	0.00620826	1	0.482	0.4988	Non-Significant Effect	
Error	0.1802246	0.01287318	14				
Total	0.1864328	0.01908144	15				

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	1.82	8.89	0.4462	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.892	0.841	0.0590	Normal Distribution	

Mean Dry Weight-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-004	8	0.361	0.324	0.397	0.246	0.505	0.0338	0.0955	26.5%	9.85%

Mean Dry Weight-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-004	0.37	0.477	0.246	0.505	0.384	0.283	0.358	0.263

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 3 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 15-6443-6524	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	36.9%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-003	-0.405	1.76	14	0.148	0.6542	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.004612572	0.004612572	1	0.164	0.6916	Non-Significant Effect	
Error	0.3936066	0.02811476	14				
Total	0.3982191	0.03272733	15				

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	2.38	8.89	0.2750	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.849	0.841	0.0134	Normal Distribution	

Mean Dry Weight-mg Summary											
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%	
21128-003	8	0.434	0.358	0.51	0.202	0.862	0.0704	0.199	45.9%	-8.49%	

Mean Dry Weight-mg Detail									
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448	
21128-003	0.385	0.202	0.317	0.498	0.51	0.862	0.345	0.352	

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 4 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 12-1260-7485	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	22.4%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-002	-1.01	1.76	14	0.0895	0.8344	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01048065	0.01048065	1	1.01	0.3311	Non-Significant Effect
Error	0.1447588	0.01033991	14			
Total	0.1552394	0.02082056	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	4.11	8.89	0.0822	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.851	0.841	0.0140	Normal Distribution

**Mean Dry Weight-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-002	8	0.451	0.427	0.475	0.363	0.54	0.0225	0.0636	14.1%	-12.8%

**Mean Dry Weight-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-002	0.54	0.394	0.504	0.363	0.414	0.417	0.464	0.513

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 5 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 20-4952-3650	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:00	<b>Analysis:</b> Nonparametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	61.3%

Wilcoxon Rank Sum Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21128-000		21128-001	93		14	0	0.9965	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.5220645	0.5220645	1	6.74	0.0211	Significant Effect
Error	1.084293	0.07744952	14			
Total	1.606358	0.599514	15			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	8.31	8.89	0.0122	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.841	0.841	0.0099	Non-normal Distribution	

Mean Dry Weight-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-001	8	0.761	0.62	0.903	0.402	1.48	0.131	0.372	48.8%	-90.3%

Mean Dry Weight-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-001	0.402	1.48	0.574	0.662	0.644	0.505	0.636	1.18

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 1 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 05-7481-4451	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	41.8%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-005	-2.25	1.76	14	0.134	0.9793	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1169644	0.1169644	1	5.05	0.0413	Significant Effect
Error	0.3243743	0.02316959	14			
Total	0.4413387	0.140134	15			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.7	8.89	0.2137	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.889	0.841	0.0541	Normal Distribution

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-005	8	0.492	0.422	0.562	0.314	0.878	0.065	0.184	37.4%	-53.3%

Mean Dry Biomass-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-005	0.52	0.592	0.51	0.314	0.878	0.362	0.342	0.418

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 2 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 10-7087-4289	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	26.4%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-004	0.218	1.76	14	0.0847	0.4152	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0004410285	0.0004410285	1	0.0476	0.8304	Non-Significant Effect
Error	0.1296529	0.009260924	14			
Total	0.130094	0.009701952	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.09	8.89	0.3514	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.936	0.841	0.3061	Normal Distribution

**Mean Dry Biomass-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-004	8	0.31	0.281	0.34	0.21	0.404	0.0274	0.0774	24.9%	3.27%

**Mean Dry Biomass-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-004	0.37	0.286	0.246	0.404	0.384	0.226	0.358	0.21

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 3 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 17-7809-5869	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	47.3%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-003	-0.803	1.76	14	0.152	0.7823	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0191821	0.0191821	1	0.645	0.4355	Non-Significant Effect
Error	0.4166031	0.02975736	14			
Total	0.4357851	0.04893946	15			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	3.75	8.89	0.1024	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.865	0.841	0.0229	Normal Distribution

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-003	8	0.39	0.308	0.473	0.162	0.862	0.0766	0.217	55.5%	-21.6%

Mean Dry Biomass-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-003	0.308	0.162	0.254	0.398	0.51	0.862	0.276	0.352

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 4 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 14-7691-8606	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	26.4%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-002	-1.2	1.76	14	0.0849	0.8757	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01345608	0.01345608	1	1.45	0.2487	Non-Significant Effect
Error	0.1300234	0.00928739	14			
Total	0.1434795	0.02274347	15			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.07	8.89	0.3571	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.938	0.841	0.3226	Normal Distribution

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-002	8	0.379	0.349	0.409	0.29	0.504	0.0275	0.0777	20.5%	-18.1%

Mean Dry Biomass-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-002	0.324	0.394	0.504	0.29	0.414	0.334	0.464	0.308

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 5 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

**Analysis ID:** 01-3082-8564      **Endpoint:** Mean Dry Biomass-mg      **CETIS Version:** CETISv1.8.0  
**Analyzed:** 13 Jul-11 11:01      **Analysis:** Parametric-Two Sample      **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	65.0%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-001	-3.16	1.76	14	0.209	0.9965	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.5595022	0.5595022	1	9.96	0.0070	Significant Effect
Error	0.7863894	0.05617067	14			
Total	1.345892	0.6156729	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	7.97	8.89	0.0138	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.857	0.841	0.0173	Normal Distribution

**Mean Dry Biomass-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-001	8	0.695	0.575	0.815	0.402	1.19	0.112	0.316	45.5%	-117.0%

**Mean Dry Biomass-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-001	0.402	1.19	0.574	0.53	0.644	0.404	0.636	1.18

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**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:39 (p 1 of 1)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000		21128-001	0.9965	0.05	Non-Significant Effect	01-3082-8564	Equal Variance t Two-Sample Test
		21128-002	0.8757	0.05	Non-Significant Effect	14-7691-8606	Equal Variance t Two-Sample Test
		21128-003	0.7823	0.05	Non-Significant Effect	17-7809-5869	Equal Variance t Two-Sample Test
		21128-004	0.4152	0.05	Non-Significant Effect	10-7087-4289	Equal Variance t Two-Sample Test
		21128-005	0.9793	0.05	Non-Significant Effect	05-7481-4451	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-3082-8564	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
05-7481-4451	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
10-7087-4289	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
14-7691-8606	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
17-7809-5869	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
01-3082-8564	Mean Dry Biomass-mg	PMSD	0.65	0.11 - 0.37	Yes	Above Acceptability Criteria
05-7481-4451	Mean Dry Biomass-mg	PMSD	0.418	0.11 - 0.37	Yes	Above Acceptability Criteria
10-7087-4289	Mean Dry Biomass-mg	PMSD	0.264	0.11 - 0.37	Yes	Passes Acceptability Criteria
14-7691-8606	Mean Dry Biomass-mg	PMSD	0.264	0.11 - 0.37	Yes	Passes Acceptability Criteria
17-7809-5869	Mean Dry Biomass-mg	PMSD	0.473	0.11 - 0.37	Yes	Above Acceptability Criteria

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.279	0.363	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-001	8	0.695	0.577	0.813	0.402	1.19	0.112	0.316	45.5%	-117.0%
21128-002	8	0.379	0.35	0.408	0.29	0.504	0.0275	0.0777	20.5%	-18.1%
21128-003	8	0.39	0.309	0.471	0.162	0.862	0.0766	0.217	55.5%	-21.6%
21128-004	8	0.31	0.282	0.339	0.21	0.404	0.0274	0.0774	24.9%	3.27%
21128-005	8	0.492	0.423	0.561	0.314	0.878	0.065	0.184	37.4%	-53.3%

Mean Dry Biomass-mg Detail									
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358	
21128-001	0.402	1.19	0.574	0.53	0.644	0.404	0.636	1.18	
21128-002	0.324	0.394	0.504	0.29	0.414	0.334	0.464	0.308	
21128-003	0.308	0.162	0.254	0.398	0.51	0.862	0.276	0.352	
21128-004	0.37	0.286	0.246	0.404	0.384	0.226	0.358	0.21	
21128-005	0.52	0.592	0.51	0.314	0.878	0.362	0.342	0.418	

**Arbacia punctulata Chronic Fertilization Assay  
Water Quality and Gamete Preparation Data**

STUDY: <u>21128</u>	CLIENT: Woods Hole Group	LOCATION: New Bedford	DATE: <u>6/30/11</u> INITIALS: <u>LB</u>		
SALINITY ADJUSTMENT RECORD: <u>1000</u> mL -001 + <u>5</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -002 + <u>5</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -003 + <u>6</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -004 + <u>2</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -005 + <u>16</u> g SALT					
SALINITY ADJUSTED SAMPLE	D.O. (mg/L)	pH (SU)	SPEC COND (µmhos)	TEMP (°C)	SALINITY (ppt)
Lab Control	7.9	7.97	44180	18	29
-001	7.1	7.95	45230	21	30
-002	7.4	8.05	45810	21	30
-003	7.2	8.07	48190	21	32
-004	7.1	7.87	45980	21	30
-005	7.5	8.20	46830	21	30

**METERS USED**

DO meter # 24    DO probe # 89    pH meter # 1097    pH probe # 93    S/C meter # YS130E    S/C probe # YS130E  
SALINITY meter # YS130E

DATE & INITIALS FOR GAMETE PREPARATION: 6/30/11 LB  
SPERM DILUTIONS:

HEMACYTOMETER COUNT, E: 124 X 10<sup>4</sup> = SPM SOLUTION E = 1.24 x 10<sup>6</sup>  
SPERM CONCENTRATIONS: SOLUTION E X 40 = SOLUTION A = 4.96 x 10<sup>7</sup> SPM  
SOLUTION E X 20 = SOLUTION B = 2.48 x 10<sup>7</sup> SPM  
SOLUTION E X 5 = SOLUTION C = 6.2 x 10<sup>6</sup> SPM

**FINAL COUNTS:**

FINAL SPERM COUNT: 4.96 x 10<sup>7</sup>  
FINAL EGG COUNT: 2000

**TEST TIMES:**

SPERM COLLECTED: 1430  
EGGS COLLECTED: 1430  
SPERM ADDED: 1506  
EGGS ADDED: 1606  
FIXATIVE ADDED: 1626

**Arbacia punctulata Chronic Fertilization Assay**

**SAMPLE USE RECORD**

STUDY: 21128		CLIENT: Woods Hole Group New Bedford	
SPECIES: <i>A. punctulata</i>			
Day: 0			
SAMPLE	Volume Used (mL)	ESI Cube ID	
Lab Control	100	—	
-001	↓	001	
-002		002	
-003		003	
-004		004	
-005		005	
INITIALS:	LB		
TIME:	1035		
DATE:	6/30/11		

**FERTILIZATION COUNTS**

STUDY	CLIENT	LOCATION		DATE	INITIALS
	Woods Hole Group	New Bedford		07/01/11	LB
	REPLICATE VIAL				
	1	2	3	4	
SAMPLE	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	
Lab Control	82/100 <sup>85/100</sup>	76/100 <sup>90/100</sup>	70/100 <sup>91/100</sup>	78/100 <sup>80/100</sup>	(LB)
-001	89/100	86/100	77/100	83/100	
-002	83/100	78/100	78/100	80/100	
-003	83/100	86/100	88/100	82/100	
-004	17/100	33/100	25/100	40/100	
-005	88/100	82/100	86/100	85/100	

**CETIS Summary Report**

**Report Date:** 13 Jul-11 12:53 (p 1 of 1)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>	<b>EnviroSystems, Inc.</b>
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<b>Batch ID:</b> 01-1966-7637	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 30 Jun-11 15:06	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 30 Jun-11 16:26	<b>Species:</b> Arbacia punctulata	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture	<b>Age:</b>

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000 (Ap)	01-5152-9165	30 Jun-11 12:00	30 Jun-11 12:00	3h	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	77h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	76h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	76h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	73h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	73h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000 (Ap)	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control (Ap); 21128-00		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000 (Ap)		21128-001	0.0989	0.05	Non-Significant Effect	16-7317-8166	Equal Variance t Two-Sample Test
		21128-002	0.0029	0.05	Significant Effect	00-2974-6066	Equal Variance t Two-Sample Test
		21128-003	0.0791	0.05	Non-Significant Effect	16-8553-8067	Equal Variance t Two-Sample Test
		21128-004	<0.0001	0.05	Significant Effect	19-8643-9866	Equal Variance t Two-Sample Test
		21128-005	0.1002	0.05	Non-Significant Effect	19-1458-1209	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-2974-6066	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
16-7317-8166	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
16-8553-8067	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
19-1458-1209	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
19-8643-9866	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
00-2974-6066	Proportion Fertilized	PMSD	0.0399	NL - 0.25	No	Passes Acceptability Criteria
16-7317-8166	Proportion Fertilized	PMSD	0.063	NL - 0.25	No	Passes Acceptability Criteria
16-8553-8067	Proportion Fertilized	PMSD	0.0442	NL - 0.25	No	Passes Acceptability Criteria
19-1458-1209	Proportion Fertilized	PMSD	0.0424	NL - 0.25	No	Passes Acceptability Criteria
19-8643-9866	Proportion Fertilized	PMSD	0.0964	NL - 0.25	No	Passes Acceptability Criteria

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-001	4	0.837	0.818	0.857	0.77	0.89	0.0256	0.0512	6.12%	4.83%
21128-002	4	0.797	0.789	0.806	0.78	0.83	0.0118	0.0236	2.96%	9.37%
21128-003	4	0.847	0.837	0.858	0.82	0.88	0.0138	0.0275	3.25%	3.69%
21128-004	4	0.288	0.25	0.325	0.17	0.4	0.0497	0.0995	34.6%	67.3%
21128-005	4	0.853	0.843	0.862	0.82	0.88	0.0125	0.025	2.93%	3.12%

Proportion Fertilized Detail					
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	
21128-000 (Ap)	0.85	0.9	0.91	0.86	
21128-001	0.89	0.86	0.77	0.83	
21128-002	0.83	0.78	0.78	0.8	
21128-003	0.83	0.86	0.88	0.82	
21128-004	0.17	0.33	0.25	0.4	
21128-005	0.88	0.82	0.86	0.85	

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 1 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 19-1458-1209	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	4.24%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-005	1.44	1.94	6	0.0559	0.1002	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003421607	0.003421607	1	2.07	0.2004	Non-Significant Effect
Error	0.009925229	0.001654205	6			
Total	0.01334684	0.005075812	7			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.69	47.5	0.6775	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.901	0.645	0.2976	Normal Distribution

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-005	4	0.853	0.843	0.862	0.82	0.88	0.0125	0.025	2.93%	3.12%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-005	4	1.18	1.16	1.19	1.13	1.22	0.0175	0.0351	2.98%	3.39%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 2 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 19-8643-9866	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	9.64%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-004	10.9	1.94	6	0.118	<0.0001	Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.8648093	0.8648093	1	118	<0.0001	Significant Effect	
Error	0.04403229	0.007338715	6				
Total	0.9088416	0.872148	7				

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	6.06	47.5	0.1730	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.964	0.645	0.8458	Normal Distribution	

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-004	4	0.288	0.25	0.325	0.17	0.4	0.0497	0.0995	34.6%	67.3%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-004	4	0.561	0.519	0.604	0.425	0.685	0.0561	0.112	20.0%	53.9%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 3 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 16-8553-8067	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	4.42%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-003	1.61	1.94	6	0.0581	0.0791	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004643438	0.004643438	1	2.6	0.1582	Non-Significant Effect
Error	0.01072542	0.00178757	6			
Total	0.01536886	0.006431008	7			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.39	47.5	0.7942	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.862	0.645	0.1245	Normal Distribution

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-003	4	0.847	0.837	0.858	0.82	0.88	0.0138	0.0275	3.25%	3.69%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-003	4	1.17	1.16	1.19	1.13	1.22	0.0193	0.0387	3.31%	3.95%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 4 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>		<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 00-2974-6066	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	3.99%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-002	4.2	1.94	6	0.0529	0.0029	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02615269	0.02615269	1	17.6	0.0057	Significant Effect
Error	0.008906805	0.001484468	6			
Total	0.0350595	0.02763716	7			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.33	47.5	0.5050	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.906	0.645	0.3268	Normal Distribution

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-002	4	0.797	0.789	0.806	0.78	0.83	0.0118	0.0236	2.96%	9.37%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-002	4	1.1	1.09	1.12	1.08	1.15	0.0149	0.0299	2.7%	9.38%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 5 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>		<b>EnviroSystems, Inc.</b>
--	--	----------------------------

<b>Analysis ID:</b> 16-7317-8166	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:51	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	6.3%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-001	1.45	1.94	6	0.0802	0.0989	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.007145571	0.007145571	1	2.1	0.1979	Non-Significant Effect
Error	0.02045619	0.003409366	6			
Total	0.02760177	0.01055494	7			

Distributional Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.28	47.5	0.5157	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.967	0.645	0.8756	Normal Distribution

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-001	4	0.837	0.818	0.857	0.77	0.89	0.0256	0.0512	6.12%	4.83%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-001	4	1.16	1.13	1.19	1.07	1.23	0.0344	0.0689	5.94%	4.9%

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SALTWATER ASSAYS

A. bahia, A. punctulata

STUDY: 21128	LOCATION: New Bedford Harbor					
CHEMISTRY <sup>LB</sup> 6/28/11	Lab Salt Control	-001	-002	-003	-004	-005
	AMMONIA	006	007 006 007 008	008 009	009	010
AS RECEIVED WATER QUALITIES	Lab Salt Control	-001	-002	-003	-004	-005
	SALINITY (ppt)	25.7	25.8	25.0	28.2	16.2
pH (SU)	7.35	7.46	7.66	7.56	8.23	
TRC (mg/L)	20.02	20.02	20.02	20.02	20.02	
DO (mg/L)	6.0	7.3	7.6	7.0	9.6	
S/C (µmhos/cm)	40280	40510	39420	43670	26460	
WQ STATION USED	2	→				
INITIALS	LB	→				
A. bahia SALINITY ADJUSTMENT RECORD	Lab Salt Control	-001	-002	-003	-004	-005
	SAMPLE (mLs)	/	10,000	10,000	10,000	18,000
SEA SALT (g)	/	NA	NA	NA	2500 mL OF H <sub>2</sub> O	182
DATE:	6/28/11	→				
TIME:	134	→				
INITIALS:	W	→				

Sample ID	ESI Cube ID
-001	-001
-002	-002
<del>-003</del> 002 Rep	-003
<del>-004</del> 003	-004
<del>-005</del> 004	-005

<sup>LB</sup> 6/28/11

**Americamysis bahia 7 DAY CHRONIC ASSAY  
NEW WATER QUALITIES**

STUDY: Z1128		CLIENT: Woods Hole Group				LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY					
		NEW DISSOLVED OXYGEN (mg/L)							NEW SALINITY (ppt)						
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	6.9	6.9	7.0	6.8	7.5	6.9	7.0	25	25	25	24	24	25	25
-001	A	6.2	6.4	6.8	6.9	7.4	7.2	7.3	26	26	26	26	26	26	26
-002	A	6.8	6.5	6.8	6.9	7.7	7.3	7.4	26	26	26	26	26	26	25
-003	A	6.9	6.5	6.9	7.3	7.8	7.4	7.4	25	25	25	25	25	25	25
-004	A	7.0	6.6	6.9	7.2	7.8	7.3	7.2	25	25	25	25	25	25	25
-005	A	8.1	7.0	6.9	7.0	7.8	7.1	7.3	25	25	25	25	25	25	25
		NEW pH (SU)							NEW TEMPERATURE (°C)						
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	8.13	8.01	8.06	7.99	8.05	8.00	8.07	25	25	25	24	24	25	25
-001	A	7.49	7.52	7.62	7.65	7.74	7.73	7.90	25	25	25	24	24	25	25
-002	A	7.56	7.51	7.59	7.61	7.68	7.72	7.92	25	25	25	24	24	25	25
-003	A	7.73	7.63	7.75	7.70	7.72	7.67	7.79	25	25	25	24	24	25	25
-004	A	7.67	7.64	7.72	7.72	7.74	7.69	7.85	25	25	25	24	24	25	25
-005	A	8.21	8.09	8.13	8.08	8.11	8.06	8.08	25	25	25	24	24	25	25
INC TEMP:		25	24	25	25	25	25	25							
DATE:		6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4							
TIME:		1510	1330	1125	1115	0955	1325	1305							
INIT:		vc	CS	CS	LB	LB	SJ	SJ							

WATER QUALITY METERS USED NEW WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	/	/	/	/	/	/	/	/
Initials	/	CS	CS	LB	LB	SJ	SJ	
Date	6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	

**Americamysis bahia 7 DAY CHRONIC ASSAY  
OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY						
OLD SALINITY (ppt)									OLD pH (SU)						
Conc	Rep	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Control	A	25	25	25	25	25	26	26	7.94	8.04	8.02	8.06	7.98	8.00	8.10
-001	A	26	27	26	26	26	27	27	7.64	8.07	8.03	8.06	8.02	8.10	8.10
-002	A	26	26	26	26	26	26	26	7.48	7.98	8.06	8.04	8.03	8.11	8.13
-003	A	25	26	26	26	26	26	26	7.51	8.07	8.05	8.04	7.94	8.08	8.10
-004	A	25	26	26	26	26	26	26	7.58	8.04	8.00	8.02	7.99	8.09	8.08
-005	A	26	26	26	26	26	26	26	7.96	8.16	8.09	8.10	8.09	8.10	8.15
OLD TEMPERATURE (°C)															
Conc	Rep	1	2	3	4	5	6	7							
Control	A	25	25	24	24	25	25	25							
-001	A	25	25	24	24	25	25	25							
-002	A	25	25	24	24	25	25	25							
-003	A	25	25	24	24	25	25	25							
-004	A	25	25	24	24	25	25	25							
-005	A	25	25	24	24	25	25	25							
INC TEMP:		26	25	25	25	25	26	26							
DATE:		6/29/11	6/30	7/1	7/2	7/3	7/4	7/5							
TIME:		1140	1030	1030	0900	1255	1235	0955							
INITIALS:		CS	CS	LB	LB	SJ	SJ	CS							

**GENERAL NOTES - for additional information refer to SOP #1411 or EPA manual 600/4-91/003**

- Test vessels will be 250 mL glass beakers containing a minimum of 150 mL of solution
- 8 replicates per site with 5 organisms each
- Test Temperature: 26±1°C
- Salinity: 25 ±2ppt
- Dissolved Oxygen: >4.3 mg/L
- Photoperiod will be 16 hours light and 8 hours dark.
- Passing criteria require >80% survival and average dry weight of ≥0.20 mg/organism in the control vessels.

WATER QUALITY METERS USED OLD WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	///	1	1	1	1	1	1	1
Initials	///	CS	CS	LB	LB	SJ	SJ	CS
Date	6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5

### DILUTIONS

STUDY: 21128	CLIENT: Woods Hole Group	
SPECIES: <i>A. bahia</i>		
	Sample: New Bedford Harbor	
Sample	Vol. Eff.(mls)	Final Vol.(mls)
Lab	800	800
-001	↓	↓
-002		
-003		
-004		
-005	↓	↓
INITIALS:	w	
TIME:	1510	
DATE:	6/28/11	

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SAMPLE USE RECORD**

STUDY: 71128		CLIENT: Woods Hole Group							
SPECIES: <i>A. bahia</i>			TEST: chronic renewal						
Sample	Day: 0		Day: 1		Day: 2		Day	Date	Time
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID			
Lab Control	1600 2000 2000	n/a	1200	n/a	1200	n/a	0	6/28/11	1500
-001	↓	-001	↓	-001	↓	-001	1	6/29/11	1235
-002	↓	-002	↓	-002	↓	-002	2	6/30/11	1115
-002 REP	↓	-003	↓	-003	↓	-003	3	7/1	1105
-003	↓	-004	↓	-004	↓	-004	4	7/2	0940
-004	↓	-005	↓	-005	↓	-005	5	7/3	1320
							6	7/4	1300
Sample	Day: 3		Day: 4		Day: 5		Day: 6		
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	
Lab Control	1200	n/a	1200	n/a	1200	n/a	1200	n/a	
-001	↓	001	↓	001	↓	-001	↓	-001	
-002	↓	002	↓	002	↓	-002	↓	-002	
-002 REP	↓	003	↓	003	↓	-003	↓	-003	
-003	↓	004	↓	004	↓	-004	↓	-004	
-004	↓	005	↓	005	↓	-005	↓	-005	



### RECORD OF METERS USED

STUDY: 21128		CLIENT: Woods Hole Group	
<i>A. bahia</i>			
Exposure (Hours)			
	0	24	48
Water Quality Station #	1	1	1
Initials / Date	W 6/28/11	CS 4/29/11	CS 6/28/11

Water Quality Station #1		Water Quality Station #2		COMMENTS
DO meter #	24	DO meter #		
DO probe #	89	DO probe #		
pH meter #	1007	pH meter #		
pH probe #	93	pH probe #		
S/C meter #	7513CE	S/C meter #		
S/C probe #	↓	S/C probe #		
Salinity meter #		Salinity meter #		

Report No: 21128  
Project: WHG - New Bedford Harbor 2011

SDG:

Sample ID: WQ-TOX-001-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-006	ND	0.1	mg/L as N	06/30/11 1223	06/30/11 1223	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-007	ND	0.1	mg/L as N	06/30/11 1223	06/30/11 1223	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062711-REP  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-008	ND	0.1	mg/L as N	06/30/11 1224	06/30/11 1224	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-003-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-009	ND	0.1	mg/L as N	06/30/11 1225	06/30/11 1225	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-004-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-010	ND	0.1	mg/L as N	06/30/11 1226	06/30/11 1226	JLH/SM 4500-NH3 G

Notes:

ND = Not Detected

ESI

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 21128  
 SDG No:  
 Project: WHG - New Bedford Harbor 2011  
 Delivered via:  
 Date and Time Received: 06/27/11 1900 Date and Time Logged into Lab: 06/28/11 1300  
 Recieved By: KAS Logged into Lab by: KC *[Signature]*  
 Air bill / Way bill: No Air bill included in folder if received? NA  
 Cooler on ice/packs: Yes Custody Seals present? NA  
 Cooler Blank Temp (C) at arrival: 3 Custody Seals intact? NA  
 Number of COC Pages: 1  
 COC Serial Number(s):  
 COC Complete: Yes Does the info on the COC match the samples? Yes  
     Sampled Date: Yes Were samples received within holding time? Yes  
     Field ID complete: Yes Were all samples properly labeled? Yes  
     Sampled Time: Yes Were proper sample containers used? Yes  
     Analysis request: Yes Were samples received intact? (none broken or leaking) Yes  
 COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes  
 Were all samples received? Yes Were VOC vials free of headspace? NA  
 Client notification/authorization: Not required

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
WQ-TOX-001-062711	21128-001	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-002-062711	21128-002	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-002-062711-REP	21128-003	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-003-062711	21128-004	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-004-062711	21128-005	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-001-062711	21128-006	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062711	21128-007	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062711-REP	21128-008	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-003-062711	21128-009	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-004-062711	21128-010	W	NH3;	1x60 P	H2SO4	Yes

Notes and qualifications:

Samples -006 through -010 subsampled in lab from original aliquots.  
 See Chain of Custody.



EnviroSystems, Inc.  
1 Lafayette Road  
P.O. Box 778  
Hampton, N.H. 03843

Voice: 603-926-3345  
FAX: 603-926-3521

ESI Job No: 21128

CHAIN OF CUSTODY DOCUMENTATION

Client: Woods Hole Group Inc.	Contact: DAVE WALSH	Project Name: New Bedford Environmental Monitoring	Page 1 of 1
Point to: Dave Walsh	Address: 81 Technology Park Dr.	Project Number: TO-0010-04	
Invoice to: Dave Walsh	Address: East Falhoote, 02536	Project Manager: Dave Walsh	
Voice: 508-540-8080	Fax: 508-540-1001	email: dwalsh@whgrp.com	P.O. No: Quote No:

Lab Number	Your Field ID:	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested	Special Instructions	
-001	WQ-TOX-001-062711	6/27/11	10:30	DRW	G	10	P	N/A	W	N	All 3 Analysis	Arbacia I-AR Spem Immobilized Mysid 48hr Mysid 7-Day	
-002	WQ-TOX-002-062711	6/27/11	11:06	DRW	G	10	P	N/A	W	N	All 3 Analysis		
-003	WQ-TOX-002-062711-REP	6/27/11	11:06	DRW	G	10	P	N/A	W	N	All 3 Analysis		
-004	WQ-TOX-003-062711	6/27/11	13:40	DRW	G	2x10L	P	N/A	W	N	All 3 Analysis		2 10 liter containers
-005	WQ-TOX-004-062711	6/27/11	14:23	DRW	G	2x10L	P	N/A	W	N	All 3 Analysis		2 10 liter containers
-006	WQ-TOX-001-062711	6/28/11	1130	W	G	60ml	P	N/A	W	N	NH3		
-007	WQ-TOX-002-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	NH3		
-008	WQ-TOX-002-062711-REP	↓	↓	↓	↓	↓	↓	↓	↓	↓	NH3		
-009	WQ-TOX-003-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	NH3		
-010	WQ-TOX-004-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	NH3		

Relinquished By: <i>William J. Goff</i>	Date: 06/27/11 Time: 1900	Received By: <i>John Sims</i>	Date: 06/27/2011 Time: 1900
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Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:
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Comments: Samples -006 → -010 subsampled at lab - WJG 6/28/11

**Biomonitoring of Surface Water Samples  
New Bedford Harbor  
New Bedford, Massachusetts**

**June 28, 2011 Sampling Event**

**NED ACOE Job Number: TO-0010-04**

**Task Order No.: ESI0007**

Prepared for:

Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

Prepared by:

EnviroSystems, Incorporated  
1 Lafayette Road  
Hampton, New Hampshire 03843

June 2011  
Reference Number: WHG NBH OU1 21159-11-06

# Biomonitoring of Surface Water Samples New Bedford Harbor, New Bedford, Massachusetts

June 28, 2011 Sampling Event  
NED ACOE Job Number: TO-0010-04

## 1.0 INTRODUCTION

This report provides a summary of data generated from acute and chronic exposure assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on five grab surface water samples collected on June 28, 2011 from specified areas in the harbor. Samples were collected in the vicinity of dredging operations under the supervision of Woods Hole Group, Inc. personnel from the Falmouth, Massachusetts office and were evaluated "As Received" without additional dilutions. Testing was based on programs and protocols developed by the US EPA (2002) and included the following assays; 48 hour acute and 7 day chronic assays conducted with the mysid shrimp, *Americamysis bahia*, and 60 minute chronic fertilization assays conducted with the purple sea urchin, *Arbacia punctulata*. Assay design included a laboratory control treatment. All assays were conducted by ESI at its Hampton, New Hampshire facility.

## 2.0 MATERIALS AND METHODS

### 2.1 General Methods

Toxicological and analytical protocols used in this program followed procedures primarily designed by the EPA to provide standard approaches for the evaluation of toxicological effects of discharges on aquatic organisms, and for the analysis of water samples. See Section 4.0 for a list of references.

### 2.2 Test Species

*A. bahia* were obtained from cultures maintained by Aquatic Research Organisms (ARO), Hampton, New Hampshire. Juvenile shrimp were collected daily, isolated, and placed in a rearing tank. Holding tanks were maintained in a flow-through culture mode at a temperature of  $25 \pm 2^\circ\text{C}$ . At the start of the assays the mysids were <5 days old for the acute evaluation and 7 days old for the chronic evaluation. Juveniles were fed  $\leq 24$  hour old brine shrimp on a daily basis. Water temperature, salinity, and pH were monitored on a daily basis. Prior to testing, organisms were siphoned from the rearing tanks to a holding vessel, and then transferred to test chambers using a large bore pipet, minimizing the amount of water added to test solutions.

*A. punctulata* adults were from cultures maintained by ESI. Original stock was obtained from commercial supply. Male and female urchins are maintained in separate chambers as recommended by protocol (EPA 2002) and ESI. Adult urchins were induced to spawn by the injection of a potassium chloride solution. The viability of gametes obtained was determined prior to their addition to the test solutions. Eggs and/or sperm that would not result in a fertilized egg were rejected from the pool of gametes used in the assay.

### 2.3 Surface Water Samples and Laboratory Control Water

Five grab surface water samples were collected by Woods Hole Group, Inc. staff on June 28, 2011 in New Bedford Harbor. Samples were placed in 10 L polyethylene cubitainers for shipment to the laboratory. Sample receipt information is shown in Table 1.

Prior to testing, samples were evaluated to document salinity, conductivity, and total residual chlorine. Total residual chlorine was measured by amperometric titration (MDL 0.02 mg/L). When necessary, the salinity of samples for the *A. bahia* chronic exposure assays were adjusted to  $25 \pm 2\%$  while samples used for the *A. punctulata* assays were adjusted to  $30 \pm 2\%$  using commercial sea salts. Samples with "as received" salinity above these levels were not adjusted. A summary of "As Received" data are presented in Table 2.

Laboratory control water used for the mysid and sea urchin assays was collected from the Hampton/Seabrook Estuary. This water is classified as SA-1 and has been used to culture marine test organisms since 1981.

## 2.4 Bioassays

### 2.4.1 *Americamysis bahia* Acute Exposure Bioassay

The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity test was conducted at  $25\pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Test chambers for the acute assay were 250 mL glass beakers containing 200 mL test solution in each of 4 replicates with 10 organisms/replicate. Survival and dissolved oxygen were measured daily in all replicates and pH, temperature, and salinity were measured daily in one replicate of each test treatment. Specific conductance was measured in one replicate of each test concentration at the start of the assay. Mysids were not fed during the assay.

### 2.4.2 *Americamysis bahia* Chronic Exposure Bioassay

Endpoints for the *A. bahia* bioassays were survival and growth. Chronic exposure screening assays were conducted in a static renewal test mode with renewals made at 24-hour intervals. The 7 day assays were conducted at a temperature of  $26\pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Mysids were maintained in 250 mL beakers containing 150 mL of test solution. Approximately 100 mL of the test solution were replaced each day. The assay incorporated 8 replicates with 5 organisms/replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded in a composite sample of the "old" test solution and in the "new" test solution prior to being added to the test chamber. Incubator temperatures were also recorded on a daily basis.

During the test, mysids were fed  $\leq 24$  hour old *Artemia* nauplii. On Day 7 of the assay, surviving mysids were removed from test solutions, rinsed to remove any surface detritus and salts, and transferred to tared foils and dried for 24 hours at  $104^\circ\text{C}$ . Foils were weighed to the nearest 0.01 mg. Mean dry biomass per individual were obtained by dividing the net dry weight of all surviving organisms by the number of organisms added at the start of the assay.

### 2.4.3 *Arbacia punctulata* Chronic Exposure Fertilization Assays

The endpoint for the *A. punctulata* bioassay was fertilization. Gametes were obtained by potassium chloride injection to induce spawning. Sperm were collected dry, diluted to achieve a concentration of approximately  $5.0 \times 10^7$  sperm/mL in the surface water treatments. Actual sperm concentrations are provided on laboratory bench sheets in Appendix A. Sperm solutions were added to 5 mL aliquots of each sample being evaluated and allowed to remain in the test solutions for 60 minutes before the addition of unfertilized eggs. Each treatment incorporated a total of four (4) replicates. After 20 minutes exposure, the assay was terminated by the addition of 0.2 mL of preservative. Aliquots of preserved solution were counted to determine numbers of fertilized and unfertilized eggs. Fertilization was accepted based on the presence or absence of a fertilization membrane around the egg.

## 2.5 Data Analysis

Statistical analysis of acute and chronic exposure data was completed using CETIS, Comprehensive Environmental Toxicity Testing System, software. The program computes acute and chronic exposure endpoints based on EPA decision tree guidelines specified in individual test methods. For chronic exposure endpoints statistical significance was accepted at  $\alpha < 0.05$ . The laboratory control was used for both assays to determine whether there were significant reductions in survival or fertilization as compared to the site samples. If survival in the acute assay was greater than 90%, then a determination of "not significant" was made based on direct observation.

## 2.6 Quality Control

As part of the laboratory quality control program, standard reference toxicant assays are completed on a regular basis for each test species. These results, summarized in Table 3, provide relative health and response data while allowing for comparison with historic data sets.

## 2.7 Protocol Deviations

Review of the data associated with this series of assays documented a single protocol deviation. The *Arbacia punctulata*, fertilization assay was started outside of the recommended sample holding time. The delay in starting the assay was related to poor fertilization rates in the laboratory control treatment which necessitated repeating the assay. The lab ran the initial fertilization assay at 09:00 on the 29<sup>th</sup>, the morning after the samples arrived at the laboratory, June 28<sup>th</sup> at 17:19 pm, at this time the sample was approximately 16 hours old. Results of the test showed that fertilization in the laboratory control treatment was below the 70% specified by the method. At that time a new batch of adult urchins were ordered and the urchins arrived at the lab on the 30<sup>th</sup>. A new round of assays was initiated on the 30<sup>th</sup> and fertilization rates for this set of assays exceeded minimum acceptability criteria. Urchins used in the first two series of assays were from the general laboratory population and had been used in assays without any instances of low control fertilization rates. As there had been no change in holding conditions, there was no reason to presuppose that gametes from the adult urchins would have failed to meet fertilization acceptability criteria. It is ESI's Study Director's opinion that the holding time violation had no impact on the outcome of the assays. This is based on several criteria. If trace metals are considered to be a contaminant of concern their toxicity is relatively stable over the time frame under consideration. For organic compounds, PCBs and PAHs are unlikely to exhibit significant changes in concentration or toxicity over the short term. The remaining probable group of potential toxicants, volatile organics, are also unlikely to have an impact due to extended holding, as the majority of compounds would have likely been lost to the atmosphere through the plastic container between sampling and arrival at the lab.

## 3.0 RESULTS SUMMARY

Tables 4 and 5 provide summaries of survival, growth and fertilization endpoints and associated statistical analyses for *A. bahia* and *A. punctulata* for the June 28, 2011 sampling events. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

### 3.1 *Americamysis bahia* Acute Exposure Bioassay

Minimum test acceptability criteria for the acute exposure bioassay require  $\geq 90\%$  survival in the control concentration. Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

### 3.2 *Americamysis bahia* Chronic Exposure Bioassay

Minimum test acceptability criteria for the chronic exposure bioassay require  $\geq 80\%$  survival and a minimum weight of 0.2 mg per individual in the control concentrations. Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

### 3.3 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punctulata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

## 4.0 REFERENCES

- APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20<sup>th</sup> edition. Washington D.C.
- US EPA. 2002. *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*. Fourth Edition. EPA-821-R-02-012.
- US EPA. 2002. *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. Fourth Edition. EPA-821-R-02-013.



**Table 1. Sample Receipt Summary.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Type of Sample	Matrix	Collection		Receipt	
				Date	Time	Date	Time
WQ-TOX-001-062811	21159-001	Grab	Water	06/28/11	0940	06/28/11	1719
WQ-TOX-002-062811	21159-002	Grab	Water	06/28/11	1035	06/28/11	1719
WQ-TOX-002-062811-REP	21159-003	Grab	Water	06/28/11	1035	06/28/11	1719
WQ-TOX-003-062811	21159-004	Grab	Water	06/28/11	1235	06/28/11	1719
WQ-TOX-004-062811	21159-005	Grab	Water	06/28/11	1315	06/28/11	1719

**Table 2 Summary of “As Received” Sample Physical and Chemical Characteristics.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Ammonia* (mg/L)	pH (SU)	Salinity (‰)	Total Residual Chlorine (mg/L)
WQ-TOX-001-062811	21159-001	<0.1	7.02	9	<0.02
WQ-TOX-002-062811	21159-002	<0.1	8.05	15	<0.02
WQ-TOX-002-062811-REP	21159-003	<0.1	7.96	16	<0.02
WQ-TOX-003-062811	21159-004	<0.1	7.63	27	<0.02
WQ-TOX-004-062811	21159-005	<0.1	8.52	16	<0.02

**COMMENTS:**

\* Ammonia samples were sub-sampled at ESI on June 29, 2011.

**Table 3 Reference Toxicant Summary.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Date	Endpoint	Value	Historic Mean/ Central Tendency	Acceptable Range	Reference Toxicant	
<i>A. bahia</i>						
06/21/11	Survival	LC-50 - 48 Hr	29.1*	22.1	16.8 - 27.4	SDS (mg/L)
06/21/11	Survival	C-NOEC	15.0	15.0	10.0 - 25.0	SDS (mg/L)
06/21/11	Growth	C-NOEC	15.0	10.0	5.0 - 15.0	SDS (mg/L)
.....						
<i>A. punctulata</i>						
06/09/11	Fertilization	C-NOEC	<1.0**	10.0	5.0 - 20.0	Copper (µg/L)
06/09/11	Fertilization	IC-25	20.4	29.1	0 - 69.8	Copper (µg/L)
.....						

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

\* Normal Acceptance Limits set at  $\pm 2$  Std Dev of historic mean; maximum limits are  $\pm 3$  Std of historic mean. The  $\pm 3$  limit is acceptable, but considered high. If  $\pm 3$  limit is utilized value is noted.

\*\* Normal Acceptance Limits for the NOEC endpoint are set at  $\pm 1$  concentration surrounding the central tendency. The NOEC for this series of reference toxicant assays is outside of acceptable range. However, as the IC-25 endpoint for the assay was within the acceptable limits of  $\pm 2$  Standard Deviations of historic mean the reference toxicant evaluation was considered to be acceptable.

**Table 4. Summary of Acute Exposure Assay: *A. bahia*.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Percent Survival	Significant Difference vs. Lab?
Laboratory Control	21159-000	100.0%	No
WQ-TOX-001-062811	21159-001	100.0%	No
WQ-TOX-002-062811	21159-002	97.5%	No
WQ-TOX-002-062811-REP	21159-003	100.0%	No
WQ-TOX-003-062811	21159-004	100.0%	No
WQ-TOX-004-062811	21159-005	100.0%	No

**Table 5. Summary of Chronic Exposure Assays: *A. bahia* and *A. punctulata*.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Sample ID	ESI Code	Reps	Mean	Min	Max	CV	Significant Difference vs	
							p Value	Lab
<i>Americamysis bahia</i>			Survival					
Laboratory Control	21159-000		90.0%	80.0%	100.0%	11.9%	-	-
WQ-TOX-001-062811	21159-001	8	80.0%	60.0%	100.0%	18.9%	0.0769	NO
WQ-TOX-002-062811	21159-002		85.0%	60.0%	100.0%	20.9%	0.2633	NO
WQ-TOX-002-062811-REP	21159-003		97.5%	80.0%	100.0%	7.3%	0.9399	NO
WQ-TOX-003-062811	21159-004		92.5%	80.0%	100.0%	11.2%	0.6395	NO
WQ-TOX-004-062811	21159-005		82.5%	60.0%	100.0%	20.2%	0.1572	NO
<i>Americamysis bahia</i>			Growth - Biomass					
Laboratory Control	21159-000		33.8%	22.4%	45.6%	26.8%	-	-
WQ-TOX-001-062811	21159-001	8	29.3%	16.8%	50.6%	40.1%	0.2028	NO
WQ-TOX-002-062811	21159-002		32.8%	19.8%	46.8%	29.9%	0.4177	NO
WQ-TOX-002-062811-REP	21159-003		38.8%	29.4%	47.8%	18.2%	0.8807	NO
WQ-TOX-003-062811	21159-004		45.1%	21.2%	72.4%	32.1%	0.9582	NO
WQ-TOX-004-062811	21159-005		46.5%	31.8%	67.2%	28.5%	0.9787	NO
<i>Americamysis bahia</i>			Growth - Dry Weight					
Laboratory Control	21159-000	8	37.3%	28.0%	49.0%	21.5%	-	-
<i>Arbacia punctulata*</i>			Portion Fertilized					
Laboratory Control	21159-000		88.0%	85.0%	91.0%	3.4%	-	-
WQ-TOX-001-062811	21159-001	4	33.7%	13.0%	46.0%	42.5%	0.0002	YES
WQ-TOX-002-062811	21159-002		29.0%	22.0%	35.0%	18.5%	<0.0001	YES
WQ-TOX-002-062811-REP	21159-003		29.0%	19.0%	34.0%	23.7%	<0.0001	YES
WQ-TOX-003-062811	21159-004		7.8%	4.0%	10.0%	33.9%	<0.0001	YES
WQ-TOX-004-062811	21159-005		75.8%	55.0%	86.0%	18.6%	0.055	NO

**COMMENTS:**

\* The *A. punctulata* assay was run 2 days after the samples were collected which was outside of the 36 hour recommended hold time.

**APPENDIX A**  
**SUPPORT DATA**

<b>Contents</b>	<b># Pages</b>
Methods Summary	1
Study 21159: Sample Date June 28, 2011	
<i>A. bahia</i> Bench Sheets & Statistical Analysis Report	25
<i>A. punctulata</i> Bench Sheets and Statistical Analysis Report	8
Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Records	6
Analytical Chemistry Report	1
Sample Receipt Records	1
Chain of Custody and Organism Shipping Information	1
Total Appendix Pages	43

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

Parameter	Method
<b>Acute Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-012 2002.0
<i>Daphnia pulex</i>	EPA-821-R-02-012 2021.0
<i>Pimephales promelas</i>	EPA-821-R-02-012 2000.0
<i>Americamysis bahia</i>	EPA-821-R-02-012 2007.0
<i>Menidia beryllina</i>	EPA-821-R-02-012 2006.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-012 2004.0
<b>Chronic Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013 1002.0
<i>Pimephales promelas</i>	EPA-821-R-02-013 1000.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-014 1004.0
<i>Menidia beryllina</i>	EPA-821-R-02-014 1006.0
<i>Americamysis bahia</i>	EPA-821-R-02-014 1007.0
<i>Arbacia punctulata</i>	EPA-821-R-02-014 1008.0
<i>Champia parvula</i>	EPA-821-R-02-014 1009.0
<b>Trace Metals:</b>	
Trace Metals	EPA 200.7/SW 6010 and EPA 200.8/SW 6020
Hardness	Standard Methods 20 <sup>th</sup> Edition - Method 2340 B
<b>Wet Chemistries:</b>	
Alkalinity	EPA 310.2
Chlorine, Residual	Standard Methods 20 <sup>th</sup> Edition - Method 4500CLD
Total Organic Carbon	Standard Methods 20 <sup>th</sup> Edition - Method 5310C
Specific Conductance	Standard Methods 20 <sup>th</sup> Edition - Method 2510B
Nitrogen - Ammonia	Standard Methods 20 <sup>th</sup> Edition - Method 4500NH3G
pH	Standard Methods 20 <sup>th</sup> Edition - Method 4500H+B
Solids, Total (TS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 B
Solids, Total Dissolved (TDS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 C
Solids, Total Suspended (TSS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 D
Dissolved Oxygen	Standard Methods 20 <sup>th</sup> Edition - Method 4500-O G

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ACUTE BIOASSAY DATA SUMMARY

1997-2007-09-D-0001  
 High Quality Monitoring Summary Report  
 D-651  
 Delivery Order 101044  
 Mar 07 2007

STUDY: 21159		"AS RECEIVED" EFFLUENT AND DILUENT CHEMISTRIES								
CLIENT: Woods Hole Group	TEST ORGANISM: <i>A. bahia</i>		TRC	TS/TSS	AMM	TOC	T.METAL	SAL	pH	S/C
SAMPLE: New Bedford Harbor	ORGANISM SUPPLIER/BATCH/AGE: See Organism Culture Sheet	EFF								
		DIL								

CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0
LAB	A	10	10	10	7.3	4.9	4.6	8.02	7.75	7.64	25	25	24	25	25	25	39200
	B	10	10	10	7.3	5.4	4.6										
	C	10	10	10	7.3	5.8	4.8										
	D	10	10	10	7.3	5.8	4.8										
-001	A	10	10	10	7.6	5.9	6.7	7.86	7.91	7.78	25	25	24	25	26	26	38940
	B	10	10	10	7.4	5.9	4.7										
	C	10	10	10	7.6	5.5	4.8										
	D	10	10	10	7.6	5.6	4.9										
-002	A	10	10	10	8.2	6.3	5.2	8.06	7.99	7.83	25	25	24	25	25	26	38980
	B	10	10	10	8.2	6.2	4.6										
	C	10	10	10	8.2	6.2	4.7										
	D	10	10	9	8.2	6.1	5.0										
-003	A	10	10	10	8.2	6.2	5.3	8.06	8.02	7.87	25	25	24	25	25	26	39110
	B	10	10	10	8.2	6.3	5.6										
	C	10	10	10	8.2	6.2	4.7										
	D	10	10	10	8.2	6.1	5.3										

DATE	6/29	6/30/11	7/1	6/21/11	6/29/11	7/1
TIME	1555	1410	1305	1545	1400	1240
INITIALS	CS	CS	LB	CS	CS	LB

ACUTE BIOASSAY DATA SUMMARY

Water Quality Monitoring Summary Report  
 W912113-09-D-0001  
 Date: 6/29/11

STUDY: 21159				SAMPLE: New Bedford Harbor														
CLIENT: Woods Hole Group				TEST ORGANISM: <i>A. bahia</i>														
CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)	
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0	
004	A	10	10	10	7.4	6.1	5.3	7.69	7.87	7.79	25	25	24	25	25	26	39040	
	B	10	10	10	7.4	6.2	5.4											
	C	10	10	10	7.4	6.1	5.2											
	D	10	10	10	7.4	6.2	5.2											
-005	A	10	10	10	7.4	6.3	5.4	8.40	8.08	7.87	25	25	24	25	25	26	39160	
	B	10	10	10	7.4	6.4	5.3											
	C	10	10	10	7.4	6.3	5.3											
	D	10	10	10	7.4	6.6	5.3											
D-64	A																	
	B																	
	C																	
	D																	
D-64	A																	
	B																	
	C																	
	D																	
D-64	A																	
	B																	
	C																	
	D																	
DATE	6/29	6/30/11	7/1	6/29/11	6/30/11	7/1												
TIME	1555	1410	1305	1545	1400	1240												
INITIALS	CS	CS	LB	CS	CS	LB												



rec  
6/28/11

# Aquatic Research Organisms

## DATA SHEET

### I. Organism History

Species AMERICAMYSIS BABIA

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-25-11 Receipt date \_\_\_\_\_

Lot number 062511MS Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity ~27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other ENCAP SHRIMP DIET

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

### IV. Shipping Information

Client: ESL # of Organisms 48+

Carrier: \_\_\_\_\_ Date shipped 6-28-11

Biologist: Mark Veron



**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#			
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)							
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
Lab Control	A	5	5	5	5	5	4	4	4	6.3	6.3	6.3	5.8	6.2	6.8	4.2	
	B	5	5	5	5	5	4	4	4	6.2	5.9	6.4	6.0	6.3	6.7	4.1	
	C	5	5	5	5	4	4	4	4	6.2	5.9	6.4	5.6	5.9	6.8	3.7	
	D	5	5	5	5	5	5	5	5	6.1	5.9	6.4	5.5	6.0	6.6	3.8	
	E	5	5	5	4	4	4	4	4	6.1	6.0	6.5	5.7	5.7	6.0	4.2	
	F	5	5	5	5	5	5	5	5	6.1	5.9	6.6	5.8	5.9	6.5	4.0	
	G	5	5	5	5	5	5	5	5	6.1	5.8	6.6	5.4	6.0	6.4	2.8	
	H	5	5	5	5	5	5	5	5	6.0	5.6	6.6	5.2	6.1	6.3	3.0	
-001	A	5	5	5	5	5	5	4	4	6.1	5.7	6.6	5.3	5.6	6.3	4.6	
	B	5	5	5	5	5	5	5	5	6.1	5.7	6.5	5.0	6.0	6.3	4.4	
	C	5	5	5	5	5	5	4	4	6.0	5.8	6.5	5.0	5.7	6.3	4.1	
	D	5	5	5	4	4	4	3	3	6.0	5.7	6.6	5.0	5.8	6.3	4.1	
	E	5	5	4	4	4	4	4	4	6.1	5.9	6.7	5.4	5.7	6.3	4.4	
	F	5	5	5	5	4	4	3	3	6.2	6.0	6.5	5.5	5.6	6.3	4.3	
	G	5	5	5	5	5	5	5	5	6.2	5.9	6.5	5.4	5.9	6.2	4.2	
	H	5	5	5	5	5	5	4	4	6.2	5.9	6.5	5.3	5.6	6.3	4.6	
-002	A	5	4	4	4	4	4	4	4	6.3	5.3	6.5	5.6	5.4	6.0	4.3	
	B	5	5	4.5	5	5	5	5	5	6.2	5.5	6.3	5.9	5.2	5.8	4.1	
	C	5	5	5	5	5	5	5	5	6.0	5.5	6.3	5.5	5.3	5.9	4.2	
	D	5	5	5	5	5	5	5	5	6.0	5.4	6.2	5.0	5.4	6.1	4.6	
	E	5	5	4	4	4	3	3	3	6.0	5.4	6.3	5.2	5.6	6.3	4.8	
	F	5	5	5	5	5	5	5	5	6.1	4.9	6.2	5.3	5.5	5.8	4.5	
	G	5	5	5	5	5	5	4	3	6.1	5.0	6.1	5.1	5.4	5.8	4.1	
	H	5	5	5	5	5	5	4	4	6.1	5.2	6.2	5.2	5.3	5.8	4.0	
INC TEMP:		26	25	25	25	25	26	26	25								
DATE:		6/29/11	7/1/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6								
TIME:		1615	1120	1045	0935	1220	1200	1205	1120								
INITIALS:		W	CS	W	CS	JS	JS	CS	CS								

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21154		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#		
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)						
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7
-003	A	5	5	5	5	5	5	4	4	6.4	5.5	6.1	5.1	5.7	6.0	5.2
	B	5	5	5	5	5	5	5	5	6.3	4.8	6.1	5.0	5.4	5.7	4.9
	C	5	5	5	5	5	5	5	5	6.1	4.9	6.1	5.0	5.6	5.7	4.8
	D	5	5	5	5	5	5	5	5	6.0	5.1	6.0	5.2	5.3	5.8	4.7
	E	5	5	5	5	5	5	5	5	5.9	5.7	6.0	5.4	5.4	6.0	4.7
	F	5	5	5	5	5	5	5	5	6.0	5.5	6.1	5.3	5.6	5.5	4.7
	G	5	5	5	5	5	5	5	5	5.9	5.4	6.2	5.6	5.7	5.4	4.4
	H	5	5	5	5	5	5	5	5	5.9	5.5	6.2	5.4	5.6	5.3	4.2
-004	A	5	5	5	5	5	5	5	5	6.0	5.8	6.2	5.6	5.9	5.9	4.3
	B	5	5	5	5	5	5	5	5	6.1	5.7	6.2	5.7	5.6	6.5	4.4
	C	5	5	5	5	5	5	5	5	6.2	5.6	6.3	5.7	5.8	6.6	4.3
	D	5	5	4	4	4	4	4	4	6.1	5.6	6.4	5.9	6.0	6.5	4.5
	E	5	4	4	4	4	4	4	4	6.1	5.9	6.4	6.0	5.9	6.2	4.8
	F	5	5	5	5	5	5	4	4	6.2	5.8	6.4	6.0	6.0	5.7	4.9
	G	5	5	5	5	5	5	5	5	6.3	5.9	6.5	6.0	5.9	5.5	4.8
	H	5	5	5	5	5	5	5	5	6.3	5.9	6.5	5.9	6.0	5.6	5.0
-005	A	5	5	5	5	5	5	5	5	6.4	6.0	6.5	6.0	6.1	5.7	5.1
	B	5	5	5	4	4	4	4	4	6.6	6.1	6.6	6.3	5.9	5.7	5.0
	C	5	5	5	5	5	5	5	5	6.6	6.0	6.5	5.8	5.8	5.7	4.7
	D	5	5	4	4	4	4	4	3	6.5	5.9	6.5	5.8	5.8	5.8	4.9
	E	5	5	5	5	5	5	5	4	6.5	6.3	6.5	6.0	5.8	6.1	5.0
	F	5	5	5	4	4	4	4	4	6.6	6.0	6.4	6.0	5.7	5.9	4.9
	G	5	5	5	5	5	5	5	5	6.4	5.9	6.4	5.7	5.6	6.0	4.8
	H	5	5	5	5	5	5	4	3	6.2	5.7	6.6	5.8	5.7	5.8	4.8
INC TEMP:		26	25	25	23	25	26	26	25							
DATE:		6/29/11	6/30/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6							
TIME:		1015	1120	1045	0935	1220	1200	1205	1120							
INITIALS:		W	CS	W	CS	SS	SS	CS	CS							

Larval Fish Dry Weight Summary Sheet

Study:	21159	
Client:	Woods Hole Group	
Date/Time/Init:	07/07/11 1050 CS	07/02/11 1055 LB
Conc	Fish and Foil (mg)	Tare Wt (mg)
Lab A	211.87	210.74
Lab B	208.53	207.41
Lab C	211.02	209.06
Lab D	212.14	209.99
Lab E	209.37	207.98
Lab F	211.32	209.38
Lab G	212.46	210.18
Lab H	209.71	208.15
001A	210.18	209.05
001B	209.85	207.32
001C	211.79	210.51
001D	211.01	209.73
001E	211.76	209.74
001F	211.21	210.31
001G	211.54	209.79
001H	208.37	207.53
002A	211.02	209.43
002B	210.61	208.27
002C	212.52	210.26
002D	212.11	210.16
002E	211.35	210.04
002F	210.5	209.19
002G	211.15	210.16
002H	210.58	209.2
003A	211.26	209.79
003B	211.97	209.72
003C	211.87	209.96
003D	212.08	209.77
003E	212.08	210.46
003F	211.3	209.69
003G	211.85	209.46
003H	211.24	209.27
004A	210.46	209.4
004B	210.96	209
004C	212.2	209.71
004D	211.91	210.07
004E	211.92	209.62
004F	212.06	209.8
004G	213.07	209.45
004H	212.32	209.82
005A	212.24	209.4
005B	209.89	207.91
005C	213.04	210.13
005D	211.46	209.77
005E	211.22	209.45
005F	212.39	209.94
005G	213.38	210.02
005H	212.45	210.86

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:22 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000		21159-001	0.0769	0.05	Non-Significant Effect	04-8870-9520	Equal Variance t Two-Sample Test
		21159-002	0.2633	0.05	Non-Significant Effect	12-5792-1161	Equal Variance t Two-Sample Test
		21159-003	0.9399	0.05	Non-Significant Effect	15-8420-1292	Equal Variance t Two-Sample Test
		21159-004	0.6395	0.05	Non-Significant Effect	01-1930-9356	Wilcoxon Rank Sum Two-Sample Test
		21159-005	0.1572	0.05	Non-Significant Effect	20-3342-6909	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-1930-9356	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
04-8870-9520	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
12-5792-1161	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
15-8420-1292	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
20-3342-6909	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria

7d Proportion Survived Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.9	0.86	0.94	0.8	1	0.0378	0.107	11.9%	0.0%
21159-001	8	0.8	0.744	0.856	0.6	1	0.0535	0.151	18.9%	11.1%
21159-002	8	0.85	0.784	0.916	0.6	1	0.0627	0.177	20.9%	5.56%
21159-003	8	0.975	0.949	1	0.8	1	0.025	0.0707	7.25%	-8.33%
21159-004	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-2.78%
21159-005	8	0.825	0.763	0.887	0.6	1	0.059	0.167	20.2%	8.33%

7d Proportion Survived Detail								
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21159-000	0.8	0.8	0.8	1	0.8	1	1	1
21159-001	0.8	1	0.8	0.6	0.8	0.6	1	0.8
21159-002	0.8	1	1	1	0.6	1	0.6	0.8
21159-003	0.8	1	1	1	1	1	1	1
21159-004	1	1	1	0.8	0.8	0.8	1	1
21159-005	1	0.8	1	0.6	0.8	0.8	1	0.6

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 1 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 20-3342-6909	<b>Endpoint:</b> 7d Proportion Survived		<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>		<b>PMSD</b>				
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint		13.3%				
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-005	1.04	1.76	14	0.144	0.1572	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.02892358		0.02892358	1	1.09	0.3145	Non-Significant Effect			
Error	0.3720191		0.0265728	14						
Total	0.4009427		0.05549638	15						
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F		2.28	8.89	0.2991	Equal Variances				
Distribution	Shapiro-Wilk W Normality		0.899	0.841	0.0787	Normal Distribution				
<b>7d Proportion Survived Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%
21159-005	8	0.825	0.762	0.888	0.6	1	0.059	0.167	20.2%	8.33%
<b>Angular (Corrected) Transformed Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%
21159-005	8	1.14	1.07	1.21	0.886	1.35	0.068	0.192	16.8%	6.93%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 2 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b> 01-1930-9356	<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Nonparametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint				10.3%			
<b>Wilcoxon Rank Sum Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>Ties</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-004	72		14	2	0.6395	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>				
Between	0.003544244		0.003544244	1	0.226	0.6420	Non-Significant Effect				
Error	0.2197431		0.01569594	14							
Total	0.2232873		0.01924018	15							
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.07	8.89	0.9343	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.731	0.841	0.0004	Non-normal Distribution					
<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-004	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-2.78%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-004	8	1.26	1.21	1.3	1.11	1.35	0.0436	0.123	9.81%	-2.43%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 3 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b> 15-8420-1292	<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint				9.01%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-1.66	1.76	14	0.095	0.9399	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.03189819		0.03189819		1	2.74	0.1202	Non-Significant Effect			
Error	0.1630352		0.01164537		14						
Total	0.1949334		0.04354357		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		2.29	8.89	0.2977	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.847	0.841	0.0123	Normal Distribution					
<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-003	8	0.975	0.948	1	0.8	1	0.025	0.0707	7.25%	-8.33%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-003	8	1.32	1.28	1.35	1.11	1.35	0.0298	0.0842	6.4%	-7.28%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 4 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 12-5792-1161	<b>Endpoint:</b> 7d Proportion Survived		<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>		<b>PMSD</b>				
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint		13.9%				
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-002	0.65	1.76	14	0.15	0.2633	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>				
Between	0.01221816	0.01221816	1	0.422	0.5265	Non-Significant Effect				
Error	0.40543	0.02895929	14							
Total	0.4176481	0.04117745	15							
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F	2.57	8.89	0.2353	Equal Variances					
Distribution	Shapiro-Wilk W Normality	0.85	0.841	0.0136	Normal Distribution					
<b>7d Proportion Survived Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%
21159-002	8	0.85	0.783	0.917	0.6	1	0.0627	0.177	20.9%	5.56%
<b>Angular (Corrected) Transformed Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%
21159-002	8	1.17	1.09	1.25	0.886	1.35	0.0722	0.204	17.4%	4.51%



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 5 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test						EnviroSystems, Inc.					
<b>Analysis ID:</b> 04-8870-9520		<b>Endpoint:</b> 7d Proportion Survived		<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20		<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792		<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15		<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20		<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h		<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>						
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	12.5%						
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-001	1.51	1.76	14	0.134	0.0769	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.05271749	0.05271749	1	2.27	0.1537	Non-Significant Effect					
Error	0.3244313	0.02317367	14								
Total	0.3771488	0.07589116	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.86	8.89	0.4315	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.926	0.841	0.2069	Normal Distribution						
<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-001	8	0.8	0.742	0.858	0.6	1	0.0535	0.151	18.9%	11.1%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-001	8	1.11	1.05	1.18	0.886	1.35	0.0614	0.174	15.6%	9.36%	

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:29 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000		21159-001	0.4121	0.05	Non-Significant Effect	10-5659-4112	Equal Variance t Two-Sample Test
		21159-002	0.6218	0.05	Non-Significant Effect	02-8418-4983	Equal Variance t Two-Sample Test
		21159-003	0.7461	0.05	Non-Significant Effect	14-9790-3655	Equal Variance t Two-Sample Test
		21159-004	0.9650	0.05	Non-Significant Effect	03-9581-3702	Equal Variance t Two-Sample Test
		21159-005	0.9999	0.05	Non-Significant Effect	15-4061-8364	Equal Variance t Two-Sample Test

Mean Dry Weight-mg Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.373	0.343	0.403	0.28	0.49	0.0284	0.0804	21.5%	0.0%
21159-001	8	0.363	0.322	0.403	0.21	0.506	0.0379	0.107	29.6%	2.87%
21159-002	8	0.385	0.359	0.411	0.262	0.468	0.0246	0.0697	18.1%	-3.19%
21159-003	8	0.397	0.375	0.42	0.322	0.478	0.0214	0.0605	15.2%	-6.48%
21159-004	8	0.491	0.435	0.546	0.212	0.724	0.0527	0.149	30.4%	-31.5%
21159-005	8	0.558	0.532	0.584	0.443	0.672	0.0249	0.0705	12.6%	-49.5%

Mean Dry Weight-mg Detail								
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21159-000	0.282	0.28	0.49	0.43	0.347	0.388	0.456	0.312
21159-001	0.282	0.506	0.32	0.427	0.505	0.3	0.35	0.21
21159-002	0.398	0.468	0.452	0.39	0.437	0.262	0.33	0.345
21159-003	0.368	0.45	0.382	0.462	0.324	0.322	0.478	0.394
21159-004	0.212	0.392	0.498	0.46	0.575	0.565	0.724	0.5
21159-005	0.568	0.495	0.582	0.563	0.443	0.612	0.672	0.53

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 1 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 15-4061-8364	<b>Endpoint:</b> Mean Dry Weight-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint				17.8%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-005	-4.89	1.76	14	0.0666	0.9999	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.1367761		0.1367761		1	23.9	0.0002	Significant Effect			
Error	0.08002669		0.005716192		14						
Total	0.2168028		0.1424923		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.3	8.89	0.7365	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.959	0.841	0.6501	Normal Distribution					
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-005	8	0.558	0.531	0.585	0.443	0.672	0.0249	0.0705	12.6%	-49.5%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 2 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b> 03-9581-3702	<b>Endpoint:</b> Mean Dry Weight-mg		<b>CETIS Version:</b> CETISv1.8.0								
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes								
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>								
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable								
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable								
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d								
Data Transform	Zeta	Alt Hyp	MC Trials	Test Result			PMSD				
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint			28.3%				
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21159-000		21159-004	-1.96	1.76	14	0.105	0.9650	Non-Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.05522501		0.05522501	1	3.85	0.0699	Non-Significant Effect				
Error	0.2008158		0.01434399	14							
Total	0.2560409		0.06956901	15							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		3.44	8.89	0.1256	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.96	0.841	0.6567	Normal Distribution					
Mean Dry Weight-mg Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-004	8	0.491	0.434	0.547	0.212	0.724	0.0527	0.149	30.4%	-31.5%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 3 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b>	14-9790-3655		<b>Endpoint:</b>	Mean Dry Weight-mg		<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:20		<b>Analysis:</b>	Parametric-Two Sample		<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	02-2114-4792		<b>Test Type:</b>	Growth-Survival-Fec (7d)		<b>Analyst:</b>					
<b>Start Date:</b>	29 Jun-11 16:15		<b>Protocol:</b>	EPA/821/R-02-014 (2002)		<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	06 Jul-11 11:20		<b>Species:</b>	Americamysis bahia		<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	6d 19h		<b>Source:</b>	ARO - Aquatic Research Organisms, NH		<b>Age:</b>	7 d				
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint			16.8%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-0.68	1.76	14	0.0627	0.7461	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.002340004	0.002340004	1	0.462	0.5078	Non-Significant Effect					
Error	0.07091493	0.005065353	14								
Total	0.07325494	0.007405357	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.76	8.89	0.4713	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.934	0.841	0.2815	Normal Distribution						
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-003	8	0.397	0.374	0.42	0.322	0.478	0.0214	0.0605	15.2%	-6.48%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 4 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 02-8418-4983	<b>Endpoint:</b> Mean Dry Weight-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint				17.8%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-002	-0.316	1.76	14	0.0663	0.6218	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.000566078		0.000566078		1	0.1	0.7565	Non-Significant Effect			
Error	0.07924668		0.005660477		14						
Total	0.07981276		0.006226555		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.33	8.89	0.7149	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.96	0.841	0.6543	Normal Distribution					
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-002	8	0.385	0.359	0.412	0.262	0.468	0.0246	0.0697	18.1%	-3.19%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 5 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b>	10-5659-4112		<b>Endpoint:</b>	Mean Dry Weight-mg		<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:20		<b>Analysis:</b>	Parametric-Two Sample		<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	02-2114-4792		<b>Test Type:</b>	Growth-Survival-Fec (7d)		<b>Analyst:</b>					
<b>Start Date:</b>	29 Jun-11 16:15		<b>Protocol:</b>	EPA/821/R-02-014 (2002)		<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	06 Jul-11 11:20		<b>Species:</b>	Americamysis bahia		<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	6d 19h		<b>Source:</b>	ARO - Aquatic Research Organisms, NH		<b>Age:</b>	7 d				
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint			22.4%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-001	0.226	1.76	14	0.0835	0.4121	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.0004605302		0.0004605302		1	0.0512	0.8242	Non-Significant Effect			
Error	0.1258034		0.008985958		14						
Total	0.1262639		0.009446489		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>			<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F			1.78	8.89	0.4649	Equal Variances				
Distribution	Shapiro-Wilk W Normality			0.946	0.841	0.4259	Normal Distribution				
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-001	8	0.363	0.322	0.403	0.21	0.506	0.0379	0.107	29.6%	2.87%	

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:26 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000	21159-001	0.2028	0.05	Non-Significant Effect	06-1142-4024	Equal Variance t Two-Sample Test
	21159-002	0.4177	0.05	Non-Significant Effect	01-9718-1682	Equal Variance t Two-Sample Test
	21159-003	0.8807	0.05	Non-Significant Effect	00-3283-4783	Equal Variance t Two-Sample Test
	21159-004	0.9582	0.05	Non-Significant Effect	00-4343-4248	Equal Variance t Two-Sample Test
	21159-005	0.9787	0.05	Non-Significant Effect	06-9984-3490	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-3283-4783	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
00-4343-4248	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
01-9718-1682	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
06-1142-4024	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
06-9984-3490	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
00-3283-4783	Mean Dry Biomass-mg	PMSD	0.212	0.11 - 0.37	Yes	Passes Acceptability Criteria
00-4343-4248	Mean Dry Biomass-mg	PMSD	0.315	0.11 - 0.37	Yes	Passes Acceptability Criteria
01-9718-1682	Mean Dry Biomass-mg	PMSD	0.246	0.11 - 0.37	Yes	Passes Acceptability Criteria
06-1142-4024	Mean Dry Biomass-mg	PMSD	0.273	0.11 - 0.37	Yes	Passes Acceptability Criteria
06-9984-3490	Mean Dry Biomass-mg	PMSD	0.295	0.11 - 0.37	Yes	Passes Acceptability Criteria

Mean Dry Biomass-mg Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.338	0.304	0.372	0.224	0.456	0.0321	0.0907	26.8%	0.0%
21159-001	8	0.293	0.249	0.337	0.168	0.506	0.0415	0.117	40.1%	13.3%
21159-002	8	0.328	0.292	0.365	0.198	0.468	0.0347	0.098	29.9%	2.96%
21159-003	8	0.388	0.362	0.415	0.294	0.478	0.0249	0.0705	18.2%	-14.8%
21159-004	8	0.451	0.397	0.505	0.212	0.724	0.0512	0.145	32.1%	-33.3%
21159-005	8	0.465	0.415	0.514	0.318	0.672	0.0468	0.132	28.5%	-37.4%

Mean Dry Biomass-mg Detail									
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21159-000	0.226	0.224	0.392	0.43	0.278	0.388	0.456	0.312	
21159-001	0.226	0.506	0.256	0.256	0.404	0.18	0.35	0.168	
21159-002	0.318	0.468	0.452	0.39	0.262	0.262	0.198	0.276	
21159-003	0.294	0.45	0.382	0.462	0.324	0.322	0.478	0.394	
21159-004	0.212	0.392	0.498	0.368	0.46	0.452	0.724	0.5	
21159-005	0.568	0.396	0.582	0.338	0.354	0.49	0.672	0.318	



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 1 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 06-9984-3490	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				29.5%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-005	-2.23	1.76	14	0.0999	0.9787	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.06400856		0.06400856		1	4.97	0.0426	Significant Effect			
Error	0.1802122		0.0128723		14						
Total	0.2442207		0.07688086		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		2.13	8.89	0.3405	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.927	0.841	0.2186	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-005	8	0.465	0.414	0.515	0.318	0.672	0.0468	0.132	28.5%	-37.4%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 2 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 00-4343-4248	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				31.5%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-004	-1.86	1.76	14	0.106	0.9582	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.050625		0.050625		1	3.47	0.0837	Non-Significant Effect			
Error	0.2043319		0.01459514		14						
Total	0.2549569		0.06522013		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		2.55	8.89	0.2407	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.966	0.841	0.7784	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-004	8	0.451	0.396	0.506	0.212	0.724	0.0512	0.145	32.1%	-33.3%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 3 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 00-3283-4783	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				21.2%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-1.23	1.76	14	0.0715	0.8807	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.009999692		0.009999692		1	1.52	0.2386	Non-Significant Effect			
Error	0.09240019		0.006600014		14						
Total	0.1023999		0.01659971		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.66	8.89	0.5214	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.925	0.841	0.2049	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-003	8	0.388	0.361	0.415	0.294	0.478	0.0249	0.0705	18.2%	-14.8%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 4 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b>	01-9718-1682		<b>Endpoint:</b>	Mean Dry Biomass-mg		<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:20		<b>Analysis:</b>	Parametric-Two Sample		<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	02-2114-4792		<b>Test Type:</b>	Growth-Survival-Fec (7d)		<b>Analyst:</b>					
<b>Start Date:</b>	29 Jun-11 16:15		<b>Protocol:</b>	EPA/821/R-02-014 (2002)		<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	06 Jul-11 11:20		<b>Species:</b>	Americamysis bahia		<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	6d 19h		<b>Source:</b>	ARO - Aquatic Research Organisms, NH		<b>Age:</b>	7 d				
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>						
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	24.6%						
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-002	0.212	1.76	14	0.0832	0.4177	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.0003999876	0.0003999876	1	0.0449	0.8353	Non-Significant Effect					
Error	0.1248565	0.008918321	14								
Total	0.1252565	0.009318308	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.17	8.89	0.8439	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.925	0.841	0.2003	Normal Distribution						
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-002	8	0.328	0.291	0.366	0.198	0.468	0.0347	0.098	29.9%	2.96%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 5 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 06-1142-4024	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				27.3%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-001	0.858	1.76	14	0.0924	0.2028	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.008100304		0.008100304		1	0.736	0.4055	Non-Significant Effect			
Error	0.1541797		0.01101284		14						
Total	0.16228		0.01911314		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.68	8.89	0.5121	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.927	0.841	0.2171	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-001	8	0.293	0.249	0.338	0.168	0.506	0.0415	0.117	40.1%	13.3%	

**Arbacia punctulata Chronic Fertilization Assay  
Water Quality and Gamete Preparation Data**

STUDY: 21159	CLIENT: Woods Hole Group	LOCATION: New Bedford	DATE: 6/30/11 INITIALS: UB		
SALINITY ADJUSTMENT RECORD: 1000 mL -001 + 5 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -002 + 5 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -003 + 6 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -004 + 0 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -005 + 16 g SALT					
SALINITY ADJUSTED SAMPLE	D.O. (mg/L)	pH (SU)	SPEC COND (µmhos)	TEMP (°C)	SALINITY (ppt)
ASW Lab Control (UB 6/30/11 Hampton pier)	5.6	8.21	45700	20	30
-001	8.3	7.73	47120	20	31
-002	8.3	7.70	45790	20	30
-003	8.3	7.82	45820	20	30
-004	8.4	7.70	43860	20	28
-005	8.6	8.19	46840	20	30

**METERS USED**

DO meter # 24 DO probe # 89 pH meter # 1097 pH probe # 93 S/C meter # YS130E S/C probe # YS130E  
SALINITY meter # YS130E

DATE & INITIALS FOR GAMETE PREPARATION: 6/30/11 UB

**SPERM DILUTIONS:**

HEMACYTOMETER COUNT, E: 124 X 10<sup>4</sup> = SPM SOLUTION E = 1.24 x 10<sup>6</sup>  
SPERM CONCENTRATIONS: SOLUTION E X 40 = SOLUTION A = 4.96 x 10<sup>7</sup> SPM  
SOLUTION E X 20 = SOLUTION B = 2.48 x 10<sup>7</sup> SPM  
SOLUTION E X 5 = SOLUTION C = 0.20 x 10<sup>6</sup> SPM

**FINAL COUNTS:**

FINAL SPERM COUNT: 4.96 x 10<sup>7</sup>  
FINAL EGG COUNT: 2000

**TEST TIMES:**

SPERM COLLECTED: 1510 1430  
EGGS COLLECTED: 1510 1430  
SPERM ADDED: 1507  
EGGS ADDED: 1607  
FIXATIVE ADDED: 1627

See ESI SOP #1412 for additional information

**Arbacia punctulata Chronic Fertilization Assay**

**SAMPLE USE RECORD**

STUDY: 21159		CLIENT: Woods Hole Group New Bedford	
SPECIES: <i>A. punctulata</i>			
		Day: 0	
SAMPLE	Volume Used (mL)	ESI Cube ID	
Lab Control	1000	—	
-001	↓	001	
-002		002	
-003		003	
-004		004	
-005		005	
INITIALS:	LB		
TIME:	1030		
DATE:	8/30/11		

**FERTILIZATION COUNTS**

STUDY	CLIENT	LOCATION			DATE	INITIALS
	Woods Hole Group	New Bedford			8/30/11	Am
		REPLICATE VIAL				
		1	2	3	4	
SAMPLE	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	
Lab Control	85/100	90/100	91/100	86/100		
-001	46/100	13/100	38/102	42/109		
-002	22/100	35/100	29/100	30/100		
-003	19/100	34/100	30/100	33/100		
-004	4/100	8/100	10/100	9/100		
-005	55/100	86/100	82/100	80/100		

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:47 (p 1 of 1)  
**Test Code:** 21159Ap | 00-0609-4487

<b>Arbacia Sperm Cell Fertilization Test</b>	<b>EnviroSystems, Inc.</b>
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<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata	<b>Brine:</b> Not Applicable
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture	<b>Age:</b>

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	05-4755-5848	30 Jun-11 12:00	30 Jun-11 12:00	3h	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	53h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	53h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	53h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	51h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	50h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control (Ap); 21159-00		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000		21159-001	0.0002	0.05	Significant Effect	14-1416-0181	Equal Variance t Two-Sample Test
		21159-002	<0.0001	0.05	Significant Effect	06-7751-0890	Equal Variance t Two-Sample Test
		21159-003	<0.0001	0.05	Significant Effect	17-7229-5531	Equal Variance t Two-Sample Test
		21159-004	<0.0001	0.05	Significant Effect	03-4801-7354	Equal Variance t Two-Sample Test
		21159-005	0.0550	0.05	Non-Significant Effect	13-4815-5589	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-4801-7354	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
06-7751-0890	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
13-4815-5589	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
14-1416-0181	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
17-7229-5531	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
03-4801-7354	Proportion Fertilized	PMSD	0.0527	NL - 0.25	No	Passes Acceptability Criteria
06-7751-0890	Proportion Fertilized	PMSD	0.0568	NL - 0.25	No	Passes Acceptability Criteria
13-4815-5589	Proportion Fertilized	PMSD	0.135	NL - 0.25	No	Passes Acceptability Criteria
14-1416-0181	Proportion Fertilized	PMSD	0.143	NL - 0.25	No	Passes Acceptability Criteria
17-7229-5531	Proportion Fertilized	PMSD	0.0702	NL - 0.25	No	Passes Acceptability Criteria

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21159-001	4	0.337	0.283	0.39	0.13	0.46	0.0716	0.143	42.5%	61.7%
21159-002	4	0.29	0.27	0.31	0.22	0.35	0.0268	0.0535	18.5%	67.0%
21159-003	4	0.29	0.264	0.316	0.19	0.34	0.0344	0.0688	23.7%	67.0%
21159-004	4	0.0775	0.0677	0.0873	0.04	0.1	0.0131	0.0263	33.9%	91.2%
21159-005	4	0.758	0.705	0.81	0.55	0.86	0.0703	0.141	18.6%	13.9%

Proportion Fertilized Detail				
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4
21159-000	0.85	0.9	0.91	0.86
21159-001	0.46	0.13	0.373	0.385
21159-002	0.22	0.35	0.29	0.3
21159-003	0.19	0.34	0.3	0.33
21159-004	0.04	0.08	0.1	0.09
21159-005	0.55	0.86	0.82	0.8



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 1 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 13-4815-5589	<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:45	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization			<b>Analyst:</b>							
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture			<b>Age:</b>							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				13.5%			
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21159-000		21159-005	1.87	1.94	6	0.159	0.0550	Non-Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.0469663		0.0469663	1	3.51	0.1100	Non-Significant Effect				
Error	0.08022018		0.01337003	6							
Total	0.1271865		0.06033633	7							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		11.9	47.5	0.0718	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.862	0.645	0.1262	Normal Distribution					
Proportion Fertilized Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-005	4	0.758	0.704	0.811	0.55	0.86	0.0703	0.141	18.6%	13.9%	
Angular (Corrected) Transformed Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-005	4	1.07	1.01	1.13	0.835	1.19	0.0785	0.157	14.7%	12.6%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 2 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 03-4801-7354	<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:45	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization			<b>Analyst:</b>							
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture			<b>Age:</b>							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				5.27%			
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21159-000		21159-004	26.8	1.94	6	0.0683	<0.0001	Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	1.768129		1.768129	1	716	<0.0001	Significant Effect				
Error	0.01480914		0.002468189	6							
Total	1.782938		1.770597	7							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		1.38	47.5	0.7995	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.897	0.645	0.2731	Normal Distribution					
Proportion Fertilized Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-004	4	0.0775	0.0675	0.0875	0.04	0.1	0.0131	0.0263	33.9%	91.2%	
Angular (Corrected) Transformed Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-004	4	0.279	0.258	0.299	0.201	0.322	0.0267	0.0535	19.2%	77.1%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 3 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 17-7229-5531	<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:44	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization			<b>Analyst:</b>							
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture			<b>Age:</b>							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				7.02%			
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21159-000		21159-003	14.3	1.94	6	0.0886	<0.0001	Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.8517774		0.8517774	1	205	<0.0001	Significant Effect				
Error	0.02494452		0.004157419	6							
Total	0.876722		0.8559349	7							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		3	47.5	0.3908	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.874	0.645	0.1654	Normal Distribution					
Proportion Fertilized Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-003	4	0.29	0.264	0.316	0.19	0.34	0.0344	0.0688	23.7%	67.0%	
Angular (Corrected) Transformed Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-003	4	0.566	0.536	0.596	0.451	0.623	0.0395	0.079	13.9%	53.5%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 4 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 06-7751-0890	<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:44	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization			<b>Analyst:</b>							
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture			<b>Age:</b>							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				5.68%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-002	17.3	1.94	6	0.0731	<0.0001	Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.8488871		0.8488871		1	300	<0.0001	Significant Effect			
Error	0.01696688		0.002827814		6						
Total	0.865854		0.851715		7						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.72	47.5	0.6663	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.973	0.645	0.9209	Normal Distribution					
<b>Proportion Fertilized Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-002	4	0.29	0.27	0.31	0.22	0.35	0.0268	0.0535	18.5%	67.0%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-002	4	0.567	0.545	0.59	0.488	0.633	0.0299	0.0598	10.5%	53.4%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 5 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 14-1416-0181	<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:44	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes							
<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization			<b>Analyst:</b>							
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable							
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture			<b>Age:</b>							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				14.3%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-001	7.09	1.94	6	0.167	0.0002	Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.741222		0.741222		1	50.3	0.0004	Significant Effect			
Error	0.08842896		0.01473816		6						
Total	0.8296509		0.7559601		7						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		13.2	47.5	0.0622	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.86	0.645	0.1214	Normal Distribution					
<b>Proportion Fertilized Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-001	4	0.337	0.282	0.391	0.13	0.46	0.0716	0.143	42.5%	61.7%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-001	4	0.61	0.547	0.673	0.369	0.745	0.0828	0.166	27.1%	49.9%	

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SAMPLE USE RECORD**

STUDY: 21159		CLIENT: Woods Hole Group							
SPECIES: <i>A. bahia</i>			TEST: chronic renewal						
Sample	Day: 0		Day: 1		Day: 2		Day	Date	Time
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID			
Lab Control	1600	n/a	1200	n/a	1200	n/a	0	6/29/11	1545 1600 <sup>cs</sup>
-001	↓	-001	↓	-001	↓		1	6/30/11	1240
-002	↓	-002	↓	-002	↓		2	7/1/11	1135
-003	↓	-003	↓	-003	↓		3	7/2/11	1000
-004	↓	-004	↓	-004	↓		4	7/3	1240
-005	↓	-005	↓	-005	↓		5	7/4	1220
							6	7/5	1230
Sample	Day: 3		Day: 4		Day: 5		Day: 6		
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	
Lab Control	1200	n/a	1200	n/a	1200	n/a	1200	n/a	
-001	↓	-001	↓	-001	↓	-001	↓	-001	
-002	↓	-002	↓	-002	↓	-002	↓	-002	
-003	↓	-003	↓	-003	↓	-003	↓	-003	
-004	↓	-004	↓	-004	↓	-004	↓	-004	
-005	↓	-005	↓	-005	↓	-005	↓	-005	

6/29

# SALTWATER ASSAYS

*A. bahia*, *A. punctulata*

STUDY: 21159	LOCATION: New Bedford Harbor					
CHEMISTRY	Lab Salt Control	-001	-002	-003	-004	-005
		-006	-007	-008	-009	-010
AMMONIA						
AS RECEIVED WATER QUALITIES	Lab Salt Control	-001	-002	-003	-004	-005
SALINITY (ppt)		8.6	14.8	15.8	27.0	15.5
pH (SU)		7.02	8.05	7.96	7.63	8.52
TRC (mg/L)		20.02	20.02	20.02	20.02	20.02
DO (mg/L)		7.4	8.9	8.3	6.2	8.8
S/C (µmhos/cm)		14730	24710	25760	42420	25260
WQ STATION USED		1	1	1	1	1
INITIALS		W	W	W	W	W
<i>A. bahia</i> SALINITY ADJUSTMENT RECORD	Lab Salt Control	-001	-002	-003	-004	-005
SAMPLE (mLs)		20,000	20,000	20,000	20,000	20,000
SEA SALT (g)		378	235	212	2500 mLs PE H <sub>2</sub> O	219
DATE:	6/29/11	→	→	→	→	→
TIME:	1405	→	→	→	→	→
INITIALS:	W	→	→	→	→	→

Sample ID	ESI Cube ID
-001	-001
-002	-002
-003 Z - REP 6/29/11	-003
-004	-004
-005	-005

**Americamysis bahia 7 DAY CHRONIC ASSAY  
NEW WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY						
		NEW DISSOLVED OXYGEN (mg/L)						NEW SALINITY (ppt)							
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	7.3	7.3	7.1	6.8	6.9	7.0	7.8	25	25	25	25	25	25	25
-001	A	7.6	7.0	6.9	6.7	6.7	6.5	7.6	25	25	25	25	25	25	25
-002	A	8.2	7.1	6.7	6.6	7.2	6.7	7.3	25	25	25	25	25	25	25
-003	A	8.2	7.1	6.4	6.5	7.0	6.8	7.2	25	25	25	25	25	25	25
-004	A	7.4	7.0	6.4	6.6	7.0	6.9	7.3	25	25	25	25	25	25	25
-005	A	7.4	7.1	6.6	6.7	7.2	7.2	7.2	25	25	25	25	25	25	25
		NEW pH (SU)						NEW TEMPERATURE (°C)							
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	8.02	8.08	8.07	8.06	8.02	8.12	8.03	25	25	25	25	25	25	25
-001	A	7.86	7.98	7.85	7.86	7.81	7.91	7.89	25	25	25	25	25	25	25
-002	A	8.06	8.01	7.95	7.95	7.95	8.01	7.98	25	25	25	25	25	25	25
-003	A	8.06	8.02	7.95	7.94	7.90	7.97	7.92	25	25	25	25	25	25	25
-004	A	7.69	7.75	7.75	7.72	7.71	7.81	7.81	25	25	25	25	25	25	25
-005	A	8.40	8.33	8.25	8.27	8.25	8.21	8.14	25	25	25	25	25	25	25
INC TEMP:	26	26	25	25	25	25	25	26							
DATE:	6/29/11	6/29/11	7/1/11	7/1/11	7/3/11	7/4/11	7/5/11								
TIME:	1555	1245	1150	1015	1245	1225	1235								
INIT:	CS	CS	W	CS	JS	JS	CS								

WATER QUALITY METERS USED NEW WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	/	1	1	1	1	1	1	
Initials	/	CS	W	CS	JS	JS	CS	
Date	6/29/11	6/30/11	7/1/11	7/2/11	7/3/11	7/4	7/5	



**Americamysis bahia 7 DAY CHRONIC ASSAY  
OLD WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY						
OLD SALINITY (ppt)									OLD pH (SU)						
Conc	Rep	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Control	A	25	26	25	25	25	25	25	7.92	7.98	7.96	7.94	7.99	7.96	7.57
-001	A	26	26	26	25	25	26	26	7.95	7.93	7.97	7.82	7.95	7.97	7.78
-002	A	25	25	25	25	25	26	25	7.96	7.90	7.95	7.84	7.90	7.88	7.62
-003	A	25	25	25	25	26	25	25	7.94	7.97	7.94	7.82	7.86	7.85	7.68
-004	A	25	25	25	25	26	25	25	7.89	7.87	7.88	7.87	7.91	7.91	7.59
-005	A	25	25	25	25	26	26	25	8.20	8.11	8.09	7.96	8.00	7.83	7.63
OLD TEMPERATURE (°C)															
Conc	Rep	1	2	3	4	5	6	7							
Control	A	25	25	25	25	25	25	25							
-001	A	25	25	25	25	25	25	25							
-002	A	25	25	25	25	25	25	25							
-003	A	25	25	25	25	25	25	25							
-004	A	25	25	25	25	25	25	25							
-005	A	25	25	25	25	25	25	25							
INC TEMP:		25	25	25	25	26	26	25							
DATE:		6/30/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6							
TIME:		1155	0935	0925	1205	1150	1150	1100							
INITIALS:		CS	W	CS	SJ	SJ	CS	CS							

**GENERAL NOTES - for additional information refer to SOP #1411 or EPA manual 600/4-91/003**

- Test vessels will be 250 mL glass beakers containing a minimum of 150 mL of solution
- 8 replicates per site with 5 organisms each
- Test Temperature: 26±1°C
- Salinity: 25 ±2ppt
- Dissolved Oxygen: >4.3 mg/L
- Photoperiod will be 16 hours light and 8 hours dark.
- Passing criteria require ≥80% survival and average dry weight of ≥0.20 mg/organism in the control vessels.

WATER QUALITY METERS USED OLD WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	///							
Initials	///	CS	W	CS	SJ	SJ	CS	CS
Date	6/29/11	6/30/11	7/1/11	7/2/11	7/3/11	7/4	7/5	7/6

### DILUTIONS

STUDY:		CLIENT: Woods Hole Group	
SPECIES: <i>A. bahia</i>			
	Sample: New Bedford Harbor		
Sample	Vol. Eff. (mls)	Final Vol. (mls)	
Lab	800	800	
-001	↓	↓	
-002	↓	↓	
-003	↓	↓	
-004	↓	↓	
-005	↓	↓	
INITIALS:	JTP		
TIME:	1520		
DATE:	06/29/11		

RECORD OF METERS USED

STUDY: 21159		CLIENT: Woods Hole Group	
A. bahia			
Exposure (Hours)			
	0	24	48
Water Quality Station #	1	1	1
Initials / Date	CS 6/29/11	CS 6/30/11	UB 7/11

Water Quality Station #1		Water Quality Station #2		COMMENTS
DO meter #	24	DO meter #		
DO probe #	89	DO probe #		
pH meter #	1097	pH meter #		
pH probe #	93	pH probe #		
S/C meter #	<del>9530E</del>	S/C meter #		
S/C probe #	Y5130E	S/C probe #		
Salinity meter #	Y5130E	Salinity meter #		

Report No: 21159 SDG:  
Project: WHG - New Bedford Harbor 2011

Sample ID: WQ-TOX-001-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-006	ND	0.1	mg/L as N	06/30/11 1227	06/30/11 1227	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-007	ND	0.1	mg/L as N	06/30/11 1228	06/30/11 1228	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062811-REP  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-008	ND	0.1	mg/L as N	06/30/11 1228	06/30/11 1228	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-003-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-009	ND	0.1	mg/L as N	06/30/11 1232	06/30/11 1232	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-004-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-010	ND	0.1	mg/L as N	06/30/11 1233	06/30/11 1233	JLH/SM 4500-NH3 G

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 21159  
 SDG No:  
 Project: WHG - New Bedford Harbor 2011  
 Delivered via:  
 Date and Time Received: 06/28/11 1719 Date and Time Logged into Lab: 06/29/11 1352  
 Received By: RF Logged into Lab by: KC *[Signature]*  
 Air bill / Way bill: No Air bill included in folder if received? NA  
 Cooler on ice/packs: Yes Custody Seals present? NA  
 Cooler Blank Temp (C) at arrival: 1 Custody Seals intact? NA  
 Number of COC Pages: 1  
 COC Serial Number(s): NA  
 COC Complete: Yes Does the info on the COC match the samples? Yes  
     Sampled Date: Yes Were samples received within holding time? Yes  
     Field ID complete: Yes Were all samples properly labeled? Yes  
     Sampled Time: Yes Were proper sample containers used? Yes  
     Analysis request: Yes Were samples received intact? (none broken or leaking) Yes  
 COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes  
 Were all samples received? Yes Were VOC vials free of headspace? NA  
 Client notification/authorization: Not required

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
WQ-TOX-001-062811	21159-001	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-002-062811	21159-002	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-002-062811-REP	21159-003	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-003-062811	21159-004	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-004-062811	21159-005	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-001-062811	21159-006	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062811	21159-007	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062811-REP	21159-008	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-003-062811	21159-009	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-004-062811	21159-010	W	NH3;	1x60 P	H2SO4	Yes

Notes and qualifications:

Samples -006 through -010 subsampled at lab from original aliquots.  
 See Chain of Custody.



EnviroSystems, Inc.  
1 Lafayette Road  
P.O. Box 778  
Hampton, N.H. 03843

Voice: 603-926-3345  
FAX: 603-926-3521

ESI Job No: Z 1159

CHAIN OF CUSTODY DOCUMENTATION

Client: Woods Hole Group Inc.	Contact: Dave Walsh	Project Name: New Bedford Environmental monitoring	Page 1 of 1
Point of Contact: Dave Walsh	Address: 81 Technology Park Dr.	Project Number: TO-0010-04	
Address to: Dave Walsh	Address: East Falmouth, MA 02520	Project Manager: Dave Walsh	
Phone: 508-540-8080	Fax:	email: dwalsh@whgrp.com	P.O. No: Quote No:

Lab Number (assigned by ESI)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container Size	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	Other
-001	WQ-TOX-001-062811	6/28/11	0940	DB	G	2x10L	P	NA	W	N	All 3 Analyses	Arbacia 1-HR Sperm Immobilization
-002	WQ-TOX-002-062811	6/28/11	1035	DB	G	2x10L	P	NA	W	N	All 3 Analyses	Ebb Sample
-003	WQ-TOX-002-062811-REP	6/28/11	1035	DB	G	2x10L	P	NA	W	N	All 3 Analyses	Ebb Sample
-004	WQ-TOX-003-062811	6/28/11	1235	DB	G	2x10L	P	NA	W	N	All 3 Analyses	Flood Ref
-005	WQ-TOX-004-062811	6/28/11	1315	DB	G	2x10L	P	NA	W	N	All 3 Analyses	Flood Sample
-006	WQ-TOX-001-062811	6/29/11	1315	W	G	1x60mL	P	N/A	W	N	NH3	
-007	WQ-TOX-002-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
-008	WQ-TOX-002-062811-REP	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
-009	WQ-TOX-003-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
-010	WQ-TOX-004-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	

Relinquished By: <i>W. Walsh</i>	Date: 06/28/11	Time: 1719	Received By: <i>R. R. R.</i>	Date: 6/28/2011	Time: 1709
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:

Comments: -006 through -010 were subsampled in lab from aliquots by W 6/29/11



## ANALYTICAL REPORT

Lab Number:	L1107072
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	2011 BASELINE
Project Number:	TO-0010-03
Report Date:	05/26/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1107072-01	WQ-TSS-001-051911	NEW BEDFORD, MA	05/19/11 09:20
L1107072-02	WQ-TUR-001-051911	NEW BEDFORD, MA	05/19/11 09:20
L1107072-03	WQ-TSS-002-051911	NEW BEDFORD, MA	05/19/11 09:33
L1107072-04	WQ-TUR-002-051911	NEW BEDFORD, MA	05/19/11 09:33
L1107072-05	WQ-TSS-002-051911 REP	NEW BEDFORD, MA	05/19/11 09:35
L1107072-06	WQ-TUR-002-051911 REP	NEW BEDFORD, MA	05/19/11 09:35
L1107072-07	WQ-TSS-003-051911	NEW BEDFORD, MA	05/19/11 11:38
L1107072-08	WQ-TUR-003-051911	NEW BEDFORD, MA	05/19/11 11:38
L1107072-09	WQ-TSS-004-051911	NEW BEDFORD, MA	05/19/11 11:53
L1107072-10	WQ-TUR-004-051911	NEW BEDFORD, MA	05/19/11 11:53



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

---

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 05/26/11

# **INORGANICS & MISCELLANEOUS**

Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-01  
 Client ID: WQ-TSS-001-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:20  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.70		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-02  
 Client ID: WQ-TUR-001-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:20  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.3		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-03  
 Client ID: WQ-TSS-002-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:33  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.50		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-04  
 Client ID: WQ-TUR-002-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:33  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.2		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-05  
 Client ID: WQ-TSS-002-051911 REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:35  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.80		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-06  
 Client ID: WQ-TUR-002-051911 REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 09:35  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.0		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR





Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-07  
 Client ID: WQ-TSS-003-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:38  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.70		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

## SAMPLE RESULTS

Lab ID: L1107072-08  
 Client ID: WQ-TUR-003-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:38  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.8		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-09  
 Client ID: WQ-TSS-004-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:53  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	2.20		mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**SAMPLE RESULTS**

Lab ID: L1107072-10  
 Client ID: WQ-TUR-004-051911  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 05/19/11 11:53  
 Date Received: 05/20/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.1		NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR



Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10 Batch: WG469112-1									
Turbidity	ND	NTU	0.40	--	1	-	05/20/22 16:00	8,180.1	NR
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG469826-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	05/26/11 08:00	4,160.2	NR

## Lab Control Sample Analysis

Batch Quality Control

Project Name: 2011 BASELINE

Project Number: TO-0010-03

Lab Number: L1107072

Report Date: 05/26/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 Batch: WG469112-2								
Turbidity	102		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG469826-2								
Solids, Total Suspended	101		-		80-120	-		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: 2011 BASELINE

Project Number: TO-0010-03

Lab Number: L1107072

Report Date: 05/26/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 QC Batch ID: WG469112-3 QC Sample: L1107072-02 Client ID: WQ-TUR-001-051911						
Turbidity	1.3	1.3	NTU	0		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG469826-3 QC Sample: L1107072-01 Client ID: WQ-TSS-001-051911						
Solids, Total Suspended	5.70	6.00	mg/l	5		20

Project Name: 2011 BASELINE

Lab Number: L1107072

Project Number: TO-0010-03

Report Date: 05/26/11

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1107072-01A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-02A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-03A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-04A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-05A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-06A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-07A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-08A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)
L1107072-09A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TSS-160(7)
L1107072-10A	Plastic 1000ml unpreserved	A	N/A	3.9	NA	Absent	A2-TURBIDITY-180.1(2)

\*Values in parentheses indicate holding time in days



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

## GLOSSARY

### Acronyms

EPA	-Environmental Protection Agency.
LCS	-Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	-Laboratory Control Sample Duplicate: Refer to LCS.
LFB	-Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	-Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	-Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	-Matrix Spike Sample Duplicate: Refer to MS.
NA	-Not Applicable.
NC	-Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	-Not Ignitable.
RL	-Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	-Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	-Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** -Spectra identified as "Aldol Condensation Product".
- B** -The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** -Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** -Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** -Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** -The concentration may be biased high due to matrix interferences (i.e., co-elution) with non-target compound(s). The result should be considered estimated.
- H** -The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of

Report Format: Data Usability Report



**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

#### *Data Qualifiers*

sample collection.

- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** 2011 BASELINE  
**Project Number:** TO-0010-03

**Lab Number:** L1107072  
**Report Date:** 05/26/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised March 23, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, EPA 200.8, SM2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 7470A, 9040B, 6020, 9010B, 9014 Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B, 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 9014, 9040B, 120.1, SM2510B, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Client Information

Client: WOODSHOLE GROUP, INC.  
 Address: 81 TECHNOLOGY PARK DR.  
E. PALMOUTH, MA 02536  
 Phone: 508-540-0080  
 Fax: 508-540-1001  
 Email: DWALSH@WHGRP.COM  
 These samples have been previously analyzed by Alpha

### Project Information

Project Name: 2011 NEW BEDFORD BASELINE  
 Project Location: NEW BEDFORD, MA  
 Project #: TO-0010-03  
 Project Manager: DAVE WALSH  
 ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

ALPHA Job #: L1107072

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

### Billing Information

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

*Project Specific LDD*

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS	TSS	Turbidity	SAMPLE HANDLING	TOTAL # BOTTLES
		Date	Time							
L1107072-1	WQ-TSS-001-051911	5/19/11	09:20	SW	DRW	X			FLOOD REF. (SAL)	1
2	WQ-TUR-001-051911		09:20					X	FLOOD REF. (SAL)	1
3	WQ-TSS-002-051911		0933			X			FLOOD (AREA L)	1
4	WQ-TUR-002-051911		0933					X	FLOOD (AREA L)	1
5	WQ-TSS-002-051911 DUP		0935			X			FIELD DUPLICATE	1
6	WQ-TUR-002-051911 DUP		0935					X	FIELD DUPLICATE	1
7	WQ-TSS-003-051911		1138			X			EBB REF. (NWS)	1
8	WQ-TUR-003-051911		1138					X	EBB REF. (NWS)	1
9	WQ-TSS-004-051911		1153			X			EBB (AREA G)	1
10	WQ-TUR-004-051911		1153					X	EBB (AREA G)	1

Container Type P P  
 Preservative A A

Relinquished By: [Signature] Date/Time: 5/20/11 10:00  
5/20/11 1530

Received By: [Signature] Date/Time: 5/20/11 1000  
5/20/11 1530

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

**SDMS REPOSITORY TARGET SHEET**

US EPA New England  
Superfund Document Management System /  
RCRA Document Management System  
**Native Files Target Sheet**

SDMS Document ID #: 535501

Site Name: NEW BEDFORD

File Type(s) Attached (examples: Excel file or .jpg): Excel file  
L1107072\_nbh.csv

Document Type this Target Sheet Represents:

- Map       Photograph       Graph/Chart  
 Video       Compact Disc       Other (Specify  
below)
- 

Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

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by clicking the paper clip -  - in the left side panel of this window.**

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Site Remediation and Restoration Records and Information Center-  
Telephone (617) 918 1440

SAMP_ID	RECEIPT_DATE	PREP_METH	ANALYSIS_M	LAB_QC_COD	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LIM	DETECT_LIM	UNIT	ANALYSIS_DATE	SDG	LAB_SAMP_ID	LAB	SAMP_PREP
WQ-TSS-001-051911	5/20/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	5.7		1	RL	MG/L	5/26/2011	L1107072	L1107072-01	AAL	
WQ-TUR-001-051911	5/20/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	1.3		0.4	RL	NTU	5/20/2022	L1107072	L1107072-02	AAL	
WQ-TSS-002-051911	5/20/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	5.5		1	RL	MG/L	5/26/2011	L1107072	L1107072-03	AAL	
WQ-TUR-002-051911	5/20/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	2.2		0.4	RL	NTU	5/20/2022	L1107072	L1107072-04	AAL	
WQ-TSS-002-051911 REP	5/20/2011	NO_PREP	160.2	REP	TOTAL	1	TSS	Solids, Total S	2.8		1	RL	MG/L	5/26/2011	L1107072	L1107072-05	AAL	
WQ-TUR-002-051911 REP	5/20/2011	NO_PREP	180.1	REP	TOTAL	1	TURB	Turbidity	2		0.4	RL	NTU	5/20/2022	L1107072	L1107072-06	AAL	
WQ-TSS-003-051911	5/20/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	2.7		1	RL	MG/L	5/26/2011	L1107072	L1107072-07	AAL	
WQ-TUR-003-051911	5/20/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	1.8		0.4	RL	NTU	5/20/2022	L1107072	L1107072-08	AAL	
WQ-TSS-004-051911	5/20/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	2.2		1	RL	MG/L	5/26/2011	L1107072	L1107072-09	AAL	
WQ-TUR-004-051911	5/20/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	2.1		0.4	RL	NTU	5/20/2022	L1107072	L1107072-10	AAL	
	5/23/2011	NO_PREP	180.1	MB	TOTAL	1	TURB	Turbidity	0.4	U	0.4	RL	NTU	5/20/2022	L1107072	WG469112-1	AAL	
	5/23/2011	NO_PREP	180.1	LCS	TOTAL	1	TURB	Turbidity	102		0.4	RL	PCT_REC	5/20/2022	L1107072	WG469112-2	AAL	
WQ-TUR-001-051911-DUP	5/19/2011	NO_PREP	180.1	DUP	TOTAL	1	TURB	Turbidity	1.3		0.4	RL	NTU	5/20/2022	L1107072	WG469112-3	AAL	
	5/26/2011	NO_PREP	160.2	MB	TOTAL	1	TSS	Solids, Total S	1	U	1	RL	MG/L	5/26/2011	L1107072	WG469826-1	AAL	
	5/26/2011	NO_PREP	160.2	LCS	TOTAL	1	TSS	Solids, Total S	101		1	RL	PCT_REC	5/26/2011	L1107072	WG469826-2	AAL	
WQ-TSS-001-051911-DUP	5/19/2011	NO_PREP	160.2	DUP	TOTAL	1	TSS	Solids, Total S	6		1	RL	MG/L	5/26/2011	L1107072	WG469826-3	AAL	



SAMP_WGT_	SAMP_WGT_	EMPC	REPORT_YN	
600	ML		Y	
40	ML		Y	
600	ML		Y	
40	ML		Y	
600	ML		Y	
40	ML		Y	
600	ML		Y	
40	ML		Y	
600	ML		Y	
40	ML		Y	
40	ML		N	
40	ML		N	
40	ML		N	
600	ML		N	
600	ML		N	
600	ML		N	

# ESI

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EnviroSystems, Inc.  
P.O. Box 778  
Hampton, NH 03843-0778  
603-926-3345

July 26, 2011

Mr. Dave Walsh  
Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

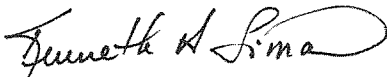
Dear Mr. Walsh;

Enclosed please find two (2) copies of our report evaluating the toxicity of samples received as part of the New Bedford Harbor OU 1 dredge monitoring program for the 2011 sampling period. This report evaluates results of five (5) surface water samples collected on June 27, 2011 in acute and chronic exposure toxicity tests using the mysid shrimp, *Americamysis bahia*, and the purple sea urchin, *Arbacia punctulata*.

Please do not hesitate to call me, Kirk Cram or Petra Karbe should you have any questions regarding the report.

Sincerely,

EnviroSystems, Incorporated

  
Kenneth A. Simon  
President

Enclosure

Report; Two (2) Copies  
Study Number 21128-11-06

**Biomonitoring of Surface Water Samples  
New Bedford Harbor  
New Bedford, Massachusetts**

**June 27, 2011 Sampling Event**

**NED ACOE Job Number: TO-0010-04**

**Task Order No.: ESI0007**

Prepared for:

Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

Prepared by:

EnviroSystems, Incorporated  
1 Lafayette Road  
Hampton, New Hampshire 03843

June 2011  
Reference Number: WHG NBH OU1 21128-11-06

# Biomonitoring of Surface Water Samples New Bedford Harbor, New Bedford, Massachusetts

June 27, 2011 Sampling Event  
NED ACOE Job Number: TO-0010-04

## 1.0 INTRODUCTION

This report provides a summary of data generated from acute and chronic exposure assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on five grab surface water samples collected on June 27, 2011 from specified areas in the harbor. Samples were collected in the vicinity of dredging operations under the supervision of Woods Hole Group, Inc. personnel from the Falmouth, Massachusetts office and were evaluated "As Received" without additional dilutions. Testing was based on programs and protocols developed by the US EPA (2002) and included the following assays; 48 hour acute and 7 day chronic assays conducted with the mysid shrimp, *Americamysis bahia*, and 60 minute chronic fertilization assays conducted with the purple sea urchin, *Arbacia punctulata*. Assay design included a laboratory control treatment. All assays were conducted by ESI at its Hampton, New Hampshire facility.

## 2.0 MATERIALS AND METHODS

### 2.1 General Methods

Toxicological and analytical protocols used in this program followed procedures primarily designed by the EPA to provide standard approaches for the evaluation of toxicological effects of discharges on aquatic organisms, and for the analysis of water samples. See Section 4.0 for a list of references.

### 2.2 Test Species

*A. bahia* were obtained from cultures maintained by Aquatic Research Organisms (ARO), Hampton, New Hampshire. Juvenile shrimp were collected daily, isolated, and placed in a rearing tank. Holding tanks were maintained in a flow-through culture mode at a temperature of  $25 \pm 2^\circ\text{C}$ . At the start of the assays the mysids were <5 days old for the acute evaluation and 7 days old for the chronic evaluation. Juveniles were fed  $\leq 24$  hour old brine shrimp on a daily basis. Water temperature, salinity, and pH were monitored on a daily basis. Prior to testing, organisms were siphoned from the rearing tanks to a holding vessel, and then transferred to test chambers using a large bore pipet, minimizing the amount of water added to test solutions.

*A. punctulata* adults were from cultures maintained by ESI. Original stock was obtained from commercial supply. Male and female urchins are maintained in separate chambers as recommended by protocol (EPA 2002) and ESI. Adult urchins were induced to spawn by the injection of a potassium chloride solution. The viability of gametes obtained was determined prior to their addition to the test solutions. Eggs and/or sperm that would not result in a fertilized egg were rejected from the pool of gametes used in the assay.

### 2.3 Surface Water Samples and Laboratory Control Water

Five grab surface water samples were collected by Woods Hole Group, Inc. staff on June 27, 2011 in New Bedford Harbor. Samples were placed in 10 L polyethylene cubitainers for shipment to the laboratory. Sample receipt information is shown in Table 1.

Prior to testing, samples were evaluated to document salinity, conductivity, and total residual chlorine. Total residual chlorine was measured by amperometric titration (MDL 0.02 mg/L). When necessary, the salinity of samples for the *A. bahia* chronic exposure assays were adjusted to  $25 \pm 2\text{‰}$  while samples used for the *A. punctulata* assays were adjusted to  $30 \pm 2\text{‰}$  using commercial sea salts. Samples with "as received" salinity above these levels were not adjusted. A summary of "As Received" data are presented in Table 2.

Laboratory control water used for the mysid and sea urchin assays was collected from the

Hampton/Seabrook Estuary. This water is classified as SA-1 and has been used to culture marine test organisms since 1981.

## 2.4 Bioassays

### 2.4.1 *Americamysis bahia* Acute Exposure Bioassay

The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity test was conducted at  $25 \pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Test chambers for the acute assay were 250 mL glass beakers containing 200 mL test solution in each of 4 replicates with 10 organisms/replicate. Survival and dissolved oxygen were measured daily in all replicates and pH, temperature, and salinity were measured daily in one replicate of each test treatment. Specific conductance was measured in one replicate of each test concentration at the start of the assay. Mysids were not fed during the assay.

### 2.4.2 *Americamysis bahia* Chronic Exposure Bioassay

Endpoints for the *A. bahia* bioassays were survival and growth. Chronic exposure screening assays were conducted in a static renewal test mode with renewals made at 24-hour intervals. The 7 day assays were conducted at a temperature of  $26 \pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Mysids were maintained in 250 mL beakers containing 150 mL of test solution. Approximately 100 mL of the test solution were replaced each day. The assay incorporated 8 replicates with 5 organisms/replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded in a composite sample of the "old" test solution and in the "new" test solution prior to being added to the test chamber. Incubator temperatures were also recorded on a daily basis.

During the test, mysids were fed  $\leq 24$  hour old *Artemia* nauplii. On Day 7 of the assay, surviving mysids were removed from test solutions, rinsed to remove any surface detritus and salts, and transferred to tared foils and dried for 24 hours at  $104^\circ\text{C}$ . Foils were weighed to the nearest 0.01 mg. Mean dry biomass per individual were obtained by dividing the net dry weight of all surviving organisms by the number of organisms added at the start of the assay.

### 2.4.3 *Arbacia punctulata* Chronic Exposure Fertilization Assays

The endpoint for the *A. punctulata* bioassay was fertilization. Gametes were obtained by potassium chloride injection to induce spawning. Sperm were collected dry, diluted to achieve a concentration of approximately  $5.0 \times 10^7$  sperm/mL in the surface water treatments. Actual sperm concentrations are provided on laboratory bench sheets in Appendix A. Sperm solutions were added to 5 mL aliquots of each sample being evaluated and allowed to remain in the test solutions for 60 minutes before the addition of unfertilized eggs. Each treatment incorporated a total of four (4) replicates. After 20 minutes exposure, the assay was terminated by the addition of 0.2 mL of preservative. Aliquots of preserved solution were counted to determine numbers of fertilized and unfertilized eggs. Fertilization was accepted based on the presence or absence of a fertilization membrane around the egg.

## 2.5 Data Analysis

Statistical analysis of acute and chronic exposure data was completed using CETIS, Comprehensive Environmental Toxicity Testing System, software. The program computes acute and chronic exposure endpoints based on EPA decision tree guidelines specified in individual test methods. For chronic exposure endpoints statistical significance was accepted at  $\alpha < 0.05$ . The laboratory control was used for both assays to determine whether there were significant reductions in survival or fertilization as compared to the site samples. If survival in the acute assay was greater than 90%, then a determination of "not significant" was made based on direct observation.

## 2.6 Quality Control

As part of the laboratory quality control program, standard reference toxicant assays are completed on a regular basis for each test species. These results, summarized in Table 3, provide relative health and response data while allowing for comparison with historic data sets.

### 3.0 RESULTS SUMMARY

Tables 4 and 5 provide summaries of survival, growth and fertilization endpoints and associated statistical analyses for *A. bahia* and *A. punctulata* for the June 27, 2011 sampling events. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

#### 3.1 *Americamysis bahia* Acute Exposure Bioassay

Minimum test acceptability criteria for the acute exposure bioassay require  $\geq 90\%$  survival in the control concentration. Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

#### 3.2 *Americamysis bahia* Chronic Exposure Bioassay

Minimum test acceptability criteria for the chronic exposure bioassay require  $\geq 80\%$  survival and a minimum weight of 0.2 mg per individual in the control concentrations. Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

#### 3.3 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punctulata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

### 4.0 REFERENCES

- APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20<sup>th</sup> edition. Washington D.C.
- US EPA. 2002. *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*. Fourth Edition. EPA-821-R-02-012.
- US EPA. 2002. *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. Fourth Edition. EPA-821-R-02-013.

**Table 1. Sample Receipt Summary.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Type of Sample	Matrix	Collection		Receipt	
				Date	Time	Date	Time
WQ-TOX-001-062711	21128-001	Grab	Water	06/27/11	1030	06/27/11	1900
WQ-TOX-002-062711	21128-002	Grab	Water	06/27/11	1106	06/27/11	1900
WQ-TOX-002-062711-REP	21128-003	Grab	Water	06/27/11	1106	06/27/11	1900
WQ-TOX-003-062711	21128-004	Grab	Water	06/27/11	1340	06/27/11	1900
WQ-TOX-004-062711	21128-005	Grab	Water	06/27/11	1423	06/27/11	1900

**Table 2 Summary of "As Received" Sample Physical and Chemical Characteristics.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Ammonia* (mg/L)	pH (SU)	Salinity (‰)	Total Residual Chlorine (mg/L)
WQ-TOX-001-062711	21128-001	<0.1	7.35	26	<0.02
WQ-TOX-002-062711	21128-002	<0.1	7.46	26	<0.02
WQ-TOX-002-062711-REP	21128-003	<0.1	7.66	25	<0.02
WQ-TOX-003-062711	21128-004	<0.1	7.56	28	<0.02
WQ-TOX-004-062711	21128-005	<0.1	8.23	16	<0.02

**COMMENTS:**

\* Ammonia samples were sub-sampled at ESI on June 28, 2011.

**Table 3 Reference Toxicant Summary.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Date	Endpoint	Value	Historic Mean/ Central Tendency	Acceptable Range	Reference Toxicant	
<i>A. bahia</i>						
06/21/11	Survival	LC-50 - 48 Hr	29.1*	22.1	16.8 - 27.4	SDS (mg/L)
06/21/11	Survival	C-NOEC	15.0	15.0	10.0 - 25.0	SDS (mg/L)
06/21/11	Growth	C-NOEC	15.0	10.0	5.0 - 15.0	SDS (mg/L)
<i>A. punctulata</i>						
06/09/11	Fertilization	C-NOEC	<1.0**	10.0	5.0 - 20.0	Copper (µg/L)
06/09/11	Fertilization	IC-25	20.4	29.1	0 - 69.8	Copper (µg/L)

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

\* Normal Acceptance Limits set at  $\pm 2$  Std Dev of historic mean; maximum limits are  $\pm 3$  Std of historic mean. The  $\pm 3$  limit is acceptable, but considered high. If  $\pm 3$  limit is utilized value is noted.

\*\* Normal Acceptance Limits set at  $\pm 1$  concentration surrounding the central tendency. Value is outside of acceptable range.

**Table 4. Summary of Acute Exposure Assay: *A. bahia*.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Field ID	ESI Code	Percent Survival	Significant Difference vs. Lab?
Laboratory Control	21128-000	100%	No
WQ-TOX-001-062711	21128-001	100%	No
WQ-TOX-002-062711	21128-002	95%	No
WQ-TOX-002-062711-REP	21128-003	97.5%	No
WQ-TOX-003-062711	21128-004	97.5%	No
WQ-TOX-004-062711	21128-005	97.5%	No



**Table 5. Summary of Chronic Exposure Assays: *A. bahia* and *A. punctulata*.  
New Bedford Harbor Dredge Monitoring. June 27, 2011.**

Sample ID	ESI Code	Reps	Mean	Min	Max	CV	Significant Difference vs	
							p Value	Lab
<i>Americamysis bahia</i>			Survival					
Laboratory Control	21128-000		80.0%	60.0%	100.0%	13.4%	-	-
WQ-TOX-001-062711	21128-001	8	92.5%	80.0%	100.0%	11.2%	0.9841	NO
WQ-TOX-002-062711	21128-002		85.0%	60.0%	100.0%	20.9%	0.7618	NO
WQ-TOX-002-062711-REP	21128-003		87.5%	80.0%	100.0%	11.8%	0.9108	NO
WQ-TOX-003-062711	21128-004		87.5%	60.0%	100.0%	17.0%	0.8734	NO
WQ-TOX-004-062711	21128-005		85.0%	60.0%	100.0%	16.6%	0.7874	NO
<i>Americamysis bahia</i>			Growth - Biomass					
Laboratory Control	21128-000		32.1%	19.4%	55.4%	34.9%	-	-
WQ-TOX-001-062711	21128-001	8	69.5%	40.2%	119.0%	45.5%	0.9965	NO
WQ-TOX-002-062711	21128-002		37.9%	29.0%	50.4%	20.5%	0.8757	NO
WQ-TOX-002-062711-REP	21128-003		39.0%	16.2%	86.2%	55.5%	0.7823	NO
WQ-TOX-003-062711	21128-004		31.0%	21.0%	40.4%	24.9%	0.4152	NO
WQ-TOX-004-062711	21128-005		49.2%	31.4%	87.8%	37.4%	0.9793	NO
<i>Americamysis bahia</i>			Growth - Dry Weight					
Laboratory Control	21128-000	8	40.0%	27.0%	69.2%	32.2%	-	-
<i>Arbacia punctulata*</i>			Portion Fertilized					
Laboratory Control	21128-000		88.0%	85.0%	91.0%	3.4%	-	-
WQ-TOX-001-062711	21128-001	4	83.7%	77.0%	89.0%	6.1%	0.0989	NO
WQ-TOX-002-062711	21128-002		79.7%	78.0%	83.0%	3.0%	0.0029	YES
WQ-TOX-002-062711-REP	21128-003		84.7%	82.0%	88.0%	3.3%	0.0791	NO
WQ-TOX-003-062711	21128-004		28.8%	17.0%	40.0%	34.6%	<0.0001	YES
WQ-TOX-004-062711	21128-005		85.3%	82.0%	88.0%	2.9%	0.1002	NO

**COMMENTS:**

\* The *A. punctulata* assay was run 3 days after the samples were collected, which is outside the recommended hold time of 36 hours.

**APPENDIX A**  
**SUPPORT DATA**

<b>Contents</b>	<b># Pages</b>
Methods Summary	1
Study 21128: Sample Date June 27, 2011	
<i>A. bahia</i> Bench Sheets & Statistical Analysis Report	25
<i>A. punctulata</i> Bench Sheets and Statistical Analysis Report	8
Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Records	6
Analytical Chemistry Report	1
Sample Receipt Records	1
Chain of Custody and Organism Shipping Information	1
 Total Appendix Pages	 43

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

Parameter	Method
<b>Acute Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-012 2002.0
<i>Daphnia pulex</i>	EPA-821-R-02-012 2021.0
<i>Pimephales promelas</i>	EPA-821-R-02-012 2000.0
<i>Americamysis bahia</i>	EPA-821-R-02-012 2007.0
<i>Menidia beryllina</i>	EPA-821-R-02-012 2006.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-012 2004.0
<b>Chronic Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013 1002.0
<i>Pimephales promelas</i>	EPA-821-R-02-013 1000.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-014 1004.0
<i>Menidia beryllina</i>	EPA-821-R-02-014 1006.0
<i>Americamysis bahia</i>	EPA-821-R-02-014 1007.0
<i>Arbacia punctulata</i>	EPA-821-R-02-014 1008.0
<i>Champia parvula</i>	EPA-821-R-02-014 1009.0
<b>Trace Metals:</b>	
Trace Metals	EPA 200.7/SW 6010 and EPA 200.8/SW 6020
Hardness	Standard Methods 20 <sup>th</sup> Edition - Method 2340 B
<b>Wet Chemistries:</b>	
Alkalinity	EPA 310.2
Chlorine, Residual	Standard Methods 20 <sup>th</sup> Edition - Method 4500CLD
Total Organic Carbon	Standard Methods 20 <sup>th</sup> Edition - Method 5310C
Specific Conductance	Standard Methods 20 <sup>th</sup> Edition - Method 2510B
Nitrogen - Ammonia	Standard Methods 20 <sup>th</sup> Edition - Method 4500NH3G
pH	Standard Methods 20 <sup>th</sup> Edition - Method 4500H+B
Solids, Total (TS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 B
Solids, Total Dissolved (TDS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 C
Solids, Total Suspended (TSS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 D
Dissolved Oxygen	Standard Methods 20 <sup>th</sup> Edition - Method 4500-O G

Please visit our web site at [www.envirosystems.com](http://www.envirosystems.com) for a copy of our NH NELAP Accreditation and Massachusetts State Certification.

ACUTE BIOASSAY DATA SUMMARY

STUDY: Z1128		"AS RECEIVED" EFFLUENT AND DILUENT CHEMISTRIES							
CLIENT: Woods Hole Group	TEST ORGANISM: <i>A. bahia</i>	TRC	TS/TSS	AMM	TOC	T.METAL	SAL	pH	S/C
SAMPLE: New Bedford Harbor	ORGANISM SUPPLIER/BATCH/AGE: See Organism Culture Sheet	EFF	See A. bahia Chronic						
		DIL							

CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0
LAB	A	10	10	10	6.9	6.0	7.1	8.13	7.79	8.00	24	25	25	25	25	25	38880
	B	10	10	10	6.9	5.9	7.1										
	C	10	10	10	6.9	5.7	7.1										
	D	10	10	10	6.9	5.7	7.0										
-001	A	10	10	10	6.2	5.8	6.9	7.49	7.61	8.01	24	25	25	26	26	27	40660
	B	10	10	10	6.2	5.7	7.0										
	C	10	10	10	6.2	5.8	7.0										
	D	10	10	10	6.2	5.9	7.0										
-002	A	10	10	10	6.8	2.8*	7.0	7.56	7.24	7.98	24	25	25	26	26	26	39980
	B	10	10	9	6.8	5.3	7.0										
	C	10	10	10	6.8	5.0	6.9										
	D	10	10	9	6.8	3.9	6.9										
-003	A	10	10	10	6.9	4.8	6.9	7.73	7.56	7.95	24	25	25	25	25	26	39320
	B	10	10	10	6.9	4.4	7.0										
	C	10	10	10	6.9	4.5	6.9										
	D	10	10	9	6.9	4.2	6.9										

DATE	6/24/11	6/30/11	6/28/11	4/29/11	4/30/11
TIME	1535	1405	1425	1510	1345
INITIALS	LB	CS	CS	W	CS

\* put on air 24 hrs

## ACUTE BIOASSAY DATA SUMMARY

STUDY: Z1128		SAMPLE: New Bedford Harbor															
CLIENT: Woods Hole Group		TEST ORGANISM: <i>A. bahia</i>															
CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0
-004	A	10	10	10	7.0	3.9	6.6	7.67	7.36	7.87	24	25	25	25	25	26	39330
	B	10	10	10	7.0	4.0	6.6										
	C	10	10	10	7.0	4.8	6.7										
	D	10	9	9	7.0	4.8	6.6										
-005	A	10	10	10	8.1	5.1	6.6	8.21	7.83	8.07	24	25	25	25	25	26	39470
	B	10	10	10	8.1	5.0	6.7										
	C	10	10	10	8.1	4.5	6.8										
	D	10	9	9	8.1	4.6	6.8										
	A																
	B																
	C																
	D																
	A																
	B																
	C																
	D																
DATE	6/28/11	6/29/11	6/30/11	6/28/11	6/29/11	6/30/11											
TIME	1535	1405	1425	1510	1345	1345											
INITIALS	LB	CS	CS	W	CS	CS											



# Aquatic Research Organisms

REC  
6/28/11

## DATA SHEET

### I. Organism History

Species AMERICAMYSIS BABIA

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-25-11 Receipt date \_\_\_\_\_

Lot number 062511MS Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity 27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other ESL SLIZING DIET

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

### IV. Shipping Information

Client: ESL # of Organisms 48+

Carrier: \_\_\_\_\_ Date shipped 6-28-11

Biologist: Mark Donaghy

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#		
SAMPLE		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)						
Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
Lab Control	A	5	5	5	5	4	4	4	4	6.0	6.6	6.9	7.1	6.9	6.4	6.7
	B	5	5	5	4	4	3	3	3	5.9	6.7	7.0	6.9	7.0	6.5	6.7
	C	5	5	4	4	4	4	4	4	5.9	6.8	6.9	7.3	7.2	6.6	6.6
	D	5	5	5	5	5	5	4	4	5.9	6.7	6.9	7.3	7.0	6.7	6.6
	E	5	5	5	5	5	5	5	4	5.5	6.8	6.7	7.0	6.6	6.7	6.6
	F	5	5	5	5	5	5	5	5	5.4	6.8	7.0	7.0	7.0	6.9	6.6
	G	5	5	5	5	5	4	4	4	4.9	6.8	6.6	7.1	6.9	7.0	6.8
	H	5	5	5	5	5	5	5	4	5.1	6.8	6.6	7.4	6.6	6.5	6.7
-001	A	5	5	5	5	5	5	5	5	5.4	6.8	6.9	6.9	6.8	6.7	8.6
	B	5	4	4	4	4	4	4	4	5.4	6.8	6.8	7.4	6.7	6.6	8.8
	C	5	5	5	5	5	5	5	5	3.9	6.9	6.7	7.1	6.7	6.9	9.9
	D	5	5	5	5	5	4	4	4	4.9	6.8	6.8	7.1	6.6	6.5	6.7
	E	5	5	5	5	5	5	5	5	4.2	6.8	6.7	7.1	6.7	6.6	6.6
	F	5	5	5	5	4	4	4	4	2.5	6.8	6.8	7.0	6.7	7.0	6.6
	G	5	5	5	5	6	5	5	5	6.0	6.8	6.8	7.1	6.6	7.1	6.6
	H	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.1	6.6	7.0	6.6
-002	A	5	5	5	4	5	4	4	3	4.5	6.8	6.7	7.1	6.9	6.6	7.3
	B	5	5	5	5	5	5	5	5	5.9	6.7	6.7	7.0	6.7	6.5	6.8
	C	5	5	5	5	5	5	5	5	4.2	6.8	6.7	7.0	6.6	6.7	6.7
	D	5	5	5	5	5	5	4	4	5.3	6.8	6.5	7.0	6.7	6.2	6.4
	E	5	5	5	5	5	5	5	5	4.4	6.8	6.6	7.0	6.7	6.4	6.4
	F	5	5	5	4	4	4	4	4	4.7	6.8	6.6	7.0	6.6	6.5	6.6
	G	5	5	5	5	5	5	5	5	4.9	6.8	6.7	7.1	6.6	6.7	6.2
	H	5	5	5	5	5	5	4	3	4.3	6.8	6.8	7.0	7.0	6.9	6.5
INC TEMP:		26	26	25	25	25	25	26	26							
DATE:		6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5							
TIME:		1455	1205	1045	1045	0915	1305	1245	1020							
INITIALS:		LB	CS	CS	LB	LB	SJ	SJ	CS							

LB  
7/1/11

\*put on air day 1

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#			
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)							
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
-003	A	5	5	5	5	5	5	5	4	4.5	6.8	6.6	7.0	6.6	6.5	7.3	
	B	5	5	5	5	4	4	4	4	4.5	6.9	6.7	7.0	6.5	6.4	6.5	
	C	5	5	5	5	5	5	5	4	4.5	6.8	6.6	7.0	6.6	6.3	6.1	
	D	5	5	5	5	5	5	5	4	4.3	6.8	6.6	7.0	6.5	6.7	7.5	
	E	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.0	6.6	6.8	6.9	
	F	5	5	5	5	5	5	5	5	5.1	6.8	6.6	7.0	6.9	6.7	6.6	
	G	5	5	5	4	4	4	4	4	5.3	6.8	6.8	6.6	6.7	6.6	6.9	
	H	5	5	5	5	5	5	5	5	5.0	6.8	6.6	6.8	6.6	6.8	6.5	
-004	A	5	5	5	5	5	5	5	5	5.2	6.8	6.5	6.9	6.6	6.4	6.7	
	B	5	5	5	5	5	4	4	3	4.2	6.7	6.6	7.0	6.7	6.6	6.7	
	C	5	5	5	5	5	5	5	5	4.9	6.7	6.6	7.0	6.6	6.7	6.6	
	D	5	5	5	5	4	4	4	4	4.8	6.7	6.6	7.0	6.8	6.9	6.8	
	E	5	5	5	5	5	5	5	5	4.9	6.7	6.6	7.2	6.6	7.0	6.8	
	F	5	5	5	5	5	5	5	4	6.6	6.7	6.6	7.1	6.6	6.8	6.6	
	G	5	5	5	5	5	5	5	5	5.8	6.7	6.6	7.0	6.7	6.7	6.7	
	H	5	5	5	5	5	5	4	4	4.9	6.8	6.6	7.1	6.8	6.6	6.8	
-005	A	5	5	5	5	5	5	5	5	5.3	6.8	6.5	7.0	6.6	6.5	6.7	
	B	5	5	5	5	5	5	4	4	5.6	6.8	6.5	6.9	6.7	6.3	6.7	
	C	5	5	5	5	5	5	5	5	5.8	6.9	6.5	7.0	6.8	6.6	6.7	
	D	5	5	5	5	5	5	5	4	5.9	6.8	6.4	7.1	6.6	6.4	6.7	
	E	5	5	5	5	5	5	5	4	6.2	6.8	6.4	7.0	6.7	6.4	7.1	
	F	5	4	4	4	4	3	3	3	6.2	6.7	6.4	7.0	6.7	6.5	6.8	
	G	5	5	5	5	5	5	5	4	6.0	6.7	6.4	7.0	7.1	6.3	6.7	
	H	5	5	5	5	5	5	5	5	5.9	6.8	6.4	7.0	6.6	6.4	7.2	
INC TEMP:		26	26	25	25	25	25	28	26								
DATE:		6/23/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5								
TIME:		1455	1205	1045	1055	0915	1305	1245	1020								
INITIALS:		UB	CS	CS	UB	UB	SJ	SJ	CS								

UB  
7/11/11



Larval Fish Dry Weight Summary Sheet

Study:	21128	
Client:	Woods Hole Group	
Date/Time/Init:	07/06/11 0915 CS	07/02/11 1025 LB
Conc	Fish and Foil (mg)	Tare Wt (mg)
Lab A	208.46	207.11
Lab B	207.21	206.24
Lab C	209.47	207.94
Lab D	210.04	208.51
Lab E	210.45	209.37
Lab F	208.07	206.25
Lab G	212.12	209.35
Lab H	208.99	207.2
001A	209.89	207.88
001B	213.87	207.94
001C	214.6	211.73
001D	210.67	208.02
001E	209.94	206.72
001F	210.06	208.04
001G	209.9	206.72
001H	213.69	207.77
002A	212.2	210.58
002B	211.72	209.75
002C	211.55	209.03
002D	211.32	209.87
002E	211.69	209.62
002F	208.41	206.74
002G	210.77	208.45
002H	208.43	206.89
003A	207.46	205.92
003B	205.51	204.7
003C	209.76	208.49
003D	210.41	208.42
003E	212.61	210.06
003F	214.17	209.86
003G	208.95	207.57
003H	206.96	205.2
004A	208.15	206.3
004B	209.9	208.47
004C	209.06	207.83
004D	210.39	208.37
004E	210.58	208.66
004F	210.85	209.72
004G	208.83	207.04
004H	209.45	208.4
005A	211.26	208.66
005B	209	206.04
005C	211.89	209.34
005D	208.29	206.72
005E	211.96	207.57
005F	208.35	206.54
005G	210.6	208.89
005H	208.38	206.29

**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:38 (p 1 of 1)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000	21128-001	0.9841	0.05	Non-Significant Effect	00-3041-5675	Equal Variance t Two-Sample Test
	21128-002	0.7618	0.05	Non-Significant Effect	01-7796-1607	Equal Variance t Two-Sample Test
	21128-003	0.9108	0.05	Non-Significant Effect	21-2893-6766	Equal Variance t Two-Sample Test
	21128-004	0.8734	0.05	Non-Significant Effect	14-3920-9434	Equal Variance t Two-Sample Test
	21128-005	0.7874	0.05	Non-Significant Effect	13-0638-1109	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-3041-5675	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
01-7796-1607	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
13-0638-1109	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
14-3920-9434	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria
21-2893-6766	7d Proportion Survived	Control Resp	0.8	0.8 - NL	Yes	Passes Acceptability Criteria

7d Proportion Survived Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.8	0.76	0.84	0.6	1	0.0378	0.107	13.4%	0.0%
21128-001	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-15.6%
21128-002	8	0.85	0.784	0.916	0.6	1	0.0627	0.177	20.9%	-6.25%
21128-003	8	0.875	0.836	0.914	0.8	1	0.0366	0.104	11.8%	-9.37%
21128-004	8	0.875	0.819	0.931	0.6	1	0.0526	0.149	17.0%	-9.37%
21128-005	8	0.85	0.797	0.903	0.6	1	0.05	0.141	16.6%	-6.25%

7d Proportion Survived Detail									
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8	
21128-001	1	0.8	1	0.8	1	0.8	1	1	
21128-002	0.6	1	1	0.8	1	0.8	1	0.6	
21128-003	0.8	0.8	0.8	0.8	1	1	0.8	1	
21128-004	1	0.6	1	0.8	1	0.8	1	0.8	
21128-005	1	0.8	1	0.8	0.8	0.6	0.8	1	

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 1 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

Americamysis 7-d Survival, Growth and Fecundity Test										EnviroSystems, Inc.	
<b>Analysis ID:</b> 13-0638-1109		<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 13 Jul-11 11:01		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint				13.6%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21128-000		21128-005	-0.8215	1.761	14	0.1276	0.7874	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.01417698		0.01417698		1	0.6748	0.4251	Non-Significant Effect			
Error	0.2941186		0.02100847		14						
Total	0.3082955		0.03518545		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.787	8.885	0.4617	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9004	0.8408	0.0815	Normal Distribution					
<b>7d Proportion Survived Summary</b>											
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%	
21128-005	8	0.85	0.7962	0.9038	0.6	1	0.05	0.1414	16.64%	-6.25%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%	
21128-005	8	1.169	1.106	1.231	0.8861	1.345	0.05803	0.1641	14.04%	-5.37%	
<b>7d Proportion Survived Detail</b>											
<b>Sample Code</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>	<b>Rep 6</b>	<b>Rep 7</b>	<b>Rep 8</b>			
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8			
21128-005	1	0.8	1	0.8	0.8	0.6	0.8	1			

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 2 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 14-3920-9434	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	4.1%

<b>Equal Variance t Two-Sample Test</b>								
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
21128-000		21128-004	-1.192	1.761	14	0.132	0.8734	Non-Significant Effect

<b>ANOVA Table</b>							
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>	
Between	0.03189819	0.03189819	1	1.421	0.2531	Non-Significant Effect	
Error	0.3143682	0.02245487	14				
Total	0.3462664	0.05435307	15				

<b>Distributional Tests</b>					
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>
Variances	Variance Ratio F	1.979	8.885	0.3880	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9266	0.8408	0.2153	Normal Distribution

<b>7d Proportion Survived Summary</b>										
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-004	8	0.875	0.8184	0.9316	0.6	1	0.05261	0.1488	17.01%	-9.38%

<b>Angular (Corrected) Transformed Summary</b>										
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-004	8	1.199	1.133	1.264	0.8861	1.345	0.06107	0.1727	14.41%	-8.05%

<b>7d Proportion Survived Detail</b>									
<b>Sample Code</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>	<b>Rep 6</b>	<b>Rep 7</b>	<b>Rep 8</b>	
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8	
21128-004	1	0.6	1	0.8	1	0.8	1	0.8	

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 3 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 21-2893-6766	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint11.4%	

<b>Equal Variance t Two-Sample Test</b>								
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
21128-000		21128-003	-1.417	1.761	14	0.1083	0.9108	Non-Significant Effect

<b>ANOVA Table</b>							
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>	
Between	0.03039269	0.03039269	1	2.008	0.1783	Non-Significant Effect	
Error	0.2118715	0.01513368	14				
Total	0.2422642	0.04552637	15				

<b>Distributional Tests</b>						
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>	
Variances	Variance Ratio F	1.007	8.885	0.9925	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.9058	0.8408	0.0994	Normal Distribution	

<b>7d Proportion Survived Summary</b>										
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%
21128-003	8	0.875	0.8356	0.9144	0.8	1	0.0366	0.1035	11.83%	-9.38%

<b>Angular (Corrected) Transformed Summary</b>										
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%
21128-003	8	1.196	1.15	1.243	1.107	1.345	0.04357	0.1232	10.3%	-7.86%

<b>7d Proportion Survived Detail</b>									
<b>Sample Code</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>	<b>Rep 6</b>	<b>Rep 7</b>	<b>Rep 8</b>	
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8	
21128-003	0.8	0.8	0.8	0.8	1	1	0.8	1	

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**CETIS Analytical Report**

Report Date: 13 Jul-11 11:28 (p 4 of 5)  
 Test Code: 62DA1398 | 16-5845-9032

Americamysis 7-d Survival, Growth and Fecundity Test								EnviroSystems, Inc.			
<b>Analysis ID:</b> 01-7796-1607		<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 13 Jul-11 11:01		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint16.0%							
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21128-000		21128-002	-0.7319	1.761	14	0.1484	0.7618	Non-Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.01521097		0.01521097	1	0.5357	0.4763	Non-Significant Effect				
Error	0.3975583		0.02839702	14							
Total	0.4127693		0.04360799	15							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		2.767	8.885	0.2028	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.8912	0.8408	0.0583	Normal Distribution					
7d Proportion Survived Summary											
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%	
21128-002	8	0.85	0.7826	0.9174	0.6	1	0.06268	0.1773	20.86%	-6.25%	
Angular (Corrected) Transformed Summary											
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%	
21128-002	8	1.171	1.093	1.249	0.8861	1.345	0.07221	0.2042	17.44%	-5.56%	
7d Proportion Survived Detail											
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8			
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8			
21128-002	0.6	1	1	0.8	1	0.8	1	0.6			

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:28 (p 5 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

Americamysis 7-d Survival, Growth and Fecundity Test										EnviroSystems, Inc.	
<b>Analysis ID:</b> 00-3041-5675		<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 13 Jul-11 11:01		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint1 1.4%							
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21128-000		21128-001	-2.385	1.761	14	0.1083	0.9841	Non-Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square	DF	F Stat	P-Value	Decision(α:5%)				
Between	0.08608479		0.08608479	1	5.688	0.0318	Significant Effect				
Error	0.2118715		0.01513368	14							
Total	0.2979563		0.1012185	15							
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		1.007	8.885	0.9925	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.9101	0.8408	0.1168	Normal Distribution					
7d Proportion Survived Summary											
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000	8	0.8	0.7593	0.8407	0.6	1	0.0378	0.1069	13.36%	0.0%	
21128-001	8	0.925	0.8856	0.9644	0.8	1	0.0366	0.1035	11.19%	-15.62%	
Angular (Corrected) Transformed Summary											
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000	8	1.109	1.063	1.156	0.8861	1.345	0.04341	0.1228	11.07%	0.0%	
21128-001	8	1.256	1.209	1.303	1.107	1.345	0.04357	0.1232	9.81%	-13.22%	
7d Proportion Survived Detail											
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8			
21128-000	0.8	0.6	0.8	0.8	0.8	1	0.8	0.8			
21128-001	1	0.8	1	0.8	1	0.8	1	1			

**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:39 (p 1 of 1)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000	21128-001	0.9965	0.05	Non-Significant Effect	01-3082-8564	Equal Variance t Two-Sample Test
	21128-002	0.8757	0.05	Non-Significant Effect	14-7691-8606	Equal Variance t Two-Sample Test
	21128-003	0.7823	0.05	Non-Significant Effect	17-7809-5869	Equal Variance t Two-Sample Test
	21128-004	0.4152	0.05	Non-Significant Effect	10-7087-4289	Equal Variance t Two-Sample Test
	21128-005	0.9793	0.05	Non-Significant Effect	05-7481-4451	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-3082-8564	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
05-7481-4451	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
10-7087-4289	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
14-7691-8606	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
17-7809-5869	Mean Dry Biomass-mg	Control Resp	0.321	0.2 - NL	Yes	Passes Acceptability Criteria
01-3082-8564	Mean Dry Biomass-mg	PMSD	0.65	0.11 - 0.37	Yes	Above Acceptability Criteria
05-7481-4451	Mean Dry Biomass-mg	PMSD	0.418	0.11 - 0.37	Yes	Above Acceptability Criteria
10-7087-4289	Mean Dry Biomass-mg	PMSD	0.264	0.11 - 0.37	Yes	Passes Acceptability Criteria
14-7691-8606	Mean Dry Biomass-mg	PMSD	0.264	0.11 - 0.37	Yes	Passes Acceptability Criteria
17-7809-5869	Mean Dry Biomass-mg	PMSD	0.473	0.11 - 0.37	Yes	Above Acceptability Criteria

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.279	0.363	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-001	8	0.695	0.577	0.813	0.402	1.19	0.112	0.316	45.5%	-117.0%
21128-002	8	0.379	0.35	0.408	0.29	0.504	0.0275	0.0777	20.5%	-18.1%
21128-003	8	0.39	0.309	0.471	0.162	0.862	0.0766	0.217	55.5%	-21.6%
21128-004	8	0.31	0.282	0.339	0.21	0.404	0.0274	0.0774	24.9%	3.27%
21128-005	8	0.492	0.423	0.561	0.314	0.878	0.065	0.184	37.4%	-53.3%

Mean Dry Biomass-mg Detail									
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358	
21128-001	0.402	1.19	0.574	0.53	0.644	0.404	0.636	1.18	
21128-002	0.324	0.394	0.504	0.29	0.414	0.334	0.464	0.308	
21128-003	0.308	0.162	0.254	0.398	0.51	0.862	0.276	0.352	
21128-004	0.37	0.286	0.246	0.404	0.384	0.226	0.358	0.21	
21128-005	0.52	0.592	0.51	0.314	0.878	0.362	0.342	0.418	



**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 1 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>		
<b>Analysis ID:</b> 05-7481-4451	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0			
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes			

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	1.8%

<b>Equal Variance t Two-Sample Test</b>								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-005	-2.25	1.76	14	0.134	0.9793	Non-Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1169644	0.1169644	1	5.05	0.0413	Significant Effect
Error	0.3243743	0.02316959	14			
Total	0.4413387	0.140134	15			

<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	2.7	8.89	0.2137	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.889	0.841	0.0541	Normal Distribution	

<b>Mean Dry Biomass-mg Summary</b>										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-005	8	0.492	0.422	0.562	0.314	0.878	0.065	0.184	37.4%	-53.3%

<b>Mean Dry Biomass-mg Detail</b>								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-005	0.52	0.592	0.51	0.314	0.878	0.362	0.342	0.418

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 2 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

**Analysis ID:** 10-7087-4289      **Endpoint:** Mean Dry Biomass-mg      **CETIS Version:** CETISv1.8.0  
**Analyzed:** 13 Jul-11 11:01      **Analysis:** Parametric-Two Sample      **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	26.4%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-004	0.218	1.76	14	0.0847	0.4152	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0004410285	0.0004410285	1	0.0476	0.8304	Non-Significant Effect
Error	0.1296529	0.009260924	14			
Total	0.130094	0.009701952	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.09	8.89	0.3514	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.936	0.841	0.3061	Normal Distribution

**Mean Dry Biomass-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-004	8	0.31	0.281	0.34	0.21	0.404	0.0274	0.0774	24.9%	3.27%

**Mean Dry Biomass-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-004	0.37	0.286	0.246	0.404	0.384	0.226	0.358	0.21

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 3 of 5)  
**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** EnviroSystems, Inc.

<b>Analysis ID:</b> 17-7809-5869	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	47.3%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-003	-0.803	1.76	14	0.152	0.7823	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0191821	0.0191821	1	0.645	0.4355	Non-Significant Effect
Error	0.4166031	0.02975736	14			
Total	0.4357851	0.04893946	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	3.75	8.89	0.1024	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.865	0.841	0.0229	Normal Distribution

**Mean Dry Biomass-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-003	8	0.39	0.308	0.473	0.162	0.862	0.0766	0.217	55.5%	-21.6%

**Mean Dry Biomass-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-003	0.308	0.162	0.254	0.398	0.51	0.862	0.276	0.352

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 4 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 14-7691-8606	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	26.4%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-002	-1.2	1.76	14	0.0849	0.8757	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01345608	0.01345608	1	1.45	0.2487	Non-Significant Effect
Error	0.1300234	0.00928739	14			
Total	0.1434795	0.02274347	15			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	2.07	8.89	0.3571	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.938	0.841	0.3226	Normal Distribution	

Mean Dry Biomass-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-002	8	0.379	0.349	0.409	0.29	0.504	0.0275	0.0777	20.5%	-18.1%

Mean Dry Biomass-mg Detail								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-002	0.324	0.394	0.504	0.29	0.414	0.334	0.464	0.308

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:32 (p 5 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 01-3082-8564	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	65.0%

<b>Equal Variance t Two-Sample Test</b>								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-001	-3.16	1.76	14	0.209	0.9965	Non-Significant Effect

<b>ANOVA Table</b>						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.5595022	0.5595022	1	9.96	0.0070	Significant Effect
Error	0.7863894	0.05617067	14			
Total	1.345892	0.6156729	15			

<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	7.97	8.89	0.0138	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.857	0.841	0.0173	Normal Distribution	

<b>Mean Dry Biomass-mg Summary</b>										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.321	0.278	0.364	0.194	0.554	0.0396	0.112	34.9%	0.0%
21128-001	8	0.695	0.575	0.815	0.402	1.19	0.112	0.316	45.5%	-117.0%

<b>Mean Dry Biomass-mg Detail</b>								
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.27	0.194	0.306	0.306	0.216	0.364	0.554	0.358
21128-001	0.402	1.19	0.574	0.53	0.644	0.404	0.636	1.18

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**CETIS Summary Report**

**Report Date:** 13 Jul-11 11:40 (p 1 of 1)

**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 08-2262-6347	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 28 Jun-11 14:55	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 05 Jul-11 10:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000	16-4248-2666	28 Jun-11 12:00	28 Jun-11 12:00	3h (3 °C)	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	28h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	28h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	25h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	25h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21128-000		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000	21128-001	0.9965	0.05	Non-Significant Effect	20-4952-3650	Wilcoxon Rank Sum Two-Sample Test
	21128-002	0.8344	0.05	Non-Significant Effect	12-1260-7485	Equal Variance t Two-Sample Test
	21128-003	0.6542	0.05	Non-Significant Effect	15-6443-6524	Equal Variance t Two-Sample Test
	21128-004	0.2494	0.05	Non-Significant Effect	18-9556-6859	Equal Variance t Two-Sample Test
	21128-005	0.9926	0.05	Non-Significant Effect	10-7247-4612	Wilcoxon Rank Sum Two-Sample Test

Mean Dry Weight-mg Summary										
Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.352	0.448	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-001	8	0.761	0.622	0.9	0.402	1.48	0.131	0.372	48.8%	-90.3%
21128-002	8	0.451	0.427	0.475	0.363	0.54	0.0225	0.0636	14.1%	-12.8%
21128-003	8	0.434	0.36	0.508	0.202	0.862	0.0704	0.199	45.9%	-8.49%
21128-004	8	0.361	0.325	0.396	0.246	0.505	0.0338	0.0955	26.5%	9.85%
21128-005	8	0.589	0.501	0.676	0.392	1.1	0.0831	0.235	39.9%	-47.2%

Mean Dry Weight-mg Detail									
Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448	
21128-001	0.402	1.48	0.574	0.662	0.644	0.505	0.636	1.18	
21128-002	0.54	0.394	0.504	0.363	0.414	0.417	0.464	0.513	
21128-003	0.385	0.202	0.317	0.498	0.51	0.862	0.345	0.352	
21128-004	0.37	0.477	0.246	0.505	0.384	0.283	0.358	0.263	
21128-005	0.52	0.74	0.51	0.392	1.1	0.603	0.428	0.418	

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 1 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>		
<b>Analysis ID:</b> 10-7247-4612	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0			
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Nonparametric-Two Sample	<b>Official Results:</b> Yes			

<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	41.7%

<b>Wilcoxon Rank Sum Two-Sample Test</b>								
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>Ties</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
21128-000		21128-005	91		14	0	0.9926	Non-Significant Effect

<b>ANOVA Table</b>						
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
Between	0.1423183	0.1423183	1	3.96	0.0664	Non-Significant Effect
Error	0.5029182	0.03592273	14			
Total	0.6452365	0.178241	15			

<b>Distributional Tests</b>						
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>	
Variances	Variance Ratio F	3.32	8.89	0.1359	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.827	0.841	0.0064	Non-normal Distribution	

<b>Mean Dry Weight-mg Summary</b>										
<b>Sample Code</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-005	8	0.589	0.499	0.678	0.392	1.1	0.0831	0.235	39.9%	-47.2%

<b>Mean Dry Weight-mg Detail</b>								
<b>Sample Code</b>	<b>Rep 1</b>	<b>Rep 2</b>	<b>Rep 3</b>	<b>Rep 4</b>	<b>Rep 5</b>	<b>Rep 6</b>	<b>Rep 7</b>	<b>Rep 8</b>
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-005	0.52	0.74	0.51	0.392	1.1	0.603	0.428	0.418

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 11:33 (p 2 of 5)

**Test Code:** 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 18-9556-6859	<b>Endpoint:</b> Mean Dry Weight-mg	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 11:01	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	25.0%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-004	0.694	1.76	14	0.0999	0.2494	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.00620826	0.00620826	1	0.482	0.4988	Non-Significant Effect
Error	0.1802246	0.01287318	14			
Total	0.1864328	0.01908144	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.82	8.89	0.4462	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.892	0.841	0.0590	Normal Distribution

**Mean Dry Weight-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-004	8	0.361	0.324	0.397	0.246	0.505	0.0338	0.0955	26.5%	9.85%

**Mean Dry Weight-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-004	0.37	0.477	0.246	0.505	0.384	0.283	0.358	0.263

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**CETIS Analytical Report**

Report Date: 13 Jul-11 11:33 (p 3 of 5)

Test Code: 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** EnviroSystems, Inc.

Analysis ID: 15-6443-6524	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.8.0	
Analyzed: 13 Jul-11 11:01	Analysis: Parametric-Two Sample	Official Results: Yes	

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	36.9%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-003	-0.405	1.76	14	0.148	0.6542	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004612572	0.004612572	1	0.164	0.6916	Non-Significant Effect
Error	0.3936066	0.02811476	14			
Total	0.3982191	0.03272733	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.38	8.89	0.2750	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.849	0.841	0.0134	Normal Distribution

**Mean Dry Weight-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-003	8	0.434	0.358	0.51	0.202	0.862	0.0704	0.199	45.9%	-8.49%

**Mean Dry Weight-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-003	0.385	0.202	0.317	0.498	0.51	0.862	0.345	0.352

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**CETIS Analytical Report**

Report Date: 13 Jul-11 11:33 (p 4 of 5)  
 Test Code: 62DA1398 | 16-5845-9032

Americamysis 7-d Survival, Growth and Fecundity Test EnviroSystems, Inc.

Analysis ID: 12-1260-7485      Endpoint: Mean Dry Weight-mg      CETIS Version: CETISv1.8.0  
 Analyzed: 13 Jul-11 11:01      Analysis: Parametric-Two Sample      Official Results: Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	22.4%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000		21128-002	-1.01	1.76	14	0.0895	0.8344	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01048065	0.01048065	1	1.01	0.3311	Non-Significant Effect
Error	0.1447588	0.01033991	14			
Total	0.1552394	0.02082056	15			

**Distributional Tests**

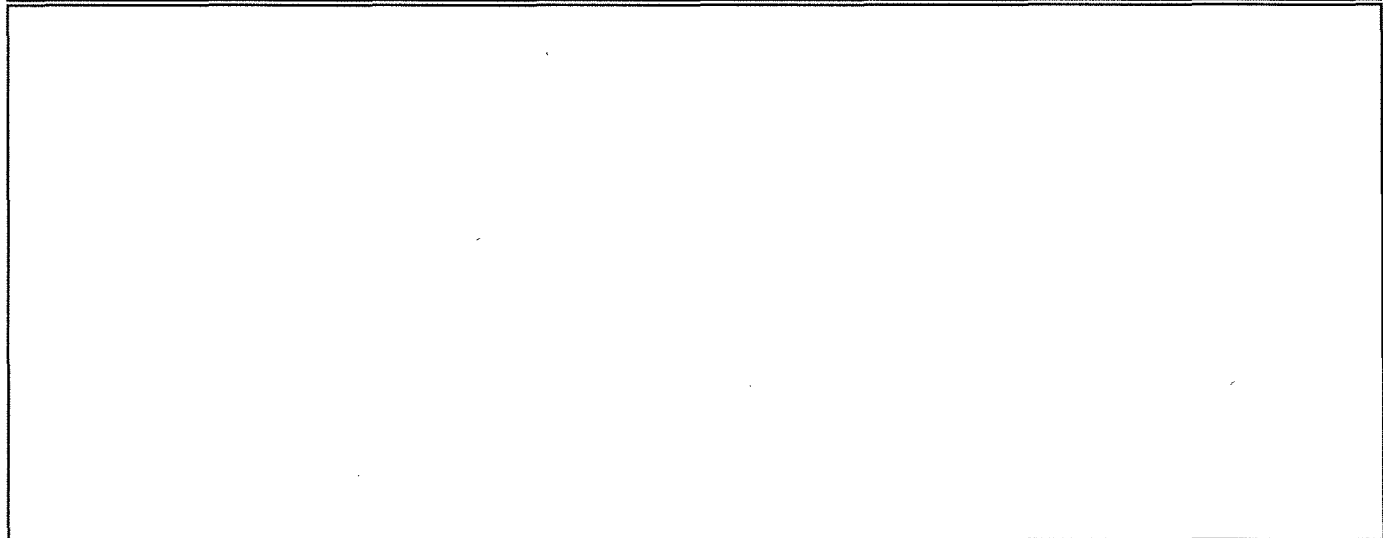
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	4.11	8.89	0.0822	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.851	0.841	0.0140	Normal Distribution

**Mean Dry Weight-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-002	8	0.451	0.427	0.475	0.363	0.54	0.0225	0.0636	14.1%	-12.8%

**Mean Dry Weight-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-002	0.54	0.394	0.504	0.363	0.414	0.417	0.464	0.513



**CETIS Analytical Report**

Report Date: 13 Jul-11 11:33 (p 5 of 5)  
 Test Code: 62DA1398 | 16-5845-9032

**Americamysis 7-d Survival, Growth and Fecundity Test** EnviroSystems, Inc.

Analysis ID: 20-4952-3650      Endpoint: Mean Dry Weight-mg      CETIS Version: CETISv1.8.0  
 Analyzed: 13 Jul-11 11:00      Analysis: Nonparametric-Two Sample      Official Results: Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	61.3%

**Wilcoxon Rank Sum Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21128-000		21128-001	93		14	0	0.9965	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.5220645	0.5220645	1	6.74	0.0211	Significant Effect
Error	1.084293	0.07744952	14			
Total	1.606358	0.599514	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	8.31	8.89	0.0122	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.841	0.841	0.0099	Non-normal Distribution

**Mean Dry Weight-mg Summary**

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000	8	0.4	0.351	0.449	0.27	0.692	0.0456	0.129	32.2%	0.0%
21128-001	8	0.761	0.62	0.903	0.402	1.48	0.131	0.372	48.8%	-90.3%

**Mean Dry Weight-mg Detail**

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21128-000	0.338	0.323	0.382	0.382	0.27	0.364	0.692	0.448
21128-001	0.402	1.48	0.574	0.662	0.644	0.505	0.636	1.18

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# Aquatic Research Organisms

FPC  
6/28/11

## DATA SHEET

### I. Organism History

Species Artemia salina bahia

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-21-11 Receipt date \_\_\_\_\_

Lot number 06211175 Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity ≈27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other Esc. 45 Grimp Diet

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

### IV. Shipping Information

Client: ESI # of Organisms 240+

Carrier: \_\_\_\_\_ Date shipped 6-28-11

Biologist: Mark Cosengrout

**Arbacia punctulata Chronic Fertilization Assay  
Water Quality and Gamete Preparation Data**

STUDY: <u>21128</u>	CLIENT: Woods Hole Group	LOCATION: New Bedford	DATE: <u>6/30/11</u> INITIALS: <u>UB</u>		
SALINITY ADJUSTMENT RECORD: <u>1000</u> mL -001 + <u>5</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -002 + <u>5</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -003 + <u>6</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -004 + <u>2</u> g SALT					
SALINITY ADJUSTMENT RECORD: <u>  </u> mL -005 + <u>16</u> g SALT					
SALINITY ADJUSTED SAMPLE	D.O. (mg/L)	pH (SU)	SPEC COND (µmhos)	TEMP (°C)	SALINITY (ppt)
Lab Control	7.9	7.97	44180	18	29
-001	7.1	7.95	45230	21	30
-002	7.4	8.05	45810	21	30
-003	7.2	8.07	48190	21	32
-004	7.1	7.87	45980	21	30
-005	7.5	8.20	46830	21	30

**METERS USED**

DO meter # 24    DO probe # 89    pH meter # 1097    pH probe # 93    S/C meter # YS130E    S/C probe # YS130E  
SALINITY meter # YS130E

DATE & INITIALS FOR GAMETE PREPARATION: 6/30/11 UB  
SPERM DILUTIONS:

HEMACYTOMETER COUNT, E: 124 X 10<sup>4</sup> = SPM SOLUTION E = 1.24 x 10<sup>6</sup>  
SPERM CONCENTRATIONS: SOLUTION E X 40 = SOLUTION A = 4.96 x 10<sup>7</sup> SPM  
SOLUTION E X 20 = SOLUTION B = 2.48 x 10<sup>7</sup> SPM  
SOLUTION E X 5 = SOLUTION C = 6.2 x 10<sup>6</sup> SPM

**FINAL COUNTS:**

FINAL SPERM COUNT: 4.96 x 10<sup>7</sup>  
FINAL EGG COUNT: 2000

**TEST TIMES:**

SPERM COLLECTED: 1430  
EGGS COLLECTED: 1430  
SPERM ADDED: 1506  
EGGS ADDED: 1606  
FIXATIVE ADDED: 1626

**Arbacia punctulata Chronic Fertilization Assay**

**SAMPLE USE RECORD**

STUDY: 21128		CLIENT: Woods Hole Group New Bedford	
SPECIES: <i>A. punctulata</i>			
Day: 0			
SAMPLE	Volume Used (mL)	ESI Cube ID	
Lab Control	100	—	
-001	↓	001	
-002		002	
-003		003	
-004		004	
-005		005	
INITIALS:	LB		
TIME:	1035		
DATE:	6/30/11		

**FERTILIZATION COUNTS**

STUDY	CLIENT	LOCATION		DATE	INITIALS
	Woods Hole Group	New Bedford		07/01/11	LB
	REPLICATE VIAL				
	1	2	3	4	
SAMPLE	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	
Lab Control	<del>82/100</del> <sup>85/100</sup>	<del>76/100</del> <sup>90/100</sup>	<del>70/100</del> <sup>91/100</sup>	<del>78/100</del> <sup>80/100</sup>	LB
-001	89/100	86/100	77/100	83/100	
-002	83/100	78/100	78/100	80/100	
-003	83/100	86/100	88/100	82/100	
-004	17/100	33/100	25/100	40/100	
-005	88/100	82/100	86/100	85/100	

**CETIS Summary Report**

**Report Date:** 13 Jul-11 12:53 (p 1 of 1)  
**Test Code:** 21128Ap | 11-3860-1470

**Arbacia Sperm Cell Fertilization Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 01-1966-7637	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 30 Jun-11 15:06	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 30 Jun-11 16:26	<b>Species:</b> Arbacia punctulata	<b>Brine:</b> Generic commercial salts
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture	<b>Age:</b>

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21128-000 (Ap)	01-5152-9165	30 Jun-11 12:00	30 Jun-11 12:00	3h	Woods Hole Group	Ecological Risk Asse
21128-001	05-9975-7598	27 Jun-11 10:30	27 Jun-11 19:00	77h (3 °C)		
21128-002	14-1513-9776	27 Jun-11 11:06	27 Jun-11 19:00	76h (3 °C)		
21128-003	20-3831-4904	27 Jun-11 11:06	27 Jun-11 19:00	76h (3 °C)		
21128-004	10-7616-4833	27 Jun-11 13:40	27 Jun-11 19:00	73h (3 °C)		
21128-005	20-6755-0634	27 Jun-11 14:23	27 Jun-11 19:00	73h (3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21128-000 (Ap)	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control (Ap); 21128-00		
21128-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062711; 21128-001		
21128-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711; 21128-002		
21128-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062711-REP; 21128		
21128-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062711; 21128-004		
21128-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062711; 21128-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21128-000 (Ap)	21128-001	0.0989	0.05	Non-Significant Effect	16-7317-8166	Equal Variance t Two-Sample Test
	21128-002	0.0029	0.05	Significant Effect	00-2974-6066	Equal Variance t Two-Sample Test
	21128-003	0.0791	0.05	Non-Significant Effect	16-8553-8067	Equal Variance t Two-Sample Test
	21128-004	<0.0001	0.05	Significant Effect	19-8643-9866	Equal Variance t Two-Sample Test
	21128-005	0.1002	0.05	Non-Significant Effect	19-1458-1209	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-2974-6066	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
16-7317-8166	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
16-8553-8067	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
19-1458-1209	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
19-8643-9866	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
00-2974-6066	Proportion Fertilized	PMSD	0.0399	NL - 0.25	No	Passes Acceptability Criteria
16-7317-8166	Proportion Fertilized	PMSD	0.063	NL - 0.25	No	Passes Acceptability Criteria
16-8553-8067	Proportion Fertilized	PMSD	0.0442	NL - 0.25	No	Passes Acceptability Criteria
19-1458-1209	Proportion Fertilized	PMSD	0.0424	NL - 0.25	No	Passes Acceptability Criteria
19-8643-9866	Proportion Fertilized	PMSD	0.0964	NL - 0.25	No	Passes Acceptability Criteria

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-001	4	0.837	0.818	0.857	0.77	0.89	0.0256	0.0512	6.12%	4.83%
21128-002	4	0.797	0.789	0.806	0.78	0.83	0.0118	0.0236	2.96%	9.37%
21128-003	4	0.847	0.837	0.858	0.82	0.88	0.0138	0.0275	3.25%	3.69%
21128-004	4	0.288	0.25	0.325	0.17	0.4	0.0497	0.0995	34.6%	67.3%
21128-005	4	0.853	0.843	0.862	0.82	0.88	0.0125	0.025	2.93%	3.12%

Proportion Fertilized Detail				
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4
21128-000 (Ap)	0.85	0.9	0.91	0.86
21128-001	0.89	0.86	0.77	0.83
21128-002	0.83	0.78	0.78	0.8
21128-003	0.83	0.86	0.88	0.82
21128-004	0.17	0.33	0.25	0.4
21128-005	0.88	0.82	0.86	0.85

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 1 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

**Arbacia Sperm Cell Fertilization Test** **EnviroSystems, Inc.**

**Analysis ID:** 19-1458-1209      **Endpoint:** Proportion Fertilized      **CETIS Version:** CETISv1.8.0  
**Analyzed:** 13 Jul-11 12:52      **Analysis:** Parametric-Two Sample      **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	4.24%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-005	1.44	1.94	6	0.0559	0.1002	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003421607	0.003421607	1	2.07	0.2004	Non-Significant Effect
Error	0.009925229	0.001654205	6			
Total	0.01334684	0.005075812	7			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.69	47.5	0.6775	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.901	0.645	0.2976	Normal Distribution

**Proportion Fertilized Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-005	4	0.853	0.843	0.862	0.82	0.88	0.0125	0.025	2.93%	3.12%

**Angular (Corrected) Transformed Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-005	4	1.18	1.16	1.19	1.13	1.22	0.0175	0.0351	2.98%	3.39%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 2 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>							<b>EnviroSystems, Inc.</b>				
<b>Analysis ID:</b> 19-8643-9866		<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 13 Jul-11 12:52		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				9.64%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21128-000 (Ap)		21128-004	10.9	1.94	6	0.118	<0.0001	Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.8648093		0.8648093		1	118	<0.0001	Significant Effect			
Error	0.04403229		0.007338715		6						
Total	0.9088416		0.872148		7						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		6.06	47.5	0.1730	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.964	0.645	0.8458	Normal Distribution					
<b>Proportion Fertilized Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21128-004	4	0.288	0.25	0.325	0.17	0.4	0.0497	0.0995	34.6%	67.3%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21128-004	4	0.561	0.519	0.604	0.425	0.685	0.0561	0.112	20.0%	53.9%	

**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 3 of 5)  
**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>			<b>EnviroSystems, Inc.</b>		
<b>Analysis ID:</b> 16-8553-8067	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0			
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes			

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	4.42%

<b>Equal Variance t Two-Sample Test</b>								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-003	1.61	1.94	6	0.0581	0.0791	Non-Significant Effect

<b>ANOVA Table</b>							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.004643438	0.004643438	1	2.6	0.1582	Non-Significant Effect	
Error	0.01072542	0.00178757	6				
Total	0.01536886	0.006431008	7				

<b>Distributional Tests</b>						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	1.39	47.5	0.7942	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.862	0.645	0.1245	Normal Distribution	

<b>Proportion Fertilized Summary</b>											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21128-003	4	0.847	0.837	0.858	0.82	0.88	0.0138	0.0275	3.25%	3.69%	

<b>Angular (Corrected) Transformed Summary</b>											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21128-003	4	1.17	1.16	1.19	1.13	1.22	0.0193	0.0387	3.31%	3.95%	

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 4 of 5)

**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>			<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 00-2974-6066	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:52	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	3.99%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-002	4.2	1.94	6	0.0529	0.0029	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02615269	0.02615269	1	17.6	0.0057	Significant Effect
Error	0.008906805	0.001484468	6			
Total	0.0350595	0.02763716	7			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	2.33	47.5	0.5050	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.906	0.645	0.3268	Normal Distribution	

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-002	4	0.797	0.789	0.806	0.78	0.83	0.0118	0.0236	2.96%	9.37%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-002	4	1.1	1.09	1.12	1.08	1.15	0.0149	0.0299	2.7%	9.38%

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**CETIS Analytical Report**

**Report Date:** 13 Jul-11 12:54 (p 5 of 5)

**Test Code:** 21128Ap | 11-3860-1470

<b>Arbacia Sperm Cell Fertilization Test</b>			<b>EnviroSystems, Inc.</b>
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<b>Analysis ID:</b> 16-7317-8166	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 13 Jul-11 12:51	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	6.3%

Equal Variance t Two-Sample Test								
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21128-000 (Ap)		21128-001	1.45	1.94	6	0.0802	0.0989	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.007145571	0.007145571	1	2.1	0.1979	Non-Significant Effect
Error	0.02045619	0.003409366	6			
Total	0.02760177	0.01055494	7			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F	2.28	47.5	0.5157	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.967	0.645	0.8756	Normal Distribution	

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21128-001	4	0.837	0.818	0.857	0.77	0.89	0.0256	0.0512	6.12%	4.83%

Angular (Corrected) Transformed Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21128-000 (Ap)	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21128-001	4	1.16	1.13	1.19	1.07	1.23	0.0344	0.0689	5.94%	4.9%

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SALTWATER ASSAYS

*A. bahia*, *A. punctulata*

STUDY: 21128	LOCATION: New Bedford Harbor					
CHEMISTRY <sup>LB</sup> <sub>6/28/11</sub>	Lab Salt Control	-001	-002	-003	-004	-005
	AMMONIA	006	007 006 007 008	008 009	009	010
AS RECEIVED WATER QUALITIES	Lab Salt Control	-001	-002	-003	-004	-005
	SALINITY (ppt)	25.7	25.8	25.0	28.2	16.2
pH (SU)	7.35	7.46	7.66	7.56	8.23	
TRC (mg/L)	20.02	20.02	20.02	20.02	20.02	
DO (mg/L)	6.0	7.3	7.6	7.0	9.6	
S/C (µmhos/cm)	40280	40510	39420	43670	26460	
WQ STATION USED	2	→				
INITIALS	LB	→				
<i>A. bahia</i> SALINITY ADJUSTMENT RECORD	Lab Salt Control	-001	-002	-003	-004	-005
	SAMPLE (mLs)	/	10,000	10,000	10,000	18,000
SEA SALT (g)	/	NA	NA	NA	2500 mL OF H <sub>2</sub> O	182
DATE:	6/28/11	→				
TIME:	134	→				
INITIALS:	W	→				

Sample ID	ESI Cube ID
-001	-001
-002	-002
<del>-003</del> 002 Rep	-003
<del>-004</del> 003	-004
<del>-005</del> 004	-005

<sup>LB</sup> <sub>6/28/11</sub>

**Americamysis bahia 7 DAY CHRONIC ASSAY  
NEW WATER QUALITIES**

STUDY: Z1128		CLIENT: Woods Hole Group				LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY					
		NEW DISSOLVED OXYGEN (mg/L)							NEW SALINITY (ppt)						
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	6.9	6.9	7.0	6.8	7.5	6.9	7.0	25	25	25	24	24	25	25
-001	A	6.2	6.4	6.8	6.9	7.4	7.2	7.3	26	26	26	26	26	26	26
-002	A	6.8	6.5	6.8	6.9	7.7	7.3	7.4	26	26	26	26	26	26	25
-003	A	6.9	6.5	6.9	7.3	7.8	7.4	7.4	25	25	25	25	25	25	25
-004	A	7.0	6.6	6.9	7.2	7.8	7.3	7.2	25	25	25	25	25	25	25
-005	A	8.1	7.0	6.9	7.0	7.8	7.1	7.3	25	25	25	25	25	25	25
		NEW pH (SU)							NEW TEMPERATURE (°C)						
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	8.13	8.01	8.06	7.99	8.05	8.00	8.07	25	25	25	24	24	25	25
-001	A	7.49	7.52	7.62	7.65	7.74	7.73	7.90	25	25	25	24	24	25	25
-002	A	7.56	7.51	7.59	7.61	7.68	7.72	7.92	25	25	25	24	24	25	25
-003	A	7.73	7.63	7.75	7.70	7.72	7.67	7.79	25	25	25	24	24	25	25
-004	A	7.67	7.64	7.72	7.72	7.74	7.69	7.85	25	25	25	24	24	25	25
-005	A	8.21	8.09	8.13	8.08	8.11	8.06	8.08	25	25	25	24	24	25	25
INC TEMP:		25	24	25	25	25	25	25							
DATE:		6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4							
TIME:		1510	1330	1125	1115	0955	1325	1305							
INIT:		vc	CS	CS	LB	LB	SJ	SJ							

WATER QUALITY METERS USED NEW WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	/	/	/	/	/	/	/	/
Initials	/	CS	CS	LB	LB	SJ	SJ	
Date	6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	

**Americamysis bahia 7 DAY CHRONIC ASSAY  
OLD WATER QUALITIES**

STUDY: 21128		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY						
OLD SALINITY (ppt)									OLD pH (SU)						
Conc	Rep	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Control	A	25	25	25	25	25	26	26	7.94	8.04	8.02	8.06	7.98	8.00	8.10
-001	A	26	27	26	26	26	27	27	7.64	8.07	8.03	8.06	8.02	8.10	8.10
-002	A	26	26	26	26	26	26	26	7.48	7.98	8.06	8.04	8.03	8.11	8.13
-003	A	25	26	26	26	26	26	26	7.51	8.07	8.05	8.04	7.94	8.08	8.10
-004	A	25	26	26	26	26	26	26	7.58	8.04	8.00	8.02	7.99	8.09	8.08
-005	A	26	26	26	26	26	26	26	7.96	8.16	8.09	8.10	8.09	8.10	8.15
OLD TEMPERATURE (°C)															
Conc	Rep	1	2	3	4	5	6	7							
Control	A	25	25	24	24	25	25	25							
-001	A	25	25	24	24	25	25	25							
-002	A	25	25	24	24	25	25	25							
-003	A	25	25	24	24	25	25	25							
-004	A	25	25	24	24	25	25	25							
-005	A	25	25	24	24	25	25	25							
INC TEMP:		26	25	25	25	25	26	26							
DATE:		6/29/11	6/30	7/1	7/2	7/3	7/4	7/5							
TIME:		1140	1030	1030	0900	1255	1235	0955							
INITIALS:		CS	CS	LB	LB	SJ	SJ	CS							

**GENERAL NOTES - for additional information refer to SOP #1411 or EPA manual 600/4-91/003**

- Test vessels will be 250 mL glass beakers containing a minimum of 150 mL of solution
- 8 replicates per site with 5 organisms each
- Test Temperature: 26±1°C
- Salinity: 25 ±2ppt
- Dissolved Oxygen: >4.3 mg/L
- Photoperiod will be 16 hours light and 8 hours dark.
- Passing criteria require >80% survival and average dry weight of ≥0.20 mg/organism in the control vessels.

WATER QUALITY METERS USED OLD WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	///							
Initials	///	CS	CS	LB	LB	SJ	SJ	CS
Date	6/28/11	6/29/11	6/30/11	7/1	7/2	7/3	7/4	7/5

### DILUTIONS

STUDY: 21128	CLIENT: Woods Hole Group	
SPECIES: <i>A. bahia</i>		
	Sample: New Bedford Harbor	
Sample	Vol. Eff.(mls)	Final Vol.(mls)
Lab	800	800
-001	↓	↓
-002		
-003		
-004		
-005	↓	↓
INITIALS:	w	
TIME:	1510	
DATE:	6/28/11	



**Americamysis bahia 7 DAY CHRONIC ASSAY  
SAMPLE USE RECORD**

STUDY: 71128		CLIENT: Woods Hole Group							
SPECIES: <i>A. bahia</i>			TEST: chronic renewal						
Sample	Day: 0		Day: 1		Day: 2		Day	Date	Time
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID			
Lab Control	1600 2000 2000	n/a	1200	n/a	1200	n/a	0	6/28/11	1500
-001	↓	-001	↓	-001	↓	-001	1	6/29/11	1235
-002	↓	-002	↓	-002	↓	-002	2	6/30/11	1115
-002 REP	↓	-003	↓	-003	↓	-003	3	7/1	1105
-003	↓	-004	↓	-004	↓	-004	4	7/2	0940
-004	↓	-005	↓	-005	↓	-005	5	7/3	1320
							6	7/4	1300
Sample	Day: 3		Day: 4		Day: 5		Day: 6		
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	
Lab Control	1200	n/a	1200	n/a	1200	n/a	1200	n/a	
-001	↓	001	↓	001	↓	-001	↓	-001	
-002	↓	002	↓	002	↓	-002	↓	-002	
-002 REP	↓	003	↓	003	↓	-003	↓	-003	
-003	↓	004	↓	004	↓	-004	↓	-004	
-004	↓	005	↓	005	↓	-005	↓	-005	

### RECORD OF METERS USED

STUDY: 21128		CLIENT: Woods Hole Group	
<i>A. bahia</i>			
Exposure (Hours)			
	0	24	48
Water Quality Station #	1	1	1
Initials / Date	W 6/28/11	CS 4/29/11	CS 6/28/11

Water Quality Station #1		Water Quality Station #2		COMMENTS
DO meter #	24	DO meter #		
DO probe #	89	DO probe #		
pH meter #	1007	pH meter #		
pH probe #	93	pH probe #		
S/C meter #	Y513CE	S/C meter #		
S/C probe #	↓	S/C probe #		
Salinity meter #	↓	Salinity meter #		

Report No: 21128  
Project: WHG - New Bedford Harbor 2011

SDG:

Sample ID: WQ-TOX-001-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-006	ND	0.1	mg/L as N	06/30/11 1223	06/30/11 1223	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-007	ND	0.1	mg/L as N	06/30/11 1223	06/30/11 1223	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062711-REP  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-008	ND	0.1	mg/L as N	06/30/11 1224	06/30/11 1224	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-003-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-009	ND	0.1	mg/L as N	06/30/11 1225	06/30/11 1225	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-004-062711  
Matrix: Water  
Sampled: 06/28/11 1130

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21128-010	ND	0.1	mg/L as N	06/30/11 1226	06/30/11 1226	JLH/SM 4500-NH3 G

Notes:

ND = Not Detected

ESI

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 21128  
 SDG No:  
 Project: WHG - New Bedford Harbor 2011  
 Delivered via:  
 Date and Time Received: 06/27/11 1900 Date and Time Logged into Lab: 06/28/11 1300  
 Recieved By: KAS Logged into Lab by: KC *KC*  
 Air bill / Way bill: No Air bill included in folder if received? NA  
 Cooler on ice/packs: Yes Custody Seals present? NA  
 Cooler Blank Temp (C) at arrival: 3 Custody Seals intact? NA  
 Number of COC Pages: 1  
 COC Serial Number(s):  
 COC Complete: Yes Does the info on the COC match the samples? Yes  
     Sampled Date: Yes Were samples received within holding time? Yes  
     Field ID complete: Yes Were all samples properly labeled? Yes  
     Sampled Time: Yes Were proper sample containers used? Yes  
     Analysis request: Yes Were samples received intact? (none broken or leaking) Yes  
 COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes  
 Were all samples received? Yes Were VOC vials free of headspace? NA  
 Client notification/authorization: Not required

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
WQ-TOX-001-062711	21128-001	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-002-062711	21128-002	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-002-062711-REP	21128-003	W	AB7DCR, AB48AD, AP01CR;	1x10000 P	4C	
WQ-TOX-003-062711	21128-004	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-004-062711	21128-005	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-001-062711	21128-006	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062711	21128-007	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062711-REP	21128-008	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-003-062711	21128-009	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-004-062711	21128-010	W	NH3;	1x60 P	H2SO4	Yes

Notes and qualifications:

Samples -006 through -010 subsampled in lab from original aliquots.  
 See Chain of Custody.



EnviroSystems, Inc.  
1 Lafayette Road  
P.O. Box 778  
Hampton, N.H. 03843

Voice: 603-926-3345  
FAX: 603-926-3521

ESI Job No: 21128

CHAIN OF CUSTODY DOCUMENTATION

Client: <u>Woods Hole Group Inc.</u>	Contact: <u>DAVE WALSH</u>	Project Name: <u>New Bedford Environmental Monitoring</u>	Page <u>1</u> of <u>1</u>
Report to: <u>Dave Walsh</u>	Address: <u>81 Technology Park Dr.</u>	Project Number: <u>TO-0010-04</u>	
Invoice to: <u>Dave Walsh</u>	Address: <u>East Falhoote, 02536</u>	Project Manager: <u>Dave Walsh</u>	
Voice: <u>508-540-8080</u>	Fax: <u>508-540-1001</u>	email: <u>dwalsh@whgop.com</u>	P.O. No:                      Quote No:

Protocol:		RCRA	SDWA	NPDES	USCOE		Other					Analyses Requested Special Instructions:
Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or compos (G/C)	Container Size (ml)	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do		
-001	WQ-TOX-001-062711	6/27/11	10:30	DRW	G	10	P	N/A	W	N	<u>Arbacia 1-AR Spem Immobilized</u> <u>Mysid 48hr</u> <u>Mysid 7-Day</u> <u>All 3 Analysis</u>	
-002	WQ-TOX-002-062711	6/27/11	11:06	DRW	G	10	P	N/A	W	N		<u>All 3 Analysis</u>
-003	WQ-TOX-002-062711-REP	6/27/11	11:06	DRW	G	10	P	N/A	W	N		<u>All 3 Analysis</u>
-004	WQ-TOX-003-062711	6/27/11	13:40	DRW	G	2x10L	P	N/A	W	N		<u>All 3 Analysis</u>
-005	WQ-TOX-004-062711	6/27/11	14:23	DRW	G	2x10L	P	N/A	W	N		<u>All 3 Analysis</u>
-006	WQ-TOX-001-062711	6/28/11	1130	W	G	60ml	P	N/A	W	N	<u>NH3</u>	
-007	WQ-TOX-002-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>NH3</u>	
-008	WQ-TOX-002-062711-REP	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>NH3</u>	
-009	WQ-TOX-003-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>NH3</u>	
-010	WQ-TOX-004-062711	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>NH3</u>	

Relinquished By: <u>William J. Giff</u>	Date: <u>06/27/11</u> Time: <u>1900</u>	Received By: <u>Jim Sims</u>	Date: <u>06/27/2011</u> Time: <u>1900</u>
Relinquished By:	Date:                      Time:	Received at Lab By:	Date:                      Time:

Comments: Samples -006 → -010 subsampled at lab - WJG 6/28/11



## ANALYTICAL REPORT

Lab Number:	L1109482
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR
Project Number:	TO-0010-04
Report Date:	08/15/11

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Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1109482-01	WQ-TPC-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-02	WQ-DPC-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-03	WQ-MET-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-04	WQ-TUR-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-05	WQ-TSS-001-062711	NEW BEDFORD, MA	06/27/11 10:30
L1109482-06	WQ-TPC-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-07	WQ-DPC-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-08	WQ-MET-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-09	WQ-TUR-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-10	WQ-TSS-002-062711	NEW BEDFORD, MA	06/27/11 11:06
L1109482-11	WQ-TPC-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-12	WQ-TPC-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-13	WQ-DPC-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-14	WQ-MET-001-062711-EB	NEW BEDFORD, MA	06/27/11 11:21
L1109482-15	WQ-TPC-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-16	WQ-DPC-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-17	WQ-MET-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-18	WQ-TUR-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-19	WQ-TSS-003-062711	NEW BEDFORD, MA	06/27/11 13:40
L1109482-20	WQ-TPC-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-21	WQ-DPC-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-22	WQ-MET-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-23	WQ-TUR-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-24	WQ-TSS-004-062711	NEW BEDFORD, MA	06/27/11 14:23
L1109482-25	WQ-DPC-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-26	WQ-MET-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-27	WQ-TUR-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06
L1109482-28	WQ-TSS-002-062711-REP	NEW BEDFORD, MA	06/27/11 11:06

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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### Report Submission

This report replace steh one issued on July 12, 2011. The report was amended to include a narrative regarding the temperature of the samples upon receipt.

### Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site.

Samples were received intact on June 27, 2011. Upon receipt, samples that were marked dissolved on the chain of custody were filtered through a 0.45 micron filter thereby creating the dissolved sample.



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

### Case Narrative (continued)

Equipment blank IDs were edited with client authorization to ensure unique IDs for each analysis. These IDs were created to be consistent with the nomenclature of the field samples.

PCB Congeners by 8082

The PCB Congener analysis was performed utilizing dual column confirmation with the higher of the two values reported. Technical judgment was employed in the case of an observed interference. In each case that interference was observed on one column, the value from the opposite column was reported regardless of whether it was the higher or lower value.

Samples L1109482-01, 20, 21 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1109482-06, 07, 11, 25 were re-analyzed on dilution in order to quantitate the sample within the calibration range. The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analyses were performed only for the compounds that exceeded the calibration range.

The WG476293-4/-5 MS/MSD, performed on L1109482-06, was not recovered for several compounds due to the high concentrations of these compounds detected in the sample utilized for the MS/MSD.

The WG476293-6/-7 MS/MSD recoveries, performed on L1109482-07, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476293-7 MSD RPDs, performed on L1109482-07, are above the acceptance criteria for Cl3-BZ#28 (97%) and Cl4-BZ#52 (120%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 08/15/11

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-01  
 Client ID: WQ-TPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 10:08  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	0.22838		ug/l	0.00208	--	2
CI4-BZ#44	0.05034		ug/l	0.00208	--	2
CI4-BZ#66	0.03297		ug/l	0.00208	--	2
CI5-BZ#118	0.00938		ug/l	0.00208	--	2
CI5-BZ#105	ND		ug/l	0.00208	--	2
CI6-BZ#128	ND		ug/l	0.00208	--	2
CI7-BZ#180	ND		ug/l	0.00208	--	2
CI7-BZ#170	ND		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	108		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-01  
 Client ID: WQ-TPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 10:08  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.18791		ug/l	0.00208	--	2
CI3-BZ#28	0.24657		ug/l	0.00208	--	2
CI4-BZ#52	0.18293		ug/l	0.00208	--	2
CI5-BZ#101	0.02226		ug/l	0.00208	--	2
CI6-BZ#153	0.01175		ug/l	0.00208	--	2
CI6-BZ#138	0.00465		ug/l	0.00208	--	2
CI7-BZ#187	0.00324		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	108		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-02  
 Client ID: WQ-DPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/01/11 23:18  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#18	0.15408		ug/l	0.00111	--	1
CI4-BZ#44	0.03253		ug/l	0.00111	--	1
CI4-BZ#66	0.01413		ug/l	0.00111	--	1
CI5-BZ#118	0.00186		ug/l	0.00111	--	1
CI5-BZ#105	ND		ug/l	0.00111	--	1
CI6-BZ#138	ND		ug/l	0.00111	--	1
CI7-BZ#187	ND		ug/l	0.00111	--	1
CI6-BZ#128	ND		ug/l	0.00111	--	1
CI7-BZ#180	ND		ug/l	0.00111	--	1
CI7-BZ#170	ND		ug/l	0.00111	--	1
CI8-BZ#195	ND		ug/l	0.00111	--	1
CI9-BZ#206	ND		ug/l	0.00111	--	1
CI10-BZ#209	ND		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	94		30-150
DBOB	94		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-02  
 Client ID: WQ-DPC-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/01/11 23:18  
 Analyst: JS

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.12589		ug/l	0.00111	--	1
CI3-BZ#28	0.11065		ug/l	0.00111	--	1
CI4-BZ#52	0.08193		ug/l	0.00111	--	1
CI5-BZ#101	0.00893		ug/l	0.00111	--	1
CI6-BZ#153	0.00241		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	94		30-150
DBOB	94		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-06  
 Client ID: WQ-TPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 00:01  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	2.0906	E	ug/l	0.00100	--	1
CI3-BZ#18	2.8436	E	ug/l	0.00100	--	1
CI3-BZ#28	2.3287	E	ug/l	0.00100	--	1
CI4-BZ#52	2.0582	E	ug/l	0.00100	--	1
CI4-BZ#44	0.54214	E	ug/l	0.00100	--	1
CI4-BZ#66	0.56087	E	ug/l	0.00100	--	1
CI5-BZ#118	0.16585		ug/l	0.00100	--	1
CI7-BZ#187	0.04181		ug/l	0.00100	--	1
CI6-BZ#128	0.01918		ug/l	0.00100	--	1
CI7-BZ#180	0.03153		ug/l	0.00100	--	1
CI7-BZ#170	0.02164		ug/l	0.00100	--	1
CI8-BZ#195	0.00298		ug/l	0.00100	--	1
CI9-BZ#206	0.00536		ug/l	0.00100	--	1
CI10-BZ#209	ND		ug/l	0.00100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	108		30-150
BZ 198	90		30-150



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-06  
 Client ID: WQ-TPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 00:01  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl5-BZ#101	0.28616	E	ug/l	0.00100	--	1
Cl6-BZ#153	0.17175		ug/l	0.00100	--	1
Cl5-BZ#105	0.02104		ug/l	0.00100	--	1
Cl6-BZ#138	0.05558		ug/l	0.00100	--	1
DBOB	108			30-150		
BZ 198	90			30-150		

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-06 D  
**Client ID:** WQ-TPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 10:52  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	2.9353		ug/l	0.05000	--	50
Cl3-BZ#18	3.8404		ug/l	0.05000	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-06 D  
**Client ID:** WQ-TPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 10:52  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	3.0626		ug/l	0.05000	--	50
Cl4-BZ#52	2.9641		ug/l	0.05000	--	50
Cl4-BZ#44	0.79005		ug/l	0.05000	--	50
Cl4-BZ#66	0.66035		ug/l	0.05000	--	50
Cl5-BZ#101	0.37115		ug/l	0.05000	--	50

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-07  
 Client ID: WQ-DPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 02:56  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.96764	E	ug/l	0.00111	--	1
CI3-BZ#18	1.1520	E	ug/l	0.00111	--	1
CI4-BZ#66	0.06685		ug/l	0.00111	--	1
CI5-BZ#105	ND		ug/l	0.00111	--	1
CI6-BZ#128	ND		ug/l	0.00111	--	1
CI7-BZ#180	0.00131		ug/l	0.00111	--	1
CI7-BZ#170	ND		ug/l	0.00111	--	1
CI8-BZ#195	ND		ug/l	0.00111	--	1
CI9-BZ#206	ND		ug/l	0.00111	--	1
CI10-BZ#209	ND		ug/l	0.00111	--	1

DBOB 67 30-150  
 BZ 198 87 30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-07  
 Client ID: WQ-DPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 02:56  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	0.56662	E	ug/l	0.00111	--	1
CI4-BZ#52	0.46399	E	ug/l	0.00111	--	1
CI4-BZ#44	0.13368		ug/l	0.00111	--	1
CI5-BZ#101	0.02808		ug/l	0.00111	--	1
CI5-BZ#118	0.00575		ug/l	0.00111	--	1
CI6-BZ#153	0.00824		ug/l	0.00111	--	1
CI6-BZ#138	0.00243		ug/l	0.00111	--	1
CI7-BZ#187	0.00239		ug/l	0.00111	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	67		30-150
BZ 198	87		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

Lab ID: L1109482-07 D  
 Client ID: WQ-DPC-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 13:03  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#18	1.3342		ug/l	0.01111	--	10

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-07 D  
**Client ID:** WQ-DPC-002-062711  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 13:03  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	1.1760		ug/l	0.01111	--	10
Cl3-BZ#28	0.68526		ug/l	0.01111	--	10
Cl4-BZ#52	0.50504		ug/l	0.01111	--	10

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-11  
 Client ID: WQ-TPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 05:07  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	1.7673	E	ug/l	0.00104	--	1
CI3-BZ#18	2.0393	E	ug/l	0.00104	--	1
CI3-BZ#28	1.9055	E	ug/l	0.00104	--	1
CI4-BZ#52	1.8626	E	ug/l	0.00104	--	1
CI4-BZ#44	0.48131	E	ug/l	0.00104	--	1
CI4-BZ#66	0.51467	E	ug/l	0.00104	--	1
CI5-BZ#118	0.15186		ug/l	0.00104	--	1
CI7-BZ#187	0.03979		ug/l	0.00104	--	1
CI6-BZ#128	0.01848		ug/l	0.00104	--	1
CI7-BZ#180	0.03062		ug/l	0.00104	--	1
CI7-BZ#170	0.02073		ug/l	0.00104	--	1
CI8-BZ#195	0.00268		ug/l	0.00104	--	1
CI9-BZ#206	0.00540		ug/l	0.00104	--	1
CI10-BZ#209	ND		ug/l	0.00104	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	100		30-150
BZ 198	91		30-150



**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 05:07  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl5-BZ#101	0.26376	E	ug/l	0.00104	--	1
Cl6-BZ#153	0.15738		ug/l	0.00104	--	1
Cl5-BZ#105	0.02082		ug/l	0.00104	--	1
Cl6-BZ#138	0.05162		ug/l	0.00104	--	1
DBOB	100			30-150		
BZ 198	91			30-150		

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11 D  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 15:14  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	2.3584		ug/l	0.05208	--	50
Cl3-BZ#18	3.5664		ug/l	0.05208	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-11 D  
**Client ID:** WQ-TPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 15:14  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	2.8619		ug/l	0.05208	--	50
CI4-BZ#52	2.4993		ug/l	0.05208	--	50
CI4-BZ#44	0.66312		ug/l	0.05208	--	50
CI4-BZ#66	0.57818		ug/l	0.05208	--	50
CI5-BZ#101	0.31651		ug/l	0.05208	--	50

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-12  
**Client ID:** WQ-TPC-001-062711-EB  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 05:51  
**Analyst:** JS

**Date Collected:** 06/27/11 11:21  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.00453		ug/l	0.00104	--	1
CI3-BZ#18	0.00466		ug/l	0.00104	--	1
CI4-BZ#52	0.00130		ug/l	0.00104	--	1
CI4-BZ#44	ND		ug/l	0.00104	--	1
CI4-BZ#66	ND		ug/l	0.00104	--	1
CI5-BZ#101	ND		ug/l	0.00104	--	1
CI5-BZ#118	ND		ug/l	0.00104	--	1
CI5-BZ#105	ND		ug/l	0.00104	--	1
CI6-BZ#138	ND		ug/l	0.00104	--	1
CI7-BZ#187	ND		ug/l	0.00104	--	1
CI6-BZ#128	ND		ug/l	0.00104	--	1
CI7-BZ#180	ND		ug/l	0.00104	--	1
CI7-BZ#170	ND		ug/l	0.00104	--	1
CI8-BZ#195	ND		ug/l	0.00104	--	1
CI9-BZ#206	ND		ug/l	0.00104	--	1
CI10-BZ#209	ND		ug/l	0.00104	--	1

DBOB 90 30-150  
 BZ 198 97 30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-12  
**Client ID:** WQ-TPC-001-062711-EB  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/02/11 05:51  
**Analyst:** JS

**Date Collected:** 06/27/11 11:21  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.00116		ug/l	0.00104	--	1
Cl6-BZ#153	ND		ug/l	0.00104	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	90		30-150
BZ 198	97		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

Lab ID: L1109482-13  
 Client ID: WQ-DPC-001-062711-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 06:35  
 Analyst: JS

Date Collected: 06/27/11 11:21  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.00553		ug/l	0.00108	--	1
CI3-BZ#18	0.00398		ug/l	0.00108	--	1
CI4-BZ#52	0.00121		ug/l	0.00108	--	1
CI4-BZ#44	ND		ug/l	0.00108	--	1
CI4-BZ#66	ND		ug/l	0.00108	--	1
CI5-BZ#101	ND		ug/l	0.00108	--	1
CI5-BZ#118	ND		ug/l	0.00108	--	1
CI5-BZ#105	ND		ug/l	0.00108	--	1
CI6-BZ#138	ND		ug/l	0.00108	--	1
CI7-BZ#187	ND		ug/l	0.00108	--	1
CI6-BZ#128	ND		ug/l	0.00108	--	1
CI7-BZ#180	ND		ug/l	0.00108	--	1
CI7-BZ#170	ND		ug/l	0.00108	--	1
CI8-BZ#195	ND		ug/l	0.00108	--	1
CI9-BZ#206	ND		ug/l	0.00108	--	1
CI10-BZ#209	ND		ug/l	0.00108	--	1

DBOB 94 30-150  
 BZ 198 95 30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-13  
 Client ID: WQ-DPC-001-062711-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 06:35  
 Analyst: JS

Date Collected: 06/27/11 11:21  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.00138		ug/l	0.00108	--	1
Cl6-BZ#153	ND		ug/l	0.00108	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	94		30-150
BZ 198	95		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-15  
 Client ID: WQ-TPC-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 07:19  
 Analyst: JS

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	0.09572		ug/l	0.00105	--	1
CI3-BZ#28	0.13761		ug/l	0.00105	--	1
CI4-BZ#66	0.04475		ug/l	0.00105	--	1
CI5-BZ#118	0.02418		ug/l	0.00105	--	1
CI6-BZ#128	0.00458		ug/l	0.00105	--	1
CI7-BZ#180	0.00386		ug/l	0.00105	--	1
CI7-BZ#170	0.00305		ug/l	0.00105	--	1
CI8-BZ#195	ND		ug/l	0.00105	--	1
CI9-BZ#206	ND		ug/l	0.00105	--	1
CI10-BZ#209	ND		ug/l	0.00105	--	1

DBOB 106 30-150  
 BZ 198 95 30-150



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-15  
 Client ID: WQ-TPC-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 07:19  
 Analyst: JS

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.05443		ug/l	0.00105	--	1
CI4-BZ#52	0.13171		ug/l	0.00105	--	1
CI4-BZ#44	0.04685		ug/l	0.00105	--	1
CI5-BZ#101	0.03916		ug/l	0.00105	--	1
CI6-BZ#153	0.02288		ug/l	0.00105	--	1
CI5-BZ#105	0.00574		ug/l	0.00105	--	1
CI6-BZ#138	0.01242		ug/l	0.00105	--	1
CI7-BZ#187	0.00496		ug/l	0.00105	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	106		30-150
BZ 198	95		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-16  
 Client ID: WQ-DPC-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 08:02  
 Analyst: JS

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.03988		ug/l	0.00107	--	1
CI3-BZ#18	0.07211		ug/l	0.00107	--	1
CI3-BZ#28	0.07361		ug/l	0.00107	--	1
CI4-BZ#66	0.01409		ug/l	0.00107	--	1
CI5-BZ#118	0.00405		ug/l	0.00107	--	1
CI5-BZ#105	ND		ug/l	0.00107	--	1
CI7-BZ#187	ND		ug/l	0.00107	--	1
CI6-BZ#128	ND		ug/l	0.00107	--	1
CI7-BZ#180	ND		ug/l	0.00107	--	1
CI7-BZ#170	ND		ug/l	0.00107	--	1
CI8-BZ#195	ND		ug/l	0.00107	--	1
CI9-BZ#206	ND		ug/l	0.00107	--	1
CI10-BZ#209	ND		ug/l	0.00107	--	1

DBOB 102 30-150  
 BZ 198 104 30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-16  
 Client ID: WQ-DPC-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 08:02  
 Analyst: JS

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl4-BZ#52	0.06057		ug/l	0.00107	--	1
Cl4-BZ#44	0.02222		ug/l	0.00107	--	1
Cl5-BZ#101	0.01057		ug/l	0.00107	--	1
Cl6-BZ#153	0.00325		ug/l	0.00107	--	1
Cl6-BZ#138	0.00185		ug/l	0.00107	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	102		30-150
BZ 198	104		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-20  
 Client ID: WQ-TPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 15:58  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.26891		ug/l	0.00213	--	2
CI3-BZ#18	0.40817		ug/l	0.00213	--	2
CI5-BZ#105	ND		ug/l	0.00213	--	2
CI7-BZ#187	ND		ug/l	0.00213	--	2
CI6-BZ#128	ND		ug/l	0.00213	--	2
CI7-BZ#180	ND		ug/l	0.00213	--	2
CI7-BZ#170	ND		ug/l	0.00213	--	2
CI8-BZ#195	ND		ug/l	0.00213	--	2
CI9-BZ#206	ND		ug/l	0.00213	--	2
CI10-BZ#209	ND		ug/l	0.00213	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	100		30-150
DBOB	102		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-20  
 Client ID: WQ-TPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 15:58  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	0.32189		ug/l	0.00213	--	2
CI4-BZ#52	0.30327		ug/l	0.00213	--	2
CI4-BZ#44	0.09184		ug/l	0.00213	--	2
CI4-BZ#66	0.07533		ug/l	0.00213	--	2
CI5-BZ#101	0.05759		ug/l	0.00213	--	2
CI5-BZ#118	0.03392		ug/l	0.00213	--	2
CI6-BZ#153	0.03999		ug/l	0.00213	--	2
CI6-BZ#138	0.01554		ug/l	0.00213	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	100		30-150
DBOB	102		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-21  
 Client ID: WQ-DPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 16:42  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#18	0.27398		ug/l	0.00208	--	2
CI4-BZ#66	0.02262		ug/l	0.00208	--	2
CI5-BZ#105	ND		ug/l	0.00208	--	2
CI6-BZ#138	ND		ug/l	0.00208	--	2
CI7-BZ#187	ND		ug/l	0.00208	--	2
CI6-BZ#128	ND		ug/l	0.00208	--	2
CI7-BZ#180	ND		ug/l	0.00208	--	2
CI7-BZ#170	ND		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	102		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-21  
 Client ID: WQ-DPC-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/05/11 16:42  
 Analyst: JS

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	0.20046		ug/l	0.00208	--	2
CI3-BZ#28	0.17384		ug/l	0.00208	--	2
CI4-BZ#52	0.14098		ug/l	0.00208	--	2
CI4-BZ#44	0.04238		ug/l	0.00208	--	2
CI5-BZ#101	0.01184		ug/l	0.00208	--	2
CI5-BZ#118	0.00460		ug/l	0.00208	--	2
CI6-BZ#153	0.00512		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	102		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

Lab ID: L1109482-25  
 Client ID: WQ-DPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 10:13  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	1.2098	E	ug/l	0.00112	--	1
CI3-BZ#18	1.3205	E	ug/l	0.00112	--	1
CI3-BZ#28	0.75199	E	ug/l	0.00112	--	1
CI4-BZ#66	0.08217		ug/l	0.00112	--	1
CI5-BZ#118	0.00583		ug/l	0.00112	--	1
CI5-BZ#105	ND		ug/l	0.00112	--	1
CI6-BZ#128	ND		ug/l	0.00112	--	1
CI7-BZ#170	ND		ug/l	0.00112	--	1
CI8-BZ#195	ND		ug/l	0.00112	--	1
CI9-BZ#206	ND		ug/l	0.00112	--	1
CI10-BZ#209	ND		ug/l	0.00112	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	111		30-150



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-25  
 Client ID: WQ-DPC-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/02/11 10:13  
 Analyst: JS

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI4-BZ#52	0.54656	E	ug/l	0.00112	--	1
CI4-BZ#44	0.15190		ug/l	0.00112	--	1
CI5-BZ#101	0.03099		ug/l	0.00112	--	1
CI6-BZ#153	0.00791		ug/l	0.00112	--	1
CI6-BZ#138	0.00267		ug/l	0.00112	--	1
CI7-BZ#187	0.00234		ug/l	0.00112	--	1
CI7-BZ#180	0.00127		ug/l	0.00112	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	111		30-150

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-25 D  
**Client ID:** WQ-DPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 17:25  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl2-BZ#8	1.4273		ug/l	0.01124	--	10
Cl3-BZ#18	1.3901		ug/l	0.01124	--	10

**Project Name:** NEW BEDFORD HARBOR**Lab Number:** L1109482**Project Number:** TO-0010-04**Report Date:** 08/15/11**SAMPLE RESULTS**

**Lab ID:** L1109482-25 D  
**Client ID:** WQ-DPC-002-062711-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/05/11 17:25  
**Analyst:** JS

**Date Collected:** 06/27/11 11:06  
**Date Received:** 06/27/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 06/30/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#28	0.90754		ug/l	0.01124	--	10
Cl4-BZ#52	0.59285		ug/l	0.01124	--	10

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8082  
Analytical Date: 07/01/11 20:23  
Analyst: JS

Extraction Method: EPA 3510C  
Extraction Date: 06/30/11 12:59

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-1					
Cl2-BZ#8	ND		ug/l	0.00100	--
Cl3-BZ#18	ND		ug/l	0.00100	--
Cl3-BZ#28	ND		ug/l	0.00100	--
Cl4-BZ#52	ND		ug/l	0.00100	--
Cl4-BZ#44	ND		ug/l	0.00100	--
Cl4-BZ#66	ND		ug/l	0.00100	--
Cl5-BZ#101	ND		ug/l	0.00100	--
Cl5-BZ#118	ND		ug/l	0.00100	--
Cl5-BZ#105	ND		ug/l	0.00100	--
Cl6-BZ#138	ND		ug/l	0.00100	--
Cl7-BZ#187	ND		ug/l	0.00100	--
Cl6-BZ#128	ND		ug/l	0.00100	--
Cl7-BZ#180	ND		ug/l	0.00100	--
Cl7-BZ#170	ND		ug/l	0.00100	--
Cl8-BZ#195	ND		ug/l	0.00100	--
Cl9-BZ#206	ND		ug/l	0.00100	--
Cl10-BZ#209	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	84		30-150
BZ 198	89		30-150

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8082  
 Analytical Date: 07/01/11 20:23  
 Analyst: JS

Extraction Method: EPA 3510C  
 Extraction Date: 06/30/11 12:59

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-1					
Cl6-BZ#153	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	84		30-150
BZ 198	89		30-150

## Matrix Spike Analysis

### Batch Quality Control

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 QC Batch ID: WG476293-4 WG476293-5 QC Sample: L1109482-06 Client ID: WQ-TPC-002-062711												
Cl2-BZ#8	2.9353	0.109	2.8221	0	Q	2.7510	0	Q	40-140	3		30
Cl3-BZ#18	3.8404	0.109	3.7740	0	Q	3.9021	57		40-140	3		30
Cl5-BZ#118	0.16585	0.109	0.26615	92		0.27482	100		40-140	3		30
Cl7-BZ#187	0.04181	0.109	0.13683	87		0.13682	87		40-140	0		30
Cl6-BZ#128	0.01918	0.109	0.12016	93		0.12086	94		40-140	1		30
Cl7-BZ#180	0.03153	0.109	0.13171	92		0.13254	93		40-140	1		30
Cl7-BZ#170	0.02164	0.109	0.12107	91		0.12105	91		40-140	0		30
Cl8-BZ#195	0.00298	0.109	0.10092	90		0.09973	89		40-140	1		30
Cl9-BZ#206	0.00536	0.109	0.11492	101		0.11508	101		40-140	0		30
Cl10-BZ#209	ND	0.109	0.09915	91		0.09959	92		40-140	0		30
Cl3-BZ#28	3.0626	0.109	2.9592	0	Q	3.0443	0	Q	40-140	3		30
Cl4-BZ#52	2.9641	0.109	2.8534	0	Q	2.8671	0	Q	40-140	0		30
Cl4-BZ#44	0.79005	0.109	0.82810	35	Q	0.83734	44		40-140	1		30
Cl4-BZ#66	0.66035	0.109	0.73478	68		0.74168	75		40-140	1		30
Cl5-BZ#101	0.37115	0.109	0.43712	61		0.44255	66		40-140	1		30
Cl6-BZ#153	0.17175	0.109	0.24502	67		0.24432	67		40-140	0		30
Cl5-BZ#105	0.02104	0.109	0.10890	81		0.10960	81		40-140	1		30
Cl6-BZ#138	0.05558	0.109	0.13160	70		0.14343	81		40-140	9		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25    QC Batch ID: WG476293-4 WG476293-5    QC Sample: L1109482-06    Client ID: WQ-TPC-002-062711

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
DBOB	108		79		30-150

## Matrix Spike Analysis

### Batch Quality Control

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 QC Batch ID: WG476293-6 WG476293-7 QC Sample: L1109482-07 Client ID: WQ-DPC-002-062711												
Cl3-BZ#18	1.3342	0.107	1.3584	23	Q	1.7988	432	Q	40-140	28		30
Cl4-BZ#66	0.06685	0.107	0.16643	93		0.19529	119		40-140	16		30
Cl5-BZ#105	ND	0.107	0.11011	103		0.11672	108		40-140	6		30
Cl6-BZ#128	ND	0.107	0.10538	98		0.11181	104		40-140	6		30
Cl7-BZ#180	0.00131	0.107	0.10493	97		0.11168	103		40-140	6		30
Cl7-BZ#170	ND	0.107	0.10456	98		0.11070	103		40-140	6		30
Cl8-BZ#195	ND	0.107	0.10151	95		0.10760	100		40-140	6		30
Cl9-BZ#206	ND	0.107	0.11466	107		0.12194	113		40-140	6		30
Cl10-BZ#209	ND	0.107	0.10252	96		0.10901	101		40-140	6		30
Cl2-BZ#8	1.1760	0.107	1.1753	0	Q	1.4939	296	Q	40-140	24		30
Cl3-BZ#28	0.68526	0.107	0.80707	114		1.0252	316	Q	40-140	97	Q	30
Cl4-BZ#52	0.50504	0.107	0.59061	80		0.71136	192	Q	40-140	120	Q	30
Cl4-BZ#44	0.13368	0.107	0.21336	74		0.25302	111		40-140	17		30
Cl5-BZ#101	0.02808	0.107	0.12926	95		0.14197	106		40-140	9		30
Cl5-BZ#118	0.00575	0.107	0.11570	103		0.12310	109		40-140	6		30
Cl6-BZ#153	0.00824	0.107	0.10134	87		0.10864	93		40-140	7		30
Cl6-BZ#138	0.00243	0.107	0.11062	101		0.11865	108		40-140	7		30
Cl7-BZ#187	0.00239	0.107	0.10077	92		0.10783	98		40-140	7		30



### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25    QC Batch ID: WG476293-6 WG476293-7    QC Sample: L1109482-07    Client ID: WQ-DPC-002-062711

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
BZ 198	97		102		30-150
DBOB	75		100		30-150

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3								
CI2-BZ#8	74		74		40-140	1		30
CI3-BZ#18	73		71		40-140	2		30
CI3-BZ#28	86		83		40-140	3		30
CI4-BZ#52	78		74		40-140	5		30
CI4-BZ#44	81		78		40-140	3		30
CI4-BZ#66	88		84		40-140	5		30
CI5-BZ#101	84		80		40-140	5		30
CI5-BZ#118	96		93		40-140	3		30
CI5-BZ#105	100		97		40-140	3		30
CI6-BZ#138	96		93		40-140	3		30
CI7-BZ#187	89		86		40-140	4		30
CI6-BZ#128	98		95		40-140	3		30
CI7-BZ#180	98		96		40-140	1		30
CI7-BZ#170	99		96		40-140	2		30
CI8-BZ#195	98		95		40-140	3		30
CI9-BZ#206	111		108		40-140	3		30
CI10-BZ#209	100		96		40-140	4		30

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		95		30-150
DBOB	88		88		30-150

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-13,15-16,20-21,25 Batch: WG476293-2 WG476293-3

Cl6-BZ#153	84	82	40-140	2	30
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Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		95		30-150
DBOB	88		88		30-150

# **INORGANICS & MISCELLANEOUS**

Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-04  
 Client ID: WQ-TUR-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.5		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

## SAMPLE RESULTS

Lab ID: L1109482-05  
 Client ID: WQ-TSS-001-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 10:30  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	6.20		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-09  
 Client ID: WQ-TUR-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	14		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-10  
 Client ID: WQ-TSS-002-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	28.0		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES





Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-18  
 Client ID: WQ-TUR-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	5.3		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-19  
 Client ID: WQ-TSS-003-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 13:40  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.50		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-23  
 Client ID: WQ-TUR-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	6.3		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

## SAMPLE RESULTS

Lab ID: L1109482-24  
 Client ID: WQ-TSS-004-062711  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 14:23  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.50		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-27  
 Client ID: WQ-TUR-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	15		NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**SAMPLE RESULTS**

Lab ID: L1109482-28  
 Client ID: WQ-TSS-002-062711-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/27/11 11:06  
 Date Received: 06/27/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	24.0		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD HARBOR

Lab Number: L1109482

Project Number: TO-0010-04

Report Date: 08/15/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 04,09,18,23,27 Batch: WG476135-1									
Turbidity	ND	NTU	0.40	--	1	-	06/27/11 18:30	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 05,10,19,24,28 Batch: WG476453-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 04,09,18,23,27 Batch: WG476135-2								
Turbidity	100		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 05,10,19,24,28 Batch: WG476453-2								
Solids, Total Suspended	99		-		80-120	-		20



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A	Absent
D	Absent
B	Absent
C	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109482-01A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-01B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-02C	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-02D	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-03A	Plastic 500ml HNO3 preserved	D	<2	15.9	Y	Absent	HOLD(14)
L1109482-04A	Plastic 1000ml unpreserved	D	7	15.9	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-05A	Plastic 1000ml unpreserved	D	7	15.9	Y	Absent	A2-TSS-160(7)
L1109482-06A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06C	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-06D	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07A	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07B	Amber 1000ml unpreserved	D	7	15.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07C	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-07D	Glass 60mL unpreserved	D	N/A	15.9	Y	Absent	FILTER()
L1109482-07E	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-07F	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-07G	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-07H	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-08A	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)
L1109482-08B	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)

\*Values in parentheses indicate holding time in days

Project Name: NEW BEDFORD HARBOR

Project Number: TO-0010-04

Lab Number: L1109482

Report Date: 08/15/11

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109482-09A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-10A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TSS-160(7)
L1109482-11A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-11B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-12A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-12B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-13C	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-13D	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-14A	Plastic 500ml HNO3 preserved	B	<2	13.4	Y	Absent	HOLD(14)
L1109482-15A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-15B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16A	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16B	Amber 1000ml unpreserved	B	7	13.4	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-16C	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-16D	Glass 60mL unpreserved	B	N/A	13.4	Y	Absent	FILTER()
L1109482-17A	Plastic 500ml HNO3 preserved	B	<2	13.4	Y	Absent	HOLD(14)
L1109482-18A	Plastic 1000ml unpreserved	B	7	13.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-19A	Plastic 1000ml unpreserved	B	7	13.4	Y	Absent	A2-TSS-160(7)
L1109482-20A	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-20B	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21A	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21B	Amber 1000ml unpreserved	C	7	16.9	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-21C	Glass 60mL unpreserved	C	N/A	16.9	Y	Absent	FILTER()
L1109482-21D	Glass 60mL unpreserved	C	N/A	16.9	Y	Absent	FILTER()
L1109482-22A	Plastic 500ml HNO3 preserved	C	<2	16.9	Y	Absent	HOLD(14)
L1109482-23A	Plastic 1000ml unpreserved	C	7	16.9	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-24A	Plastic 1000ml unpreserved	C	7	16.9	Y	Absent	A2-TSS-160(7)
L1109482-25A	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-25B	Amber 1000ml unpreserved	A	7	17.1	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109482-25C	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-25D	Glass 60mL unpreserved	A	N/A	17.1	Y	Absent	FILTER()
L1109482-26A	Plastic 500ml HNO3 preserved	A	<2	17.1	Y	Absent	HOLD(14)
L1109482-27A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1109482-28A	Plastic 1000ml unpreserved	A	7	17.1	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR  
**Project Number:** TO-0010-04

**Lab Number:** L1109482  
**Report Date:** 08/15/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

#### **Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.







# MANSFIELD CHAIN OF CUSTODY

PAGE 2 OF 4

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

### Client Information

Client: **WOODS HOLE GROUP, INC.**

Address: **81 TECHNOLOGY PARK DR.  
E. PALMOUTH, MA 02536**

Phone: **508-540-8080**

Fax: **508-540-1001**

Email: **DWALSH@WHGP.COM**

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials																
		Date	Time																		
11	WQ-TPC-002-062711-REP	6/27/11	11:06	SW	DRW	X															
6	WQ-TPC-002-062711-MS					X															
	WQ-TPC-002-062711-MSD					X															
25	WQ-DPC-002-062711-REP						X														
7	WQ-DPC-002-062711-MS						X														
	WQ-DPC-002-062711-MSD						X														
8	WQ-MET-002-062711-MSMSD							X													
26	WQ-MET-002-062711-REP							X													
27	WQ-TUR-002-062711-REP								X												
28	WQ-TSS-002-062711-REP									X											

### Project Information

Project Name: **NEWBEDFORD ENV. MONITORING**

Project Location: **NEWBEDFORD, MA**

Project #: **TO-0010-04**

Project Manager: **DAVE WALSH**

ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: **L1109482**

### Billing Information

Same as Client info PO #: \_\_\_\_\_

### Regulatory Requirements/Report Limits

State/Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

**ANALYSIS**

TPC (Total PCB Cong)  
DPC (Dissolved PCB Cong)  
METALS  
TURBIDITY  
TSS

**SAMPLE HANDLING**

Filtration \_\_\_\_\_

Done  
 Not needed  
 Lab to do  
 Preservation  
 Lab to do

(Please specify below)

TOTAL # BOTTLES

Container Type	A	A	P	P	P						
Preservative	A	A	C	A	A						

Relinquished By:	Date/Time	Received By:	Date/Time
<i>William J. [Signature]</i>	06/27/11 16:40	<i>[Signature]</i>	6/27/11 1640

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



# MANSFIELD CHAIN OF CUSTODY

PAGE 3 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Project Information

Project Name: **NEW BEDFORD ENV. MONITORING**  
 Project Location: **NEW BEDFORD, MA**  
 Project #: **TO-0010-04**  
 Project Manager: **DAVE WALSH**  
 ALPHA Quote #:

Date Rec'd in Lab:

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: **L1100482**

## Billing Information

Same as Client info PO #:

## Client Information

Client: **WOODS HOLE GROUP, INC.**  
 Address: **81 TECHNOLOGY PARK DR. E. PALMOUTH, MA 02536**  
 Phone: **508-540-8080**  
 Fax: **508-540-1001**  
 Email: **DWALSH@WHGRP.COM**

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: Time:

## Regulatory Requirements/Report Limits

State Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS					SAMPLE HANDLING	TOTAL # BOTTLES	
		Date	Time			TPC (TOTAL PCB Cong)	DPC (DISSOLVED PCB Cong)	METALS	Turbidity	TSS			
14	EB-001-062711	6/27/11	11:21	SW	DRW	X	X	X				EQUIPMENT BLANK	5
15	WQ-TPC-003-062711		13:40			X						FLOOD REF	2
16	WQ-DPC-003-062711		13:40				X						2
17	WQ-MET-003-062711		13:40					X					1
18	WQ-TUR-003-062711		13:40						X				1
19	WQ-TSS-003-062711		13:40							X			1
20	WQ-TPC-004-062711		14:23			X						FLOOD SAMPLE	2
21	WQ-DPC-004-062711		14:23				X						2
22	WQ-MET-004-062711		14:23					X					1
23	WQ-TUR-004-062711		14:23						X				1

**SAMPLE HANDLING**  
 Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do Preservation  
 Lab to do  
 (Please specify below)

Container Type: **A A P P P**  
 Preservative: **A A C A A**

Relinquished By: *William J. [Signature]* Date/Time: **06/27/11 16:40**  
 Received By: *[Signature]* Date/Time: **6/27/11 1640**

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.





**Data Validation Report**  
**EPA Region I Tier I+**  
**18 NOAA PCB Congeners by 8082**

**Client/Company:** Woods Hole Group, Inc. (WHG)

**Site/Project Name:** New Bedford Harbor Superfund Site – OU1

**Laboratory:** Alpha Analytical – Mansfield, MA

**Lab Project Number(s):** L1109482

**Date(s) of Collection:** June 27, 2011

**Number / Type  
Samples & Analyses  
For Validation** 5 Total surface water samples + 1 Total equipment blank and 5 Dissolved  
surface water samples + 1 Dissolved equipment blank for 18 NOAA PCB  
Congeners

**Senior Data Reviewers:** Nancy C. Rothman, PhD, New Environmental Horizons, Inc.  
Susan D. Chapnick, New Environmental Horizons, Inc.

**Date Completed:** August 19, 2011

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Environmental Monitoring, Sampling, and Analysis Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Operable Unit 1 (OU1), New Bedford, MA*, Rev. 4.0, prepared by Woods Hole Group, Inc., July 2011 (NBH OU1 QAPP Addendum 2011); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and reason codes added based on actions taken; and
- The Data Review Checklist completed during this validation to document the Tier I+ review. The Checklist is an integral part of the DV Report as it contains comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

## I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the quality control (QC) results (as applicable) of Matrix Spike (MS), Matrix Spike Duplicate (MSD), Matrix Duplicate (MD), Field Duplicate (FD), Field Equipment Blank (EB), and Trip Blank (TB), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters <sup>1</sup>	Sample Type
WQ-TPC-001-062711	L1109482-01	6/27/11	Total Surface Water	PCBs	Field Sample
WQ-DPC-001-062711	L1109482-02	6/27/11	Dissolved Surface Water	PCBs	Field Sample
WQ-TPC-002-062711	L1109482-06	6/27/11	Total Surface Water	PCBs	Field Sample [used for MS/MSD]
WQ-DPC-002-062711	L1109482-07	6/27/11	Dissolved Surface Water	PCBs	Field Sample [used for MS/MSD]
WQ-TPC-002-062711-REP	L1109482-11	6/27/11	Total Surface Water	PCBs	Field Duplicate of WQ-TPC-002-062711
WQ-TPC-001-062711-EB	L1109482-12	6/27/11	Total Water	PCBs	Equipment Blank
WQ-DPC-001-062711-EB	L1109482-13	6/27/11	Dissolved Water	PCBs	Equipment Blank
WQ-TPC-003-062711	L1109482-15	6/27/11	Total Surface Water	PCBs	Field Sample
WQ-DPC-003-062711	L1109482-16	6/27/11	Dissolved Surface Water	PCBs	Field Sample
WQ-TPC-004-062711	L1109482-20	6/27/11	Total Surface Water	PCBs	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - continued

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters <sup>1</sup>	Sample Type
WQ-DPC-004-062711	L1109482-21	6/27/11	Dissolved Surface Water	PCBs	Field Sample
WQ-DPC-002-062711-REP	L1109482-25	6/27/11	Dissolved Surface Water	PCBs	Field Duplicate of WQ-DPC-002-062711

Analytical method references:

PCBs: *Polychlorinated Biphenyls (PCBs) by Gas Chromatography* in EPA’s Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 8082, Rev. 1, February 2007.

<sup>1</sup> Total Suspended Solids (TSS) and Turbidity measurements were also performed on total surface water samples; however, data validation for these parameters was not required. Aliquots of samples were also archived at the laboratory for metals analysis.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congeners and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2011 requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)
- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria\* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries\*
- Retention Time windows\*
- Other method-specific QC if applicable and reported\* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

\* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of 18 NOAA PCB Congeners, all results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2011 requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID\_QUAL, VALIDATION\_LEVEL, VALIDATION, VALID\_DATE, BIAS, and DV\_COMMENT.

The remainder of this report documents “exceptions” to the NBH OU1 QAPP Addendum 2011 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during this Tier I+ validation is presented in the attached Data Review Checklist.

### **Sample Receipt**

Samples were all received between 13.4 °C and 17.1 °C on the same day of sample collection. No action was taken based on receipt temperatures above 6 °C since samples were hand-delivered directly from the site, were on ice, and apparently had not yet reached  $4 \pm 2$  °C when they were received at the laboratory.

Aliquots of the “dissolved” samples were immediately filtered through a 0.45 µm filter, upon receipt at the laboratory, to produce the Dissolved sample aliquots that were used for PCB analysis.

### **Accuracy**

MS/MSD analysis was performed on WQ-TPC-002-062711 and WQ-DPC-002-062711, the Total and Dissolved aliquots of the same sample, respectively. Accuracy was acceptable for all 18 NOAA PCB Congeners in both MS/MSD analyses with the following exceptions: low MS recovery was observed in WQ-TPC-002-062711 for 2,2',3,5'-Tetrachlorobiphenyl (BZ #44) and high MSD recovery was observed for 2,4,4'-Trichlorobiphenyl (BZ #28) and 2,2',5,5'-Tetrachlorobiphenyl (BZ #52) in WQ-DPC-002-062711. The results for these three Congeners were estimated (DJ) in the unspiked samples, as shown in Table 2.

### **Field Blanks**

The Total and Dissolved equipment blanks, WQ-TPC-001-062711-EB and WQ-DPC-001-062711-EB, respectively, reported low-level results for several Congeners. No blank actions were required based on a comparison of the levels reported in the equipment blanks with the levels reported in the field samples.

### **Precision**

Precision was acceptable for the MS/MSD analysis of sample WQ-TPC-002-062711 for all 18 NOAA PCB Congeners. Precision was acceptable for the MS/MSD analysis of sample WQ-DPC-002-062711 for all PCB Congeners except 2,4,4'-Trichlorobiphenyl (BZ #28) and 2,2',5,5'-Tetrachlorobiphenyl (BZ #52), which had relative percent differences (RPD) that exceeded criteria. The results for these two Congeners were estimated (DJ) in WQ-DPC-002-062711 with indeterminate bias as indicated in Table 2.

There were two sets of Field Duplicates: WQ-TPC-002-062711 / WQ-TPC-002-062711-REP and WQ-DPC-002-062711 / WQ-DPC-002-062711-REP. FD precision was acceptable for all 18 NOAA PCB Congeners in both FD pairs.

The MS/MSD and FD results for the 18 NOAA PCB Congeners are an indication of generally acceptable representativeness and precision in the site surface water samples.

**Sensitivity & Reporting**

Twenty-two results were reported at levels exceeding the instrument calibration range and were qualified “E” by the laboratory. The samples were re-analyzed at a secondary dilution and these twenty-two Congener results were reported within the calibration range and qualified “D” by the laboratory. The “E” qualified data were not reviewed herein since the “D” qualified data replaced these values. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Sensitivity in terms of sample-specific reporting limits as compared to PALs defined in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2011, were met for all 18 NOAA PCB Congeners.

Table 2. Summary of Data Validation Actions

<b>Field Sample ID</b>	<b>Analyte</b>	<b>Qualifier</b>	<b>Bias</b>	<b>Validation Comments</b>
WQ-DPC-002-062711	2,4,4'-Trichlorobiphenyl & 2,2',5,5'-Tetrachlorobiphenyl	DJ	I	High MSD recovery + MS/MSD imprecision
WQ-TPC-002-062711	2,2',3,5'-Tetrachlorobiphenyl	DJ	L	Low MS recovery

*Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory).*

*Bias: L = Low; H = High; I = Indeterminate*

*Abbreviations used in Table 2:*

*MS = Matrix Spike*

*MSD = Matrix Spike Duplicate*



**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109482

Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

No. Samples 8 + 1FD + 1EB  
5 Total & 5 Dissolved  
Matrix: Surface Water

Date Sampled: 6/27/11

Analysis: 18 NOAA PCB Congeners by GC/ECD

<b>Data Element</b>	Preservation & HT	Surrogates %R 30-150%	LCS/LCSD %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD ≤ 30% SW RPD ≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
<b>Acceptable</b>	✓	✓	✓		✓	✓	✓	✓	NA
<b>No</b>				Estimate (J) 3 results in 2 samples (see page 3)					

**Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.**

*The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA target Congeners were acceptable unless an issue was raised in the laboratory narrative. This review also assumed that the highest value for the two GC columns used was reported for the sample result, as required by the QAPP, unless noted by the laboratory.*

**Comments:**

Samples were received in 4 coolers with temperatures upon receipt between 13.4- 17.1C on 6/27/10 within hours of collection. COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab. Samples were analyzed for TSS and Turbidity (not required to be reviewed) and aliquots for Metals analysis were also received but placed on "HOLD" by client prior to arrival at the lab. Since the samples were iced upon collection but had not yet reached temperature (4 ± 2C) upon receipt at the lab, no action taken for high receipt Temperatures.

To generate the Dissolved samples, the laboratory filtered samples labeled "Dissolved" through a 0.45 μ filter upon receipt.

*HT*: all samples were extracted on 6/30/11 and analyzed by 7/5/11 - HT met - No action required.

*Surrogates*: All samples were analyzed with DF=1 or DF=2 and for some samples DF>2 as well to report all congeners within the instrument calibration range. For all of the DF=1 or DF=2 analyses, both surrogates (DBOB and BZ#198) were recovered within criteria - No Action required.

*LCS*: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners and RPD between LCS and LCSD OK - No Action required.

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.



Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

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*MS/MSD*: performed on WQ-TPC-002-062711 and WQ-DPC-002-062711. For MS/MSD on WQ-TPC-002-062711, %Rec and RPD all OK except BZ#8, BZ#18, BZ#28, & BZ#52 reported 0% MS and MSD recoveries; however, level in unspiked sample for these Congeners was too high to make %Rec meaningful (spike level too low). MS %Rec for BZ#44 low (MSD recovery OK) for spike on WQ-TPC-002-062711. For WQ-DPC-002-062711, %Rec for BZ#8 & BZ#18 erroneous due to spike level being too low compared to level of these Congeners in the unspiked sample. MSD %Rec high and MS/MSD RPD high for BZ#28 & BZ#52 in spike of WQ-DPC-002-062711.

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*\* Action: BZ#44 in WQ-TPC-002-062711 estimated (J) due to low MS recovery and BZ#28 & BZ#52 estimated (J) in WQ-DPC-002-062711 with indeterminate bias due to high MSD recovery + MS/MSD imprecision.*

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All samples were initially analyzed at DF= 1 or DF=2 and several samples were also analyzed a second time since several results in the initial analyses were over the instrument calibration range and flagged "E" by the lab. The lab reported for the secondary dilution analysis only those analytes over-range in the initial analysis and flagged all of these data with a "D". During this assessment, all "E" qualified data had "Report\_YN" were changed from "Y" to "N" since only the "D" qualified data were considered valid for reporting. The following samples were analyzed with DF > 1 : WQ-DPC-002-062711 (DF=1 & DF=10), WQ-DPC-002-062711-REP (DF=1 and DF=10), WQ-DPC-004-062711 (DF=2 only), WQ-TPC-001-062711 (DF=2 only), WQ-TPC-002-062711 (DF=1 and DF=50), WQ-TPC-002-062711-REP (DF=1 and DF=50), and WQ-TPC-004-062711 (DF=2 only).

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There were no other issues with qualifiers (i.e., no J qualified data reported).

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All RLs = PQL given in QAPP Worksheet #15 on a sample-specific basis (i.e., accounting for slight differences in amount extracted) for all samples except WQ-TPC-001-062711, WQ-TPC-004-062711, and WQ-DPC-004-062711 since these samples were analyzed at DF=2 due to the presence of high level of target analytes. Since the sum of the 18 NOAA Congeners in these 3 samples exceeded 0.03 µg/L (Project Action Limit); sensitivity was considered acceptable for all samples.

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*Narrative*: the narrative did not raise any issues not already addressed.

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Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109482

Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

FD pair: WQ-TPC-002-062711 and WQ-TPC-002-062711REP. A comparison of results shown below (ordering of compounds from the database).

Field Duplicate Evaluation\_ Sample IDs:

Sample = WQ-TPC-002-062711

FD = WQ-TPC-002-062711REP

Analyte Name	DF= 1 & 50	Sample	Sample Result	FD	FD Result	RPD	Action
	RL (µg/L)	µg/L	Q Level	µg/L	Q Level		
2,3,3',4,4'-Pentachlorobiphenyl	0.001	0.02104	> 2 x RL	0.02082	> 2 x RL	1.1	None
2,3',4,4',5-Pentachlorobiphenyl	0.001	0.16585	> 2 x RL	0.15186	> 2 x RL	8.8	None
2,2',3,3',4,4'-Hexachlorobiphenyl	0.001	0.01918	> 2 x RL	0.01848	> 2 x RL	3.7	None
2,2',3,4,4',5'-Hexachlorobiphenyl	0.001	0.05558	> 2 x RL	0.05162	> 2 x RL	7.4	None
2,2',4,4',5,5'-Hexachlorobiphenyl	0.001	0.17175	> 2 x RL	0.15738	> 2 x RL	8.7	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	0.001	0.02164	> 2 x RL	0.02073	> 2 x RL	4.3	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.001	0.03153	> 2 x RL	0.03062	> 2 x RL	2.9	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	0.001	0.04181	> 2 x RL	0.03979	> 2 x RL	5.0	None
2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.001	0.00298	> 2 x RL	0.00268	> 2 x RL	10.6	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.001	0.00536	> 2 x RL	0.0054	> 2 x RL	0.7	None
DecaCB - Homologue	0.001	0.001	U RL	0.00104	U RL	NA	None
2,4'-Dichlorobiphenyl	0.05	2.9353	D > 2 x RL	2.3584	D > 2 x RL	21.8	None
2,2',5-Trichlorobiphenyl	0.05	3.8404	D > 2 x RL	3.5664	D > 2 x RL	7.4	None
2,4,4'-Trichlorobiphenyl	0.05	3.0626	D > 2 x RL	2.8619	D > 2 x RL	6.8	None
2,2',3,5'-Tetrachlorobiphenyl	0.05	0.79005	DJ > 2 x RL	0.66312	D > 2 x RL	17.5	None
2,2',5,5'-Tetrachlorobiphenyl	0.05	2.9641	D > 2 x RL	2.4993	D > 2 x RL	17.0	None
2,3',4,4'-Tetrachlorobiphenyl	0.05	0.66035	D > 2 x RL	0.57818	D > 2 x RL	13.3	None
2,2',4,5,5'-Pentachlorobiphenyl	0.05	0.37115	D > 2 x RL	0.31651	D > 2 x RL	15.9	None

FD precision was acceptable for all 18 NOAA Congeners - No Action required

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109482

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

Lab: Alpha Analytical

FD pair: WQ-DPC-002-062711 and WQ-DPC-002-062711REP. A comparison of results shown below (ordering of compounds from the database).

Field Duplicate Evaluation\_ Sample IDs:

Sample = WQ-DPC-002-062711

FD = WQ-DPC-002-062711REP

Analyte Name	DF= 1	Sample	Sample Result	FD	FD Result	RPD	Action
	RL (µg/L)	µg/L	Q Level	µg/L	Q Level		
2,2',3,5'-Tetrachlorobiphenyl	0.00111	0.13368	> 2 x RL	0.1519	> 2 x RL	12.8	None
2,3',4,4'-Tetrachlorobiphenyl	0.00111	0.06685	> 2 x RL	0.08217	> 2 x RL	20.6	None
2,2',4,5,5'-Pentachlorobiphenyl	0.00111	0.02808	> 2 x RL	0.03099	> 2 x RL	9.9	None
2,3,3',4,4'-Pentachlorobiphenyl	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
2,3',4,4',5-Pentachlorobiphenyl	0.00111	0.00575	> 2 x RL	0.00583	> 2 x RL	1.4	None
2,2',3,3',4,4'-Hexachlorobiphenyl	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
2,2',3,4,4',5'-Hexachlorobiphenyl	0.00111	0.00243	> 2 x RL	0.00267	> 2 x RL	9.4	None
2,2',4,4',5,5'-Hexachlorobiphenyl	0.00111	0.00824	> 2 x RL	0.00791	> 2 x RL	4.1	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00111	0.00131	>RL but < 2xRL	0.00127	>RL but < 2xRL	3.1	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00111	0.00239	> 2 x RL	0.00234	> 2 x RL	2.1	None
2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
DecaCB - Homologue	0.00111	0.00111 U	RL	0.00112 U	RL	NA	None
2,4'-Dichlorobiphenyl	0.01111	1.176 D	> 2 x RL	1.4273 D	> 2 x RL	19.3	None
2,2',5-Trichlorobiphenyl	0.01111	1.3342 D	> 2 x RL	1.3901 D	> 2 x RL	4.1	None
2,4,4'-Trichlorobiphenyl	0.01111	0.68526 DJ	> 2 x RL	0.90754 D	> 2 x RL	27.9	None
2,2',5,5'-Tetrachlorobiphenyl	0.01111	0.50504 DJ	> 2 x RL	0.59285 D	> 2 x RL	16.0	None

FD precision was acceptable for all 18 NOAA Congeners - No Action required

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

**ACTIONS:**

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.

HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND

Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)

Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs

Surrogates: % Recovery > 150%, J det/Accept ND; 10% ≤ % Recovery < 30%, J det/J NDs; Recovery < 10%, J det/R NDs.

LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.

MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.

FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL, negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if result < lowest calibration standard, J result. Verify all J data reported properly, if applicable. Note any non-detects at values > PALs.

Other Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes

Qualifiers: either U or J based on actions taken for Method Blank (MB)

% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.

**Qualifiers:** U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate.

**Reference:** Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Environmental Monitoring, Sampling, and Analysis, New Bedford, Massachusetts, rev. 4, July 2011 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5'-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5'-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5'-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**SDMS REPOSITORY TARGET SHEET**

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SAMP_ID	RECEIPT_DATE	PREP_METH	ANALYSIS_METH	LAB_QC_COD	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LIMI	DETECT_LIMI	UNIT	ANALYSIS_DA
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-27-1	2,2',4,4',5,5'-	0.01175	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-10386-84	DBOB	111	D		RL	PCT_REC	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-78-2	2,2',3,3',4,4',5,5'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	34883-43-7	2,4'-Dicb	0.18791	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-73-2	2,2,4,5,5'-Per	0.02226	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-28-2	2,2',3,4',4,5'-	0.00465	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-68194-17	2,2',3,3',4,5,5'-	108	D		RL	PCT_REC	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-14-4	2,3,3',4,4'-Pe	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	41464-39-5	2,2',3,5'-Tetra	0.05034	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-10-0	2,3',4,4'-Tetra	0.03297	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	31508-00-6	2,3',4,4',5-Pe	0.00938	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	7012-37-5	2,4,4'-Tricb	0.24657	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-68-0	2,2',3,4',5,5',6,6'-	0.00324	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35693-99-3	2,2',5,5'-Tetra	0.18293	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-65-2	2,2',5-Tricb	0.22838	D	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-29-3	2,2',3,4,4',5,5'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	40186-72-9	2,2',3,3',4,4',5,5'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-30-6	2,2',3,3',4,4',5,5'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	2051-24-3	Decacb - Con	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-TPC-001-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	38380-07-3	2,2',3,3',4,4'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Con	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-	0.00241		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetra	0.03253		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84	DBOB	94			RL	PCT_REC	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pe	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-65-2	2,2',5-Tricb	0.15408		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetra	0.01413		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	34883-43-7	2,4'-Dicb	0.12589		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17	2,2',3,3',4,5,5'-	94			RL	PCT_REC	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pe	0.00186		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35693-99-3	2,2',5,5'-Tetra	0.08193		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6,6'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	7012-37-5	2,4,4'-Tricb	0.11065		0.00111	RL	UG/L	7/1/2011
WQ-DPC-001-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Per	0.00893		0.00111	RL	UG/L	7/1/2011
WQ-TUR-001-062711	6/27/2011	NO_PREP		180.1 SA	TOTAL	1	TURB	Turbidity	4.5		0.4	RL	NTU	6/27/2011
WQ-TSS-001-062711	6/27/2011	NO_PREP		160.2 SA	TOTAL	1	TSS	Solids, Total S	6.2		1	RL	MG/L	7/1/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	0.05558		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	34883-43-7	2,4'-Dicb	2.0906	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	37680-65-2	2,2',5-Tricb	2.8436	E	0.001	RL	UG/L	7/2/2011



WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	37680-65-2	2,2',5'-Tricb	3.8404	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-10386-84	DBOB	108			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,5'-	0.00298		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	0.17175		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	37680-73-2	2,2,4,5,5'-Perf	0.37115	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	0.16585		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	7012-37-5	2,4,4'-Tricb	3.0626	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	34883-43-7	2,4'-Dicb	2.9353	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	37680-73-2	2,2,4,5,5'-Perf	0.28616	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	0.56087	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	7012-37-5	2,4,4'-Tricb	2.3287	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	41464-39-5	2,2',3,5'-Tetra	0.79005	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	0.02104		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5'-	0.00536		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'-	0.03153		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-30-6	2,2',3,3',4,4',5,5'-	0.02164		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-68-0	2,2',3,4',5,5',6,6'-	0.04181		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	0.54214	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5'-	90			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	2051-24-3	Decacb - Con	0.001	U	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	38380-07-3	2,2',3,3',4,4',5,5'-	0.01918		0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	2.0582	E	0.001	RL	UG/L	7/2/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	32598-10-0	2,3',4,4'-Tetra	0.66035	D	0.05	RL	UG/L	7/5/2011
WQ-TPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	TOTAL	50	35693-99-3	2,2',5,5'-Tetra	2.9641	D	0.05	RL	UG/L	7/5/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-	0.00824		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	DISS	10	7012-37-5	2,4,4'-Tricb	0.68526	D	0.01111	RL	UG/L	7/5/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-	0.00243		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetra	0.13368		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Con	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetra	0.06685		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	DISS	10	35693-99-3	2,2',5,5'-Tetra	0.50504	D	0.01111	RL	UG/L	7/5/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pe	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	1	37680-65-2	2,2',5'-Tricb	1.152	E	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	1	7012-37-5	2,4,4'-Tricb	0.56662	E	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	DISS	10	34883-43-7	2,4'-Dicb	1.176	D	0.01111	RL	UG/L	7/5/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Perf	0.02808		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17	2,2',3,3',4,5,5'-	87			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84	DBOB	67			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pe	0.00575		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5,5'-	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6,6'-	0.00239		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL2	DISS	10	37680-65-2	2,2',5'-Tricb	1.3342	D	0.01111	RL	UG/L	7/5/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5'-	0.00131		0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	1	35693-99-3	2,2',5,5'-Tetra	0.46399	E	0.00111	RL	UG/L	7/2/2011

WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	1	34883-43-7	2,4'-Dicb	0.96764	E	0.00111	RL	UG/L	7/2/2011
WQ-DPC-002-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-	0.00111	U	0.00111	RL	UG/L	7/2/2011
WQ-TUR-002-062711	6/27/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	14		0.4	RL	NTU	6/27/2011
WQ-TSS-002-062711	6/27/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	28		1	RL	MG/L	7/1/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	32598-10-0	2,3',4,4'-Tetra	0.57818	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	52663-68-0	2,2',3,4',5,5',4	0.03979		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	52663-78-2	2,2',3,3',4,4',5	0.00268		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	0.15738		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	7012-37-5	2,4,4'-Tricb	2.8619	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	34883-43-7	2,4'-Dicb	2.3584	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	37680-65-2	2,2',5-Tricb	3.5664	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	1.8626	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	0.51467	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	40186-72-9	2,2',3,3',4,4',5	0.0054		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5	91			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	7012-37-5	2,4,4'-Tricb	1.9055	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	0.15186		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	35065-30-6	2,2',3,3',4,4',5	0.02073		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	35693-99-3	2,2',5,5'-Tetra	2.4993	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	37680-65-2	2,2',5-Tricb	2.0393	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	37680-73-2	2,2,4,5,5'-Per	0.31651	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	0.01848		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	2051-24-3	Decacb - Con	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	CS-10386-84	DBOB	100			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	35065-29-3	2,2',3,4,4',5,5	0.03062		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	0.26376	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	34883-43-7	2,4'-Dicb	1.7673	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	0.02082		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REP	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	0.05162		0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL1	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	0.48131	E	0.00104	RL	UG/L	7/2/2011
WQ-TPC-002-062711-RE	6/27/2011	3510C	8082 Congeners	REPDL2	TOTAL	50	41464-39-5	2,2',3,5'-Tetra	0.66312	D	0.05208	RL	UG/L	7/5/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	0.0013		0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	2051-24-3	Decacb - Con	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-65-2	2,2',5-Tricb	0.00466		0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	34883-43-7	2,4'-Dicb	0.00453		0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	7012-37-5	2,4,4'-Tricb	0.00116		0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5	97			RL	PCT_REC	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-10386-84	DBOB	90			RL	PCT_REC	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-30-6	2,2',3,3',4,4',5	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-29-3	2,2',3,4,4',5,5	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	40186-72-9	2,2',3,3',4,4',5	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-78-2	2,2',3,3',4,4',5	0.00104	U	0.00104	RL	UG/L	7/2/2011

WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-TPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-68-0	2,2',3,4',5,5',6	0.00104	U	0.00104	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pe	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35693-99-3	2,2',5,5'-Tetra	0.00121		0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17	2,2',3,3',4,5,5	95			RL	PCT_REC	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Per	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	34883-43-7	2,4'-Dicb	0.00553		0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84	DBOB	94			RL	PCT_REC	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	7012-37-5	2,4,4'-Tricb	0.00138		0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetra	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Con	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pe	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-65-2	2,2',5-Tricb	0.00398		0.00108	RL	UG/L	7/2/2011
WQ-DPC-001-062711-EE	6/27/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetra	0.00108	U	0.00108	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	0.03916		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	0.00458		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-78-2	2,2',3,3',4,4',5	0.00105	U	0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	34883-43-7	2,4'-Dicb	0.05443		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5	95			RL	PCT_REC	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	0.02418		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	40186-72-9	2,2',3,3',4,4',5	0.00105	U	0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-29-3	2,2',3,4,4',5,5	0.00386		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-30-6	2,2',3,3',4,4',5	0.00305		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-68-0	2,2',3,4',5,5',6	0.00496		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	0.04475		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-10386-84	DBOB	106			RL	PCT_REC	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	7012-37-5	2,4,4'-Tricb	0.13761		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	0.13171		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	0.01242		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	2051-24-3	Decacb - Con	0.00105	U	0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	0.04685		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	0.02288		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	0.00574		0.00105	RL	UG/L	7/2/2011
WQ-TPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-65-2	2,2',5-Tricb	0.09572		0.00105	RL	UG/L	7/2/2011
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5	0.00107	U	0.00107	RL	UG/L	7/2/2011

WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84	DBOB	102			RL	PCT_REC	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-	0.00325		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pe	0.00405		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-	0.00185		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17	2,2',3,3',4,5,5'	104			RL	PCT_REC	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetra	0.01409		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pe	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	7012-37-5	2,4,4'-Tricb	0.07361		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5'	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Per	0.01057		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5'	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	34883-43-7	2,4'-Dicb	0.03988		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6'	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Cong	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	37680-65-2	2,2',5-Tricb	0.07211		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	35693-99-3	2,2',5,5'-Tetra	0.06057		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetra	0.02222		0.00107	RL	UG/L	7/2/2011	
WQ-DPC-003-062711	6/27/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5'	0.00107	U	0.00107	RL	UG/L	7/2/2011	
WQ-TUR-003-062711	6/27/2011	NO_PREP		180.1	SA	TOTAL	1	TURB	Turbidity	5.3		0.4	RL	NTU	6/27/2011
WQ-TSS-003-062711	6/27/2011	NO_PREP		160.2	SA	TOTAL	1	TSS	Solids, Total S	7.5		1	RL	MG/L	7/1/2011
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-29-3	2,2',3,4,4',5,5'	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-65-2	2,2',5-Tricb	0.40817	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-73-2	2,2,4,5,5'-Per	0.05759	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	34883-43-7	2,4'-Dicb	0.26891	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	2051-24-3	Decacb - Cong	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-28-2	2,2',3,4',4,5'-	0.01554	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-14-4	2,3,3',4,4'-Pe	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-27-1	2,2',4,4',5,5'-	0.03999	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-78-2	2,2',3,3',4,4',5'	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35693-99-3	2,2',5,5'-Tetra	0.30327	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-68-0	2,2',3,4',5,5',6'	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-30-6	2,2',3,3',4,4',5'	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	7012-37-5	2,4,4'-Tricb	0.32189	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-10-0	2,3',4,4'-Tetra	0.07533	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	31508-00-6	2,3',4,4',5-Pe	0.03392	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-68194-17	2,2',3,3',4,5,5'	100	D		RL	PCT_REC	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	38380-07-3	2,2',3,3',4,4'-	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	41464-39-5	2,2',3,5'-Tetra	0.09184	D	0.00213	RL	UG/L	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-10386-84	DBOB	102	D		RL	PCT_REC	7/5/2011	
WQ-TPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	TOTAL	2	40186-72-9	2,2',3,3',4,4',5'	0.00213	DU	0.00213	RL	UG/L	7/5/2011	
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	2	2051-24-3	Decacb - Cong	0.00208	DU	0.00208	RL	UG/L	7/5/2011	
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	2	31508-00-6	2,3',4,4',5-Pe	0.0046	D	0.00208	RL	UG/L	7/5/2011	
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	2	35065-27-1	2,2',4,4',5,5'-	0.00512	D	0.00208	RL	UG/L	7/5/2011	
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	2	32598-14-4	2,3,3',4,4'-Pe	0.00208	DU	0.00208	RL	UG/L	7/5/2011	
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS	2	7012-37-5	2,4,4'-Tricb	0.17384	D	0.00208	RL	UG/L	7/5/2011	

WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	CS-68194-17	2,2',3,3',4,5,5'	102	D		RL	PCT_REC	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	35065-29-3	2,2',3,4,4',5,5'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	52663-78-2	2,2',3,3',4,4',5,5'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	35693-99-3	2,2',5,5'-Tetra	0.14098	D	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	37680-65-2	2,2',5-Tricb	0.27398	D	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	35065-30-6	2,2',3,3',4,4',5,5'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	CS-10386-84	DBOB	93	D		RL	PCT_REC	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	32598-10-0	2,3',4,4'-Tetra	0.02262	D	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	52663-68-0	2,2',3,4',5,5',6,6'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	35065-28-2	2,2',3,4',4,5'-	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	38380-07-3	2,2',3,3',4,4',5,5'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	40186-72-9	2,2',3,3',4,4',5,5'	0.00208	DU	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	34883-43-7	2,4'-Dicb	0.20046	D	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	41464-39-5	2,2',3,5'-Tetra	0.04238	D	0.00208	RL	UG/L	7/5/2011
WQ-DPC-004-062711	6/27/2011	3510C	8082 Congeners	SADL1	DISS		2	37680-73-2	2,2,4,5,5'-Per	0.01184	D	0.00208	RL	UG/L	7/5/2011
WQ-TUR-004-062711	6/27/2011	NO_PREP		180.1	SA	TOTAL	1	TURB	Turbidity	6.3		0.4	RL	NTU	6/27/2011
WQ-TSS-004-062711	6/27/2011	NO_PREP		160.2	SA	TOTAL	1	TSS	Solids, Total S	7.5		1	RL	MG/L	7/1/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	41464-39-5	2,2',3,5'-Tetra	0.1519		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL2	DISS		10	35693-99-3	2,2',5,5'-Tetra	0.59285	D	0.01124	RL	UG/L	7/5/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL2	DISS		10	37680-65-2	2,2',5-Tricb	1.3901	D	0.01124	RL	UG/L	7/5/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	31508-00-6	2,3',4,4',5-Pe	0.00583		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	35065-28-2	2,2',3,4',4,5'-	0.00267		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	52663-68-0	2,2',3,4',5,5',6,6'	0.00234		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	CS-10386-84	DBOB	111			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL2	DISS		10	7012-37-5	2,4,4'-Tricb	0.90754	D	0.01124	RL	UG/L	7/5/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL1	DISS		1	34883-43-7	2,4'-Dicb	1.2098	E	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	32598-14-4	2,3,3',4,4'-Pe	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	38380-07-3	2,2',3,3',4,4',5,5'	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	35065-30-6	2,2',3,3',4,4',5,5'	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	52663-78-2	2,2',3,3',4,4',5,5'	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	35065-29-3	2,2',3,4,4',5,5'	0.00127		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	CS-68194-17	2,2',3,3',4,5,5'	96			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	32598-10-0	2,3',4,4'-Tetra	0.08217		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	2051-24-3	Decacb - Con	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	37680-73-2	2,2,4,5,5'-Per	0.03099		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	35065-27-1	2,2',4,4',5,5'-	0.00791		0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL1	DISS		1	37680-65-2	2,2',5-Tricb	1.3205	E	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL1	DISS		1	7012-37-5	2,4,4'-Tricb	0.75199	E	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REP	DISS		1	40186-72-9	2,2',3,3',4,4',5,5'	0.00112	U	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL1	DISS		1	35693-99-3	2,2',5,5'-Tetra	0.54656	E	0.00112	RL	UG/L	7/2/2011
WQ-DPC-002-062711-R	6/27/2011	3510C	8082 Congeners	REPDL2	DISS		10	34883-43-7	2,4'-Dicb	1.4273	D	0.01124	RL	UG/L	7/5/2011
WQ-TUR-002-062711-R	6/27/2011	NO_PREP		180.1	REP	TOTAL	1	TURB	Turbidity	15		0.4	RL	NTU	6/27/2011
WQ-TSS-002-062711-RE	6/27/2011	NO_PREP		160.2	REP	TOTAL	1	TSS	Solids, Total S	24		1	RL	MG/L	7/1/2011
	6/29/2011	NO_PREP		180.1	MB	TOTAL	1	TURB	Turbidity	0.4	U	0.4	RL	NTU	6/27/2011
	6/29/2011	NO_PREP		180.1	LCS	TOTAL	1	TURB	Turbidity	100		0.4	RL	PCT_REC	6/27/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL		1	32598-14-4	2,3,3',4,4'-Pe	0.001	U	0.001	RL	UG/L	7/1/2011

	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5'	89			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	34883-43-7	2,4'-Dicb	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	52663-68-0	2,2',3,4',5,5',4'	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	37680-65-2	2,2',5-Tricb	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	CS-10386-84	DBOB	84			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	52663-78-2	2,2',3,3',4,4',5'	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	2051-24-3	Decacb - Cong	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	7012-37-5	2,4,4'-Tricb	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-30-6	2,2',3,3',4,4',5'	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	40186-72-9	2,2',3,3',4,4',5'	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	MB	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	0.001	U	0.001	RL	UG/L	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-10386-84	DBOB	88			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-68-0	2,2',3,4',5,5',4'	89.2		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	7012-37-5	2,4,4'-Tricb	86.1		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	40186-72-9	2,2',3,3',4,4',5'	111		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	2051-24-3	Decacb - Cong	99.9		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	97.7		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	34883-43-7	2,4'-Dicb	73.9		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	88		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'	97.6		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	80.8		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5'	99			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-30-6	2,2',3,3',4,4',5'	98.6		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-65-2	2,2',5-Tricb	72.8		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	78.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	83.7		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	96.4		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	99.5		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	95.5		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	83.7		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-78-2	2,2',3,3',4,4',5'	98		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	93.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	41464-39-5	2,2',3,5'-Tetra	78.2		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	7012-37-5	2,4,4'-Tricb	83.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5'	95			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	52663-68-0	2,2',3,4',5,5',4'	86.1		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	96.8		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	40186-72-9	2,2',3,3',4,4',5'	108		0.001	RL	PCT_REC	7/1/2011

	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'	96.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	34883-43-7	2,4'-Dicb	73.5		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	35065-30-6	2,2',3,3',4,4',5,5'	96.4		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	81.8		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	37680-65-2	2,2',5-Tricb	71.1		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	37680-73-2	2,2,4,5,5'-Per	79.7		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	32598-10-0	2,3',4,4'-Tetra	83.5		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	95		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	CS-10386-84	DBOB	88			RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,5'	95.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	35693-99-3	2,2',5,5'-Tetra	74.3		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	92.7		0.001	RL	PCT_REC	7/1/2011
	6/30/2011	3510C	8082 Congeners	LCSD	TOTAL	1	2051-24-3	Decacb - Cong	96.4		0.001	RL	PCT_REC	7/1/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	52663-68-0	2,2',3,4',5,5',6,6'	87		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	2051-24-3	Decacb - Cong	91		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	41464-39-5	2,2',3,5'-Tetra	35	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	67		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	35693-99-3	2,2',5,5'-Tetra	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	32598-10-0	2,3',4,4'-Tetra	68	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	93		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	92		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	37680-73-2	2,2,4,5,5'-Per	61	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,5'	90		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	35065-30-6	2,2',3,3',4,4',5,5'	91		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	70		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	34883-43-7	2,4'-Dicb	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	37680-65-2	2,2',5-Tricb	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	CS-10386-84	DBOB	108			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	TOTAL	50	7012-37-5	2,4,4'-Tricb	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5'	101		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'	92		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	81		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	35065-28-2	2,2',3,4',4,5'-	81		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	CS-68194-17	2,2',3,3',4,5,5'	92			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	35693-99-3	2,2',5,5'-Tetra	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	35065-27-1	2,2',4,4',5,5'-	67		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	35065-30-6	2,2',3,3',4,4',5,5'	91		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	37680-73-2	2,2,4,5,5'-Per	66	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'	93		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5'	101		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	32598-14-4	2,3,3',4,4'-Pe	81		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,5'	89		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	32598-10-0	2,3',4,4'-Tetra	75	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	CS-10386-84	DBOB	79			RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	34883-43-7	2,4'-Dicb	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	31508-00-6	2,3',4,4',5-Pe	100		0.001087	RL	PCT_REC	7/2/2011

WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	38380-07-3	2,2',3,3',4,4'-	94		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	41464-39-5	2,2',3,5'-Tetra	44	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	37680-65-2	2,2',5'-Tricb	57	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	2051-24-3	Decacb - Con	92		0.001087	RL	PCT_REC	7/2/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	TOTAL	50	7012-37-5	2,4,4'-Tricb	0	D	0.054348	RL	PCT_REC	7/5/2011
WQ-TPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	TOTAL	1	52663-68-0	2,2',3,4',5,5',6	87		0.001087	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	32598-10-0	2,3',4,4'-Tetra	93		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	CS-10386-84	DBOB	75			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	37680-73-2	2,2,4,5,5'-Per	95		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	40186-72-9	2,2',3,3',4,4',5	107		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	32598-14-4	2,3,3',4,4'-Pe	103		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	52663-68-0	2,2',3,4',5,5',6	92		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	35065-27-1	2,2',4,4',5,5'-	87		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	DISS	10	35693-99-3	2,2',5,5'-Tetra	80	D	0.010695	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	35065-30-6	2,2',3,3',4,4',5	98		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	35065-29-3	2,2',3,4,4',5,5	97		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	31508-00-6	2,3',4,4',5-Pe	103		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	52663-78-2	2,2',3,3',4,4',5	95		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	2051-24-3	Decacb - Con	96		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	38380-07-3	2,2',3,3',4,4'-	98		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	41464-39-5	2,2',3,5'-Tetra	74		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	DISS	10	34883-43-7	2,4'-Dicb	0	D	0.010695	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	CS-68194-17	2,2',3,3',4,5,5	97			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	DISS	10	37680-65-2	2,2',5'-Tricb	23	D	0.010695	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDL1	DISS	10	7012-37-5	2,4,4'-Tricb	114	D	0.010695	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MS	DISS	1	35065-28-2	2,2',3,4',4,5'-	101		0.0010695	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	35065-29-3	2,2',3,4,4',5,5	103		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	32598-10-0	2,3',4,4'-Tetra	119		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	37680-73-2	2,2,4,5,5'-Per	106		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	DISS	10	35693-99-3	2,2',5,5'-Tetra	192	D	0.010753	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	DISS	10	7012-37-5	2,4,4'-Tricb	316	D	0.010753	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	CS-10386-84	DBOB	100			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	CS-68194-17	2,2',3,3',4,5,5	102			RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	52663-68-0	2,2',3,4',5,5',6	98		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	35065-27-1	2,2',4,4',5,5'-	93		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	DISS	10	37680-65-2	2,2',5'-Tricb	432	D	0.010753	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	31508-00-6	2,3',4,4',5-Pe	109		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	40186-72-9	2,2',3,3',4,4',5	113		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	35065-30-6	2,2',3,3',4,4',5	103		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	35065-28-2	2,2',3,4',4,5'-	108		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	41464-39-5	2,2',3,5'-Tetra	111		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	52663-78-2	2,2',3,3',4,4',5	100		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	2051-24-3	Decacb - Con	101		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	32598-14-4	2,3,3',4,4'-Pe	108		0.0010753	RL	PCT_REC	7/2/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSDDL1	DISS	10	34883-43-7	2,4'-Dicb	296	D	0.010753	RL	PCT_REC	7/5/2011
WQ-DPC-002-062711-M	6/27/2011	3510C	8082 Congeners	MSD	DISS	1	38380-07-3	2,2',3,3',4,4'-	104		0.0010753	RL	PCT_REC	7/2/2011



	6/30/2011	NO_PREP	160.2	MB	TOTAL	1	TSS	Solids, Total	1	U	1	RL	MG/L	7/1/2011
	6/30/2011	NO_PREP	160.2	LCS	TOTAL	1	TSS	Solids, Total	99		1	RL	PCT_REC	7/1/2011











L1109482	L1109482-21	AAL	6/30/2011	960	ML		N	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		N	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-21	AAL	6/30/2011	960	ML		Y	
L1109482	L1109482-23	AAL		40	ML		Y	
L1109482	L1109482-24	AAL		600	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	D
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	D
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		N	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	D
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		N	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	
L1109482	L1109482-25	AAL	6/30/2011	890	ML		Y	D
L1109482	L1109482-27	AAL		40	ML		Y	
L1109482	L1109482-28	AAL		600	ML		Y	
L1109482	WG476135-1	AAL		40	ML		N	
L1109482	WG476135-2	AAL		40	ML		N	
L1109482	WG476293-1	AAL	6/30/2011	1000	ML		N	









L1109482	WG476453-1	AAL		600	ML		N	
L1109482	WG476453-2	AAL		600	ML		N	

**SDMS REPOSITORY TARGET SHEET**

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 Video       Compact Disc       Other (Specify  
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- 

Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

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**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109501

Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

No. Samples 8 + 2FD + 2EB  
5 Total & 5 Dissolved  
 Matrix: Surface Water

Date Sampled: 6/28/11

Analysis: 18 NOAA PCB Congeners by GC/ECD

<b>Data Element</b>	Preservation	Surrogates	LCS/LCSD	MS/MSD	FD	MB	RL	Issues with	Other
<b>Acceptable</b>	& HT	%R 30-150%	%R 40-140%	%R 40-140%	RPD ≤ 30% SW	< RL or < 5x	meets QAPP	Qualifiers?	
<b>Yes</b>	√	√	√			√	√	√	NA
<b>No</b>				Estimate (J) 10 results in 2 samples (see page 3)	Estimate (J) 11 results in 2 FD pairs (see page 4 & 5)				

**Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.**

*The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA target Congeners were acceptable unless an issue was raised in the laboratory narrative. This review also assumed that the highest value for the two GC columns used was reported for the sample result, as required by the QAPP, unless noted by the laboratory.*

**Comments:**

Samples were received in 4 coolers with temperatures upon receipt between 4± 2C on 6/28/10. COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab. Samples were analyzed for TSS and Turbidity (not required to be reviewed) and aliquots for Metals analysis were also received but placed on "HOLD" by client prior to arrival at the lab.

To generate the Dissolved samples, the laboratory filtered samples labeled "Dissolved" through a 0.45 μ filer upon receipt.

*HT*: all samples were extracted on 7/1/11 and analyzed by 7/12/11 - HT met - No action required.

*Surrogates*: All samples were analyzed with DF=1, 2, or 5 to report all congeners within the instrument calibration range. Both surrogates (DBOB and BZ#198) were recovered within criteria in all samples & QC - No Action required.

*LCS*: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners and RPD between LCS and LCSD OK - No Action required.

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.





Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

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MS/MSD : performed on WQ-TPC-002-062811 and WQ-DPC-002-062811. For MS/MSD on WQ-TPC-002-062811, spike level was too low for %Rec to be meaningful for BZ#8, BZ#18, BZ#28, & BZ#52. %Rec unacceptable for BZ#44, BZ#66, BZ#101, and BZ#153 (MS recovery low 0-35% recovery) and RPD high for BZ#52 and BZ#66.

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*\* Action: BZ#44, BZ#66, BZ#101, and BZ#153 estimated (DJ) in WQ-TPC-002-062811 due to low MS recovery and BZ#52 & BZ#66 estimated (DJ) in WQ-TPC-002-062811 with indeterminate bias due to MS/MSD imprecision.*

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MS/MSD : MS/MSD on WQ-DPC-002-062811 %Rec high for MS and/or MSD BZ#8, BZ#18, BZ#28, and BZ#52 and RPD high for BZ#28, BZ#52, and BZ#44.

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*\* Action: BZ#8 & BZ#18 estimated (DJ) in WQ-DPC-002-062811 due to high MS/MSD recoveries, BZ#28 & BZ#52 estimated (DJ) due to high MSD recovery and MS/MSD imprecision and BZ#44 estimated (DJ) with indeterminate bias due to MS/MSD imprecision.*

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All samples were initially analyzed at DF= 1, DF=2, or DF=5 to report all Congeners within the instrument calibration range. There were no secondary dilution analyses performed. The following samples were analyzed with DF > 1: WQ-DPC-002-062811 (DF=5), WQ-DPC-002-062811-REP (DF=5), WQ-DPC-004-062811 (DF=2), WQ-TPC-002-062811 (DF=10), WQ-TPC-002-062811-REP (DF=10), WQ-TPC-003-062811 (DF=2), and WQ-TPC-004-062811 (DF=5).

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There were no other issues with qualifiers (i.e., no J qualified data reported).

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All RLs = PQL given in QAPP Worksheet #15 on a sample-specific basis (i.e., accounting for slight differences in amount extracted) for all samples except WQ-DPC-002-062811 (DF=5), WQ-DPC-002-062811-REP (DF=5), WQ-DPC-004-062811 (DF=2), WQ-TPC-002-062811 (DF=10), WQ-TPC-002-062811-REP (DF=10), WQ-TPC-003-062811 (DF=2), and WQ-TPC-004-062811 (DF=5), which were analyzed at DF > 1 due to the presence of high level of target analytes. Since the sum of the 18 NOAA Congeners in these samples exceeded 0.03 µg/L (Project Action Limit); sensitivity was considered acceptable for all samples.

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*Narrative* : the narrative did not raise any issues not already addressed.

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Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109501

Lab: Alpha Analytical

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

FD pair: WQ-TPC-002-062811 and WQ-TPC-002-062811-REP. A comparison of results shown below (ordering of compounds from the database).

Field Duplicate Evaluation\_ Sample IDs:

Sample = WQ-TPC-002-062811

FD = WQ-TPC-002-062811-REP

Analyte Name	DF= 10	Sample	Sample Result		FD	FD Result		RPD	Action
	RL (µg/L)		µg/L	Q	Level	µg/L	Q		
2,4'-Dichlorobiphenyl	0.01042	1.0421	D	> 2 x RL	0.58113	D	> 2 x RL	56.8	<b>J Both</b>
2,2',5-Trichlorobiphenyl	0.01042	1.4164	D	> 2 x RL	0.8663	D	> 2 x RL	48.2	<b>J Both</b>
2,4,4'-Trichlorobiphenyl	0.01042	1.1577	D	> 2 x RL	0.45713	D	> 2 x RL	86.8	<b>J Both</b>
2,2',3,5'-Tetrachlorobiphenyl	0.01042	0.31458	D	> 2 x RL	0.12249	D	> 2 x RL	87.9	<b>J Both</b>
2,2',5,5'-Tetrachlorobiphenyl	0.01042	1.2457	D	> 2 x RL	0.51798	D	> 2 x RL	82.5	<b>J Both</b>
2,3',4,4'-Tetrachlorobiphenyl	0.01042	0.24988	D	> 2 x RL	0.10676	D	> 2 x RL	80.3	<b>J Both</b>
2,2',4,5,5'-Pentachlorobiphenyl	0.01042	0.13244	D	> 2 x RL	0.06604	D	> 2 x RL	66.9	<b>J Both</b>
2,3,3',4,4'-Pentachlorobiphenyl	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None
2,3',4,4',5-Pentachlorobiphenyl	0.01042	0.0704	D	> 2 x RL	0.03203	D	> 2 x RL	74.9	<b>J Both</b>
2,2',3,3',4,4'-Hexachlorobiphenyl	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None
2,2',3,4,4',5'-Hexachlorobiphenyl	0.01042	0.02676	D	> 2 x RL	0.01986	D	> 2 x RL	29.6	None
2,2',4,4',5,5'-Hexachlorobiphenyl	0.01042	0.09833	D	> 2 x RL	0.04537	D	> 2 x RL	73.7	<b>J Both</b>
2,2',3,3',4,4',5-Heptachlorobiphenyl	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.01042	0.01555	D	< 2 x RL	0.01708	D	< 2 x RL	9.4	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	0.01042	0.02499	D	> 2 x RL	0.01602	D	> 2 x RL	43.7	<b>J Both</b>
2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None
DecaCB - Homologue	0.01042	0.01042	U	RL	0.0102	U	RL	NA	None

FD precision was unacceptable for 10 out of 18 NOAA Congeners as indicated above.

*\*ACTION: 10 Congeners identified above estimated (DJ) in FD pair with indeterminate bias due to FD imprecision.*

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**New Bedford Harbor  
OU-1 Monitoring 2011**

Lab Project #: L1109501

**18 NOAA PCB Congeners Tier I+ Data Validation Checklist**

Lab: Alpha Analytical

FD pair: WQ-DPC-002-062811 and WQ-DPC-002-062811-REP. A comparison of results shown below (ordering of compounds from the database).

Field Duplicate Evaluation\_ Sample IDs:

Sample = WQ-DPC-002-062811

FD = WQ-DPC-002-062811-REP

Analyte Name	DF= 5	Sample	Sample Result		FD	FD Result		RPD	Action
	RL (µg/L)		µg/L	Q	Level	µg/L	Q		
2,4'-Dichlorobiphenyl	0.00532	0.50223	D	> 2 x RL	0.41074	D	> 2 x RL	20.0	None
2,2',5-Trichlorobiphenyl	0.00532	0.51264	D	> 2 x RL	0.53387	D	> 2 x RL	4.1	None
2,4,4'-Trichlorobiphenyl	0.00532	0.34642	D	> 2 x RL	0.25468	D	> 2 x RL	30.5	<b>J Both</b>
2,2',3,5'-Tetrachlorobiphenyl	0.00532	0.06733	D	> 2 x RL	0.05591	D	> 2 x RL	18.5	None
2,2',5,5'-Tetrachlorobiphenyl	0.00532	0.27594	D	> 2 x RL	0.22178	D	> 2 x RL	21.8	None
2,3',4,4'-Tetrachlorobiphenyl	0.00532	0.03487	D	> 2 x RL	0.02686	D	> 2 x RL	26.0	None
2,2',4,5,5'-Pentachlorobiphenyl	0.00532	0.01359	D	> 2 x RL	0.0105	D	> 2 x RL	25.7	None
2,3,3',4,4'-Pentachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,3',4,4',5-Pentachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,3',4,4'-Hexachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,4,4',5'-Hexachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',4,4',5,5'-Hexachlorobiphenyl	0.00532	0.00569	D	< 2 x RL	0.00526	U	RL	NA	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None
DecaCB - Homologue	0.00532	0.00532	U	RL	0.00526	U	RL	NA	None

FD precision was acceptable for all 18 NOAA Congeners except for 2,4,4'-Trichlorobiphenyl, as shown above

*\*ACTION: 2,4,4'-Trichlorobiphenyl estimated (DJ) in WQ-DPC-002-062811 and WQ-DPC-002-062811-REP with indeterminate bias due to FD imprecision.*

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

**ACTIONS:**

Preservation: Cooled to  $4 \pm 2^{\circ}\text{C}$ . Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.

HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND

Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)

Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs

Surrogates: % Recovery > 150%, J det/Accept ND;  $10\% \leq$  % Recovery < 30%, J det/J NDs; Recovery < 10%, J det/R NDs.

LCS/LCSD: %Rec<10%, J det/ R NDs;  $10\% < \%$ Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.

MS/MSD: %Rec<10%, J det/ R NDs;  $10\% < \%$ Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.

FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL, negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if result < lowest calibration standard, J result. Verify all J data reported properly, if applicable. Note any non-detects at values > PALs.

Other Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes

Qualifiers: either U or J based on actions taken for Method Blank (MB)

% solids:  $10\% < \%$  solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.

**Qualifiers:** U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate.

**Reference:** Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Environmental Monitoring, Sampling, and Analysis, New Bedford, Massachusetts, rev. 4, July 2011 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5'-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5'-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5'-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: 8/14/11

Data Reviewer: Nancy C. Rothman, Ph.D.

**SDMS REPOSITORY TARGET SHEET**

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FIELD_NAME	CODE	DESCR
VALIDATION_LEVEL	T1+	USEPA Region I Tier I+ Data Validation
VALIDATION_LEVEL	T1+T2	USEPA Region I Tier I+ and Tier II Data Validation
VALIDATION_LEVEL	T2	USEPA Region I Tier I+ and Tier II Data Validation
VALIDATION	N	No, Data Not Validated
VALIDATION	Y	Yes, Data Validated



















PARAM_CODE	DESCRIPTION	RESULT	LAB_QUAL	VALID_QUAL	FINAL_QUAL	UNIT	DETECT_LIMIT	DETECT_LIM_CODE	EMPC
TSS	Total suspended solids	1	U			MG/L	1	RL	
TSS	Total suspended solids	99				PCT_REC	1	RL	
TURB	Turbidity	0.4	U			NTU	0.4	RL	
TURB	Turbidity	101				PCT_REC	0.4	RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.001	U			UG/L	0.001	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.001	U			UG/L	0.001	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.001	U			UG/L	0.001	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.001	U			UG/L	0.001	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.001	U			UG/L	0.001	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.001	U			UG/L	0.001	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.001	U			UG/L	0.001	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.001	U			UG/L	0.001	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.001	U			UG/L	0.001	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.001	U			UG/L	0.001	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.001	U			UG/L	0.001	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.001	U			UG/L	0.001	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.001	U			UG/L	0.001	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.001	U			UG/L	0.001	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.001	U			UG/L	0.001	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.001	U			UG/L	0.001	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.001	U			UG/L	0.001	RL	
2051-24-3	DecaCB - Homologue	0.001	U			UG/L	0.001	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	93				PCT_REC		RL	
CS-10386-84-2	Dbob	95				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	76.7				PCT_REC	0.001	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	74.9				PCT_REC	0.001	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	89.3				PCT_REC	0.001	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	81.6				PCT_REC	0.001	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	76.6				PCT_REC	0.001	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	87.1				PCT_REC	0.001	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	82.3				PCT_REC	0.001	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	96.1				PCT_REC	0.001	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	93.3				PCT_REC	0.001	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	93.1				PCT_REC	0.001	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	89.9				PCT_REC	0.001	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	84				PCT_REC	0.001	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	92.9				PCT_REC	0.001	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	92.7				PCT_REC	0.001	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	87.1				PCT_REC	0.001	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	91.2				PCT_REC	0.001	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	103				PCT_REC	0.001	RL	
2051-24-3	DecaCB - Homologue	92				PCT_REC	0.001	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	99				PCT_REC		RL	
CS-10386-84-2	Dbob	105				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	78.9				PCT_REC	0.001	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	77.5				PCT_REC	0.001	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	91.5				PCT_REC	0.001	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	82.6				PCT_REC	0.001	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	80.2				PCT_REC	0.001	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	86.4				PCT_REC	0.001	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	80.8				PCT_REC	0.001	RL	

32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	95.2				PCT_REC	0.001	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	93.1				PCT_REC	0.001	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	91.9				PCT_REC	0.001	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	90.3				PCT_REC	0.001	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	83.5				PCT_REC	0.001	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	91.5				PCT_REC	0.001	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	91.2				PCT_REC	0.001	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	84				PCT_REC	0.001	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	89.1				PCT_REC	0.001	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	101				PCT_REC	0.001	RL	
2051-24-3	DecaCB - Homologue	90.1				PCT_REC	0.001	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	97				PCT_REC		RL	
CS-10386-84-2	Dbob	107				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.04678				UG/L	0.00102	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.06375				UG/L	0.00102	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.0372				UG/L	0.00102	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.01007				UG/L	0.00102	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.04005				UG/L	0.00102	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.00626				UG/L	0.00102	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.00379				UG/L	0.00102	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00175				UG/L	0.00102	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.0017				UG/L	0.00102	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
2051-24-3	DecaCB - Homologue	0.00102	U			UG/L	0.00102	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	89				PCT_REC		RL	
CS-10386-84-2	Dbob	91				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.00246				UG/L	0.00108	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.00276				UG/L	0.00108	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.00151				UG/L	0.00108	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00108	U			UG/L	0.00108	RL	
2051-24-3	DecaCB - Homologue	0.00108	U			UG/L	0.00108	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	98				PCT_REC		RL	



CS-10386-84-2	Dbob	103				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.50223	D	DJ		UG/L	0.00532	RL	
37680-65-2	2,2',5'-Trichlorobiphenyl	0.51264	D	DJ		UG/L	0.00532	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.34642	D	DJ		UG/L	0.00532	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.06733	D	DJ		UG/L	0.00532	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.27594	D	DJ		UG/L	0.00532	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.03487	D			UG/L	0.00532	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.01359	D			UG/L	0.00532	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
31508-00-6	2,3',4,4',5'-Pentachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00569	D			UG/L	0.00532	RL	
35065-30-6	2,2',3,3',4,4',5'-Heptachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
52663-68-0	2,2',3,4',5,5',6'-Heptachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
52663-78-2	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
40186-72-9	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	0.00532	DU			UG/L	0.00532	RL	
2051-24-3	DecaCB - Homologue	0.00532	DU			UG/L	0.00532	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6'-Octacb (Obsolete)	83	D			PCT_REC		RL	
CS-10386-84-2	Dbob	93	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	146	D			PCT_REC	0.0055556	RL	
37680-65-2	2,2',5'-Trichlorobiphenyl	338	D			PCT_REC	0.0055556	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	118	D			PCT_REC	0.0055556	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	100	D			PCT_REC	0.0055556	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	134	D			PCT_REC	0.0055556	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	100	D			PCT_REC	0.0055556	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	96	D			PCT_REC	0.0055556	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	104	D			PCT_REC	0.0055556	RL	
31508-00-6	2,3',4,4',5'-Pentachlorobiphenyl	108	D			PCT_REC	0.0055556	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	104	D			PCT_REC	0.0055556	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	108	D			PCT_REC	0.0055556	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	91	D			PCT_REC	0.0055556	RL	
35065-30-6	2,2',3,3',4,4',5'-Heptachlorobiphenyl	102	D			PCT_REC	0.0055556	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	112	D			PCT_REC	0.0055556	RL	
52663-68-0	2,2',3,4',5,5',6'-Heptachlorobiphenyl	98	D			PCT_REC	0.0055556	RL	
52663-78-2	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	100	D			PCT_REC	0.0055556	RL	
40186-72-9	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	115	D			PCT_REC	0.0055556	RL	
2051-24-3	DecaCB - Homologue	105	D			PCT_REC	0.0055556	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6'-Octacb (Obsolete)	106	D			PCT_REC		RL	
CS-10386-84-2	Dbob	101	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	286	D			PCT_REC	0.0052083	RL	
37680-65-2	2,2',5'-Trichlorobiphenyl	324	D			PCT_REC	0.0052083	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	204	D			PCT_REC	0.0052083	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	123	D			PCT_REC	0.0052083	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	213	D			PCT_REC	0.0052083	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	114	D			PCT_REC	0.0052083	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	102	D			PCT_REC	0.0052083	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	106	D			PCT_REC	0.0052083	RL	
31508-00-6	2,3',4,4',5'-Pentachlorobiphenyl	112	D			PCT_REC	0.0052083	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	108	D			PCT_REC	0.0052083	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	112	D			PCT_REC	0.0052083	RL	

35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	95	D			PCT_REC	0.0052083	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	105	D			PCT_REC	0.0052083	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	114	D			PCT_REC	0.0052083	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	100	D			PCT_REC	0.0052083	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	103	D			PCT_REC	0.0052083	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	116	D			PCT_REC	0.0052083	RL	
2051-24-3	DecaCB - Homologue	110	D			PCT_REC	0.0052083	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	110	D			PCT_REC		RL	
CS-10386-84-2	Dbob	113	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.41074	D			UG/L	0.00526	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.53387	D			UG/L	0.00526	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.25468	D		DJ	UG/L	0.00526	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.05591	D			UG/L	0.00526	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.22178	D			UG/L	0.00526	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.02686	D			UG/L	0.00526	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.0105	D			UG/L	0.00526	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00526	DU			UG/L	0.00526	RL	
2051-24-3	DecaCB - Homologue	0.00526	DU			UG/L	0.00526	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	99	D			PCT_REC		RL	
CS-10386-84-2	Dbob	99	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.12976				UG/L	0.00105	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.15488				UG/L	0.00105	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.12994				UG/L	0.00105	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.03167				UG/L	0.00105	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.10401				UG/L	0.00105	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.01803				UG/L	0.00105	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.01371				UG/L	0.00105	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00383				UG/L	0.00105	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00166				UG/L	0.00105	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00392				UG/L	0.00105	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00105	U			UG/L	0.00105	RL	
2051-24-3	DecaCB - Homologue	0.00105	U			UG/L	0.00105	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	92				PCT_REC		RL	
CS-10386-84-2	Dbob	105				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.29583	D			UG/L	0.00211	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.38334	D			UG/L	0.00211	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.17585	D			UG/L	0.00211	RL	

41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.03698	D			UG/L	0.00211	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.1341	D			UG/L	0.00211	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.01779	D			UG/L	0.00211	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.00784	D			UG/L	0.00211	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00282	D			UG/L	0.00211	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00324	D			UG/L	0.00211	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00211	DU			UG/L	0.00211	RL	
2051-24-3	DecaCB - Homologue	0.00211	DU			UG/L	0.00211	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	93	D			PCT_REC		RL	
CS-10386-84-2	Dbob	97	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.04294				UG/L	0.00102	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.05593				UG/L	0.00102	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.03947				UG/L	0.00102	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.01087				UG/L	0.00102	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.04347				UG/L	0.00102	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.00884				UG/L	0.00102	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.005				UG/L	0.00102	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00232				UG/L	0.00102	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00115				UG/L	0.00102	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00256				UG/L	0.00102	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
2051-24-3	DecaCB - Homologue	0.00102	U			UG/L	0.00102	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	87				PCT_REC		RL	
CS-10386-84-2	Dbob	88				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.00327				UG/L	0.00102	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.00315				UG/L	0.00102	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.00243				UG/L	0.00102	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	

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52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00102	U			UG/L	0.00102	RL	
2051-24-3	DecaCB - Homologue	0.00427				UG/L	0.00102	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	96				PCT_REC		RL	
CS-10386-84-2	Dbob	110				PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	1.0421	D	DJ		UG/L	0.01042	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	1.4164	D	DJ		UG/L	0.01042	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	1.1577	D	DJ		UG/L	0.01042	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.31458	D	DJ		UG/L	0.01042	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	1.2457	D	DJ		UG/L	0.01042	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.24988	D	DJ		UG/L	0.01042	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.13244	D	DJ		UG/L	0.01042	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.01042	DU			UG/L	0.01042	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.0704	D	DJ		UG/L	0.01042	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.01042	DU			UG/L	0.01042	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.02676	D			UG/L	0.01042	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.09833	D	DJ		UG/L	0.01042	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.01042	DU			UG/L	0.01042	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.01555	D			UG/L	0.01042	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.02499	D	DJ		UG/L	0.01042	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.01042	DU			UG/L	0.01042	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.01042	DU			UG/L	0.01042	RL	
2051-24-3	DecaCB - Homologue	0.01042	DU			UG/L	0.01042	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	106	D			PCT_REC		RL	
CS-10386-84-2	Dbob	95	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0	D			PCT_REC	0.010204	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0	D			PCT_REC	0.010204	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0	D			PCT_REC	0.010204	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	21	D			PCT_REC	0.010204	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	92	D			PCT_REC	0.010204	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	56	D			PCT_REC	0.010204	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	100	D			PCT_REC	0.010204	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	88	D			PCT_REC	0.010204	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	35	D			PCT_REC	0.010204	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	101	D			PCT_REC	0.010204	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	89	D			PCT_REC	0.010204	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	81	D			PCT_REC	0.010204	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	95	D			PCT_REC	0.010204	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	108	D			PCT_REC	0.010204	RL	
2051-24-3	DecaCB - Homologue	105	D			PCT_REC	0.010204	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	102	D			PCT_REC		RL	
CS-10386-84-2	Dbob	88	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0	D			PCT_REC	0.010204	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	42	D			PCT_REC	0.010204	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0	D			PCT_REC	0.010204	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	62	D			PCT_REC	0.010204	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	66	D			PCT_REC	0.010204	RL	

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32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	92	D			PCT_REC	0.010204	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	80	D			PCT_REC	0.010204	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	100	D			PCT_REC	0.010204	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	92	D			PCT_REC	0.010204	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	65	D			PCT_REC	0.010204	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	100	D			PCT_REC	0.010204	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	94	D			PCT_REC	0.010204	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	83	D			PCT_REC	0.010204	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	92	D			PCT_REC	0.010204	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	108	D			PCT_REC	0.010204	RL	
2051-24-3	DecaCB - Homologue	105	D			PCT_REC	0.010204	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	100	D			PCT_REC		RL	
CS-10386-84-2	Dbob	88	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.58113	D	DJ		UG/L	0.0102	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.8663	D	DJ		UG/L	0.0102	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.45713	D	DJ		UG/L	0.0102	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.12249	D	DJ		UG/L	0.0102	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.51798	D	DJ		UG/L	0.0102	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.10676	D	DJ		UG/L	0.0102	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.06604	D	DJ		UG/L	0.0102	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.0102	DU			UG/L	0.0102	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.03203	D	DJ		UG/L	0.0102	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.0102	DU			UG/L	0.0102	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.01986	D			UG/L	0.0102	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.04537	D	DJ		UG/L	0.0102	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.0102	DU			UG/L	0.0102	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.01708	D			UG/L	0.0102	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.01602	D	DJ		UG/L	0.0102	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.0102	DU			UG/L	0.0102	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.0102	DU			UG/L	0.0102	RL	
2051-24-3	DecaCB - Homologue	0.0102	DU			UG/L	0.0102	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	103	D			PCT_REC		RL	
CS-10386-84-2	Dbob	91	D			PCT_REC		RL	
34883-43-7	2,4'-Dichlorobiphenyl	0.175	D			UG/L	0.00208	RL	
37680-65-2	2,2',5-Trichlorobiphenyl	0.31034	D			UG/L	0.00208	RL	
7012-37-5	2,4,4'-Trichlorobiphenyl	0.2725	D			UG/L	0.00208	RL	
41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	0.08063	D			UG/L	0.00208	RL	
35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	0.26158	D			UG/L	0.00208	RL	
32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	0.06279	D			UG/L	0.00208	RL	
37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	0.04688	D			UG/L	0.00208	RL	
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	0.00638	D			UG/L	0.00208	RL	
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	0.02716	D			UG/L	0.00208	RL	
38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	0.00614	D			UG/L	0.00208	RL	
35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	0.01508	D			UG/L	0.00208	RL	
35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	0.03089	D			UG/L	0.00208	RL	
35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.00379	D			UG/L	0.00208	RL	
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.00494	D			UG/L	0.00208	RL	
52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	0.00675	D			UG/L	0.00208	RL	
52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.00208	DU			UG/L	0.00208	RL	
40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.00208	DU			UG/L	0.00208	RL	
2051-24-3	DecaCB - Homologue	0.00208	DU			UG/L	0.00208	RL	
CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	104	D			PCT_REC		RL	





















**SDMS REPOSITORY TARGET SHEET**

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Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

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SAMP_ID	RECEIPT_DATE	PREP_METH	ANALYSIS_METH	LAB_QC_CODE	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LIMIT
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 37680-65-2	2,2',5-Tricb	0.05593		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 35693-99-3	2,2',5,5'-Tetracb	0.04347		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 37680-73-2	2,2,4,5,5'-Pentacb	0.005		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 35065-28-2	2,2',3,4',4,5'-Hexacb	0.00115		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	87		
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 41464-39-5	2,2',3,5'-Tetracb	0.01087		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 32598-14-4	2,3,3',4,4'-Pentacb	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 38380-07-3	2,2',3,3',4,4'-Hexacb	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 7012-37-5	2,4,4'-Tricb	0.03947		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 CS-10386-84-2	DBOB	88		
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 2051-24-3	Decacb - Congener	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 31508-00-6	2,3',4,4',5-Pentacb	0.00232		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 32598-10-0	2,3',4,4'-Tetracb	0.00884		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00102	U	0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 35065-27-1	2,2',4,4',5,5'-Hexacb	0.00256		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 34883-43-7	2,4'-Dicb	0.04294		0.00102
WQ-TPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	TOTAL		1 35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 37680-73-2	2,2,4,5,5'-Pentacb	0.00379		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 34883-43-7	2,4'-Dicb	0.04678		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 7012-37-5	2,4,4'-Tricb	0.0372		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 31508-00-6	2,3',4,4',5-Pentacb	0.00175		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 35065-27-1	2,2',4,4',5,5'-Hexacb	0.0017		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 35693-99-3	2,2',5,5'-Tetracb	0.04005		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	89		
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 CS-10386-84-2	DBOB	91		
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 32598-14-4	2,3,3',4,4'-Pentacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 35065-28-2	2,2',3,4',4,5'-Hexacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 38380-07-3	2,2',3,3',4,4'-Hexacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 37680-65-2	2,2',5-Tricb	0.06375		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 2051-24-3	Decacb - Congener	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 41464-39-5	2,2',3,5'-Tetracb	0.01007		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 32598-10-0	2,3',4,4'-Tetracb	0.00626		0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00102	U	0.00102
WQ-DPC-001-062811	6/28/2011	3510C	8082 Congeners	SA	DISS		1 35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00102	U	0.00102
WQ-TUR-001-062811	6/28/2011	NO_PREP	180.1	SA	TOTAL		1 TURB	Turbidity	4.2		0.4
WQ-TSS-001-062811	6/28/2011	NO_PREP	160.2	SA	TOTAL		1 TSS	Solids, Total Suspended	1.8		1
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.01042	DU	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 38380-07-3	2,2',3,3',4,4'-Hexacb	0.01042	DU	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 2051-24-3	Decacb - Congener	0.01042	DU	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 32598-10-0	2,3',4,4'-Tetracb	0.24988	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 35065-28-2	2,2',3,4',4,5'-Hexacb	0.02676	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 37680-73-2	2,2,4,5,5'-Pentacb	0.13244	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 37680-65-2	2,2',5-Tricb	1.4164	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 35065-30-6	2,2',3,3',4,4',5-Heptacb	0.01042	DU	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 34883-43-7	2,4'-Dicb	1.0421	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 52663-68-0	2,2',3,4',5,5',6-Heptacb	0.02499	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.01555	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 35065-27-1	2,2',4,4',5,5'-Hexacb	0.09833	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 35693-99-3	2,2',5,5'-Tetracb	1.2457	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 41464-39-5	2,2',3,5'-Tetracb	0.31458	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 32598-14-4	2,3,3',4,4'-Pentacb	0.01042	DU	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 31508-00-6	2,3',4,4',5-Pentacb	0.0704	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 CS-68194-17-2	2,2',3,3',4,4',5,5',6-Octachl	106	D	
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 CS-10386-84-2	DBOB	95	D	
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 7012-37-5	2,4,4'-Tricb	1.1577	D	0.01042
WQ-TPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL		10 40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.01042	DU	0.01042
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS		5 37680-73-2	2,2,4,5,5'-Pentacb	0.01359	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS		5 35693-99-3	2,2',5,5'-Tetracb	0.27594	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS		5 52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00532	DU	0.00532



WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	34883-43-7	2,4'-Dicb	0.50223	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	CS-10386-84-2	DBOB	93	D	
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	2051-24-3	Decacb - Congener	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	35065-30-6	2,2',3,3',4,4',5'-Heptacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00569	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	83	D	
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	31508-00-6	2,3',4,4',5'-Pentacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	41464-39-5	2,2',3,5'-Tetracb	0.06733	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	7012-37-5	2,4,4'-Tricb	0.34642	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	32598-10-0	2,3',4,4'-Tetracb	0.03487	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	37680-65-2	2,2',5-Tricb	0.51264	D	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	32598-14-4	2,3,3',4,4'-Pentacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00532	DU	0.00532
WQ-DPC-002-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00532	DU	0.00532
WQ-TUR-002-062811	6/28/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	12		0.4
WQ-TSS-002-062811	6/28/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total Suspended	28.7		1
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	35065-30-6	2,2',3,3',4,4',5'-Heptacb	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	103	D	
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	CS-10386-84-2	DBOB	91	D	
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	38380-07-3	2,2',3,3',4,4'-Hexacb	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	52663-68-0	2,2',3,4',5,5',6'-Heptacb	0.01602	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	32598-10-0	2,3',4,4'-Tetracb	0.10676	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	35693-99-3	2,2',5,5'-Tetracb	0.51798	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	32598-14-4	2,3,3',4,4'-Pentacb	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	35065-28-2	2,2',3,4',4,5'-Hexacb	0.01986	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	31508-00-6	2,3',4,4',5'-Pentacb	0.03203	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	41464-39-5	2,2',3,5'-Tetracb	0.12249	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	35065-27-1	2,2',4,4',5,5'-Hexacb	0.04537	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	37680-73-2	2,2,4,5,5'-Pentacb	0.06604	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.01708	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	7012-37-5	2,4,4'-Tricb	0.45713	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	2051-24-3	Decacb - Congener	0.0102	DU	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	37680-65-2	2,2',5-Tricb	0.8663	D	0.0102
WQ-TPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	TOTAL	10	34883-43-7	2,4'-Dicb	0.58113	D	0.0102
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	52663-68-0	2,2',3,4',5,5',6'-Heptacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	37680-73-2	2,2,4,5,5'-Pentacb	0.0105	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	35065-30-6	2,2',3,3',4,4',5'-Heptacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	99	D	
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	37680-65-2	2,2',5-Tricb	0.53387	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	7012-37-5	2,4,4'-Tricb	0.25468	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	41464-39-5	2,2',3,5'-Tetracb	0.05591	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	32598-14-4	2,3,3',4,4'-Pentacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	2051-24-3	Decacb - Congener	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	31508-00-6	2,3',4,4',5'-Pentacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	35693-99-3	2,2',5,5'-Tetracb	0.22178	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00526	DU	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	32598-10-0	2,3',4,4'-Tetracb	0.02686	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	34883-43-7	2,4'-Dicb	0.41074	D	0.00526
WQ-DPC-002-062811-RE	6/28/2011	3510C	8082 Congeners	REPDL1	DISS	5	CS-10386-84-2	DBOB	99	D	
WQ-TUR-002-062811-RE	6/28/2011	NO_PREP	180.1	REP	TOTAL	1	TURB	Turbidity	12		0.4
WQ-TSS-002-062811-RE	6/28/2011	NO_PREP	160.2	REP	TOTAL	1	TSS	Solids, Total Suspended	19.1		1
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-30-6	2,2',3,3',4,4',5'-Heptacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-10386-84-2	DBOB	110		
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	96		
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-65-2	2,2',5-Tricb	0.00315		0.00102

WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	2051-24-3	Decacb - Congener	0.00427		0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	35693-99-3	2,2',5,5'-Tetracb	0.00243		0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	37680-73-2	2,2,4,5,5'-Pentacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	7012-37-5	2,4,4'-Tricb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-10-0	2,3',4,4'-Tetracb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	32598-14-4	2,3,3',4,4'-Pentacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	41464-39-5	2,2',3,5'-Tetracb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	34883-43-7	2,4'-Dicb	0.00327		0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00102	U	0.00102
WQ-TPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	TOTAL	1	31508-00-6	2,3',4,4',5-Pentacb	0.00102	U	0.00102
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84-2	DBOB	103		
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Pentacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35693-99-3	2,2',5,5'-Tetracb	0.00151		0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetracb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	34883-43-7	2,4'-Dicb	0.00246		0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	7012-37-5	2,4,4'-Tricb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Congener	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	37680-65-2	2,2',5-Tricb	0.00276		0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pentacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	98		
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetracb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pentacb	0.00108	U	0.00108
WQ-DPC-001-062811-EB	6/28/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00108	U	0.00108
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-10-0	2,3',4,4'-Tetracb	0.06279	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	41464-39-5	2,2',3,5'-Tetracb	0.08063	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-27-1	2,2',4,4',5,5'-Hexacb	0.03089	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-10386-84-2	DBOB	110	D	
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-65-2	2,2',5-Tricb	0.31034	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00208	DU	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00208	DU	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	32598-14-4	2,3,3',4,4'-Pentacb	0.00638	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-28-2	2,2',3,4',4,5'-Hexacb	0.01508	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	2051-24-3	Decacb - Congener	0.00208	DU	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	7012-37-5	2,4,4'-Tricb	0.2725	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	34883-43-7	2,4'-Dicb	0.175	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00614	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35693-99-3	2,2',5,5'-Tetracb	0.26158	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00494	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00379	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	37680-73-2	2,2,4,5,5'-Pentacb	0.04688	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	31508-00-6	2,3',4,4',5-Pentacb	0.02716	D	0.00208
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	104	D	
WQ-TPC-003-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	2	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00675	D	0.00208
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	37680-73-2	2,2,4,5,5'-Pentacb	0.01371		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00392		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	37680-65-2	2,2',5-Tricb	0.15488		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	31508-00-6	2,3',4,4',5-Pentacb	0.00383		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	2051-24-3	Decacb - Congener	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	41464-39-5	2,2',3,5'-Tetracb	0.03167		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	7012-37-5	2,4,4'-Tricb	0.12994		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	34883-43-7	2,4'-Dicb	0.12976		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00105	U	0.00105

WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	32598-14-4	2,3,3',4,4'-Pentacb	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00166		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	35693-99-3	2,2',5,5'-Tetracb	0.10401		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	32598-10-0	2,3',4,4'-Tetracb	0.01803		0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00105	U	0.00105
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	CS-10386-84-2	DBOB	105		
WQ-DPC-003-062811	6/28/2011	3510C	8082 Congeners	SA	DISS	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	92		
WQ-TUR-003-062811	6/28/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	6.4		0.4
WQ-TSS-003-062811	6/28/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total Suspended	10.8		1
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	7012-37-5	2,4,4'-Tricb	0.38325	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00945	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	35693-99-3	2,2',5,5'-Tetracb	0.35041	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	34883-43-7	2,4'-Dicb	0.44247	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	37680-65-2	2,2',5-Tricb	0.62681	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00675	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	31508-00-6	2,3',4,4',5-Pentacb	0.01885	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	CS-10386-84-2	DBOB	100	D	
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	32598-14-4	2,3,3',4,4'-Pentacb	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	35065-27-1	2,2',4,4',5,5'-Hexacb	0.0251	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	32598-10-0	2,3',4,4'-Tetracb	0.06387	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	41464-39-5	2,2',3,5'-Tetracb	0.09561	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	2051-24-3	Decacb - Congener	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	37680-73-2	2,2,4,5,5'-Pentacb	0.03614	D	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00515	DU	0.00515
WQ-TPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	TOTAL	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	96	D	
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	35065-28-2	2,2',3,4',4,5'-Hexacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	31508-00-6	2,3',4,4',5-Pentacb	0.00282	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	CS-10386-84-2	DBOB	97	D	
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	37680-73-2	2,2,4,5,5'-Pentacb	0.00784	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	34883-43-7	2,4'-Dicb	0.29583	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	37680-65-2	2,2',5-Tricb	0.38334	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	38380-07-3	2,2',3,3',4,4'-Hexacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	7012-37-5	2,4,4'-Tricb	0.17585	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	32598-14-4	2,3,3',4,4'-Pentacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	32598-10-0	2,3',4,4'-Tetracb	0.01779	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	35065-27-1	2,2',4,4',5,5'-Hexacb	0.00324	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	41464-39-5	2,2',3,5'-Tetracb	0.03698	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.00211	DU	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	93	D	
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	35693-99-3	2,2',5,5'-Tetracb	0.1341	D	0.00211
WQ-DPC-004-062811	6/28/2011	3510C	8082 Congeners	SADL1	DISS	2	2051-24-3	Decacb - Congener	0.00211	DU	0.00211
WQ-TUR-004-062811	6/28/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	7.4		0.4
WQ-TSS-004-062811	6/28/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total Suspended	17.7		1
	6/29/2011	NO_PREP	180.1	MB	TOTAL	1	TURB	Turbidity	0.4	U	0.4
	6/29/2011	NO_PREP	180.1	LCS	TOTAL	1	TURB	Turbidity	101		0.4
	6/30/2011	NO_PREP	160.2	MB	TOTAL	1	TSS	Solids, Total Suspended	1	U	1
	6/30/2011	NO_PREP	160.2	LCS	TOTAL	1	TSS	Solids, Total Suspended	99		1
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	93		
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	41464-39-5	2,2',3,5'-Tetracb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	37680-73-2	2,2,4,5,5'-Pentacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	38380-07-3	2,2',3,3',4,4'-Hexacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	2051-24-3	Decacb - Congener	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	CS-10386-84-2	DBOB	95		
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	0.001	U	0.001

	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	32598-10-0	2,3',4,4'-Tetracb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	7012-37-5	2,4,4'-Tricb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	34883-43-7	2,4'-Dicb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	35693-99-3	2,2',5,5'-Tetracb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-28-2	2,2',3,4',4,5'-Hexacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	32598-14-4	2,3,3',4,4'-Pentacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	35065-27-1	2,2',4,4',5,5'-Hexacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	37680-65-2	2,2',5-Tricb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	MB	TOTAL	1	31508-00-6	2,3',4,4',5-Pentacb	0.001	U	0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	92.7		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	7012-37-5	2,4,4'-Tricb	89.3		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	31508-00-6	2,3',4,4',5-Pentacb	93.3		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-28-2	2,2',3,4',4,5'-Hexacb	89.9		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	87.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	103		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-27-1	2,2',4,4',5,5'-Hexacb	84		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	34883-43-7	2,4'-Dicb	76.7		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-10-0	2,3',4,4'-Tetracb	87.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	99		
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-14-4	2,3,3',4,4'-Pentacb	96.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-10386-84-2	DBOB	105		
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-65-2	2,2',5-Tricb	74.9		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	91.2		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	38380-07-3	2,2',3,3',4,4'-Hexacb	93.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	41464-39-5	2,2',3,5'-Tetracb	81.6		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	92.9		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	2051-24-3	Decacb - Congener	92		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35693-99-3	2,2',5,5'-Tetracb	76.6		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-73-2	2,2,4,5,5'-Pentacb	82.3		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	101		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	2051-24-3	Decacb - Congener	90.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	7012-37-5	2,4,4'-Tricb	91.5		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	91.5		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	89.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-10386-84-2	DBOB	107		
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35693-99-3	2,2',5,5'-Tetracb	80.2		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-73-2	2,2,4,5,5'-Pentacb	80.8		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	38380-07-3	2,2',3,3',4,4'-Hexacb	91.9		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	97		
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-10-0	2,3',4,4'-Tetracb	86.4		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	37680-65-2	2,2',5-Tricb	77.5		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	31508-00-6	2,3',4,4',5-Pentacb	93.1		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-27-1	2,2',4,4',5,5'-Hexacb	83.5		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	91.2		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	34883-43-7	2,4'-Dicb	78.9		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	32598-14-4	2,3,3',4,4'-Pentacb	95.2		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	35065-28-2	2,2',3,4',4,5'-Hexacb	90.3		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	84		0.001
	7/1/2011	3510C	8082 Congeners	LCS	TOTAL	1	41464-39-5	2,2',3,5'-Tetracb	82.6		0.001
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	37680-65-2	2,2',5-Tricb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	102	D	
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	52663-78-2	2,2',3,3',4,4',5,6-Octacb	95	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	7012-37-5	2,4,4'-Tricb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	37680-73-2	2,2,4,5,5'-Pentacb	21	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	52663-68-0	2,2',3,4',5,5',6-Heptacb	81	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	35065-29-3	2,2',3,4,4',5,5'-Heptacb	89	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	41464-39-5	2,2',3,5'-Tetracb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	31508-00-6	2,3',4,4',5-Pentacb	56	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	35065-28-2	2,2',3,4',4,5'-Hexacb	88	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	108	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	2051-24-3	Decacb - Congener	105	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	34883-43-7	2,4'-Dicb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	32598-14-4	2,3,3',4,4'-Pentacb	92	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	35065-30-6	2,2',3,3',4,4',5-Heptacb	101	D	0.010204

WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	35693-99-3	2,2',5,5'-Tetracb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	CS-10386-84-2	DBOB	88	D	
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	32598-10-0	2,3',4,4'-Tetracb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	35065-27-1	2,2',4,4',5,5'-Hexacb	35	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	TOTAL	10	38380-07-3	2,2',3,3',4,4'-Hexacb	100	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	38380-07-3	2,2',3,3',4,4'-Hexacb	100	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	35065-29-3	2,2',3,4,4',5,5'-Heptacb	94	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	2051-24-3	Decacb - Congener	105	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	7012-37-5	2,4,4'-Tricb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	37680-73-2	2,2,4,5,5'-Pentacb	66	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	35065-27-1	2,2',4,4',5,5'-Hexacb	65	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	CS-10386-84-2	DBOB	88	D	
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	34883-43-7	2,4'-Dicb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	35065-30-6	2,2',3,3',4,4',5-Heptacb	100	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	100	D	
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	108	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	41464-39-5	2,2',3,5'-Tetracb	42	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	32598-14-4	2,3,3',4,4'-Pentacb	92	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	52663-78-2	2,2',3,3',4,4',5,6-Octacb	92	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	52663-68-0	2,2',3,4',5,5',6-Heptacb	83	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	37680-65-2	2,2',5-Tricb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	32598-10-0	2,3',4,4'-Tetracb	62	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	35065-28-2	2,2',3,4',4,5'-Hexacb	92	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	35693-99-3	2,2',5,5'-Tetracb	0	D	0.010204
WQ-TPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	TOTAL	10	31508-00-6	2,3',4,4',5-Pentacb	80	D	0.010204
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	31508-00-6	2,3',4,4',5-Pentacb	108	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	35065-30-6	2,2',3,3',4,4',5-Heptacb	102	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	2051-24-3	Decacb - Congener	105	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	35693-99-3	2,2',5,5'-Tetracb	134	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	41464-39-5	2,2',3,5'-Tetracb	100	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	37680-73-2	2,2,4,5,5'-Pentacb	96	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	34883-43-7	2,4'-Dicb	146	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	32598-14-4	2,3,3',4,4'-Pentacb	104	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	35065-28-2	2,2',3,4',4,5'-Hexacb	108	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	38380-07-3	2,2',3,3',4,4'-Hexacb	104	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	115	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	52663-78-2	2,2',3,3',4,4',5,6-Octacb	100	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	7012-37-5	2,4,4'-Tricb	118	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	CS-10386-84-2	DBOB	101	D	
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	52663-68-0	2,2',3,4',5,5',6-Heptacb	98	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	37680-65-2	2,2',5-Tricb	338	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	35065-27-1	2,2',4,4',5,5'-Hexacb	91	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	35065-29-3	2,2',3,4,4',5,5'-Heptacb	112	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	32598-10-0	2,3',4,4'-Tetracb	100	D	0.0055556
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDL1	DISS	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	106	D	
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	31508-00-6	2,3',4,4',5-Pentacb	112	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nona	116	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	37680-65-2	2,2',5-Tricb	324	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	32598-10-0	2,3',4,4'-Tetracb	114	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	32598-14-4	2,3,3',4,4'-Pentacb	106	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	35065-29-3	2,2',3,4,4',5,5'-Heptacb	114	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	7012-37-5	2,4,4'-Tricb	204	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	35693-99-3	2,2',5,5'-Tetracb	213	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	35065-28-2	2,2',3,4',4,5'-Hexacb	112	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachl	110	D	
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	35065-27-1	2,2',4,4',5,5'-Hexacb	95	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	52663-68-0	2,2',3,4',5,5',6-Heptacb	100	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	38380-07-3	2,2',3,3',4,4'-Hexacb	108	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	35065-30-6	2,2',3,3',4,4',5-Heptacb	105	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	52663-78-2	2,2',3,3',4,4',5,6-Octacb	103	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	34883-43-7	2,4'-Dicb	286	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	37680-73-2	2,2,4,5,5'-Pentacb	102	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	CS-10386-84-2	DBOB	113	D	
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	2051-24-3	Decacb - Congener	110	D	0.0052083
WQ-DPC-002-062811-M	6/28/2011	3510C	8082 Congeners	MSDDL1	DISS	5	41464-39-5	2,2',3,5'-Tetracb	123	D	0.0052083

















## ANALYTICAL REPORT

Lab Number:	L1109501
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD ENV. MONITORING
Project Number:	TO-0010-04
Report Date:	07/13/11

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Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1109501-01	WQ-TPC-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-02	WQ-DPC-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-03	WQ-MET-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-04	WQ-TUR-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-05	WQ-TSS-001-062811	NEW BEDFORD, MA	06/28/11 09:40
L1109501-06	WQ-TPC-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-07	WQ-DPC-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-08	WQ-MET-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-09	WQ-TUR-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-10	WQ-TSS-002-062811	NEW BEDFORD, MA	06/28/11 10:35
L1109501-11	WQ-TPC-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-12	WQ-DPC-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-13	WQ-MET-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-14	WQ-TUR-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-15	WQ-TSS-002-062811-REP	NEW BEDFORD, MA	06/28/11 10:35
L1109501-16	WQ-TPC-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-17	WQ-DPC-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-18	WQ-MET-001-062811-EB	NEW BEDFORD, MA	06/28/11 12:45
L1109501-19	WQ-TPC-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-20	WQ-DPC-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-21	WQ-MET-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-22	WQ-TUR-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-23	WQ-TSS-003-062811	NEW BEDFORD, MA	06/28/11 12:35
L1109501-24	WQ-TPC-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-25	WQ-DPC-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-26	WQ-MET-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-27	WQ-TUR-004-062811	NEW BEDFORD, MA	06/28/11 13:15
L1109501-28	WQ-TSS-004-062811	NEW BEDFORD, MA	06/28/11 13:15

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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#### Sample Receipt

Samples were received intact on June 28, 2011. Upon receipt, samples that were marked dissolved on the chain of custody were filtered through a 0.45 micron filter thereby creating the dissolved sample.

Equipment blank IDs were edited with client authorization to ensure unique IDs for each analysis. These IDs were created to be consistent with the nomenclature of the field samples.

#### PCB Congeners by 8082

The PCB Congener analysis was performed utilizing dual column confirmation with the higher of the two values reported. Technical judgment was employed in the case of an observed interference. In each case that

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

### Case Narrative (continued)

interference was observed on one column, the value from the opposite column was reported regardless of whether it was the higher or lower value.

Samples L1109501-06, 07, 11, 12, 19, 24 and 25 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

The WG476527-4/-5 MS/MSD recoveries, performed on L1109501-06, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476527-5 MSD RPDs, performed on L1109501-06, are above the acceptance criteria for CI4-BZ#52 (37%) and CI4-BZ#66(32%).

The WG476527-6/-7 MS/MSD recoveries, performed on L1109501-07, are outside the acceptance criteria for several compounds. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD. In addition, the WG476527-7 MSD RPDs, performed on L1109501-07, are above the acceptance criteria for CI3-BZ#28 (38%), CI4-BZ#52 (48%) and CI4-BZ#44 (31%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 07/13/11

# ORGANICS



# PCBS

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-01  
**Client ID:** WQ-TPC-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 16:05  
**Analyst:** JS

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.04294		ug/l	0.00102	--	1
CI3-BZ#18	0.05593		ug/l	0.00102	--	1
CI4-BZ#66	0.00884		ug/l	0.00102	--	1
CI5-BZ#118	0.00232		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	87		30-150
DBOB	88		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-01  
**Client ID:** WQ-TPC-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 16:05  
**Analyst:** JS

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.03947		ug/l	0.00102	--	1
CI4-BZ#52	0.04347		ug/l	0.00102	--	1
CI4-BZ#44	0.01087		ug/l	0.00102	--	1
CI5-BZ#101	0.0050		ug/l	0.00102	--	1
CI6-BZ#153	0.00256		ug/l	0.00102	--	1
CI6-BZ#138	0.00115		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	87		30-150
DBOB	88		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-02  
 Client ID: WQ-DPC-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 16:49  
 Analyst: JS

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.04678		ug/l	0.00102	--	1
CI3-BZ#18	0.06375		ug/l	0.00102	--	1
CI3-BZ#28	0.03720		ug/l	0.00102	--	1
CI4-BZ#66	0.00626		ug/l	0.00102	--	1
CI5-BZ#118	0.00175		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI6-BZ#138	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	89		30-150
DBOB	91		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-02  
**Client ID:** WQ-DPC-001-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 16:49  
**Analyst:** JS

**Date Collected:** 06/28/11 09:40  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI4-BZ#52	0.04005		ug/l	0.00102	--	1
CI4-BZ#44	0.01007		ug/l	0.00102	--	1
CI5-BZ#101	0.00379		ug/l	0.00102	--	1
CI6-BZ#153	0.00170		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	89		30-150
DBOB	91		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-06  
 Client ID: WQ-TPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 01:21  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI2-BZ#8	1.0421		ug/l	0.01042	--	10
CI3-BZ#18	1.4164		ug/l	0.01042	--	10
CI5-BZ#105	ND		ug/l	0.01042	--	10
CI7-BZ#187	0.02499		ug/l	0.01042	--	10
CI6-BZ#128	ND		ug/l	0.01042	--	10
CI7-BZ#180	0.01555		ug/l	0.01042	--	10
CI7-BZ#170	ND		ug/l	0.01042	--	10
CI8-BZ#195	ND		ug/l	0.01042	--	10
CI9-BZ#206	ND		ug/l	0.01042	--	10
CI10-BZ#209	ND		ug/l	0.01042	--	10

DBOB 95 30-150

BZ 198 106 30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-06  
 Client ID: WQ-TPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 01:21  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	1.1577		ug/l	0.01042	--	10
CI4-BZ#52	1.2457		ug/l	0.01042	--	10
CI4-BZ#44	0.31458		ug/l	0.01042	--	10
CI4-BZ#66	0.24988		ug/l	0.01042	--	10
CI5-BZ#101	0.13244		ug/l	0.01042	--	10
CI5-BZ#118	0.07040		ug/l	0.01042	--	10
CI6-BZ#153	0.09833		ug/l	0.01042	--	10
CI6-BZ#138	0.02676		ug/l	0.01042	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	95		30-150
BZ 198	106		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-07  
 Client ID: WQ-DPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/07/11 22:23  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.50223		ug/l	0.00532	--	5
CI3-BZ#18	0.51264		ug/l	0.00532	--	5
CI4-BZ#66	0.03487		ug/l	0.00532	--	5
CI5-BZ#118	ND		ug/l	0.00532	--	5
CI5-BZ#105	ND		ug/l	0.00532	--	5
CI6-BZ#138	ND		ug/l	0.00532	--	5
CI7-BZ#187	ND		ug/l	0.00532	--	5
CI6-BZ#128	ND		ug/l	0.00532	--	5
CI7-BZ#180	ND		ug/l	0.00532	--	5
CI7-BZ#170	ND		ug/l	0.00532	--	5
CI8-BZ#195	ND		ug/l	0.00532	--	5
CI9-BZ#206	ND		ug/l	0.00532	--	5
CI10-BZ#209	ND		ug/l	0.00532	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	83		30-150
DBOB	93		30-150



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-07  
 Client ID: WQ-DPC-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/07/11 22:23  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.34642		ug/l	0.00532	--	5
CI4-BZ#52	0.27594		ug/l	0.00532	--	5
CI4-BZ#44	0.06733		ug/l	0.00532	--	5
CI5-BZ#101	0.01359		ug/l	0.00532	--	5
CI6-BZ#153	0.00569		ug/l	0.00532	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	83		30-150
DBOB	93		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-11  
**Client ID:** WQ-TPC-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/12/11 20:33  
**Analyst:** JS

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.58113		ug/l	0.01020	--	10
CI3-BZ#18	0.86630		ug/l	0.01020	--	10
CI3-BZ#28	0.45713		ug/l	0.01020	--	10
CI4-BZ#52	0.51798		ug/l	0.01020	--	10
CI4-BZ#44	0.12249		ug/l	0.01020	--	10
CI4-BZ#66	0.10676		ug/l	0.01020	--	10
CI5-BZ#118	0.03203		ug/l	0.01020	--	10
CI5-BZ#105	ND		ug/l	0.01020	--	10
CI7-BZ#187	0.01602		ug/l	0.01020	--	10
CI6-BZ#128	ND		ug/l	0.01020	--	10
CI7-BZ#180	0.01708		ug/l	0.01020	--	10
CI7-BZ#170	ND		ug/l	0.01020	--	10
CI8-BZ#195	ND		ug/l	0.01020	--	10
CI9-BZ#206	ND		ug/l	0.01020	--	10
CI10-BZ#209	ND		ug/l	0.01020	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	91		30-150
BZ 198	103		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-11  
 Client ID: WQ-TPC-002-062811-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/12/11 20:33  
 Analyst: JS

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl5-BZ#101	0.06604		ug/l	0.01020	--	10
Cl6-BZ#153	0.04537		ug/l	0.01020	--	10
Cl6-BZ#138	0.01986		ug/l	0.01020	--	10

DBOB	91	30-150
BZ 198	103	30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-12  
**Client ID:** WQ-DPC-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 04:16  
**Analyst:** JS

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.41074		ug/l	0.00526	--	5
CI3-BZ#18	0.53387		ug/l	0.00526	--	5
CI4-BZ#66	0.02686		ug/l	0.00526	--	5
CI5-BZ#105	ND		ug/l	0.00526	--	5
CI6-BZ#138	ND		ug/l	0.00526	--	5
CI7-BZ#187	ND		ug/l	0.00526	--	5
CI6-BZ#128	ND		ug/l	0.00526	--	5
CI7-BZ#180	ND		ug/l	0.00526	--	5
CI7-BZ#170	ND		ug/l	0.00526	--	5
CI8-BZ#195	ND		ug/l	0.00526	--	5
CI9-BZ#206	ND		ug/l	0.00526	--	5
CI10-BZ#209	ND		ug/l	0.00526	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	99		30-150
DBOB	99		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-12  
**Client ID:** WQ-DPC-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 04:16  
**Analyst:** JS

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.25468		ug/l	0.00526	--	5
CI4-BZ#52	0.22178		ug/l	0.00526	--	5
CI4-BZ#44	0.05591		ug/l	0.00526	--	5
CI5-BZ#101	0.01050		ug/l	0.00526	--	5
CI5-BZ#118	ND		ug/l	0.00526	--	5
CI6-BZ#153	ND		ug/l	0.00526	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	99		30-150
DBOB	99		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-16  
 Client ID: WQ-TPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 21:56  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.00327		ug/l	0.00102	--	1
CI3-BZ#28	ND		ug/l	0.00102	--	1
CI4-BZ#52	0.00243		ug/l	0.00102	--	1
CI4-BZ#44	ND		ug/l	0.00102	--	1
CI4-BZ#66	ND		ug/l	0.00102	--	1
CI5-BZ#101	ND		ug/l	0.00102	--	1
CI5-BZ#118	ND		ug/l	0.00102	--	1
CI5-BZ#105	ND		ug/l	0.00102	--	1
CI6-BZ#138	ND		ug/l	0.00102	--	1
CI7-BZ#187	ND		ug/l	0.00102	--	1
CI6-BZ#128	ND		ug/l	0.00102	--	1
CI7-BZ#180	ND		ug/l	0.00102	--	1
CI7-BZ#170	ND		ug/l	0.00102	--	1
CI8-BZ#195	ND		ug/l	0.00102	--	1
CI9-BZ#206	ND		ug/l	0.00102	--	1
CI10-BZ#209	0.00427		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-16  
 Client ID: WQ-TPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 21:56  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl3-BZ#18	0.00315		ug/l	0.00102	--	1
Cl6-BZ#153	ND		ug/l	0.00102	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-17  
 Client ID: WQ-DPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 22:39  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.00246		ug/l	0.00108	--	1
CI3-BZ#18	0.00276		ug/l	0.00108	--	1
CI3-BZ#28	ND		ug/l	0.00108	--	1
CI4-BZ#52	0.00151		ug/l	0.00108	--	1
CI4-BZ#44	ND		ug/l	0.00108	--	1
CI4-BZ#66	ND		ug/l	0.00108	--	1
CI5-BZ#101	ND		ug/l	0.00108	--	1
CI5-BZ#118	ND		ug/l	0.00108	--	1
CI5-BZ#105	ND		ug/l	0.00108	--	1
CI6-BZ#138	ND		ug/l	0.00108	--	1
CI7-BZ#187	ND		ug/l	0.00108	--	1
CI6-BZ#128	ND		ug/l	0.00108	--	1
CI7-BZ#180	ND		ug/l	0.00108	--	1
CI7-BZ#170	ND		ug/l	0.00108	--	1
CI8-BZ#195	ND		ug/l	0.00108	--	1
CI9-BZ#206	ND		ug/l	0.00108	--	1
CI10-BZ#209	ND		ug/l	0.00108	--	1

DBOB 103 30-150  
 BZ 198 98 30-150



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-17  
 Client ID: WQ-DPC-001-062811-EB  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/06/11 22:39  
 Analyst: JS

Date Collected: 06/28/11 12:45  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
Cl6-BZ#153	ND		ug/l	0.00108	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	103		30-150
BZ 198	98		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-19  
 Client ID: WQ-TPC-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 05:00  
 Analyst: JS

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.17500		ug/l	0.00208	--	2
CI3-BZ#18	0.31034		ug/l	0.00208	--	2
CI4-BZ#66	0.06279		ug/l	0.00208	--	2
CI6-BZ#128	0.00614		ug/l	0.00208	--	2
CI7-BZ#170	0.00379		ug/l	0.00208	--	2
CI8-BZ#195	ND		ug/l	0.00208	--	2
CI9-BZ#206	ND		ug/l	0.00208	--	2
CI10-BZ#209	ND		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	104		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-19  
 Client ID: WQ-TPC-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 05:00  
 Analyst: JS

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.27250		ug/l	0.00208	--	2
CI4-BZ#52	0.26158		ug/l	0.00208	--	2
CI4-BZ#44	0.08063		ug/l	0.00208	--	2
CI5-BZ#101	0.04688		ug/l	0.00208	--	2
CI5-BZ#118	0.02716		ug/l	0.00208	--	2
CI6-BZ#153	0.03089		ug/l	0.00208	--	2
CI5-BZ#105	0.00638		ug/l	0.00208	--	2
CI6-BZ#138	0.01508		ug/l	0.00208	--	2
CI7-BZ#187	0.00675		ug/l	0.00208	--	2
CI7-BZ#180	0.00494		ug/l	0.00208	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	104		30-150
DBOB	110		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-20  
 Client ID: WQ-DPC-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/07/11 00:07  
 Analyst: JS

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.12976		ug/l	0.00105	--	1
CI3-BZ#18	0.15488		ug/l	0.00105	--	1
CI4-BZ#66	0.01803		ug/l	0.00105	--	1
CI5-BZ#118	0.00383		ug/l	0.00105	--	1
CI5-BZ#105	ND		ug/l	0.00105	--	1
CI7-BZ#187	ND		ug/l	0.00105	--	1
CI6-BZ#128	ND		ug/l	0.00105	--	1
CI7-BZ#180	ND		ug/l	0.00105	--	1
CI7-BZ#170	ND		ug/l	0.00105	--	1
CI8-BZ#195	ND		ug/l	0.00105	--	1
CI9-BZ#206	ND		ug/l	0.00105	--	1
CI10-BZ#209	ND		ug/l	0.00105	--	1

DBOB 105 30-150  
 BZ 198 92 30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-20  
**Client ID:** WQ-DPC-003-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/07/11 00:07  
**Analyst:** JS

**Date Collected:** 06/28/11 12:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.12994		ug/l	0.00105	--	1
CI4-BZ#52	0.10401		ug/l	0.00105	--	1
CI4-BZ#44	0.03167		ug/l	0.00105	--	1
CI5-BZ#101	0.01371		ug/l	0.00105	--	1
CI6-BZ#153	0.00392		ug/l	0.00105	--	1
CI6-BZ#138	0.00166		ug/l	0.00105	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	105		30-150
BZ 198	92		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-24  
**Client ID:** WQ-TPC-004-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 05:43  
**Analyst:** JS

**Date Collected:** 06/28/11 13:15  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.44247		ug/l	0.00515	--	5
CI3-BZ#18	0.62681		ug/l	0.00515	--	5
CI5-BZ#105	ND		ug/l	0.00515	--	5
CI7-BZ#187	0.00675		ug/l	0.00515	--	5
CI6-BZ#128	ND		ug/l	0.00515	--	5
CI7-BZ#180	ND		ug/l	0.00515	--	5
CI7-BZ#170	ND		ug/l	0.00515	--	5
CI8-BZ#195	ND		ug/l	0.00515	--	5
CI9-BZ#206	ND		ug/l	0.00515	--	5
CI10-BZ#209	ND		ug/l	0.00515	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	100		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-24  
**Client ID:** WQ-TPC-004-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water  
**Analytical Method:** 1,8082  
**Analytical Date:** 07/08/11 05:43  
**Analyst:** JS

**Date Collected:** 06/28/11 13:15  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI3-BZ#28	0.38325		ug/l	0.00515	--	5
CI4-BZ#52	0.35041		ug/l	0.00515	--	5
CI4-BZ#44	0.09561		ug/l	0.00515	--	5
CI4-BZ#66	0.06387		ug/l	0.00515	--	5
CI5-BZ#101	0.03614		ug/l	0.00515	--	5
CI5-BZ#118	0.01885		ug/l	0.00515	--	5
CI6-BZ#153	0.02510		ug/l	0.00515	--	5
CI6-BZ#138	0.00945		ug/l	0.00515	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	96		30-150
DBOB	100		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

Lab ID: L1109501-25  
 Client ID: WQ-DPC-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 06:27  
 Analyst: JS

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	0.29583		ug/l	0.00211	--	2
CI3-BZ#18	0.38334		ug/l	0.00211	--	2
CI4-BZ#66	0.01779		ug/l	0.00211	--	2
CI5-BZ#118	0.00282		ug/l	0.00211	--	2
CI5-BZ#105	ND		ug/l	0.00211	--	2
CI6-BZ#138	ND		ug/l	0.00211	--	2
CI7-BZ#187	ND		ug/l	0.00211	--	2
CI6-BZ#128	ND		ug/l	0.00211	--	2
CI7-BZ#180	ND		ug/l	0.00211	--	2
CI7-BZ#170	ND		ug/l	0.00211	--	2
CI8-BZ#195	ND		ug/l	0.00211	--	2
CI9-BZ#206	ND		ug/l	0.00211	--	2
CI10-BZ#209	ND		ug/l	0.00211	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	97		30-150



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-25  
 Client ID: WQ-DPC-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water  
 Analytical Method: 1,8082  
 Analytical Date: 07/08/11 06:27  
 Analyst: JS

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified  
 Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB Congeners (NOAA List) - Mansfield Lab						
CI3-BZ#28	0.17585		ug/l	0.00211	--	2
CI4-BZ#52	0.13410		ug/l	0.00211	--	2
CI4-BZ#44	0.03698		ug/l	0.00211	--	2
CI5-BZ#101	0.00784		ug/l	0.00211	--	2
CI6-BZ#153	0.00324		ug/l	0.00211	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	97		30-150

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 1,8082  
**Analytical Date:** 07/06/11 11:43  
**Analyst:** JS

**Extraction Method:** EPA 3510C  
**Extraction Date:** 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-1					
Cl2-BZ#8	ND		ug/l	0.00100	--
Cl3-BZ#18	ND		ug/l	0.00100	--
Cl3-BZ#28	ND		ug/l	0.00100	--
Cl4-BZ#52	ND		ug/l	0.00100	--
Cl4-BZ#44	ND		ug/l	0.00100	--
Cl4-BZ#66	ND		ug/l	0.00100	--
Cl5-BZ#101	ND		ug/l	0.00100	--
Cl5-BZ#118	ND		ug/l	0.00100	--
Cl5-BZ#105	ND		ug/l	0.00100	--
Cl6-BZ#138	ND		ug/l	0.00100	--
Cl7-BZ#187	ND		ug/l	0.00100	--
Cl6-BZ#128	ND		ug/l	0.00100	--
Cl7-BZ#180	ND		ug/l	0.00100	--
Cl7-BZ#170	ND		ug/l	0.00100	--
Cl8-BZ#195	ND		ug/l	0.00100	--
Cl9-BZ#206	ND		ug/l	0.00100	--
Cl10-BZ#209	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	95		30-150

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8082  
 Analytical Date: 07/06/11 11:43  
 Analyst: JS

Extraction Method: EPA 3510C  
 Extraction Date: 07/01/11 14:20

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-1					
Cl6-BZ#153	ND		ug/l	0.00100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
BZ 198	93		30-150
DBOB	95		30-150

## Matrix Spike Analysis

### Batch Quality Control

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-4 WG476527-5 QC Sample: L1109501-06 Client ID: WQ-TPC-002-062811												
Cl2-BZ#8	1.0421	0.102	0.74845	0	Q	1.0089	0	Q	40-140	30		30
Cl3-BZ#18	1.4164	0.102	1.0403	0	Q	1.0974	0	Q	40-140	5		30
Cl5-BZ#105	ND	0.102	0.09389	92		0.09417	92		40-140	0		30
Cl7-BZ#187	0.02499	0.102	0.10733	81		0.10981	83		40-140	2		30
Cl6-BZ#128	ND	0.102	0.10156	100		0.10243	100		40-140	1		30
Cl7-BZ#180	0.01555	0.102	0.10645	89		0.11150	94		40-140	5		30
Cl7-BZ#170	ND	0.102	0.10332	101		0.10201	100		40-140	1		30
Cl8-BZ#195	ND	0.102	0.09740	95		0.09419	92		40-140	3		30
Cl9-BZ#206	ND	0.102	0.10985	108		0.10972	108		40-140	0		30
Cl10-BZ#209	ND	0.102	0.10687	105		0.10716	105		40-140	0		30
Cl3-BZ#28	1.1577	0.102	0.81968	0	Q	1.0783	0	Q	40-140	27		30
Cl4-BZ#52	1.2457	0.102	0.81124	0	Q	1.1785	0	Q	40-140	37	Q	30
Cl4-BZ#44	0.31458	0.102	0.26797	0	Q	0.35790	42		40-140	29		30
Cl4-BZ#66	0.24988	0.102	0.22744	0	Q	0.31344	62		40-140	32	Q	30
Cl5-BZ#101	0.13244	0.102	0.15368	21	Q	0.19963	66		40-140	26		30
Cl5-BZ#118	0.07040	0.102	0.12708	56		0.15188	80		40-140	18		30
Cl6-BZ#153	0.09833	0.102	0.13389	35	Q	0.16437	65		40-140	20		30
Cl6-BZ#138	0.02676	0.102	0.11645	88		0.12084	92		40-140	4		30

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25    QC Batch ID: WG476527-4    WG476527-5    QC Sample: L1109501-06    Client ID: WQ-TPC-002-062811

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
BZ 198	102		100		30-150
DBOB	88		88		30-150

## Matrix Spike Analysis

### Batch Quality Control

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-6 WG476527-7 QC Sample: L1109501-07 Client ID: WQ-DPC-002-062811												
Cl2-BZ#8	0.50223	0.111	0.66500	146	Q	0.80011	286	Q	40-140	18		30
Cl3-BZ#18	0.51264	0.111	0.88854	338	Q	0.85028	324	Q	40-140	4		30
Cl4-BZ#66	0.03487	0.111	0.14576	100		0.15414	114		40-140	6		30
Cl5-BZ#118	ND	0.111	0.12002	108		0.11686	112		40-140	3		30
Cl5-BZ#105	ND	0.111	0.11618	104		0.11067	106		40-140	5		30
Cl6-BZ#138	ND	0.111	0.12002	108		0.11667	112		40-140	3		30
Cl7-BZ#187	ND	0.111	0.10882	98		0.10428	100		40-140	4		30
Cl6-BZ#128	ND	0.111	0.11602	104		0.11245	108		40-140	3		30
Cl7-BZ#180	ND	0.111	0.12428	112		0.11823	114		40-140	5		30
Cl7-BZ#170	ND	0.111	0.11335	102		0.10933	105		40-140	4		30
Cl8-BZ#195	ND	0.111	0.11140	100		0.10702	103		40-140	4		30
Cl9-BZ#206	ND	0.111	0.12828	115		0.12129	116		40-140	6		30
Cl10-BZ#209	ND	0.111	0.11629	105		0.11414	110		40-140	2		30
Cl3-BZ#28	0.34642	0.111	0.47731	118		0.55933	204	Q	40-140	38	Q	30
Cl4-BZ#52	0.27594	0.111	0.42505	134		0.49779	213	Q	40-140	48	Q	30
Cl4-BZ#44	0.06733	0.111	0.17830	100		0.19574	123		40-140	31	Q	30
Cl5-BZ#101	0.01359	0.111	0.12030	96		0.11976	102		40-140	NC		30
Cl6-BZ#153	0.00569	0.111	0.10657	91		0.10477	95		40-140	24		30

## Matrix Spike Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING

**Lab Number:** L1109501

**Project Number:** TO-0010-04

**Report Date:** 07/13/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 QC Batch ID: WG476527-6 WG476527-7 QC  
 Sample: L1109501-07 Client ID: WQ-DPC-002-062811

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
BZ 198	106		110		30-150
DBOB	101		113		30-150

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3								
Cl2-BZ#8	77		79		40-140	3		30
Cl3-BZ#18	75		78		40-140	3		30
Cl3-BZ#28	89		92		40-140	2		30
Cl4-BZ#52	77		80		40-140	5		30
Cl4-BZ#44	82		83		40-140	1		30
Cl4-BZ#66	87		86		40-140	1		30
Cl5-BZ#101	82		81		40-140	2		30
Cl5-BZ#118	93		93		40-140	0		30
Cl5-BZ#105	96		95		40-140	1		30
Cl6-BZ#138	90		90		40-140	0		30
Cl7-BZ#187	87		84		40-140	4		30
Cl6-BZ#128	93		92		40-140	1		30
Cl7-BZ#180	93		91		40-140	2		30
Cl7-BZ#170	93		92		40-140	2		30
Cl8-BZ#195	91		89		40-140	2		30
Cl9-BZ#206	103		101		40-140	2		30
Cl10-BZ#209	92		90		40-140	2		30



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		97		30-150
DBOB	105		107		30-150

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-12,16-17,19-20,24-25 Batch: WG476527-2 WG476527-3

Cl6-BZ#153	84	84	40-140	1	30
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Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
BZ 198	99		97		30-150
DBOB	105		107		30-150

# **INORGANICS & MISCELLANEOUS**

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-04  
 Client ID: WQ-TUR-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.2		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## SAMPLE RESULTS

Lab ID: L1109501-05  
 Client ID: WQ-TSS-001-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 09:40  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	1.80		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-09  
 Client ID: WQ-TUR-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	12		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-10  
 Client ID: WQ-TSS-002-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 10:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	28.7		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

**Lab ID:** L1109501-14  
**Client ID:** WQ-TUR-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	12		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**SAMPLE RESULTS**

**Lab ID:** L1109501-15  
**Client ID:** WQ-TSS-002-062811-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 10:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	19.1		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES





**Project Name:** NEW BEDFORD ENV. MONITORING**Lab Number:** L1109501**Project Number:** TO-0010-04**Report Date:** 07/13/11**SAMPLE RESULTS**

**Lab ID:** L1109501-22  
**Client ID:** WQ-TUR-003-062811  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 06/28/11 12:35  
**Date Received:** 06/28/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	6.4		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-23  
 Client ID: WQ-TSS-003-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 12:35  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	10.8		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-27  
 Client ID: WQ-TUR-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	7.4		NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**SAMPLE RESULTS**

Lab ID: L1109501-28  
 Client ID: WQ-TSS-004-062811  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 06/28/11 13:15  
 Date Received: 06/28/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	17.7		mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES



Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 04,09,14,22,27 Batch: WG476136-1									
Turbidity	ND	NTU	0.40	--	1	-	06/28/11 19:30	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 05,10,15,23,28 Batch: WG476453-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	07/01/11 13:00	4,160.2	ES

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD ENV. MONITORING**Project Number:** TO-0010-04**Lab Number:** L1109501**Report Date:** 07/13/11

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
<b>General Chemistry - Mansfield Lab Associated sample(s): 04,09,14,22,27 Batch: WG476136-2</b>								
Turbidity	101		-		90-110	-		10
<b>General Chemistry - Mansfield Lab Associated sample(s): 05,10,15,23,28 Batch: WG476453-2</b>								
Solids, Total Suspended	99		-		80-120	-		20

Project Name: NEW BEDFORD ENV. MONITORING

Lab Number: L1109501

Project Number: TO-0010-04

Report Date: 07/13/11

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

## Cooler Information Custody Seal

## Cooler

A	Absent
D	Absent
B	Absent
C	Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109501-01A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-01B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-02C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-02D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-03A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-04A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-05A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)
L1109501-06A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06C	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-06D	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07C	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07D	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07E	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07F	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-07G	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-07H	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-08A	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)
L1109501-08B	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)

\*Values in parentheses indicate holding time in days



Project Name: NEW BEDFORD ENV. MONITORING

Project Number: TO-0010-04

Lab Number: L1109501

Report Date: 07/13/11

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1109501-09A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-10A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TSS-160(7)
L1109501-11A	Amber 1000ml unpreserved	A	7	5.3	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-11B	Amber 1000ml unpreserved	C	7	4.8	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12A	Amber 1000ml unpreserved	A	7	5.3	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12B	Amber 1000ml unpreserved	C	7	4.8	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-12C	Glass 60mL unpreserved	C	N/A	4.8	Y	Absent	FILTER()
L1109501-12D	Glass 60mL unpreserved	C	N/A	4.8	Y	Absent	FILTER()
L1109501-13A	Plastic 500ml HNO3 preserved	A	<2	5.3	Y	Absent	HOLD(14)
L1109501-14A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-15A	Plastic 1000ml unpreserved	A	7	5.3	Y	Absent	A2-TSS-160(7)
L1109501-16A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-16B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17B	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-17C	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-17D	Glass 60mL unpreserved	D	N/A	4.7	Y	Absent	FILTER()
L1109501-18A	Plastic 500ml HNO3 preserved	D	<2	4.7	Y	Absent	HOLD(14)
L1109501-19A	Amber 1000ml unpreserved	D	7	4.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-19B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-20C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-20D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-21A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-22A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-23A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)
L1109501-24A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-24B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25A	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25B	Amber 1000ml unpreserved	B	7	3.7	Y	Absent	A2-PCBCONG-8082-NOAA(7)
L1109501-25C	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-25D	Glass 60mL unpreserved	B	N/A	3.7	Y	Absent	FILTER()
L1109501-26A	Plastic 500ml HNO3 preserved	B	<2	3.7	Y	Absent	HOLD(14)
L1109501-27A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TURBIDITY-180.1(2)
L1109501-28A	Plastic 1000ml unpreserved	B	7	3.7	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days





**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD ENV. MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1109501  
**Report Date:** 07/13/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised March 23, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, EPA 200.8, SM2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 7470A, 9040B, 6020, 9010B, 9014 Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B, 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3630C, 3640A)

**New York Department of Health Certificate/Lab ID: 11627. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 9014, 9040B, 120.1, SM2510B, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health Certificate/Lab ID: LAO00299. *NELAP Accredited via LA-DEQ.***

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. *NELAP Accredited.***

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense Certificate/Lab ID: L2217.01.**

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

### Client Information

Client: Woods Hole Group, Inc.  
Address: 81 Technology Park Dr.  
East Falmouth, MA 02536  
Phone: 508-540-8080  
Fax: 508-540-1001  
Email: DWALSH@WHGRP

These samples have been previously analyzed by Alpha

### Project Information

Project Name: New Bedford Env. Monitors  
Project Location: New Bedford, MA  
Project #: TO-0010-04  
Project Manager: Dave Walsh  
ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab: \_\_\_\_\_

ALPHA Job #: W1109501

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

### Billing Information

Same as Client info PO #: \_\_\_\_\_

### Regulatory Requirements/Report Limits

State Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										SAMPLE HANDLING	TOTAL # BOTTLES		
		Date	Time			TPC (Total PCB Congeners)	DPC (Dissolved PCB Congeners)	Metals (Arbitrary)	Turbidity	TSS	Filtration	Done	Not needed	Lab to do Preservation	Lab to do				
1	WQ-TPC-001-062811	6/28/11	09:40	SW	DB	X												Ebb Ref.	2
2	WQ-DPC-001-062811		09:40				X												2
3	WQ-MET-001-062811		09:40					X											1
4	WQ-TUR-001-062811		09:40						X										1
5	WQ-TSS-001-062811		09:40							X									1
6	WQ-TPC-002-062811		10:35			X												Ebb Ref.	2
7	WQ-DPC-002-062811		10:35				X												2
8	WQ-MET-002-062811		10:35					X											1
9	WQ-TUR-002-062811		10:35						X										1
10	WQ-TSS-002-062811		10:35							X									1

Container Type A A P P P  
Preservative A A C A A

Relinquished By: [Signature] Date/Time: 06/28/11 15:30  
Received By: [Signature] Date/Time: 6/29/11 15:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



# MANSFIELD CHAIN OF CUSTODY

PAGE 2 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Client Information

Client: Woods Hole Group  
 Address: 81 Technology Park  
East Falmouth, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1601  
 Email: DWALSH@WHGRP.COM

### Project Information

Project Name: New Bedford Environmental monitoring  
 Project Location: New Bedford, MA  
 Project #: TO-0010-04  
 Project Manager: Dave Walsh  
 ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: L1109501

### Billing Information

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program: (circled) Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
-11	WQ-TPC-002-062811-REP	6/28/11	10:35	SW	DB
-6	WQ-TPC-002-062811-MS	↓	↓	↓	↓
↓	WQ-TPC-002-062811-MSD				
-12	WQ-DPC-002-062811-REP				
-7	WQ-DPC-002-062811-MS				
↓	WQ-DPC-002-062811-MSD				
-8	WQ-MET-002-062811-MSMSD				
-13	WQ-MET-002-062811-REP				
-14	WQ-TUR-002-062811-REP				
-15	WQ-TSS-002-062811-REP				

ANALYSIS						SAMPLE HANDLING	TOTAL # BOTTLES
TPC (Total PCB cong)	DPC (Dissolved PCB cong)	Metals (archive)	Turbidity	TSS	Sample Specific Comments		
X					Ebb Sample QC	2	
X					↓	1	
X						1	
	X					2	
	X					1	
	X					1	
		X				1	
		X				1	
			X			1	
				X		1	

### SAMPLE HANDLING

- Filtration \_\_\_\_\_
  - Done
  - Not needed
  - Lab to do
  - Preservation \_\_\_\_\_
  - Lab to do
- (Please specify below)

Container Type	A	A	P	P	P
Preservative	A	A	C	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
<u>William J. [Signature]</u>	<u>6/28/11 15:30</u>	<u>[Signature]</u>	<u>6/28/11 15:30</u>

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



# MANSFIELD CHAIN OF CUSTODY

PAGE 3 OF 4

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Client Information

Client: Woods Hole Group Inc.  
 Address: 81 Technology Park Dr.  
E. Falmouth, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1001  
 Email: dwalsh@whgrp.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

## PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS					Sample Specific Comments	TOTAL # BOTTLES					
		Date	Time			TPL (Total PCB congeners)	DPC (Dissolved PCB congeners)	METALS (As, Hg, Pb, Cu, Cr, Ni, Mn, Fe, Zn, Cd)	Turbidity	TSS							
16-18	EB-001-062811	6/28/11	1245	SW	DB	X	X	X				Equipment Blank	5				
19	WQ-TPL-003-062811	↓	1235	↓	↓	X						Flood Ref	↓	2			
20	WQ-DPC-003-062811								X							2	
21	WQ-MET-003-062811										X					1	
22	WQ-TUR-003-062811													X		1	
23	WQ-TUR-003-062811													X		1	
24	WQ-TPL-004-062811					1315			X							Flood Sample	2
25	WQ-DPC-004-062811									X							2
26	WQ-MET-004-062811										X						1
27	WQ-TUR-004-062811													X			1

Container Type	A	A	P	P	P
Preservative	A	A	C	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
<i>William J. O'Neil</i>	06/28/11 1530	<i>[Signature]</i>	6/28/11 1530

Date Rec'd in Lab: \_\_\_\_\_  
 ALPHA Job #: L1109501

Report Information - Data Deliverables  
 FAX  EMAIL  
 ADEx  Add'l Deliverables

Billing Information  
 Same as Client info PO #: \_\_\_\_\_

Regulatory Requirements/Report Limits  
 State/Fed Program: \_\_\_\_\_ Criteria: \_\_\_\_\_

Turn-Around Time  
 Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

**SAMPLE HANDLING**

Filtration \_\_\_\_\_

Done

Not needed

Lab to do

Preservation \_\_\_\_\_

Lab to do

(Please specify below)

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.





# ESI

---

EnviroSystems, Inc.  
P.O. Box 778  
Hampton, NH 03843-0778  
603-926-3345

July 26, 2011

Mr. Dave Walsh  
Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

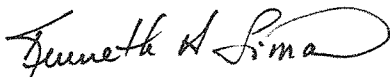
Dear Mr. Walsh;

Enclosed please find two (2) copies of our report evaluating the toxicity of samples received as part of the New Bedford Harbor OU 1 dredge monitoring program for the 2011 sampling period. This report evaluates results of five (5) surface water samples collected on June 28, 2011 in acute and chronic exposure toxicity tests using the mysid shrimp, *Americamysis bahia*, and the purple sea urchin, *Arbacia punctulata*.

Please do not hesitate to call me, Kirk Cram or Petra Karbe should you have any questions regarding the report.

Sincerely,

EnviroSystems, Incorporated

  
Kenneth A. Simon  
President

Enclosure

Report; Two (2) Copies  
Study Number 21159-11-06

**Biomonitoring of Surface Water Samples  
New Bedford Harbor  
New Bedford, Massachusetts**

**June 28, 2011 Sampling Event**

**NED ACOE Job Number: TO-0010-04**

**Task Order No.: ESI0007**

Prepared for:

Woods Hole Group, Inc.  
81 Technology Park Drive  
Falmouth, Massachusetts 02536

Prepared by:

EnviroSystems, Incorporated  
1 Lafayette Road  
Hampton, New Hampshire 03843

June 2011  
Reference Number: WHG NBH OU1 21159-11-06

# Biomonitoring of Surface Water Samples New Bedford Harbor, New Bedford, Massachusetts

June 28, 2011 Sampling Event  
NED ACOE Job Number: TO-0010-04

## 1.0 INTRODUCTION

This report provides a summary of data generated from acute and chronic exposure assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on five grab surface water samples collected on June 28, 2011 from specified areas in the harbor. Samples were collected in the vicinity of dredging operations under the supervision of Woods Hole Group, Inc. personnel from the Falmouth, Massachusetts office and were evaluated "As Received" without additional dilutions. Testing was based on programs and protocols developed by the US EPA (2002) and included the following assays; 48 hour acute and 7 day chronic assays conducted with the mysid shrimp, *Americamysis bahia*, and 60 minute chronic fertilization assays conducted with the purple sea urchin, *Arbacia punctulata*. Assay design included a laboratory control treatment. All assays were conducted by ESI at its Hampton, New Hampshire facility.

## 2.0 MATERIALS AND METHODS

### 2.1 General Methods

Toxicological and analytical protocols used in this program followed procedures primarily designed by the EPA to provide standard approaches for the evaluation of toxicological effects of discharges on aquatic organisms, and for the analysis of water samples. See Section 4.0 for a list of references.

### 2.2 Test Species

*A. bahia* were obtained from cultures maintained by Aquatic Research Organisms (ARO), Hampton, New Hampshire. Juvenile shrimp were collected daily, isolated, and placed in a rearing tank. Holding tanks were maintained in a flow-through culture mode at a temperature of  $25\pm 2^{\circ}\text{C}$ . At the start of the assays the mysids were <5 days old for the acute evaluation and 7 days old for the chronic evaluation. Juveniles were fed  $\leq 24$  hour old brine shrimp on a daily basis. Water temperature, salinity, and pH were monitored on a daily basis. Prior to testing, organisms were siphoned from the rearing tanks to a holding vessel, and then transferred to test chambers using a large bore pipet, minimizing the amount of water added to test solutions.

*A. punctulata* adults were from cultures maintained by ESI. Original stock was obtained from commercial supply. Male and female urchins are maintained in separate chambers as recommended by protocol (EPA 2002) and ESI. Adult urchins were induced to spawn by the injection of a potassium chloride solution. The viability of gametes obtained was determined prior to their addition to the test solutions. Eggs and/or sperm that would not result in a fertilized egg were rejected from the pool of gametes used in the assay.

### 2.3 Surface Water Samples and Laboratory Control Water

Five grab surface water samples were collected by Woods Hole Group, Inc. staff on June 28, 2011 in New Bedford Harbor. Samples were placed in 10 L polyethylene cubitainers for shipment to the laboratory. Sample receipt information is shown in Table 1.

Prior to testing, samples were evaluated to document salinity, conductivity, and total residual chlorine. Total residual chlorine was measured by amperometric titration (MDL 0.02 mg/L). When necessary, the salinity of samples for the *A. bahia* chronic exposure assays were adjusted to  $25\pm 2\text{‰}$  while samples used for the *A. punctulata* assays were adjusted to  $30\pm 2\text{‰}$  using commercial sea salts. Samples with "as received" salinity above these levels were not adjusted. A summary of "As Received" data are presented in Table 2.

Laboratory control water used for the mysid and sea urchin assays was collected from the

Hampton/Seabrook Estuary. This water is classified as SA-1 and has been used to culture marine test organisms since 1981.

## 2.4 Bioassays

### 2.4.1 *Americamysis bahia* Acute Exposure Bioassay

The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity test was conducted at  $25 \pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Test chambers for the acute assay were 250 mL glass beakers containing 200 mL test solution in each of 4 replicates with 10 organisms/replicate. Survival and dissolved oxygen were measured daily in all replicates and pH, temperature, and salinity were measured daily in one replicate of each test treatment. Specific conductance was measured in one replicate of each test concentration at the start of the assay. Mysids were not fed during the assay.

### 2.4.2 *Americamysis bahia* Chronic Exposure Bioassay

Endpoints for the *A. bahia* bioassays were survival and growth. Chronic exposure screening assays were conducted in a static renewal test mode with renewals made at 24-hour intervals. The 7 day assays were conducted at a temperature of  $26 \pm 1^\circ\text{C}$  with a photoperiod of 16:8 hours light:dark. Mysids were maintained in 250 mL beakers containing 150 mL of test solution. Approximately 100 mL of the test solution were replaced each day. The assay incorporated 8 replicates with 5 organisms/replicate. Survival and dissolved oxygen were measured daily in each replicate prior to test solution renewal. Salinity, temperature and pH were recorded in a composite sample of the "old" test solution and in the "new" test solution prior to being added to the test chamber. Incubator temperatures were also recorded on a daily basis.

During the test, mysids were fed  $\leq 24$  hour old *Artemia* nauplii. On Day 7 of the assay, surviving mysids were removed from test solutions, rinsed to remove any surface detritus and salts, and transferred to tared foils and dried for 24 hours at  $104^\circ\text{C}$ . Foils were weighed to the nearest 0.01 mg. Mean dry biomass per individual were obtained by dividing the net dry weight of all surviving organisms by the number of organisms added at the start of the assay.

### 2.4.3 *Arbacia punctulata* Chronic Exposure Fertilization Assays

The endpoint for the *A. punctulata* bioassay was fertilization. Gametes were obtained by potassium chloride injection to induce spawning. Sperm were collected dry, diluted to achieve a concentration of approximately  $5.0 \times 10^7$  sperm/mL in the surface water treatments. Actual sperm concentrations are provided on laboratory bench sheets in Appendix A. Sperm solutions were added to 5 mL aliquots of each sample being evaluated and allowed to remain in the test solutions for 60 minutes before the addition of unfertilized eggs. Each treatment incorporated a total of four (4) replicates. After 20 minutes exposure, the assay was terminated by the addition of 0.2 mL of preservative. Aliquots of preserved solution were counted to determine numbers of fertilized and unfertilized eggs. Fertilization was accepted based on the presence or absence of a fertilization membrane around the egg.

## 2.5 Data Analysis

Statistical analysis of acute and chronic exposure data was completed using CETIS, Comprehensive Environmental Toxicity Testing System, software. The program computes acute and chronic exposure endpoints based on EPA decision tree guidelines specified in individual test methods. For chronic exposure endpoints statistical significance was accepted at  $\alpha < 0.05$ . The laboratory control was used for both assays to determine whether there were significant reductions in survival or fertilization as compared to the site samples. If survival in the acute assay was greater than 90%, then a determination of "not significant" was made based on direct observation.

## 2.6 Quality Control

As part of the laboratory quality control program, standard reference toxicant assays are completed on a regular basis for each test species. These results, summarized in Table 3, provide relative health and response data while allowing for comparison with historic data sets.

### 3.0 RESULTS SUMMARY

Tables 4 and 5 provide summaries of survival, growth and fertilization endpoints and associated statistical analyses for *A. bahia* and *A. punctulata* for the June 28, 2011 sampling events. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

#### 3.1 *Americamysis bahia* Acute Exposure Bioassay

Minimum test acceptability criteria for the acute exposure bioassay require  $\geq 90\%$  survival in the control concentration. Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

#### 3.2 *Americamysis bahia* Chronic Exposure Bioassay

Minimum test acceptability criteria for the chronic exposure bioassay require  $\geq 80\%$  survival and a minimum weight of 0.2 mg per individual in the control concentrations. Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

#### 3.3 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punctulata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Table 5 for test acceptability and data summary.

### 4.0 REFERENCES

APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20<sup>th</sup> edition. Washington D.C.

US EPA. 2002. *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*. Fourth Edition. EPA-821-R-02-012.

US EPA. 2002. *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. Fourth Edition. EPA-821-R-02-013.

**Table 1. Sample Receipt Summary.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Type of Sample	Matrix	Collection		Receipt	
				Date	Time	Date	Time
WQ-TOX-001-062811	21159-001	Grab	Water	06/28/11	0940	06/28/11	1719
WQ-TOX-002-062811	21159-002	Grab	Water	06/28/11	1035	06/28/11	1719
WQ-TOX-002-062811-REP	21159-003	Grab	Water	06/28/11	1035	06/28/11	1719
WQ-TOX-003-062811	21159-004	Grab	Water	06/28/11	1235	06/28/11	1719
WQ-TOX-004-062811	21159-005	Grab	Water	06/28/11	1315	06/28/11	1719

**Table 2 Summary of "As Received" Sample Physical and Chemical Characteristics.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Ammonia* (mg/L)	pH (SU)	Salinity (‰)	Total Residual Chlorine (mg/L)
WQ-TOX-001-062811	21159-001	<0.1	7.02	9	<0.02
WQ-TOX-002-062811	21159-002	<0.1	8.05	15	<0.02
WQ-TOX-002-062811-REP	21159-003	<0.1	7.96	16	<0.02
WQ-TOX-003-062811	21159-004	<0.1	7.63	27	<0.02
WQ-TOX-004-062811	21159-005	<0.1	8.52	16	<0.02

**COMMENTS:**

\* Ammonia samples were sub-sampled at ESI on June 29, 2011.

**Table 3 Reference Toxicant Summary.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Date	Endpoint	Value	Historic Mean/ Central Tendency	Acceptable Range	Reference Toxicant	
<i>A. bahia</i>						
06/21/11	Survival	LC-50 - 48 Hr	29.1*	22.1	16.8 - 27.4	SDS (mg/L)
06/21/11	Survival	C-NOEC	15.0	15.0	10.0 - 25.0	SDS (mg/L)
06/21/11	Growth	C-NOEC	15.0	10.0	5.0 - 15.0	SDS (mg/L)
<i>A. punctulata</i>						
06/09/11	Fertilization	C-NOEC	<1.0**	10.0	5.0 - 20.0	Copper (µg/L)
06/09/11	Fertilization	IC-25	20.4	29.1	0 - 69.8	Copper (µg/L)

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

\* Normal Acceptance Limits set at  $\pm 2$  Std Dev of historic mean; maximum limits are  $\pm 3$  Std of historic mean. The  $\pm 3$  limit is acceptable, but considered high. If  $\pm 3$  limit is utilized value is noted.

\*\* Normal Acceptance Limits set at  $\pm 1$  concentration surrounding the central tendency. Value is outside of acceptable range.

**Table 4. Summary of Acute Exposure Assay: *A. bahia*.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Field ID	ESI Code	Percent Survival	Significant Difference vs. Lab?
Laboratory Control	21159-000	100%	No
WQ-TOX-001-062811	21159-001	100%	No
WQ-TOX-002-062811	21159-002	97.5%	No
WQ-TOX-002-062811-REP	21159-003	100%	No
WQ-TOX-003-062811	21159-004	100%	No
WQ-TOX-004-062811	21159-005	100%	No



**Table 5. Summary of Chronic Exposure Assays: *A. bahia* and *A. punctulata*.  
New Bedford Harbor Dredge Monitoring. June 28, 2011.**

Sample ID	ESI Code	Reps	Mean	Min	Max	CV	Significant Difference vs p Value	Lab
<i>Americamysis bahia</i>			Survival					
Laboratory Control	21159-000		90.0%	80.0%	100.0%	11.9%	-	-
WQ-TOX-001-062811	21159-001	8	80.0%	60.0%	100.0%	18.9%	0.0769	NO
WQ-TOX-002-062811	21159-002		85.0%	60.0%	100.0%	20.9%	0.2633	NO
WQ-TOX-002-062811-REP	21159-003		97.5%	80.0%	100.0%	7.3%	0.9399	NO
WQ-TOX-003-062811	21159-004		92.5%	80.0%	100.0%	11.2%	0.6395	NO
WQ-TOX-004-062811	21159-005		82.5%	60.0%	100.0%	20.2%	0.1572	NO
<i>Americamysis bahia</i>			Growth - Biomass					
Laboratory Control	21159-000		33.8%	22.4%	45.6%	26.8%	-	-
WQ-TOX-001-062811	21159-001	8	29.3%	16.8%	50.6%	40.1%	0.2028	NO
WQ-TOX-002-062811	21159-002		32.8%	19.8%	46.8%	29.9%	0.4177	NO
WQ-TOX-002-062811-REP	21159-003		38.8%	29.4%	47.8%	18.2%	0.8807	NO
WQ-TOX-003-062811	21159-004		45.1%	21.2%	72.4%	32.1%	0.9582	NO
WQ-TOX-004-062811	21159-005		46.5%	31.8%	67.2%	28.5%	0.9787	NO
<i>Americamysis bahia</i>			Growth - Dry Weight					
Laboratory Control	21159-000	8	37.3%	28.0%	49.0%	21.5%	-	-
<i>Arbacia punctulata*</i>			Portion Fertilized					
Laboratory Control	21159-000		88.0%	85.0%	91.0%	3.4%	-	-
WQ-TOX-001-062811	21159-001	4	33.7%	13.0%	46.0%	42.5%	0.0002	YES
WQ-TOX-002-062811	21159-002		29.0%	22.0%	35.0%	18.5%	<0.0001	YES
WQ-TOX-002-062811-REP	21159-003		29.0%	19.0%	34.0%	23.7%	<0.0001	YES
WQ-TOX-003-062811	21159-004		7.8%	4.0%	10.0%	33.9%	<0.0001	YES
WQ-TOX-004-062811	21159-005		75.8%	55.0%	86.0%	18.6%	0.055	NO

**COMMENTS:**

\* The *A. punctulata* assay was run 2 days after the samples were collected which was outside of the 36 hour recommended hold time.

**APPENDIX A**  
**SUPPORT DATA**

<b>Contents</b>	<b># Pages</b>
Methods Summary	1
Study 21159: Sample Date June 28, 2011	
<i>A. bahia</i> Bench Sheets & Statistical Analysis Report	25
<i>A. punctulata</i> Bench Sheets and Statistical Analysis Report	8
Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Records	6
Analytical Chemistry Report	1
Sample Receipt Records	1
Chain of Custody and Organism Shipping Information	1
Total Appendix Pages	43

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

Parameter	Method
<b>Acute Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-012 2002.0
<i>Daphnia pulex</i>	EPA-821-R-02-012 2021.0
<i>Pimephales promelas</i>	EPA-821-R-02-012 2000.0
<i>Americamysis bahia</i>	EPA-821-R-02-012 2007.0
<i>Menidia beryllina</i>	EPA-821-R-02-012 2006.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-012 2004.0
<b>Chronic Exposure Bioassays:</b>	
<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013 1002.0
<i>Pimephales promelas</i>	EPA-821-R-02-013 1000.0
<i>Cyprinodon variegatus</i>	EPA-821-R-02-014 1004.0
<i>Menidia beryllina</i>	EPA-821-R-02-014 1006.0
<i>Americamysis bahia</i>	EPA-821-R-02-014 1007.0
<i>Arbacia punctulata</i>	EPA-821-R-02-014 1008.0
<i>Champia parvula</i>	EPA-821-R-02-014 1009.0
<b>Trace Metals:</b>	
Trace Metals	EPA 200.7/SW 6010 and EPA 200.8/SW 6020
Hardness	Standard Methods 20 <sup>th</sup> Edition - Method 2340 B
<b>Wet Chemistries:</b>	
Alkalinity	EPA 310.2
Chlorine, Residual	Standard Methods 20 <sup>th</sup> Edition - Method 4500CLD
Total Organic Carbon	Standard Methods 20 <sup>th</sup> Edition - Method 5310C
Specific Conductance	Standard Methods 20 <sup>th</sup> Edition - Method 2510B
Nitrogen - Ammonia	Standard Methods 20 <sup>th</sup> Edition - Method 4500NH3G
pH	Standard Methods 20 <sup>th</sup> Edition - Method 4500H+B
Solids, Total (TS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 B
Solids, Total Dissolved (TDS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 C
Solids, Total Suspended (TSS)	Standard Methods 20 <sup>th</sup> Edition - Method 2540 D
Dissolved Oxygen	Standard Methods 20 <sup>th</sup> Edition - Method 4500-O G

Please visit our web site at [www.envirosystems.com](http://www.envirosystems.com) for a copy of our NH NELAP Accreditation and Massachusetts State Certification.

ACUTE BIOASSAY DATA SUMMARY

STUDY: 21159		"AS RECEIVED" EFFLUENT AND DILUENT CHEMISTRIES								
CLIENT: Woods Hole Group	TEST ORGANISM: <i>A. bahia</i>		TRC	TS/TSS	AMM	TOC	T.METAL	SAL	pH	S/C
SAMPLE: New Bedford Harbor	ORGANISM SUPPLIER/BATCH/AGE: See Organism Culture Sheet	EFF								
		DIL								

CONC	REP	SURVIVAL			DO (mg/L)			pH (SU)			TEMP (°C)			SALINITY (ppt)			S/C (µmhos/cm)
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0
LAB	A	10	10	10	7.3	4.9	4.6	8.02	7.75	7.64	25	25	24	25	25	25	39200
	B	10	10	10	7.3	5.4	4.6										
	C	10	10	10	7.3	5.8	4.8										
	D	10	10	10	7.3	5.8	4.8										
-001	A	10	10	10	7.6	5.9	6.7	7.86	7.91	7.78	25	25	24	25	26	26	38940
	B	10	10	10	7.4	5.9	4.7										
	C	10	10	10	7.6	5.5	4.8										
	D	10	10	10	7.6	5.6	4.9										
-002	A	10	10	10	8.2	6.3	5.2	8.06	7.99	7.83	25	25	24	25	25	26	38980
	B	10	10	10	8.2	6.2	4.6										
	C	10	10	10	8.2	6.2	4.7										
	D	10	10	9	8.2	6.1	5.0										
-003	A	10	10	10	8.2	6.2	5.3	8.06	8.02	7.87	25	25	24	25	25	26	39110
	B	10	10	10	8.2	6.3	5.6										
	C	10	10	10	8.2	6.2	4.7										
	D	10	10	10	8.2	6.1	5.3										

DATE	6/29	6/30/11	7/1	6/29/11	6/30/11	7/1
TIME	1555	1410	1305	1545	1400	1240
INITIALS	CS	CS	LB	CS	CS	LB





rec  
6/28/11

# Aquatic Research Organisms

## DATA SHEET

### I. Organism History

Species AMERICAMYSIS BABIA

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-25-11 Receipt date \_\_\_\_\_

Lot number 062511MS Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity ~27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other ENCAP SHRIMP DIET

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

### IV. Shipping Information

Client: ESL # of Organisms 48+

Carrier: \_\_\_\_\_ Date shipped 6-28-11

Biologist: Mark J. ...

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#		
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)						
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Lab Control	A	5	5	5	5	5	4	4	4	6.3	6.3	6.3	5.8	6.2	6.8	4.2
	B	5	5	5	5	5	4	4	4	6.2	5.9	6.4	6.0	6.3	6.7	4.1
	C	5	5	5	5	4	4	4	4	6.2	5.9	6.4	5.6	5.9	6.8	3.7
	D	5	5	5	5	5	5	5	5	6.1	5.9	6.4	5.5	6.0	6.6	3.8
	E	5	5	5	4	4	4	4	4	6.1	6.0	6.5	5.7	5.7	6.0	4.2
	F	5	5	5	5	5	5	5	5	6.1	5.9	6.6	5.8	5.9	6.5	4.0
	G	5	5	5	5	5	5	5	5	6.1	5.8	6.6	5.4	6.0	6.4	2.8
	H	5	5	5	5	5	5	5	5	6.0	5.6	6.6	5.2	6.1	6.3	3.0
-001	A	5	5	5	5	5	5	4	4	6.1	5.7	6.6	5.3	5.6	6.3	4.6
	B	5	5	5	5	5	5	5	5	6.1	5.7	6.5	5.0	6.0	6.3	4.4
	C	5	5	5	5	5	5	4	4	6.0	5.8	6.5	5.0	5.7	6.3	4.1
	D	5	5	5	4	4	4	3	3	6.0	5.7	6.6	5.0	5.8	6.3	4.1
	E	5	5	4	4	4	4	4	4	6.1	5.9	6.7	5.4	5.7	6.3	4.4
	F	5	5	5	5	4	4	3	3	6.2	6.0	6.5	5.5	5.6	6.3	4.3
	G	5	5	5	5	5	5	5	5	6.2	5.9	6.5	5.4	5.9	6.2	4.2
	H	5	5	5	5	5	5	4	4	6.2	5.9	6.5	5.3	5.6	6.3	4.6
-002	A	5	4	4	4	4	4	4	4	6.3	5.3	6.5	5.6	5.4	6.0	4.3
	B	5	5	4.5	5	5	5	5	5	6.2	5.5	6.3	5.9	5.2	5.8	4.1
	C	5	5	5	5	5	5	5	5	6.0	5.5	6.3	5.5	5.3	5.9	4.2
	D	5	5	5	5	5	5	5	5	6.0	5.4	6.2	5.0	5.4	6.1	4.6
	E	5	5	4	4	4	3	3	3	6.0	5.4	6.3	5.2	5.6	6.3	4.8
	F	5	5	5	5	5	5	5	5	6.1	4.9	6.2	5.3	5.5	5.8	4.5
	G	5	5	5	5	5	5	4	3	6.1	5.0	6.1	5.1	5.4	5.8	4.1
	H	5	5	5	5	5	5	4	4	6.1	5.2	6.2	5.2	5.3	5.8	4.0
INC TEMP:		26	25	25	25	25	26	26	25							
DATE:		6/29/11	6/30/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6							
TIME:		1615	1120	1045	0935	1220	1200	1205	1120							
INITIALS:		W	CS	W	CS	JS	JS	CS	CS							

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SURVIVAL & OLD WATER QUALITIES**

STUDY: 21154		CLIENT: Woods Hole Group			LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY				ORGANISM BATCH/LOT#		
		NUMBER OF SURVIVORS								OLD DISSOLVED OXYGEN (mg/L)						
SAMPLE	Rep	0	1	2	3	4	5	6	7	1	2	3	4	5	6	7
-003	A	5	5	5	5	5	5	4	4	6.4	5.5	6.1	5.1	5.7	6.0	5.2
	B	5	5	5	5	5	5	5	5	6.3	4.8	6.1	5.0	5.4	5.7	4.9
	C	5	5	5	5	5	5	5	5	6.1	4.9	6.1	5.0	5.6	5.7	4.8
	D	5	5	5	5	5	5	5	5	6.0	5.1	6.0	5.2	5.3	5.8	4.7
	E	5	5	5	5	5	5	5	5	5.9	5.7	6.0	5.4	5.4	6.0	4.7
	F	5	5	5	5	5	5	5	5	6.0	5.5	6.1	5.3	5.6	5.5	4.7
	G	5	5	5	5	5	5	5	5	5.9	5.4	6.2	5.6	5.7	5.4	4.4
	H	5	5	5	5	5	5	5	5	5.9	5.5	6.2	5.4	5.6	5.3	4.2
-004	A	5	5	5	5	5	5	5	5	6.0	5.8	6.2	5.6	5.9	5.9	4.3
	B	5	5	5	5	5	5	5	5	6.1	5.7	6.2	5.7	5.6	6.5	4.4
	C	5	5	5	5	5	5	5	5	6.2	5.6	6.3	5.7	5.8	6.6	4.3
	D	5	5	4	4	4	4	4	4	6.1	5.6	6.4	5.9	6.0	6.5	4.5
	E	5	4	4	4	4	4	4	4	6.1	5.9	6.4	6.0	5.9	6.2	4.8
	F	5	5	5	5	5	5	4	4	6.2	5.8	6.4	6.0	6.0	5.7	4.9
	G	5	5	5	5	5	5	5	5	6.3	5.9	6.5	6.0	5.9	5.5	4.8
	H	5	5	5	5	5	5	5	5	6.3	5.9	6.5	5.9	6.0	5.6	5.0
-005	A	5	5	5	5	5	5	5	5	6.4	6.0	6.5	6.0	6.1	5.7	5.1
	B	5	5	5	4	4	4	4	4	6.6	6.1	6.6	6.3	5.9	5.7	5.0
	C	5	5	5	5	5	5	5	5	6.6	6.0	6.5	5.8	5.8	5.7	4.7
	D	5	5	4	4	4	4	4	3	6.5	5.9	6.5	5.8	5.8	5.8	4.9
	E	5	5	5	5	5	5	5	4	6.5	6.3	6.5	6.0	5.8	6.1	5.0
	F	5	5	5	4	4	4	4	4	6.6	6.0	6.4	6.0	5.7	5.9	4.9
	G	5	5	5	5	5	5	5	5	6.4	5.9	6.4	5.7	5.6	6.0	4.8
	H	5	5	5	5	5	5	4	3	6.2	5.7	6.6	5.8	5.7	5.8	4.8
INC TEMP:		26	25	25	23	25	26	26	25							
DATE:		6/29/11	6/30/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6							
TIME:		1015	1120	1045	0935	1220	1200	1205	1120							
INITIALS:		W	CS	W	CS	SS	SS	CS	CS							



**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:22 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asses
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000	21159-001	0.0769	0.05	Non-Significant Effect	04-8870-9520	Equal Variance t Two-Sample Test
	21159-002	0.2633	0.05	Non-Significant Effect	12-5792-1161	Equal Variance t Two-Sample Test
	21159-003	0.9399	0.05	Non-Significant Effect	15-8420-1292	Equal Variance t Two-Sample Test
	21159-004	0.6395	0.05	Non-Significant Effect	01-1930-9356	Wilcoxon Rank Sum Two-Sample Test
	21159-005	0.1572	0.05	Non-Significant Effect	20-3342-6909	Equal Variance t Two-Sample Test

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-1930-9356	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
04-8870-9520	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
12-5792-1161	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
15-8420-1292	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
20-3342-6909	7d Proportion Survived	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria

**7d Proportion Survived Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.9	0.86	0.94	0.8	1	0.0378	0.107	11.9%	0.0%
21159-001	8	0.8	0.744	0.856	0.6	1	0.0535	0.151	18.9%	11.1%
21159-002	8	0.85	0.784	0.916	0.6	1	0.0627	0.177	20.9%	5.56%
21159-003	8	0.975	0.949	1	0.8	1	0.025	0.0707	7.25%	-8.33%
21159-004	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-2.78%
21159-005	8	0.825	0.763	0.887	0.6	1	0.059	0.167	20.2%	8.33%

**7d Proportion Survived Detail**

Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21159-000	0.8	0.8	0.8	1	0.8	1	1	1
21159-001	0.8	1	0.8	0.6	0.8	0.6	1	0.8
21159-002	0.8	1	1	1	0.6	1	0.6	0.8
21159-003	0.8	1	1	1	1	1	1	1
21159-004	1	1	1	0.8	0.8	0.8	1	1
21159-005	1	0.8	1	0.6	0.8	0.8	1	0.6

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 1 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

<b>Americamysis 7-d Survival, Growth and Fecundity Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 20-3342-6909	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	3.3%

<b>Equal Variance t Two-Sample Test</b>								
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
21159-000		21159-005	1.04	1.76	14	0.144	0.1572	Non-Significant Effect

<b>ANOVA Table</b>							
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>	
Between	0.02892358	0.02892358	1	1.09	0.3145	Non-Significant Effect	
Error	0.3720191	0.0265728	14				
Total	0.4009427	0.05549638	15				

<b>Distributional Tests</b>						
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>	
Variances	Variance Ratio F	2.28	8.89	0.2991	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.899	0.841	0.0787	Normal Distribution	

<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-005	8	0.825	0.762	0.888	0.6	1	0.059	0.167	20.2%	8.33%	

<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-005	8	1.14	1.07	1.21	0.886	1.35	0.068	0.192	16.8%	6.93%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 2 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	01-1930-9356	<b>Endpoint:</b>	7d Proportion Survived			<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:20	<b>Analysis:</b>	Nonparametric-Two Sample			<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	02-2114-4792	<b>Test Type:</b>	Growth-Survival-Fec (7d)			<b>Analyst:</b>					
<b>Start Date:</b>	29 Jun-11 16:15	<b>Protocol:</b>	EPA/821/R-02-014 (2002)			<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	06 Jul-11 11:20	<b>Species:</b>	Americamysis bahia			<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	6d 19h	<b>Source:</b>	ARO - Aquatic Research Organisms, NH			<b>Age:</b>	7 d				
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>						
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	0.3%						
<b>Wilcoxon Rank Sum Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>Ties</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-004	72		14	2	0.6395	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.003544244	0.003544244	1	0.226	0.6420	Non-Significant Effect					
Error	0.2197431	0.01569594	14								
Total	0.2232873	0.01924018	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.07	8.89	0.9343	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.731	0.841	0.0004	Non-normal Distribution						
<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-004	8	0.925	0.886	0.964	0.8	1	0.0366	0.104	11.2%	-2.78%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-004	8	1.26	1.21	1.3	1.11	1.35	0.0436	0.123	9.81%	-2.43%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 3 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test										EnviroSystems, Inc.	
<b>Analysis ID:</b> 15-8420-1292		<b>Endpoint:</b> 7d Proportion Survived			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 14 Jul-11 13:20		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Batch ID:</b> 02-2114-4792		<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>						
<b>Start Date:</b> 29 Jun-11 16:15		<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable						
<b>Ending Date:</b> 06 Jul-11 11:20		<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable						
<b>Duration:</b> 6d 19h		<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d						
<b>Data Transform</b>		<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>			
Angular (Corrected)		0	C > T	Not Run	Sample passes 7d proportion survived endpoint			9.01%			
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-1.66	1.76	14	0.095	0.9399	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.03189819		0.03189819		1	2.74	0.1202	Non-Significant Effect			
Error	0.1630352		0.01164537		14						
Total	0.1949334		0.04354357		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>			<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F			2.29	8.89	0.2977	Equal Variances				
Distribution	Shapiro-Wilk W Normality			0.847	0.841	0.0123	Normal Distribution				
<b>7d Proportion Survived Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%	
21159-003	8	0.975	0.948	1	0.8	1	0.025	0.0707	7.25%	-8.33%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%	
21159-003	8	1.32	1.28	1.35	1.11	1.35	0.0298	0.0842	6.4%	-7.28%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 4 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 12-5792-1161	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	13.9%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21159-000		21159-002	0.65	1.76	14	0.15	0.2633	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01221816	0.01221816	1	0.422	0.5265	Non-Significant Effect
Error	0.40543	0.02895929	14			
Total	0.4176481	0.04117745	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.57	8.89	0.2353	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.85	0.841	0.0136	Normal Distribution

**7d Proportion Survived Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%
21159-002	8	0.85	0.783	0.917	0.6	1	0.0627	0.177	20.9%	5.56%

**Angular (Corrected) Transformed Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%
21159-002	8	1.17	1.09	1.25	0.886	1.35	0.0722	0.204	17.4%	4.51%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:25 (p 5 of 5)

**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Analysis ID:</b> 04-8870-9520	<b>Endpoint:</b> 7d Proportion Survived	<b>CETIS Version:</b> CETISv1.8.0
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes 7d proportion survived endpoint	12.5%

**Equal Variance t Two-Sample Test**

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21159-000		21159-001	1.51	1.76	14	0.134	0.0769	Non-Significant Effect

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.05271749	0.05271749	1	2.27	0.1537	Non-Significant Effect
Error	0.3244313	0.02317367	14			
Total	0.3771488	0.07589116	15			

**Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.86	8.89	0.4315	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.926	0.841	0.2069	Normal Distribution

**7d Proportion Survived Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.9	0.859	0.941	0.8	1	0.0378	0.107	11.9%	0.0%
21159-001	8	0.8	0.742	0.858	0.6	1	0.0535	0.151	18.9%	11.1%

**Angular (Corrected) Transformed Summary**

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	1.23	1.18	1.27	1.11	1.35	0.045	0.127	10.4%	0.0%
21159-001	8	1.11	1.05	1.18	0.886	1.35	0.0614	0.174	15.6%	9.36%

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:26 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asses
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000	21159-001	0.2028	0.05	Non-Significant Effect	06-1142-4024	Equal Variance t Two-Sample Test
	21159-002	0.4177	0.05	Non-Significant Effect	01-9718-1682	Equal Variance t Two-Sample Test
	21159-003	0.8807	0.05	Non-Significant Effect	00-3283-4783	Equal Variance t Two-Sample Test
	21159-004	0.9582	0.05	Non-Significant Effect	00-4343-4248	Equal Variance t Two-Sample Test
	21159-005	0.9787	0.05	Non-Significant Effect	06-9984-3490	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-3283-4783	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
00-4343-4248	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
01-9718-1682	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
06-1142-4024	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
06-9984-3490	Mean Dry Biomass-mg	Control Resp	0.338	0.2 - NL	Yes	Passes Acceptability Criteria
00-3283-4783	Mean Dry Biomass-mg	PMSD	0.212	0.11 - 0.37	Yes	Passes Acceptability Criteria
00-4343-4248	Mean Dry Biomass-mg	PMSD	0.315	0.11 - 0.37	Yes	Passes Acceptability Criteria
01-9718-1682	Mean Dry Biomass-mg	PMSD	0.246	0.11 - 0.37	Yes	Passes Acceptability Criteria
06-1142-4024	Mean Dry Biomass-mg	PMSD	0.273	0.11 - 0.37	Yes	Passes Acceptability Criteria
06-9984-3490	Mean Dry Biomass-mg	PMSD	0.295	0.11 - 0.37	Yes	Passes Acceptability Criteria

Mean Dry Biomass-mg Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.338	0.304	0.372	0.224	0.456	0.0321	0.0907	26.8%	0.0%
21159-001	8	0.293	0.249	0.337	0.168	0.506	0.0415	0.117	40.1%	13.3%
21159-002	8	0.328	0.292	0.365	0.198	0.468	0.0347	0.098	29.9%	2.96%
21159-003	8	0.388	0.362	0.415	0.294	0.478	0.0249	0.0705	18.2%	-14.8%
21159-004	8	0.451	0.397	0.505	0.212	0.724	0.0512	0.145	32.1%	-33.3%
21159-005	8	0.465	0.415	0.514	0.318	0.672	0.0468	0.132	28.5%	-37.4%

Mean Dry Biomass-mg Detail									
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
21159-000	0.226	0.224	0.392	0.43	0.278	0.388	0.456	0.312	
21159-001	0.226	0.506	0.256	0.256	0.404	0.18	0.35	0.168	
21159-002	0.318	0.468	0.452	0.39	0.262	0.262	0.198	0.276	
21159-003	0.294	0.45	0.382	0.462	0.324	0.322	0.478	0.394	
21159-004	0.212	0.392	0.498	0.368	0.46	0.452	0.724	0.5	
21159-005	0.568	0.396	0.582	0.338	0.354	0.49	0.672	0.318	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 1 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 06-9984-3490	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>						
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable						
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable						
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>		
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				29.5%		
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-005	-2.23	1.76	14	0.0999	0.9787	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
Between	0.06400856		0.06400856		1	4.97	0.0426	Significant Effect		
Error	0.1802122		0.0128723		14					
Total	0.2442207		0.07688086		15					
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F		2.13	8.89	0.3405	Equal Variances				
Distribution	Shapiro-Wilk W Normality		0.927	0.841	0.2186	Normal Distribution				
<b>Mean Dry Biomass-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%
21159-005	8	0.465	0.414	0.515	0.318	0.672	0.0468	0.132	28.5%	-37.4%



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 2 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 00-4343-4248	<b>Endpoint:</b> Mean Dry Biomass-mg			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)			<b>Analyst:</b>						
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable						
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia			<b>Brine:</b> Not Applicable						
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH			<b>Age:</b> 7 d						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>		
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint				31.5%		
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-004	-1.86	1.76	14	0.106	0.9582	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
Between	0.050625		0.050625		1	3.47	0.0837	Non-Significant Effect		
Error	0.2043319		0.01459514		14					
Total	0.2549569		0.06522013		15					
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F		2.55	8.89	0.2407	Equal Variances				
Distribution	Shapiro-Wilk W Normality		0.966	0.841	0.7784	Normal Distribution				
<b>Mean Dry Biomass-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%
21159-004	8	0.451	0.396	0.506	0.212	0.724	0.0512	0.145	32.1%	-33.3%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 3 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	00-3283-4783		<b>Endpoint:</b>	Mean Dry Biomass-mg		<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:20		<b>Analysis:</b>	Parametric-Two Sample		<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	02-2114-4792		<b>Test Type:</b>	Growth-Survival-Fec (7d)		<b>Analyst:</b>					
<b>Start Date:</b>	29 Jun-11 16:15		<b>Protocol:</b>	EPA/821/R-02-014 (2002)		<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	06 Jul-11 11:20		<b>Species:</b>	Americamysis bahia		<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	6d 19h		<b>Source:</b>	ARO - Aquatic Research Organisms, NH		<b>Age:</b>	7 d				
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint			21.2%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-1.23	1.76	14	0.0715	0.8807	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.009999692		0.009999692		1	1.52	0.2386	Non-Significant Effect			
Error	0.09240019		0.006600014		14						
Total	0.1023999		0.01659971		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.66	8.89	0.5214	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.925	0.841	0.2049	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-003	8	0.388	0.361	0.415	0.294	0.478	0.0249	0.0705	18.2%	-14.8%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 4 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test						EnviroSystems, Inc.					
<b>Analysis ID:</b> 01-9718-1682	<b>Endpoint:</b> Mean Dry Biomass-mg		<b>CETIS Version:</b> CETISv1.8.0			<b>Official Results:</b> Yes					
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample										
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>			<b>Diluent:</b> Not Applicable					
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)					<b>Brine:</b> Not Applicable					
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia					<b>Age:</b> 7 d					
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH										
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint			24.6%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-002	0.212	1.76	14	0.0832	0.4177	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.0003999876		0.0003999876		1	0.0449	0.8353	Non-Significant Effect			
Error	0.1248565		0.008918321		14						
Total	0.1252565		0.009318308		15						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		1.17	8.89	0.8439	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.925	0.841	0.2003	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%	
21159-002	8	0.328	0.291	0.366	0.198	0.468	0.0347	0.098	29.9%	2.96%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:27 (p 5 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 06-1142-4024	<b>Endpoint:</b> Mean Dry Biomass-mg		<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>		<b>PMSD</b>				
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint		27.3%				
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-001	0.858	1.76	14	0.0924	0.2028	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>				
Between	0.008100304	0.008100304	1	0.736	0.4055	Non-Significant Effect				
Error	0.1541797	0.01101284	14							
Total	0.16228	0.01911314	15							
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F	1.68	8.89	0.5121	Equal Variances					
Distribution	Shapiro-Wilk W Normality	0.927	0.841	0.2171	Normal Distribution					
<b>Mean Dry Biomass-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.338	0.304	0.373	0.224	0.456	0.0321	0.0907	26.8%	0.0%
21159-001	8	0.293	0.249	0.338	0.168	0.506	0.0415	0.117	40.1%	13.3%

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:29 (p 1 of 1)  
**Test Code:** 21159Ab | 11-0623-5135

**Americamysis 7-d Survival, Growth and Fecundity Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)	<b>Analyst:</b>
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH	<b>Age:</b> 7 d

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	02-6180-4729	29 Jun-11 12:00	29 Jun-11 12:00	4h (1 °C)	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	31h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	30h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	28h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	27h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control; 21159-000		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000	21159-001	0.4121	0.05	Non-Significant Effect	10-5659-4112	Equal Variance t Two-Sample Test
	21159-002	0.6218	0.05	Non-Significant Effect	02-8418-4983	Equal Variance t Two-Sample Test
	21159-003	0.7461	0.05	Non-Significant Effect	14-9790-3655	Equal Variance t Two-Sample Test
	21159-004	0.9650	0.05	Non-Significant Effect	03-9581-3702	Equal Variance t Two-Sample Test
	21159-005	0.9999	0.05	Non-Significant Effect	15-4061-8364	Equal Variance t Two-Sample Test

Mean Dry Weight-mg Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	8	0.373	0.343	0.403	0.28	0.49	0.0284	0.0804	21.5%	0.0%
21159-001	8	0.363	0.322	0.403	0.21	0.506	0.0379	0.107	29.6%	2.87%
21159-002	8	0.385	0.359	0.411	0.262	0.468	0.0246	0.0697	18.1%	-3.19%
21159-003	8	0.397	0.375	0.42	0.322	0.478	0.0214	0.0605	15.2%	-6.48%
21159-004	8	0.491	0.435	0.546	0.212	0.724	0.0527	0.149	30.4%	-31.5%
21159-005	8	0.558	0.532	0.584	0.443	0.672	0.0249	0.0705	12.6%	-49.5%

Mean Dry Weight-mg Detail								
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21159-000	0.282	0.28	0.49	0.43	0.347	0.388	0.456	0.312
21159-001	0.282	0.506	0.32	0.427	0.505	0.3	0.35	0.21
21159-002	0.398	0.468	0.452	0.39	0.437	0.262	0.33	0.345
21159-003	0.368	0.45	0.382	0.462	0.324	0.322	0.478	0.394
21159-004	0.212	0.392	0.498	0.46	0.575	0.565	0.724	0.5
21159-005	0.568	0.495	0.582	0.563	0.443	0.612	0.672	0.53

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 1 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 15-4061-8364	<b>Endpoint:</b> Mean Dry Weight-mg				<b>CETIS Version:</b> CETISv1.8.0					
<b>Analyzed:</b> 14 Jul-11 13:21	<b>Analysis:</b> Parametric-Two Sample				<b>Official Results:</b> Yes					
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)				<b>Analyst:</b>					
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)				<b>Diluent:</b> Not Applicable					
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia				<b>Brine:</b> Not Applicable					
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH				<b>Age:</b> 7 d					
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint			17.8%			
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-005	-4.89	1.76	14	0.0666	0.9999	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
Between	0.1367761		0.1367761		1	23.9	0.0002	Significant Effect		
Error	0.08002669		0.005716192		14					
Total	0.2168028		0.1424923		15					
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F		1.3	8.89	0.7365	Equal Variances				
Distribution	Shapiro-Wilk W Normality		0.959	0.841	0.6501	Normal Distribution				
<b>Mean Dry Weight-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%
21159-005	8	0.558	0.531	0.585	0.443	0.672	0.0249	0.0705	12.6%	-49.5%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 2 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b>	03-9581-3702		<b>Endpoint:</b>	Mean Dry Weight-mg		<b>CETIS Version:</b>	CETISv1.8.0			
<b>Analyzed:</b>	14 Jul-11 13:21		<b>Analysis:</b>	Parametric-Two Sample		<b>Official Results:</b>	Yes			
<b>Batch ID:</b>	02-2114-4792		<b>Test Type:</b>	Growth-Survival-Fec (7d)		<b>Analyst:</b>				
<b>Start Date:</b>	29 Jun-11 16:15		<b>Protocol:</b>	EPA/821/R-02-014 (2002)		<b>Diluent:</b>	Not Applicable			
<b>Ending Date:</b>	06 Jul-11 11:20		<b>Species:</b>	Americamysis bahia		<b>Brine:</b>	Not Applicable			
<b>Duration:</b>	6d 19h		<b>Source:</b>	ARO - Aquatic Research Organisms, NH		<b>Age:</b>	7 d			
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>					
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	28.3%					
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-004	-1.96	1.76	14	0.105	0.9650	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>				
Between	0.05522501	0.05522501	1	3.85	0.0699	Non-Significant Effect				
Error	0.2008158	0.01434399	14							
Total	0.2560409	0.06956901	15							
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F	3.44	8.89	0.1256	Equal Variances					
Distribution	Shapiro-Wilk W Normality	0.96	0.841	0.6567	Normal Distribution					
<b>Mean Dry Weight-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%
21159-004	8	0.491	0.434	0.547	0.212	0.724	0.0527	0.149	30.4%	-31.5%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 3 of 5)

**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	14-9790-3655	<b>Endpoint:</b>	Mean Dry Weight-mg	<b>CETIS Version:</b>	CETISv1.8.0						
<b>Analyzed:</b>	14 Jul-11 13:20	<b>Analysis:</b>	Parametric-Two Sample	<b>Official Results:</b>	Yes						
<b>Batch ID:</b>	02-2114-4792	<b>Test Type:</b>	Growth-Survival-Fec (7d)	<b>Analyst:</b>							
<b>Start Date:</b>	29 Jun-11 16:15	<b>Protocol:</b>	EPA/821/R-02-014 (2002)	<b>Diluent:</b>	Not Applicable						
<b>Ending Date:</b>	06 Jul-11 11:20	<b>Species:</b>	Americamysis bahia	<b>Brine:</b>	Not Applicable						
<b>Duration:</b>	6d 19h	<b>Source:</b>	ARO - Aquatic Research Organisms, NH	<b>Age:</b>	7 d						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>						
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	16.8%						
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	-0.68	1.76	14	0.0627	0.7461	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.002340004	0.002340004	1	0.462	0.5078	Non-Significant Effect					
Error	0.07091493	0.005065353	14								
Total	0.07325494	0.007405357	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.76	8.89	0.4713	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.934	0.841	0.2815	Normal Distribution						
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-003	8	0.397	0.374	0.42	0.322	0.478	0.0214	0.0605	15.2%	-6.48%	



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:30 (p 4 of 5)  
**Test Code:** 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.			
<b>Analysis ID:</b> 02-8418-4983	<b>Endpoint:</b> Mean Dry Weight-mg		<b>CETIS Version:</b> CETISv1.8.0							
<b>Analyzed:</b> 14 Jul-11 13:20	<b>Analysis:</b> Parametric-Two Sample		<b>Official Results:</b> Yes							
<b>Batch ID:</b> 02-2114-4792	<b>Test Type:</b> Growth-Survival-Fec (7d)		<b>Analyst:</b>							
<b>Start Date:</b> 29 Jun-11 16:15	<b>Protocol:</b> EPA/821/R-02-014 (2002)		<b>Diluent:</b> Not Applicable							
<b>Ending Date:</b> 06 Jul-11 11:20	<b>Species:</b> Americamysis bahia		<b>Brine:</b> Not Applicable							
<b>Duration:</b> 6d 19h	<b>Source:</b> ARO - Aquatic Research Organisms, NH		<b>Age:</b> 7 d							
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>			
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint			17.8%			
<b>Equal Variance t Two-Sample Test</b>										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-002	-0.316	1.76	14	0.0663	0.6218	Non-Significant Effect		
<b>ANOVA Table</b>										
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
Between	0.000566078		0.000566078		1	0.1	0.7565	Non-Significant Effect		
Error	0.07924668		0.005660477		14					
Total	0.07981276		0.006226555		15					
<b>Distributional Tests</b>										
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>				
Variances	Variance Ratio F		1.33	8.89	0.7149	Equal Variances				
Distribution	Shapiro-Wilk W Normality		0.96	0.841	0.6543	Normal Distribution				
<b>Mean Dry Weight-mg Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%
21159-002	8	0.385	0.359	0.412	0.262	0.468	0.0246	0.0697	18.1%	-3.19%

**CETIS Analytical Report**

Report Date: 14 Jul-11 13:30 (p 5 of 5)

Test Code: 21159Ab | 11-0623-5135

Americamysis 7-d Survival, Growth and Fecundity Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	10-5659-4112	<b>Endpoint:</b>	Mean Dry Weight-mg	<b>CETIS Version:</b>	CETISv1.8.0						
<b>Analyzed:</b>	14 Jul-11 13:20	<b>Analysis:</b>	Parametric-Two Sample	<b>Official Results:</b>	Yes						
<b>Batch ID:</b>	02-2114-4792	<b>Test Type:</b>	Growth-Survival-Fec (7d)	<b>Analyst:</b>							
<b>Start Date:</b>	29 Jun-11 16:15	<b>Protocol:</b>	EPA/821/R-02-014 (2002)	<b>Diluent:</b>	Not Applicable						
<b>Ending Date:</b>	06 Jul-11 11:20	<b>Species:</b>	Americamysis bahia	<b>Brine:</b>	Not Applicable						
<b>Duration:</b>	6d 19h	<b>Source:</b>	ARO - Aquatic Research Organisms, NH	<b>Age:</b>	7 d						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>						
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	22.4%						
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-001	0.226	1.76	14	0.0835	0.4121	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>					
Between	0.0004605302	0.0004605302	1	0.0512	0.8242	Non-Significant Effect					
Error	0.1258034	0.008985958	14								
Total	0.1262639	0.009446489	15								
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>						
Variances	Variance Ratio F	1.78	8.89	0.4649	Equal Variances						
Distribution	Shapiro-Wilk W Normality	0.946	0.841	0.4259	Normal Distribution						
<b>Mean Dry Weight-mg Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	8	0.373	0.343	0.404	0.28	0.49	0.0284	0.0804	21.5%	0.0%	
21159-001	8	0.363	0.322	0.403	0.21	0.506	0.0379	0.107	29.6%	2.87%	

Larval Fish Dry Weight Summary Sheet

Study:	21159	
Client:	Woods Hole Group	
Date/Time/Init:	07/07/11 1050 CS	07/02/11 1055 LB
Conc	Fish and Foil (mg)	Tare Wt (mg)
Lab A	211.87	210.74
Lab B	208.53	207.41
Lab C	211.02	209.06
Lab D	212.14	209.99
Lab E	209.37	207.98
Lab F	211.32	209.38
Lab G	212.46	210.18
Lab H	209.71	208.15
001A	210.18	209.05
001B	209.85	207.32
001C	211.79	210.51
001D	211.01	209.73
001E	211.76	209.74
001F	211.21	210.31
001G	211.54	209.79
001H	208.37	207.53
002A	211.02	209.43
002B	210.61	208.27
002C	212.52	210.26
002D	212.11	210.16
002E	211.35	210.04
002F	210.5	209.19
002G	211.15	210.16
002H	210.58	209.2
003A	211.26	209.79
003B	211.97	209.72
003C	211.87	209.96
003D	212.08	209.77
003E	212.08	210.46
003F	211.3	209.69
003G	211.85	209.46
003H	211.24	209.27
004A	210.46	209.4
004B	210.96	209
004C	212.2	209.71
004D	211.91	210.07
004E	211.92	209.62
004F	212.06	209.8
004G	213.07	209.45
004H	212.32	209.82
005A	212.24	209.4
005B	209.89	207.91
005C	213.04	210.13
005D	211.46	209.77
005E	211.22	209.45
005F	212.39	209.94
005G	213.38	210.02
005H	212.45	210.86

Rec: 6/29/11



# Aquatic Research Organisms

## DATA SHEET

### I. Organism History

Species AMERICAMYSIS bahia

Source: Lab reared  Hatchery reared \_\_\_\_\_ Field collected \_\_\_\_\_

Hatch date 6-22-11 Receipt date \_\_\_\_\_

Lot number 06221145 Strain \_\_\_\_\_

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity ~27 ppt D.O. \_\_\_\_\_ ppm

pH 7.8 su Hardness \_\_\_\_\_ ppm Alkalinity \_\_\_\_\_ ppm

### III. Culture Conditions

Freshwater \_\_\_\_\_ Saltwater  Other \_\_\_\_\_

Recirculating  Flow through \_\_\_\_\_ Static renewal \_\_\_\_\_

DIET: Flake food  Phytoplankton \_\_\_\_\_ Trout chow

Artemia  Rotifers \_\_\_\_\_ YCT \_\_\_\_\_ Other Evening Starfish DIET

Prophylactic treatments: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

### IV. Shipping Information

Client: ESI # of Organisms 240 ±

Carrier: \_\_\_\_\_ Date shipped 6-29-11

Biologist: Mark J. [Signature]

**Arbacia punctulata Chronic Fertilization Assay  
Water Quality and Gamete Preparation Data**

STUDY: 21159	CLIENT: Woods Hole Group	LOCATION: New Bedford	DATE: 6/30/11 INITIALS: UB		
SALINITY ADJUSTMENT RECORD: 1000 mL -001 + 5 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -002 + 5 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -003 + 6 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -004 + 0 g SALT					
SALINITY ADJUSTMENT RECORD: 1000 mL -005 + 16 g SALT					
SALINITY ADJUSTED SAMPLE	D.O. (mg/L)	pH (SU)	SPEC COND (µmhos)	TEMP (°C)	SALINITY (ppt)
ASW Lab Control (UB 6/30/11 Hampton pier)	5.6	8.21	45700	20	30
-001	8.3	7.73	47120	20	31
-002	8.3	7.70	45790	20	30
-003	8.3	7.82	45820	20	30
-004	8.4	7.70	43860	20	28
-005	8.6	8.19	46840	20	30

**METERS USED**

DO meter # 24 DO probe # 89 pH meter # 1097 pH probe # 93 S/C meter # YS130E S/C probe # YS130E  
SALINITY meter # YS130E

DATE & INITIALS FOR GAMETE PREPARATION: 6/30/11 UB

**SPERM DILUTIONS:**

HEMACYTOMETER COUNT, E: 124 X 10<sup>4</sup> = SPM SOLUTION E = 1.24 x 10<sup>6</sup>  
SPERM CONCENTRATIONS: SOLUTION E X 40 = SOLUTION A = 4.96 x 10<sup>7</sup> SPM  
SOLUTION E X 20 = SOLUTION B = 2.48 x 10<sup>7</sup> SPM  
SOLUTION E X 5 = SOLUTION C = 0.20 x 10<sup>6</sup> SPM

**FINAL COUNTS:**

FINAL SPERM COUNT: 4.96 x 10<sup>7</sup>  
FINAL EGG COUNT: 2000

**TEST TIMES:**

SPERM COLLECTED: 1510 1430  
EGGS COLLECTED: 1510 1430  
SPERM ADDED: 1507  
EGGS ADDED: 1607  
FIXATIVE ADDED: 1627

**Arbacia punctulata Chronic Fertilization Assay**

**SAMPLE USE RECORD**

STUDY: 21159		CLIENT: Woods Hole Group New Bedford	
SPECIES: <i>A. punctulata</i>			
		Day: 0	
SAMPLE	Volume Used (mL)	ESI Cube ID	
Lab Control	1000	—	
-001	↓	001	
-002		002	
-003		003	
-004		004	
-005		005	
INITIALS:	LB		
TIME:	1030		
DATE:	8/30/11		

**FERTILIZATION COUNTS**

STUDY	CLIENT	LOCATION	DATE	INITIALS
	Woods Hole Group	New Bedford	8/30/11	Am
	REPLICATE VIAL			
	1	2	3	4
SAMPLE	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL	FERT/TOTAL
Lab Control	85/100	90/100	91/100	86/100
-001	46/100	13/100	38/102	42/109
-002	22/100	35/100	29/100	30/100
-003	19/100	34/100	30/100	33/100
-004	4/100	8/100	10/100	9/100
-005	55/100	86/100	82/100	80/100

**CETIS Summary Report**

**Report Date:** 14 Jul-11 13:47 (p 1 of 1)  
**Test Code:** 21159Ap | 00-0609-4487

**Arbacia Sperm Cell Fertilization Test** **EnviroSystems, Inc.**

<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata	<b>Brine:</b> Not Applicable
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture	<b>Age:</b>

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21159-000	05-4755-5848	30 Jun-11 12:00	30 Jun-11 12:00	3h	Woods Hole Group	Ecological Risk Asse
21159-001	08-3168-8441	28 Jun-11 09:40	28 Jun-11 17:19	53h (1 °C)		
21159-002	14-9751-2647	28 Jun-11 10:35	28 Jun-11 17:19	53h (1 °C)		
21159-003	12-3515-0369	28 Jun-11 10:35	28 Jun-11 17:19	53h (1 °C)		
21159-004	00-1467-9906	28 Jun-11 12:35	28 Jun-11 17:19	51h (1 °C)		
21159-005	17-7214-9563	28 Jun-11 13:15	28 Jun-11 17:19	50h (1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21159-000	Surface Water	New Bedford Harbor Monitoring O	Laboratory Control (Ap); 21159-00		
21159-001	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-001-062811; 21159-001		
21159-002	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811; 21159-002		
21159-003	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-002-062811-REP; 21159		
21159-004	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-003-062811; 21159-004		
21159-005	Surface Water	New Bedford Harbor Monitoring O	WQ-TOX-004-062811; 21159-005		

Sample Code	vs Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21159-000	21159-001	0.0002	0.05	Significant Effect	14-1416-0181	Equal Variance t Two-Sample Test
	21159-002	<0.0001	0.05	Significant Effect	06-7751-0890	Equal Variance t Two-Sample Test
	21159-003	<0.0001	0.05	Significant Effect	17-7229-5531	Equal Variance t Two-Sample Test
	21159-004	<0.0001	0.05	Significant Effect	03-4801-7354	Equal Variance t Two-Sample Test
	21159-005	0.0550	0.05	Non-Significant Effect	13-4815-5589	Equal Variance t Two-Sample Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-4801-7354	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
06-7751-0890	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
13-4815-5589	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
14-1416-0181	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
17-7229-5531	Proportion Fertilized	Control Resp	0.88	0.7 - 1	Yes	Passes Acceptability Criteria
03-4801-7354	Proportion Fertilized	PMSD	0.0527	NL - 0.25	No	Passes Acceptability Criteria
06-7751-0890	Proportion Fertilized	PMSD	0.0568	NL - 0.25	No	Passes Acceptability Criteria
13-4815-5589	Proportion Fertilized	PMSD	0.135	NL - 0.25	No	Passes Acceptability Criteria
14-1416-0181	Proportion Fertilized	PMSD	0.143	NL - 0.25	No	Passes Acceptability Criteria
17-7229-5531	Proportion Fertilized	PMSD	0.0702	NL - 0.25	No	Passes Acceptability Criteria

Proportion Fertilized Summary										
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21159-001	4	0.337	0.283	0.39	0.13	0.46	0.0716	0.143	42.5%	61.7%
21159-002	4	0.29	0.27	0.31	0.22	0.35	0.0268	0.0535	18.5%	67.0%
21159-003	4	0.29	0.264	0.316	0.19	0.34	0.0344	0.0688	23.7%	67.0%
21159-004	4	0.0775	0.0677	0.0873	0.04	0.1	0.0131	0.0263	33.9%	91.2%
21159-005	4	0.758	0.705	0.81	0.55	0.86	0.0703	0.141	18.6%	13.9%

Proportion Fertilized Detail					
Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	
21159-000	0.85	0.9	0.91	0.86	
21159-001	0.46	0.13	0.373	0.385	
21159-002	0.22	0.35	0.29	0.3	
21159-003	0.19	0.34	0.3	0.33	
21159-004	0.04	0.08	0.1	0.09	
21159-005	0.55	0.86	0.82	0.8	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 1 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	13-4815-5589	<b>Endpoint:</b>	Proportion Fertilized			<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:45	<b>Analysis:</b>	Parametric-Two Sample			<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	15-5408-3634	<b>Test Type:</b>	Fertilization			<b>Analyst:</b>					
<b>Start Date:</b>	30 Jun-11 15:07	<b>Protocol:</b>	EPA/821/R-02-014 (2002)			<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	30 Jun-11 16:27	<b>Species:</b>	Arbacia punctulata			<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	80m	<b>Source:</b>	In-House Culture			<b>Age:</b>					
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint			13.5%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-005	1.87	1.94	6	0.159	0.0550	Non-Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.0469663		0.0469663		1	3.51	0.1100	Non-Significant Effect			
Error	0.08022018		0.01337003		6						
Total	0.1271865		0.06033633		7						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		11.9	47.5	0.0718	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.862	0.645	0.1262	Normal Distribution					
<b>Proportion Fertilized Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-005	4	0.758	0.704	0.811	0.55	0.86	0.0703	0.141	18.6%	13.9%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-005	4	1.07	1.01	1.13	0.835	1.19	0.0785	0.157	14.7%	12.6%	



**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 2 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test										EnviroSystems, Inc.	
<b>Analysis ID:</b> 03-4801-7354		<b>Endpoint:</b> Proportion Fertilized			<b>CETIS Version:</b> CETISv1.8.0						
<b>Analyzed:</b> 14 Jul-11 13:45		<b>Analysis:</b> Parametric-Two Sample			<b>Official Results:</b> Yes						
<b>Batch ID:</b> 15-5408-3634		<b>Test Type:</b> Fertilization			<b>Analyst:</b>						
<b>Start Date:</b> 30 Jun-11 15:07		<b>Protocol:</b> EPA/821/R-02-014 (2002)			<b>Diluent:</b> Not Applicable						
<b>Ending Date:</b> 30 Jun-11 16:27		<b>Species:</b> Arbacia punctulata			<b>Brine:</b> Not Applicable						
<b>Duration:</b> 80m		<b>Source:</b> In-House Culture			<b>Age:</b>						
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>				<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint				5.27%			
Equal Variance t Two-Sample Test											
Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)			
21159-000		21159-004	26.8	1.94	6	0.0683	<0.0001	Significant Effect			
ANOVA Table											
Source	Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)			
Between	1.768129		1.768129		1	716	<0.0001	Significant Effect			
Error	0.01480914		0.002468189		6						
Total	1.782938		1.770597		7						
Distributional Tests											
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F		1.38	47.5	0.7995	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.897	0.645	0.2731	Normal Distribution					
Proportion Fertilized Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-004	4	0.0775	0.0675	0.0875	0.04	0.1	0.0131	0.0263	33.9%	91.2%	
Angular (Corrected) Transformed Summary											
Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-004	4	0.279	0.258	0.299	0.201	0.322	0.0267	0.0535	19.2%	77.1%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 3 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test							EnviroSystems, Inc.				
<b>Analysis ID:</b>	17-7229-5531	<b>Endpoint:</b>	Proportion Fertilized			<b>CETIS Version:</b>	CETISv1.8.0				
<b>Analyzed:</b>	14 Jul-11 13:44	<b>Analysis:</b>	Parametric-Two Sample			<b>Official Results:</b>	Yes				
<b>Batch ID:</b>	15-5408-3634	<b>Test Type:</b>	Fertilization			<b>Analyst:</b>					
<b>Start Date:</b>	30 Jun-11 15:07	<b>Protocol:</b>	EPA/821/R-02-014 (2002)			<b>Diluent:</b>	Not Applicable				
<b>Ending Date:</b>	30 Jun-11 16:27	<b>Species:</b>	Arbacia punctulata			<b>Brine:</b>	Not Applicable				
<b>Duration:</b>	80m	<b>Source:</b>	In-House Culture			<b>Age:</b>					
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>				
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint			7.02%				
<b>Equal Variance t Two-Sample Test</b>											
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
21159-000		21159-003	14.3	1.94	6	0.0886	<0.0001	Significant Effect			
<b>ANOVA Table</b>											
<b>Source</b>	<b>Sum Squares</b>		<b>Mean Square</b>		<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>			
Between	0.8517774		0.8517774		1	205	<0.0001	Significant Effect			
Error	0.02494452		0.004157419		6						
Total	0.876722		0.8559349		7						
<b>Distributional Tests</b>											
<b>Attribute</b>	<b>Test</b>		<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F		3	47.5	0.3908	Equal Variances					
Distribution	Shapiro-Wilk W Normality		0.874	0.645	0.1654	Normal Distribution					
<b>Proportion Fertilized Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%	
21159-003	4	0.29	0.264	0.316	0.19	0.34	0.0344	0.0688	23.7%	67.0%	
<b>Angular (Corrected) Transformed Summary</b>											
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>	
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%	
21159-003	4	0.566	0.536	0.596	0.451	0.623	0.0395	0.079	13.9%	53.5%	

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 4 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

Arbacia Sperm Cell Fertilization Test										EnviroSystems, Inc.
<b>Analysis ID:</b>	06-7751-0890		<b>Endpoint:</b>	Proportion Fertilized			<b>CETIS Version:</b>	CETISv1.8.0		
<b>Analyzed:</b>	14 Jul-11 13:44		<b>Analysis:</b>	Parametric-Two Sample			<b>Official Results:</b>	Yes		
<b>Batch ID:</b>	15-5408-3634		<b>Test Type:</b>	Fertilization			<b>Analyst:</b>			
<b>Start Date:</b>	30 Jun-11 15:07		<b>Protocol:</b>	EPA/821/R-02-014 (2002)			<b>Diluent:</b>	Not Applicable		
<b>Ending Date:</b>	30 Jun-11 16:27		<b>Species:</b>	Arbacia punctulata			<b>Brine:</b>	Not Applicable		
<b>Duration:</b>	80m		<b>Source:</b>	In-House Culture			<b>Age:</b>			
<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>			<b>PMSD</b>			
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint			5.68%			
Equal Variance t Two-Sample Test										
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>		
21159-000		21159-002	17.3	1.94	6	0.0731	<0.0001	Significant Effect		
ANOVA Table										
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>				
Between	0.8488871	0.8488871	1	300	<0.0001	Significant Effect				
Error	0.01696688	0.002827814	6							
Total	0.865854	0.851715	7							
Distributional Tests										
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>					
Variances	Variance Ratio F	1.72	47.5	0.6663	Equal Variances					
Distribution	Shapiro-Wilk W Normality	0.973	0.645	0.9209	Normal Distribution					
Proportion Fertilized Summary										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21159-002	4	0.29	0.27	0.31	0.22	0.35	0.0268	0.0535	18.5%	67.0%
Angular (Corrected) Transformed Summary										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21159-002	4	0.567	0.545	0.59	0.488	0.633	0.0299	0.0598	10.5%	53.4%

**CETIS Analytical Report**

**Report Date:** 14 Jul-11 13:46 (p 5 of 5)  
**Test Code:** 21159Ap | 00-0609-4487

<b>Arbacia Sperm Cell Fertilization Test</b>			<b>EnviroSystems, Inc.</b>
<b>Analysis ID:</b> 14-1416-0181	<b>Endpoint:</b> Proportion Fertilized	<b>CETIS Version:</b> CETISv1.8.0	
<b>Analyzed:</b> 14 Jul-11 13:44	<b>Analysis:</b> Parametric-Two Sample	<b>Official Results:</b> Yes	

<b>Batch ID:</b> 15-5408-3634	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 30 Jun-11 15:07	<b>Protocol:</b> EPA/821/R-02-014 (2002)	<b>Diluent:</b> Not Applicable
<b>Ending Date:</b> 30 Jun-11 16:27	<b>Species:</b> Arbacia punctulata	<b>Brine:</b> Not Applicable
<b>Duration:</b> 80m	<b>Source:</b> In-House Culture	<b>Age:</b>

<b>Data Transform</b>	<b>Zeta</b>	<b>Alt Hyp</b>	<b>MC Trials</b>	<b>Test Result</b>	<b>PMSD</b>
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion fertilized endpoint	14.3%

<b>Equal Variance t Two-Sample Test</b>								
<b>Sample Code</b>	<b>vs</b>	<b>Sample Code</b>	<b>Test Stat</b>	<b>Critical</b>	<b>DF</b>	<b>MSD</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>
21159-000		21159-001	7.09	1.94	6	0.167	0.0002	Significant Effect

<b>ANOVA Table</b>							
<b>Source</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>DF</b>	<b>F Stat</b>	<b>P-Value</b>	<b>Decision(α:5%)</b>	
Between	0.741222	0.741222	1	50.3	0.0004	Significant Effect	
Error	0.08842896	0.01473816	6				
Total	0.8296509	0.7559601	7				

<b>Distributional Tests</b>						
<b>Attribute</b>	<b>Test</b>	<b>Test Stat</b>	<b>Critical</b>	<b>P-Value</b>	<b>Decision(α:1%)</b>	
Variances	Variance Ratio F	13.2	47.5	0.0622	Equal Variances	
Distribution	Shapiro-Wilk W Normality	0.86	0.645	0.1214	Normal Distribution	

<b>Proportion Fertilized Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	4	0.88	0.869	0.891	0.85	0.91	0.0147	0.0294	3.35%	0.0%
21159-001	4	0.337	0.282	0.391	0.13	0.46	0.0716	0.143	42.5%	61.7%

<b>Angular (Corrected) Transformed Summary</b>										
<b>Conc-NA</b>	<b>Count</b>	<b>Mean</b>	<b>95% LCL</b>	<b>95% UCL</b>	<b>Min</b>	<b>Max</b>	<b>Std Err</b>	<b>Std Dev</b>	<b>CV%</b>	<b>%Effect</b>
21159-000	4	1.22	1.2	1.24	1.17	1.27	0.0228	0.0456	3.74%	0.0%
21159-001	4	0.61	0.547	0.673	0.369	0.745	0.0828	0.166	27.1%	49.9%

**Americamysis bahia 7 DAY CHRONIC ASSAY  
SAMPLE USE RECORD**

STUDY: 21159		CLIENT: Woods Hole Group									
SPECIES: <i>A. bahia</i>			TEST: chronic renewal								
Sample	Day: 0		Day: 1		Day: 2		Day	Date	Time		
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID					
Lab Control	1600	n/a	1200	n/a	1200	n/a	0	6/29/11	1545 1600 <sup>cs</sup>		
-001	↓	-001	↓	-001	↓	-	1	6/30/11	1240		
-002	↓	-002	↓	-002	↓	-	2	7/1/11	1135		
-003	↓	-003	↓	-003	↓	-	3	7/2/11	1000		
-004	↓	-004	↓	-004	↓	-	4	7/3	1240		
-005	↓	-005	↓	-005	↓	-	5	7/4	1220		
							6	7/5	1230		
Sample	Day: 3		Day: 4		Day: 5		Day: 6				
	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID	Volume Used (mL)	ESI Cube ID			
Lab Control	1200	n/a	1200	n/a	1200	n/a	1200	n/a			
-001	↓	-001	↓	-001	↓	-001	↓	-001			
-002	↓	-002	↓	-002	↓	-002	↓	-002			
-003	↓	-003	↓	-003	↓	-003	↓	-003			
-004	↓	-004	↓	-004	↓	-004	↓	-004			
-005	↓	-005	↓	-005	↓	-005	↓	-005			

6/29

# SALTWATER ASSAYS

*A. bahia*, *A. punctulata*

STUDY: 21159	LOCATION: New Bedford Harbor					
CHEMISTRY	Lab Salt Control	-001	-002	-003	-004	-005
		-006	-007	-008	-009	-010
AMMONIA						
AS RECEIVED WATER QUALITIES	Lab Salt Control	-001	-002	-003	-004	-005
SALINITY (ppt)		8.6	14.8	15.8	27.0	15.5
pH (SU)		7.02	8.05	7.96	7.63	8.52
TRC (mg/L)		20.02	20.02	20.02	20.02	20.02
DO (mg/L)		7.4	8.9	8.3	6.2	8.8
S/C (µmhos/cm)		14730	24710	25760	42420	25260
WQ STATION USED		1	1	1	1	1
INITIALS		W	W	W	W	W
<i>A. bahia</i> SALINITY ADJUSTMENT RECORD	Lab Salt Control	-001	-002	-003	-004	-005
SAMPLE (mLs)		20,000	20,000	20,000	20,000	20,000
SEA SALT (g)		378	235	212	250 mLs DE H <sub>2</sub> O	219
DATE:	6/29/11	→	→	→	→	→
TIME:	1405	→	→	→	→	→
INITIALS:	W	→	→	→	→	→

Sample ID	ESI Cube ID
-001	-001
-002	-002
-003 - REP <sup>23</sup> 6/29	-003
-004	-004
-005	-005

**Americamysis bahia 7 DAY CHRONIC ASSAY  
NEW WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group				LOCATION: NEW BEDFORD				LAB CONTROL: HAMPTON ESTUARY					
		NEW DISSOLVED OXYGEN (mg/L)						NEW SALINITY (ppt)							
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	7.3	7.3	7.1	6.8	6.9	7.0	7.8	25	25	25	25	25	25	25
-001	A	7.6	7.0	6.9	6.7	6.7	6.5	7.6	25	25	25	25	25	25	25
-002	A	8.2	7.1	6.7	6.6	7.2	6.7	7.3	25	25	25	25	25	25	25
-003	A	8.2	7.1	6.4	6.5	7.0	6.8	7.2	25	25	25	25	25	25	25
-004	A	7.4	7.0	6.4	6.6	7.0	6.9	7.3	25	25	25	25	25	25	25
-005	A	7.4	7.1	6.6	6.7	7.2	7.2	7.2	25	25	25	25	25	25	25
NEW pH (SU)								NEW TEMPERATURE (°C)							
CONC	REP	0	1	2	3	4	5	6	0	1	2	3	4	5	6
LAB	A	8.02	8.08	8.07	8.06	8.02	8.12	8.03	25	25	25	25	25	25	25
-001	A	7.86	7.98	7.85	7.86	7.81	7.91	7.89	25	25	25	25	25	25	25
-002	A	8.06	8.01	7.95	7.95	7.95	8.01	7.98	25	25	25	25	25	25	25
-003	A	8.06	8.02	7.95	7.94	7.90	7.97	7.92	25	25	25	25	25	25	25
-004	A	7.69	7.75	7.75	7.72	7.71	7.81	7.81	25	25	25	25	25	25	25
-005	A	8.40	8.33	8.25	8.27	8.25	8.21	8.14	25	25	25	25	25	25	25
INC TEMP:	26	26	25	25	25	25	25	26							
DATE:	6/29/11	6/29/11	7/1/11	7/1/11	7/3/11	7/4/11	7/5/11								
TIME:	1555	1245	1150	1015	1245	1225	1235								
INIT:	CS	CS	CS	CS	SS	SS	CS								

WATER QUALITY METERS USED NEW WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	/	1	1	1	1	1	1	
Initials	/	CS	CS	CS	SS	SS	CS	
Date	6/29/11	6/30/11	7/1/11	7/2/11	7/3/11	7/4/11	7/5/11	

**Americamysis bahia 7 DAY CHRONIC ASSAY  
OLD WATER QUALITIES**

STUDY: 21159		CLIENT: Woods Hole Group		LOCATION: NEW BEDFORD					LAB CONTROL: HAMPTON ESTUARY						
OLD SALINITY (ppt)									OLD pH (SU)						
Conc	Rep	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Control	A	25	26	25	25	25	25	25	7.92	7.98	7.96	7.94	7.99	7.96	7.57
-001	A	26	26	26	25	25	26	26	7.95	7.93	7.97	7.82	7.95	7.97	7.78
-002	A	25	25	25	25	25	26	25	7.96	7.90	7.95	7.84	7.90	7.88	7.62
-003	A	25	25	25	25	26	25	25	7.94	7.97	7.94	7.82	7.86	7.85	7.68
-004	A	25	25	25	25	26	25	25	7.89	7.87	7.88	7.87	7.91	7.91	7.59
-005	A	25	25	25	25	26	26	25	8.20	8.11	8.09	7.96	8.00	7.83	7.63
OLD TEMPERATURE (°C)															
Conc	Rep	1	2	3	4	5	6	7							
Control	A	25	25	25	25	25	25	25							
-001	A	25	25	25	25	25	25	25							
-002	A	25	25	25	25	25	25	25							
-003	A	25	25	25	25	25	25	25							
-004	A	25	25	25	25	25	25	25							
-005	A	25	25	25	25	25	25	25							
INC TEMP:		25	25	25	25	26	26	25							
DATE:		6/30/11	7/1/11	7/2/11	7/3	7/4	7/5	7/6							
TIME:		1155	0935	0925	1205	1150	1150	1100							
INITIALS:		CS	W	CS	SJ	SJ	CS	CS							

**GENERAL NOTES - for additional information refer to SOP #1411 or EPA manual 600/4-91/003**

- Test vessels will be 250 mL glass beakers containing a minimum of 150 mL of solution
- 8 replicates per site with 5 organisms each
- Test Temperature: 26±1°C
- Salinity: 25 ±2ppt
- Dissolved Oxygen: >4.3 mg/L
- Photoperiod will be 16 hours light and 8 hours dark.
- Passing criteria require ≥80% survival and average dry weight of ≥0.20 mg/organism in the control vessels.

WATER QUALITY METERS USED OLD WATER QUALITIES								
	0	1	2	3	4	5	6	7
Water Quality Station #	////							
Initials	////	CS	W	CS	SJ	SJ	CS	CS
Date	6/29/11	6/30/11	7/1/11	7/2/11	7/3/11	7/4	7/5	7/6



### DILUTIONS

STUDY:		CLIENT: Woods Hole Group	
SPECIES: <i>A. bahia</i>			
		Sample: New Bedford Harbor	
Sample	Vol. Eff. (mls)	Final Vol. (mls)	
Lab	800	800	
-001	↓	↓	
-002			
-003			
-004			
-005	↓	↓	
INITIALS:	JTP		
TIME:	1520		
DATE:	06/29/11		

### RECORD OF METERS USED

STUDY: 21159		CLIENT: Woods Hole Group	
A. bahia			
Exposure (Hours)			
	0	24	48
Water Quality Station #	1	1	1
Initials / Date	CS 6/29/11	CS 6/30/11	UB 7/11

Water Quality Station #1		Water Quality Station #2		COMMENTS
DO meter #	24	DO meter #		
DO probe #	89	DO probe #		
pH meter #	1097	pH meter #		
pH probe #	93	pH probe #		
S/C meter #	<del>9530E</del>	S/C meter #		
S/C probe #	Y5130E	S/C probe #		
Salinity meter #	Y5130E	Salinity meter #		

Report No: 21159 SDG:  
Project: WHG - New Bedford Harbor 2011

Sample ID: WQ-TOX-001-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-006	ND	0.1	mg/L as N	06/30/11 1227	06/30/11 1227	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-007	ND	0.1	mg/L as N	06/30/11 1228	06/30/11 1228	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-002-062811-REP  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-008	ND	0.1	mg/L as N	06/30/11 1228	06/30/11 1228	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-003-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-009	ND	0.1	mg/L as N	06/30/11 1232	06/30/11 1232	JLH/SM 4500-NH3 G

Sample ID: WQ-TOX-004-062811  
Matrix: Water  
Sampled: 06/29/11 1315

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Ammonia-N	21159-010	ND	0.1	mg/L as N	06/30/11 1233	06/30/11 1233	JLH/SM 4500-NH3 G

Notes:

ND = Not Detected

ESI

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 21159  
 SDG No:  
 Project: WHG - New Bedford Harbor 2011  
 Delivered via:  
 Date and Time Received: 06/28/11 1719 Date and Time Logged into Lab: 06/29/11 1352  
 Received By: RF Logged into Lab by: KC *[Signature]*  
 Air bill / Way bill: No Air bill included in folder if received? NA  
 Cooler on ice/packs: Yes Custody Seals present? NA  
 Cooler Blank Temp (C) at arrival: 1 Custody Seals intact? NA  
 Number of COC Pages: 1  
 COC Serial Number(s): NA  
 COC Complete: Yes Does the info on the COC match the samples? Yes  
     Sampled Date: Yes Were samples received within holding time? Yes  
     Field ID complete: Yes Were all samples properly labeled? Yes  
     Sampled Time: Yes Were proper sample containers used? Yes  
     Analysis request: Yes Were samples received intact? (none broken or leaking) Yes  
 COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes  
 Were all samples received? Yes Were VOC vials free of headspace? NA  
 Client notification/authorization: Not required

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
WQ-TOX-001-062811	21159-001	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-002-062811	21159-002	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-002-062811-REP	21159-003	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-003-062811	21159-004	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-004-062811	21159-005	W	AB7DCR, AB48AD, AP01CR;	2x10000 P	4C	
WQ-TOX-001-062811	21159-006	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062811	21159-007	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-002-062811-REP	21159-008	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-003-062811	21159-009	W	NH3;	1x60 P	H2SO4	Yes
WQ-TOX-004-062811	21159-010	W	NH3;	1x60 P	H2SO4	Yes

Notes and qualifications:

Samples -006 through -010 subsampled at lab from original aliquots.  
 See Chain of Custody.



EnviroSystems, Inc.  
1 Lafayette Road  
P.O. Box 778  
Hampton, N.H. 03843

Voice: 603-926-3345  
FAX: 603-926-3521

ESI Job No: Z 1159

CHAIN OF CUSTODY DOCUMENTATION

Client: Woods Hole Group Inc.	Contact: Dave Walsh	Project Name: <i>New Bedford Environmental monitoring</i>	Page 1 of 1
Report to: Dave Walsh	Address: 81 Technology Park Dr.	Project Number: TO-0010-04	
Invoice to: Dave Walsh	Address: East Falmouth, MA 02520	Project Manager: Dave Walsh	
Voice: 508-540-8080	Fax:	email: <i>dwalsh@whgrp.com</i>	P.O. No: Quote No:

Protocol:		RCRA	SDWA	NPDES	USCOE			Other				Analyses Requested/ Special Instructions:	Arbacia 1-HR Sperm Immobilization
Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do			
-001	WQ-TOX-001-062811	6/28/11	0940	DB	G	2x10L	P	N/A	W	N	All 3 Analyses	Ebb Ref.	
-002	WQ-TOX-002-062811	6/28/11	1035	DB	G	2x10L	P	N/A	W	N	All 3 Analyses	Ebb Sample	
-003	WQ-TOX-002-062811-REP	6/28/11	1035	DB	G	2x10L	P	N/A	W	N	All 3 Analyses	Ebb Sample	
-004	WQ-TOX-003-062811	6/28/11	1235	DB	G	2x10L	P	N/A	W	N	All 3 Analyses	Flood Ref	
-005	WQ-TOX-004-062811	6/28/11	1315	DB	G	2x10L	P	N/A	W	N	All 3 Analyses	Flood Sample	
-006	WQ-TOX-001-062811	6/29/11	1315	W	G	1x60mL	P	N/A	W	N	NH <sub>3</sub>		
-007	WQ-TOX-002-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
-008	WQ-TOX-002-062811-REP	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
-009	WQ-TOX-003-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
-010	WQ-TOX-004-062811	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		

Relinquished By: <i>W. Walsh &amp; G. Blane</i>	Date: 06/28/11 Time: 1719	Received By: <i>R. R. R.</i>	Date: 6/28/2011 Time: 1709
Relinquished By:	Date: Time:	Received at Lab By:	Date: Time:

Comments: -006 through -010 were subsampled in lab from aliquots by W 6/29/11



**Data Validation Report**  
**EPA Region I Tier I+**  
**18 NOAA PCB Congeners by 8082**

**Client/Company:** Woods Hole Group, Inc. (WHG)

**Site/Project Name:** New Bedford Harbor Superfund Site – OU1

**Laboratory:** Alpha Analytical – Mansfield, MA

**Lab Project Number(s):** L1109501

**Date(s) of Collection:** June 28, 2011

**Number / Type  
Samples & Analyses  
For Validation** 5 Total surface water samples + 1 Total equipment blank and 5 Dissolved  
surface water samples + 1 Dissolved equipment blank for 18 NOAA PCB  
Congeners

**Senior Data Reviewers:** Nancy C. Rothman, PhD, New Environmental Horizons, Inc.  
Susan D. Chapnick, New Environmental Horizons, Inc.

**Date Completed:** August 26, 2011

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Environmental Monitoring, Sampling, and Analysis Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Operable Unit 1 (OU1), New Bedford, MA*, Rev. 4.0, prepared by Woods Hole Group, Inc., July 2011 (NBH OU1 QAPP Addendum 2011); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and reason codes added based on actions taken; and
- The Data Review Checklist completed during this validation to document the Tier I+ review. The Checklist is an integral part of the DV Report as it contains comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

## I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the quality control (QC) results (as applicable) of Matrix Spike (MS), Matrix Spike Duplicate (MSD), Matrix Duplicate (MD), Field Duplicate (FD), Field Equipment Blank (EB), and Trip Blank (TB), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters <sup>1</sup>	Sample Type
WQ-TPC-001-062811	L1109501-01	6/28/11	Total Surface Water	PCBs	Field Sample
WQ-DPC-001-062811	L1109501-02	6/28/11	Dissolved Surface Water	PCBs	Field Sample
WQ-TPC-002-062811	L1109501-06	6/28/11	Total Surface Water	PCBs	Field Sample [used for MS/MSD]
WQ-DPC-002-062811	L1109501-07	6/28/11	Dissolved Surface Water	PCBs	Field Sample [used for MS/MSD]
WQ-TPC-002-062811-REP	L1109501-11	6/28/11	Total Surface Water	PCBs	Field Duplicate of WQ-TPC-002-062811
WQ-DPC-002-062811-REP	L1109501-12	6/28/11	Dissolved Surface Water	PCBs	Field Duplicate of WQ-DPC-002-062811
WQ-TPC-001-062811-EB	L1109501-16	6/28/11	Total Water	PCBs	Equipment Blank
WQ-DPC-001-062811-EB	L1109501-17	6/28/11	Dissolved Water	PCBs	Equipment Blank
WQ-TPC-003-062811	L1109501-19	6/28/11	Total Surface Water	PCBs	Field Sample
WQ-DPC-003-062811	L1109501-20	6/28/11	Dissolved Surface Water	PCBs	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters <sup>1</sup>	Sample Type
WQ-TPC-004-062811	L1109501-24	6/28/11	Total Surface Water	PCBs	Field Sample
WQ-DPC-004-062811	L1109501-25	6/28/11	Dissolved Surface Water	PCBs	Field Sample

Analytical method references:

PCBs: *Polychlorinated Biphenyls (PCBs) by Gas Chromatography* in EPA’s Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 8082, Rev. 1, February 2007.

<sup>1</sup> Total Suspended Solids (TSS) and Turbidity measurements were also performed on total surface water samples; however, data validation for these parameters was not required. Aliquots of samples were also archived at the laboratory for metals analysis.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congeners and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2011 requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)
- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria\* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries\*
- Retention Time windows\*
- Other method-specific QC if applicable and reported\* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

\* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.



Based on this Tier I+ validation of 18 NOAA PCB Congeners, all results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2011 requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID\_QUAL, VALIDATION\_LEVEL, VALIDATION, VALID\_DATE, BIAS, and DV\_COMMENT.

The remainder of this report documents “exceptions” to the NBH OU1 QAPP Addendum 2011 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during this Tier I+ validation is presented in the attached Data Review Checklist.

### **Sample Receipt**

Aliquots of the “dissolved” samples were immediately filtered through a 0.45 µm filter, upon receipt at the laboratory, to produce the actual Dissolved sample aliquots that were used for PCB analysis.

### **Accuracy**

MS/MSD analysis was performed on WQ-TPC-002-062811 and WQ-DPC-002-062811, the Total and Dissolved aliquot of the same sample. Accuracy was acceptable for all 18 NOAA PCB Congeners in both MS/MSD analyses with the following exceptions: low MS recovery was observed in WQ-TPC-002-062811 for four PCB Congeners and high MS and/or MSD recovery was observed in WQ-DPC-002-062811 for four PCB Congeners. The Congeners affected were estimated (DJ) in the unspiked samples, as listed in Table 2.

### **Field Blanks**

The Total and Dissolved equipment blanks, WQ-TPC-001-062811-EB (Total) & WQ-DPC-001-062811-EB (Dissolved), reported low-level results for several Congeners. No blank actions were required based on a comparison of the levels reported in the equipment blanks with the levels reported in the field samples.

### **Precision**

Precision was acceptable for the MS/MSD analyses of the Total and Dissolved aliquots, WQ-TPC-002-062811 and WQ-DPC-002-062811, except for two different PCB Congeners in each sample. The Congeners affected were estimated (DJ) in the unspiked samples with indeterminate bias, as listed in Table 2.

There were two sets of Field Duplicates: WQ-TPC-002-062811 / WQ-TPC-002-062811-REP and WQ-DPC-002-062811 / WQ-DPC-002-062811-REP. FD precision was unacceptable for 10 out of 18 NOAA Congeners in the FD pair of WQ-TPC-002-062811 / WQ-TPC-002-062811-REP. Precision was acceptable for all PCB Congeners except for one Congener in the WQ-DPC-002-062811 / WQ-DPC-002-062811-REP FD pair. Table 2 indicates those results that were estimated (DJ) with indeterminate bias as a consequence of the observed FD imprecision.

The MS/MSD and FD results for the 18 NOAA PCB Congeners are an indication of variable representativeness and precision, which may be due to sample heterogeneity in the site surface water samples.

**Sensitivity & Reporting**

Seven samples were diluted prior to analysis so that all results would be reported within the calibration range and qualified “D” by the laboratory. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Sensitivity in terms of sample-specific reporting limits as compared to PALs defined in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2011, were met for all 18 NOAA PCB Congeners.

Table 2. Summary of Data Validation Actions

<b>Field Sample ID</b>	<b>Analyte</b>	<b>Qualifier</b>	<b>Bias</b>	<b>Validation Comments</b>
WQ-DPC-002-062811	2,4'-Dichlorobiphenyl & 2,2',5'-Trichlorobiphenyl	DJ	H	High MS recovery
WQ-DPC-002-062811	2,4,4'-Trichlorobiphenyl	DJ	I	High MS recovery + MS/MSD imprecision + FD imprecision
WQ-DPC-002-062811	2,2',5,5'-Tetrachlorobiphenyl	DJ	I	High MS recovery + MS/MSD imprecision
WQ-DPC-002-062811	2,2',3,5'-Tetrachlorobiphenyl	DJ	I	MS/MSD imprecision
WQ-DPC-002-062811-REP	2,4,4'-Trichlorobiphenyl	DJ	I	FD imprecision
WQ-TPC-002-062811 & WQ-TPC-002-062811-REP	2,4'-Dichlorobiphenyl, 2,2',5'-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,3',4,4',5'-Pentachlorobiphenyl, & 2,2',3,4',5,5',6'-Heptachlorobiphenyl	DJ	I	FD imprecision
WQ-TPC-002-062811	2,2',3,5'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	DJ	I	Low MS recovery + FD imprecision
WQ-TPC-002-062811	2,3',4,4'-Tetrachlorobiphenyl	DJ	I	Low MS recovery + MS/MSD imprecision + FD imprecision
WQ-TPC-002-062811	2,2',5,5'-Tetrachlorobiphenyl	DJ	I	MS/MSD imprecision + FD imprecision

Table 2. Summary of Data Validation Actions - *continued*

<b>Field Sample ID</b>	<b>Analyte</b>	<b>Qualifier</b>	<b>Bias</b>	<b>Validation Comments</b>
WQ-TPC-002-062811-REP	2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	DJ	I	FD imprecision

*Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory).*

*Bias: L = Low; H = High; I = Indeterminate*

*Abbreviations used in Table 2:*

*MS = Matrix Spike*

*MSD = Matrix Spike Duplicate*

*FD = Field Duplicate*



## ANALYTICAL REPORT

Lab Number:	L1112520
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR ENV. MONITO
Project Number:	TO-0010-04
Report Date:	08/17/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1112520-01	WQ-TUR-001-081511	NEW BEDFORD, MA	08/15/11 09:00
L1112520-02	WQ-TSS-001-081511	NEW BEDFORD, MA	08/15/11 09:00
L1112520-03	WQ-TUR-002-081511	NEW BEDFORD, MA	08/15/11 09:25
L1112520-04	WQ-TSS-002-081511	NEW BEDFORD, MA	08/15/11 09:25
L1112520-05	WQ-TUR-003-081511	NEW BEDFORD, MA	08/15/11 10:40
L1112520-06	WQ-TSS-003-081511	NEW BEDFORD, MA	08/15/11 10:40
L1112520-07	WQ-TUR-004-081511	NEW BEDFORD, MA	08/15/11 11:25
L1112520-08	WQ-TSS-004-081511	NEW BEDFORD, MA	08/15/11 11:25
L1112520-09	WQ-TUR-004-081511-REP	NEW BEDFORD, MA	08/15/11 11:25
L1112520-10	WQ-TSS-004-081511-REP	NEW BEDFORD, MA	08/15/11 11:25

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 08/17/11

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1112520**Project Number:** TO-0010-04**Report Date:** 08/17/11**SAMPLE RESULTS**

**Lab ID:** L1112520-01  
**Client ID:** WQ-TUR-001-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:00  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.8		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-02  
**Client ID:** WQ-TSS-001-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:00  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	11.1		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-03  
**Client ID:** WQ-TUR-002-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	7.3		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1112520**Project Number:** TO-0010-04**Report Date:** 08/17/11**SAMPLE RESULTS**

**Lab ID:** L1112520-04  
**Client ID:** WQ-TSS-002-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 09:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	32.8		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-05  
**Client ID:** WQ-TUR-003-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 10:40  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.1		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-06  
**Client ID:** WQ-TSS-003-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 10:40  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	8.70		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-07  
**Client ID:** WQ-TUR-004-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	13		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1112520**Project Number:** TO-0010-04**Report Date:** 08/17/11**SAMPLE RESULTS**

**Lab ID:** L1112520-08  
**Client ID:** WQ-TSS-004-081511  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	28.5		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-09  
**Client ID:** WQ-TUR-004-081511-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	16		NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**SAMPLE RESULTS**

**Lab ID:** L1112520-10  
**Client ID:** WQ-TSS-004-081511-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/15/11 11:25  
**Date Received:** 08/15/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	26.5		mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP



Project Name: NEW BEDFORD HARBOR ENV. MONI'

Lab Number: L1112520

Project Number: TO-0010-04

Report Date: 08/17/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG484885-1									
Turbidity	ND	NTU	0.40	--	1	-	08/16/11 16:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10 Batch: WG484887-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	08/16/11 12:00	4,160.2	SP

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1112520**Project Number:** TO-0010-04**Report Date:** 08/17/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG484885-2								
Turbidity	108		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10 Batch: WG484887-2								
Solids, Total Suspended	85		-		80-120	-		20

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1112520-01A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-02A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-03A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-04A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-05A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-06A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-07A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-08A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)
L1112520-09A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TURBIDITY-180.1(2)
L1112520-10A	Plastic 1000ml unpreserved	A	N/A	4	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1112520  
**Report Date:** 08/17/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)



*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Project Information

Project Name: *NW Bedford Harbor Env. Monitoring*

Project Location: *New Bedford, MA*

Project #: *TO-0010-04*

Project Manager: *Dave Walsh*

ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: *L1112520*

### Billing Information

Same as Client info PO #: \_\_\_\_\_

### Client Information

Client: *Wood Hole Group*  
 Address: *81 Technology Park Dr. East Falmouth, MA 02536*

Phone: *508-540-8080*

Fax: *508-540-1001*

Email: *DWALSH@WHGRP.COM*

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

*Project Specific EDD & Report.*

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

### Regulatory Requirements/Report Limits

State/Fed Program:                      Criteria: \_\_\_\_\_

ANALYSIS	SAMPLE HANDLING										TOTAL # BOTTLES	
	Filtration _____ <input type="checkbox"/> Done <input type="checkbox"/> Not done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)											
Turbidity											Sample Specific Comments	
TSS												

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials											Sample Specific Comments		
		Date	Time															
<i>L1112520-1</i>	<i>WQ-TUR-001-081511</i>	<i>8/15/11</i>	<i>0900</i>	<i>SW</i>	<i>DS</i>	<i>X</i>											<i>2.2 ntu at collection time</i>	<i>1</i>
<i>2</i>	<i>WQ-TSS-001-081511</i>		<i>0900</i>				<i>X</i>											<i>1</i>
<i>3</i>	<i>WQ-TUR-002-081511</i>		<i>0925</i>			<i>X</i>											<i>5.5-6.5 ntu at collection time</i>	<i>1</i>
<i>4</i>	<i>WQ-TSS-002-081511</i>		<i>0925</i>				<i>X</i>											<i>1</i>
<i>5</i>	<i>WQ-TUR-003-081511</i>		<i>1040</i>			<i>X</i>											<i>3-6 ntu at collection time</i>	<i>1</i>
<i>6</i>	<i>WQ-TSS-003-081511</i>		<i>1040</i>				<i>X</i>											<i>1</i>
<i>7</i>	<i>WQ-TUR-004-081511</i>		<i>1125</i>			<i>X</i>											<i>12-18 ntu at collection time</i>	<i>1</i>
<i>8</i>	<i>WQ-TSS-004-081511</i>		<i>1125</i>				<i>X</i>											<i>1</i>
<i>9</i>	<i>WQ-TUR-004-081511-REP</i>		<i>1125</i>			<i>X</i>											<i>12-18 ntu at collection time</i>	<i>1</i>
<i>10</i>	<i>WQ-TSS-004-081511-REP</i>		<i>1125</i>				<i>X</i>										<i>12+</i>	<i>1</i>

Container Type *P P*  
 Preservative *A A*

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By: <i>[Signature]</i>	Date/Time: <i>8/15/11, 18:26</i>	Received By: <i>[Signature]</i>	Date/Time: <i>8-15-11 18:26</i>
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**SDMS REPOSITORY TARGET SHEET**

US EPA New England  
Superfund Document Management System /  
RCRA Document Management System  
**Native Files Target Sheet**

SDMS Document ID #: 535501

Site Name: NEW BEDFORD

File Type(s) Attached (examples: Excel file or .jpg): Excel file  
L1112520\_ss1.csv

Document Type this Target Sheet Represents:

- Map       Photograph       Graph/Chart  
 Video       Compact Disc       Other (Specify  
below)
- 

Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

**To view the attached files, open the “Attachment Panel”  
by clicking the paper clip -  - in the left side panel of this window.**

**\*\* Please note to view attachments the software corresponding with  
the specified file type is necessary. \*\***

For any additional assistance please contact the EPA New England Office of  
Site Remediation and Restoration Records and Information Center-  
Telephone (617) 918 1440

Sample ID	Client ID	Alpha Product Code	Analysis	Concentration	Units	Detection Limit	Method ID	Alpha Job Number	Project Number	Site
L1112520-01	WQ-TUR-001-081511	A2-TURBIDITY-180.1	Turbidity	3.8	NTU	0.4	180.1	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-02	WQ-TSS-001-081511	A2-TSS-160	Solids, Total Suspended	11.1	mg/l	1	160.2	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-03	WQ-TUR-002-081511	A2-TURBIDITY-180.1	Turbidity	7.3	NTU	0.4	180.1	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-04	WQ-TSS-002-081511	A2-TSS-160	Solids, Total Suspended	32.8	mg/l	1	160.2	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-05	WQ-TUR-003-081511	A2-TURBIDITY-180.1	Turbidity	3.1	NTU	0.4	180.1	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-06	WQ-TSS-003-081511	A2-TSS-160	Solids, Total Suspended	8.7	mg/l	1	160.2	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-07	WQ-TUR-004-081511	A2-TURBIDITY-180.1	Turbidity	13	NTU	0.4	180.1	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-08	WQ-TSS-004-081511	A2-TSS-160	Solids, Total Suspended	28.5	mg/l	1	160.2	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-09	WQ-TUR-004-081511-REP	A2-TURBIDITY-180.1	Turbidity	16	NTU	0.4	180.1	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO
L1112520-10	WQ-TSS-004-081511-REP	A2-TSS-160	Solids, Total Suspended	26.5	mg/l	1	160.2	L1112520	TO-0010-04	NEW BEDFORD HARBOR ENV. MONITO

Matrix	Sample Condition	Surrogate Flag	Sample Date	Sample Time	Date Received	Date Prepared	Date Tested	Date Reported	Invoice Number
WATER	Satisfactory	REG	15-Aug-11	9:00	15-Aug-11		0816 16:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	9:00	15-Aug-11		0816 12:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	9:25	15-Aug-11		0816 16:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	9:25	15-Aug-11		0816 12:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	10:40	15-Aug-11		0816 16:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	10:40	15-Aug-11		0816 12:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	11:25	15-Aug-11		0816 16:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	11:25	15-Aug-11		0816 12:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	11:25	15-Aug-11		0816 16:00	17-Aug-11	
WATER	Satisfactory	REG	15-Aug-11	11:25	15-Aug-11		0816 12:00	17-Aug-11	

**SDMS REPOSITORY TARGET SHEET**

US EPA New England  
Superfund Document Management System /  
RCRA Document Management System  
**Native Files Target Sheet**

SDMS Document ID #: 535501

Site Name: NEW BEDFORD


File Type(s) Attached (examples: Excel file or .jpg): Excel file  
L1113423\_nbh.csv

Document Type this Target Sheet Represents:

Map       Photograph       Graph/Chart  
 Video       Compact Disc       Other (Specify  
below)

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Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

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the specified file type is necessary. \*\***

For any additional assistance please contact the EPA New England Office of  
Site Remediation and Restoration Records and Information Center-  
Telephone (617) 918 1440

SAMP_ID	RECEIPT_DAT	PREP_MET	ANALYSIS	LAB_QC_C	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LI	DETECT_LI	UNIT	ANALYSIS_DAT	SDG	LAB_SAMP	LAB
WQ-TSS-001-083011	8/30/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total	6		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-001-083011	8/30/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	4.2		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
WQ-TSS-002-083011	8/30/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total	20		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-002-083011	8/30/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	8.4		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
WQ-TSS-003-083011	8/30/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total	26.7		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-003-083011	8/30/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	8		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
WQ-TSS-004-083011	8/30/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total	61.3		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-004-083011	8/30/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	25		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
WQ-TSS-004-083011-REP	8/30/2011	NO_PREP	160.2	REP	TOTAL	1	TSS	Solids, Total	50.5		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-004-083011-REP	8/30/2011	NO_PREP	180.1	REP	TOTAL	1	TURB	Turbidity	24		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
WQ-TSS-005-083011	8/30/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total	72.7		1	RL	MG/L	8/31/2011	L1113423	L1113423	AAL
WQ-TUR-005-083011	8/30/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	41		0.4	RL	NTU	8/30/2011	L1113423	L1113423	AAL
	8/30/2011	NO_PREP	180.1	MB	TOTAL	1	TURB	Turbidity	0.4	U	0.4	RL	NTU	8/30/2011	L1113423	WG487075	AAL
	8/30/2011	NO_PREP	180.1	LCS	TOTAL	1	TURB	Turbidity	106		0.4	RL	PCT_REC	8/30/2011	L1113423	WG487075	AAL
	8/31/2011	NO_PREP	160.2	MB	TOTAL	1	TSS	Solids, Total	1	U	1	RL	MG/L	8/31/2011	L1113423	WG487338	AAL
	8/31/2011	NO_PREP	160.2	LCS	TOTAL	1	TSS	Solids, Total	88		1	RL	PCT_REC	8/31/2011	L1113423	WG487338	AAL

SAMP_PRE	SAMP_WG	SAMP_WG	EMPC	REPORT_YN
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	600	ML		Y
	40	ML		Y
	40	ML		N
	40	ML		N
	600	ML		N
	600	ML		N





## ANALYTICAL REPORT

Lab Number:	L1113423
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR ENV. MONITO
Project Number:	TO-0010-04
Report Date:	09/06/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1113423-01	WQ-TSS-001-083011	NEW BEDFORD, MA	08/30/11 08:58
L1113423-02	WQ-TUR-001-083011	NEW BEDFORD, MA	08/30/11 08:58
L1113423-03	WQ-TSS-002-083011	NEW BEDFORD, MA	08/30/11 09:18
L1113423-04	WQ-TUR-002-083011	NEW BEDFORD, MA	08/30/11 09:18
L1113423-05	WQ-TSS-003-083011	NEW BEDFORD, MA	08/30/11 10:05
L1113423-06	WQ-TUR-003-083011	NEW BEDFORD, MA	08/30/11 10:05
L1113423-07	WQ-TSS-004-083011	NEW BEDFORD, MA	08/30/11 11:08
L1113423-08	WQ-TUR-004-083011	NEW BEDFORD, MA	08/30/11 11:08
L1113423-09	WQ-TSS-004-083011-REP	NEW BEDFORD, MA	08/30/11 11:08
L1113423-10	WQ-TUR-004-083011-REP	NEW BEDFORD, MA	08/30/11 11:08
L1113423-11	WQ-TSS-005-083011	NEW BEDFORD, MA	08/30/11 12:38
L1113423-12	WQ-TUR-005-083011	NEW BEDFORD, MA	08/30/11 12:38

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

---

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 09/06/11

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-01  
**Client ID:** WQ-TSS-001-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 08:58  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	6.00		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-02  
**Client ID:** WQ-TUR-001-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 08:58  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.2		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-03  
**Client ID:** WQ-TSS-002-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 09:18  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	20.0		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-04  
**Client ID:** WQ-TUR-002-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 09:18  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.4		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP





**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-05  
**Client ID:** WQ-TSS-003-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 10:05  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	26.7		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-06  
**Client ID:** WQ-TUR-003-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 10:05  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.0		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-07  
**Client ID:** WQ-TSS-004-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	61.3		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-08  
**Client ID:** WQ-TUR-004-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	25		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-09  
**Client ID:** WQ-TSS-004-083011-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	50.5		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-10  
**Client ID:** WQ-TUR-004-083011-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 11:08  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	24		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-11  
**Client ID:** WQ-TSS-005-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 12:38  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	72.7		mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**SAMPLE RESULTS**

**Lab ID:** L1113423-12  
**Client ID:** WQ-TUR-005-083011  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 08/30/11 12:38  
**Date Received:** 08/30/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	41		NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP





Project Name: NEW BEDFORD HARBOR ENV. MONI'

Lab Number: L1113423

Project Number: TO-0010-04

Report Date: 09/06/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,06,08,10,12 Batch: WG487075-1									
Turbidity	ND	NTU	0.40	--	1	-	08/30/11 13:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09,11 Batch: WG487338-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	08/31/11 14:25	4,160.2	SP

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD HARBOR ENV. MONITO**Lab Number:** L1113423**Project Number:** TO-0010-04**Report Date:** 09/06/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG487075-2								
Turbidity	106		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG487338-2								
Solids, Total Suspended	88		-		80-120	-		20

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1113423-01A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-02A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-03A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-04A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-05A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-06A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-07A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-08A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-09A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-10A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)
L1113423-11A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TSS-160(7)
L1113423-12A	Plastic 1000ml unpreserved	A	N/A	2.1	Y	Absent	A2-TURBIDITY-180.1(2)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR ENV. MONITO  
**Project Number:** TO-0010-04

**Lab Number:** L1113423  
**Report Date:** 09/06/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

#### **Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.





# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

## Project Information

Project Name: NEW Bedford Harbor Env. Monitoring

Project Location: New Bedford, MA

Project #: TO-0014-04

Project Manager: Dave Walsh

ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)

Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab:

## Report Information - Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

ALPHA Job #: L1113423

## Billing Information

Same as Client info PO #:

## Client Information

Client: Woods Hole Group Inc.

Address: 51 Technology Park Dr.  
East Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: DWalsh@whgrp.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

## Regulatory Requirements/Report Limits

State / Fed Program Criteria

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	TSS	TURBIDITY	ANALYSIS	SAMPLE HANDLING		TOTAL # BOTTLES
		Date	Time						Filtration	Preservation	
1	WQ-TSS-001-083011	8/30/11	0858	SW	DS	X			<input type="checkbox"/> Done <input type="checkbox"/> Not needed <input type="checkbox"/> Lab to do <input type="checkbox"/> Lab to do (Please specify below)		1
2	WQ-TUR-001-083011		0858								1
3	WQ-TSS-002-083011		0918			X					1
4	WQ-TUR-002-083011		0918								1
5	WQ-TSS-003-083011		1005			X					1
6	WQ-TUR-003-083011		1005								1
7	WQ-TSS-004-083011		1108			X					1
8	WQ-TUR-004-083011		1108								1
9	WQ-TSS-004-083011-REP		1108			X					1
10	WQ-TUR-004-083011-REP		1108								1

Container Type P P  
Preservative A A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By: Michael Walsh Date/Time: 8/30/11 1550

Received By: [Signature] Date/Time: 8/30/11 1550



# MANSFIELD CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

WESTBORO, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

MANSFIELD, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

### Client Information

Client: Woods Hole Group Inc.  
 Address: 81 Technology Park Dr.  
East Falmouth, MA 02536  
 Phone: 508-540-8080  
 Fax: 508-540-1001  
 Email: DWALSH@WHGKP.COM

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										Sample Specific Comments	TOTAL # BOTTLES			
		Date	Time			TSS	Turbidity													
<u>11</u>	<u>WQ-TSS-005-083011</u>	<u>8/30/11</u>	<u>1238</u>	<u>SW</u>	<u>DS</u>	X													<u>40-45 satn observed in field</u>	<u>1</u>
<u>12</u>	<u>WQ-TUR-005-083011</u>	<u>8/30/11</u>	<u>1238</u>	<u>SW</u>	<u>DS</u>	X													<u>↓</u>	<u>1</u>

**REPORT INFORMATION - DATA DELIVERABLES**

FAX       EMAIL  
 ADEx       Add'l Deliverables

**BILLING INFORMATION**

Same as Client info      PO #:

**REGULATORY REQUIREMENTS/REPORT LIMITS**

State: (Fed Program)      Criteria:

**TURN-AROUND TIME**

Standard       RUSH (only confirmed if pre-approved!)

Date Due:      Time:

**SAMPLE HANDLING**

Filtration \_\_\_\_\_  
 Done  
 Not needed  
 Lab to do  
 Preservation  
 Lab to do  
(Please specify below)

Container Type		P	P
Preservative		A	A
Relinquished By:	Date/Time	Received By:	Date/Time
<u>Michael Walsh</u>	<u>8/30/11 1550</u>	<u>[Signature]</u>	<u>8/30/11 1550</u>

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



## ANALYTICAL REPORT

Lab Number:	L1114366
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD HARBOR MONITORING
Project Number:	TO-0010-04
Report Date:	09/15/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1114366-01	WQ-TSS-001-091211	NEW BEDFORD, MA	09/12/11 07:36
L1114366-02	WQ-TUR-001-091211	NEW BEDFORD, MA	09/12/11 07:36
L1114366-03	WQ-TSS-002-091211	NEW BEDFORD, MA	09/12/11 08:07
L1114366-04	WQ-TUR-002-091211	NEW BEDFORD, MA	09/12/11 08:07
L1114366-05	WQ-TSS-003-091211	NEW BEDFORD, MA	09/12/11 09:09
L1114366-06	WQ-TSS-003-091211-REP	NEW BEDFORD, MA	09/12/11 09:09
L1114366-07	WQ-TUR-003-091211	NEW BEDFORD, MA	09/12/11 09:09
L1114366-08	WQ-TUR-003-091211-REP	NEW BEDFORD, MA	09/12/11 09:09
L1114366-09	WQ-TSS-004-091211	NEW BEDFORD, MA	09/12/11 11:33
L1114366-10	WQ-TUR-004-091211	NEW BEDFORD, MA	09/12/11 11:33

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 09/15/11

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-01  
**Client ID:** WQ-TSS-001-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 07:36  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	12.5		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-02  
**Client ID:** WQ-TUR-001-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 07:36  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.4		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES





**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-03  
**Client ID:** WQ-TSS-002-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 08:07  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	54.0		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-04  
**Client ID:** WQ-TUR-002-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 08:07  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	28		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-05  
**Client ID:** WQ-TSS-003-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	12.0		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

Lab ID: L1114366-06  
 Client ID: WQ-TSS-003-091211-REP  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 09/12/11 09:09  
 Date Received: 09/13/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	23.5		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-07  
**Client ID:** WQ-TUR-003-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.5		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-08  
**Client ID:** WQ-TUR-003-091211-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 09:09  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	8.0		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-09  
**Client ID:** WQ-TSS-004-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 11:33  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	119		mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR



**Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11**SAMPLE RESULTS**

**Lab ID:** L1114366-10  
**Client ID:** WQ-TUR-004-091211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 09/12/11 11:33  
**Date Received:** 09/13/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	47		NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES





Project Name: NEW BEDFORD HARBOR MONITORIN

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 02,04,07-08,10 Batch: WG489789-1									
Turbidity	ND	NTU	0.40	--	1	-	09/13/11 20:00	8,180.1	ES
General Chemistry - Mansfield Lab for sample(s): 01,03,05-06,09 Batch: WG489792-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	09/14/11 10:00	4,160.2	NR

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** NEW BEDFORD HARBOR MONITORING**Lab Number:** L1114366**Project Number:** TO-0010-04**Report Date:** 09/15/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 02,04,07-08,10 Batch: WG489789-2								
Turbidity	103		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05-06,09 Batch: WG489792-2								
Solids, Total Suspended	91		-		80-120	-		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR MONITORING

**Project Number:** TO-0010-04

**Lab Number:** L1114366

**Report Date:** 09/15/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02,04,07-08,10 QC Batch ID: WG489789-3 QC Sample: L1114366-02 Client ID: WQ-TUR-001-091211						
Turbidity	1.4	1.4	NTU	0		10
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05-06,09 QC Batch ID: WG489792-3 QC Sample: L1114366-01 Client ID: WQ-TSS-001-091211						
Solids, Total Suspended	12.5	13.5	mg/l	8		20

Project Name: NEW BEDFORD HARBOR MONITORING

Lab Number: L1114366

Project Number: TO-0010-04

Report Date: 09/15/11

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1114366-01A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-02A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-03A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-04A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-05A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-06A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-07A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-08A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)
L1114366-09A	Plastic 1000ml unpreserved	A	7	3.4	Y	Absent	A2-TSS-160(7)
L1114366-10A	Plastic 1000ml unpreserved	A	N/A	3.4	Y	Absent	A2-TURBIDITY-180.1(2)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- |          |  |
|----------|--|
| <b>A</b> | - Spectra identified as "Aldol Condensation Product".  |
| <b>B</b> | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. |
| <b>C</b> | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.   |
| <b>D</b> | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.  |
| <b>E</b> | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.   |
| <b>G</b> | - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.   |
| <b>H</b> | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.   |
| <b>I</b> | - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.   |
| <b>M</b> | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.   |
| <b>P</b> | - The RPD between the results for the two columns exceeds the method-specified criteria.   |
| <b>Q</b> | - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less   |

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR MONITORING  
**Project Number:** TO-0010-04

**Lab Number:** L1114366  
**Report Date:** 09/15/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)



*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

#### **Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



**SDMS REPOSITORY TARGET SHEET**

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L1114366\_nbh.csv

Document Type this Target Sheet Represents:

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 Video       Compact Disc       Other (Specify  
below)
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Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
(OU1) (02/01/2013 COVER PAGE ATTACHED)

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**\*\* Please note to view attachments the software corresponding with  
the specified file type is necessary. \*\***

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Telephone (617) 918 1440

SAMP_ID	RECEIPT_DATE	PREP_METH	ANALYSIS_METH	LAB_QC_COD	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LIMIT	DETECT_LIMIT
WQ-TSS-001-	9/13/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	12.5		1	RL
WQ-TUR-001-	9/13/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	1.4		0.4	RL
WQ-TSS-002-	9/13/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	54		1	RL
WQ-TUR-002-	9/13/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	28		0.4	RL
WQ-TSS-003-	9/13/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	12		1	RL
WQ-TSS-003-	9/13/2011	NO_PREP	160.2	REP	TOTAL	1	TSS	Solids, Total S	23.5		1	RL
WQ-TUR-003-	9/13/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	8.5		0.4	RL
WQ-TUR-003-	9/13/2011	NO_PREP	180.1	REP	TOTAL	1	TURB	Turbidity	8		0.4	RL
WQ-TSS-004-	9/13/2011	NO_PREP	160.2	SA	TOTAL	1	TSS	Solids, Total S	119		1	RL
WQ-TUR-004-	9/13/2011	NO_PREP	180.1	SA	TOTAL	1	TURB	Turbidity	47		0.4	RL
	9/14/2011	NO_PREP	180.1	MB	TOTAL	1	TURB	Turbidity	0.4	U	0.4	RL
	9/14/2011	NO_PREP	180.1	LCS	TOTAL	1	TURB	Turbidity	103		0.4	RL
WQ-TUR-001-	9/13/2011	NO_PREP	180.1	DUP	TOTAL	1	TURB	Turbidity	1.4		0.4	RL
	9/14/2011	NO_PREP	160.2	MB	TOTAL	1	TSS	Solids, Total S	1	U	1	RL
	9/14/2011	NO_PREP	160.2	LCS	TOTAL	1	TSS	Solids, Total S	91		1	RL
WQ-TSS-001-	9/13/2011	NO_PREP	160.2	DUP	TOTAL	1	TSS	Solids, Total S	13.5		1	RL

UNIT	ANALYSIS_DATE	SDG	LAB_SAMP_ID	LAB	SAMP_PREP	SAMP_WGT	SAMP_WGT	EMPC	REPORT_YN
MG/L	9/14/2011	L1114366	L1114366-01	AAL		600	ML		Y
NTU	9/13/2011	L1114366	L1114366-02	AAL		40	ML		Y
MG/L	9/14/2011	L1114366	L1114366-03	AAL		600	ML		Y
NTU	9/13/2011	L1114366	L1114366-04	AAL		40	ML		Y
MG/L	9/14/2011	L1114366	L1114366-05	AAL		600	ML		Y
MG/L	9/14/2011	L1114366	L1114366-06	AAL		600	ML		Y
NTU	9/13/2011	L1114366	L1114366-07	AAL		40	ML		Y
NTU	9/13/2011	L1114366	L1114366-08	AAL		40	ML		Y
MG/L	9/14/2011	L1114366	L1114366-09	AAL		600	ML		Y
NTU	9/13/2011	L1114366	L1114366-10	AAL		40	ML		Y
NTU	9/13/2011	L1114366	WG489789-1	AAL		40	ML		N
PCT_REC	9/13/2011	L1114366	WG489789-2	AAL		40	ML		N
NTU	9/13/2011	L1114366	WG489789-3	AAL		40	ML		N
MG/L	9/14/2011	L1114366	WG489792-1	AAL		600	ML		N
PCT_REC	9/14/2011	L1114366	WG489792-2	AAL		600	ML		N
MG/L	9/14/2011	L1114366	WG489792-3	AAL		600	ML		N

**SDMS REPOSITORY TARGET SHEET**

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Site Name: NEW BEDFORD

File Type(s) Attached (examples: Excel file or .jpg): Excel file  
L1117490\_pdf.pdf

Document Type this Target Sheet Represents:

- Map       Photograph       Graph/Chart  
 Video       Compact Disc       Other (Specify  
below)
- 

Description or Comments: FINAL WATER QUALITY MONITORING  
SUMMARY REPORT, 2011 REMEDIAL DREDGING, NEW  
BEDFORD HARBOR SUPERFUND SITE, OPERABLE UNIT 1  
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SAMP_ID	RECEIPT_DATE	PREP_METH	ANALYSIS_M	LAB_QC_COD	FRACTION	DILUTION	CAS	ANALYTE	VALUE	LAB_QUAL	DETECT_LIMI	DETECT_LIMI	UNIT	ANALYSIS_DATE	SDG	LAB_SAMP_ID	LAB		
WQ-TUR-001	10/25/2011	NO_PREP	180.1	SA	TOTAL		1	TURB	Turbidity		2.2		0.4	RL	NTU	10/25/2011	L1117490	L1117490-01	AAL
WQ-TSS-001	10/25/2011	NO_PREP	160.2	SA	TOTAL		1	TSS	Solids, Total S		5		1	RL	MG/L	10/28/2011	L1117490	L1117490-02	AAL
WQ-TUR-002	10/25/2011	NO_PREP	180.1	SA	TOTAL		1	TURB	Turbidity		3.1		0.4	RL	NTU	10/25/2011	L1117490	L1117490-03	AAL
WQ-TSS-002	10/25/2011	NO_PREP	160.2	SA	TOTAL		1	TSS	Solids, Total S		4.3		1	RL	MG/L	10/26/2011	L1117490	L1117490-04	AAL
WQ-TUR-003	10/25/2011	NO_PREP	180.1	SA	TOTAL		1	TURB	Turbidity		4.8		0.4	RL	NTU	10/25/2011	L1117490	L1117490-05	AAL
WQ-TSS-003	10/25/2011	NO_PREP	160.2	SA	TOTAL		1	TSS	Solids, Total S		5		1	RL	MG/L	10/26/2011	L1117490	L1117490-06	AAL
WQ-TUR-003	10/25/2011	NO_PREP	180.1	REP	TOTAL		1	TURB	Turbidity		3.5		0.4	RL	NTU	10/25/2011	L1117490	L1117490-07	AAL
WQ-TSS-003	10/25/2011	NO_PREP	160.2	REP	TOTAL		1	TSS	Solids, Total S		5.3		1	RL	MG/L	10/26/2011	L1117490	L1117490-08	AAL
WQ-TUR-004	10/25/2011	NO_PREP	180.1	SA	TOTAL		1	TURB	Turbidity		1.8		0.4	RL	NTU	10/25/2011	L1117490	L1117490-09	AAL
WQ-TSS-004	10/25/2011	NO_PREP	160.2	SA	TOTAL		1	TSS	Solids, Total S		4.3		1	RL	MG/L	10/26/2011	L1117490	L1117490-10	AAL
	10/25/2011	NO_PREP	180.1	MB	TOTAL		1	TURB	Turbidity		0.4	U	0.4	RL	NTU	10/25/2011	L1117490	WG498100-1	AAL
	10/25/2011	NO_PREP	180.1	LCS	TOTAL		1	TURB	Turbidity		104		0.4	RL	PCT_REC	10/25/2011	L1117490	WG498100-2	AAL
WQ-TUR-001	10/25/2011	NO_PREP	180.1	DUP	TOTAL		1	TURB	Turbidity		2.4		0.4	RL	NTU	10/25/2011	L1117490	WG498100-3	AAL
	10/26/2011	NO_PREP	160.2	MB	TOTAL		1	TSS	Solids, Total S		1	U	1	RL	MG/L	10/26/2011	L1117490	WG498340-1	AAL
	10/26/2011	NO_PREP	160.2	LCS	TOTAL		1	TSS	Solids, Total S		84		1	RL	PCT_REC	10/26/2011	L1117490	WG498340-2	AAL
	11/1/2011	NO_PREP	160.2	MB	TOTAL		1	TSS	Solids, Total S		1	U	1	RL	MG/L	10/28/2011	L1117490	WG499221-1	AAL
	11/1/2011	NO_PREP	160.2	LCS	TOTAL		1	TSS	Solids, Total S		96		1	RL	PCT_REC	10/28/2011	L1117490	WG499221-2	AAL
WQ-TSS-001	10/25/2011	NO_PREP	160.2	DUP	TOTAL		1	TSS	Solids, Total S		5.5		1	RL	MG/L	10/28/2011	L1117490	WG499221-3	AAL







## ANALYTICAL REPORT

Lab Number:	L1117490
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Dave Walsh
Phone:	(508) 540-8080
Project Name:	NEW BEDFORD WATER QUALITY
Project Number:	TO-0010-04
Report Date:	11/01/11

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Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1117490-01	WQ-TUR-001-102411	NEW BEDFORD, MA	10/24/11 11:30
L1117490-02	WQ-TSS-001-102411	NEW BEDFORD, MA	10/24/11 11:30
L1117490-03	WQ-TUR-002-102411	NEW BEDFORD, MA	10/24/11 11:52
L1117490-04	WQ-TSS-002-102411	NEW BEDFORD, MA	10/24/11 11:52
L1117490-05	WQ-TUR-003-102411	NEW BEDFORD, MA	10/24/11 12:14
L1117490-06	WQ-TSS-003-102411	NEW BEDFORD, MA	10/24/11 12:14
L1117490-07	WQ-TUR-003-102411-REP	NEW BEDFORD, MA	10/24/11 12:14
L1117490-08	WQ-TSS-003-102411-REP	NEW BEDFORD, MA	10/24/11 12:14
L1117490-09	WQ-TUR-004-102411	NEW BEDFORD, MA	10/24/11 12:35
L1117490-10	WQ-TSS-004-102411	NEW BEDFORD, MA	10/24/11 12:35

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

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### Report Submission

This report replaces the one issued previously. The report was reissued after L1117490-02 was re-analyzed.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Cynthia McQueen

Title: Technical Director/Representative

Date: 11/01/11

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-01  
**Client ID:** WQ-TUR-001-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 11:30  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	2.2		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-02  
**Client ID:** WQ-TSS-001-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 11:30  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	5.00		mg/l	1.00	NA	1	-	10/28/11 12:00	4,160.2	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-03  
**Client ID:** WQ-TUR-002-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 11:52  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.1		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-04  
**Client ID:** WQ-TSS-002-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 11:52  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total Suspended	4.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP





**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-05  
**Client ID:** WQ-TUR-003-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 12:14  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	4.8		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-06  
**Client ID:** WQ-TSS-003-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 12:14  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.00		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-07  
**Client ID:** WQ-TUR-003-102411-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 12:14  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	3.5		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-08  
**Client ID:** WQ-TSS-003-102411-REP  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 12:14  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



**Project Name:** NEW BEDFORD WATER QUALITY**Lab Number:** L1117490**Project Number:** TO-0010-04**Report Date:** 11/01/11**SAMPLE RESULTS**

**Lab ID:** L1117490-09  
**Client ID:** WQ-TUR-004-102411  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Water

**Date Collected:** 10/24/11 12:35  
**Date Received:** 10/25/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Turbidity	1.8		NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**SAMPLE RESULTS**

Lab ID: L1117490-10  
 Client ID: WQ-TSS-004-102411  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Water

Date Collected: 10/24/11 12:35  
 Date Received: 10/25/11  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total Suspended	4.30		mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP



Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01,03,05,07,09 Batch: WG498100-1									
Turbidity	ND	NTU	0.40	--	1	-	10/25/11 18:00	8,180.1	SP
General Chemistry - Mansfield Lab for sample(s): 04,06,08,10 Batch: WG498340-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	10/26/11 12:15	4,160.2	SP
General Chemistry - Mansfield Lab for sample(s): 02 Batch: WG499221-1									
Solids, Total Suspended	ND	mg/l	1.00	NA	1	-	10/28/11 12:00	4,160.2	SP

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD WATER QUALITY

**Lab Number:** L1117490

**Project Number:** TO-0010-04

**Report Date:** 11/01/11

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 Batch: WG498100-2								
Turbidity	104		-		90-110	-		10
General Chemistry - Mansfield Lab Associated sample(s): 04,06,08,10 Batch: WG498340-2								
Solids, Total Suspended	84		-		80-120	-		20
General Chemistry - Mansfield Lab Associated sample(s): 02 Batch: WG499221-2								
Solids, Total Suspended	96		-		80-120	-		20



## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD WATER QUALITY

**Project Number:** TO-0010-04

**Lab Number:** L1117490

**Report Date:** 11/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG498100-3 QC Sample: L1117490-01 Client ID: WQ-TUR-001-102411						
Turbidity	2.2	2.4	NTU	9		10
General Chemistry - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG499221-3 QC Sample: L1117490-02 Client ID: WQ-TSS-001-102411						
Solids, Total Suspended	5.00	5.50	mg/l	10		20

Project Name: NEW BEDFORD WATER QUALITY

Lab Number: L1117490

Project Number: TO-0010-04

Report Date: 11/01/11

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1117490-01A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-02A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-03A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-04A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-05A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-06A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-07A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-08A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)
L1117490-09A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TURBIDITY-180.1(2)
L1117490-10A	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	A2-TSS-160(7)

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

<b>A</b>	- Spectra identified as "Aldol Condensation Product".
<b>B</b>	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
<b>C</b>	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
<b>D</b>	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
<b>E</b>	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
<b>G</b>	- The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
<b>H</b>	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
<b>I</b>	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
<b>M</b>	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
<b>NJ</b>	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

Report Format: Data Usability Report



**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

**Data Qualifiers**

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD WATER QUALITY  
**Project Number:** TO-0010-04

**Lab Number:** L1117490  
**Report Date:** 11/01/11

## REFERENCES

- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised September 19, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health Certificate/Lab ID: PH-0141.**

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 245.7, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081B, 8082A, 8260B, 8270C, 8015D.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082A, 8081B.)

### **New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. *NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Pennsylvania** Certificate/Lab ID: 68-02089 **NELAP Accredited**

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020A, 7471B, 7474. Organic Parameters: EPA 3050B, 3540C, 3630C, 8270C, 8081B, 8082A.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via LA-DEQ.**

Refer to LA-DEQ Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

*Air & Emissions* (EPA TO-15.)

#### **Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

MANSFIELD, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

### Client Information

Client: Woods Hole Group  
Address: 81 Technology Park  
East Falmouth, MA 02536  
Phone: 508-540-8080  
Fax: 508-540-1001  
Email: DWALSH@WHGRP.COM

These samples have been previously analyzed by Alpha

### Project Information

Project Name: New Bedford Water Quality  
Project Location: New Bedford, MA  
Project #: TO-0010-04  
Project Manager: Dave Walsh  
ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due: \_\_\_\_\_ Time: \_\_\_\_\_

Date Rec'd in Lab: \_\_\_\_\_

### Report Information - Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

ALPHA Job #: L1117490

### Billing Information

Same as Client info PO #: \_\_\_\_\_

### Regulatory Requirements/Report Limits

State (Fed Program) Criteria \_\_\_\_\_

Other Project Specific Requirements/Comments/Detection Limits:

### PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS		SAMPLE HANDLING	TOTAL # BOTTLES		
		Date	Time			Turbidity	TSS				
1	WQ-TUR-001-102411	10/24/11	1130	SW	DS	X		Filtration _____ <input type="checkbox"/> Done <input type="checkbox"/> Not needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below) Sample Specific Comments	1		
2	WQ-TSS-001-102411		1130				X			Turbidity = 1.0 NTU upon sampling	1
3	WQ-TUR-002-102411		1152				X			Turbidity = 0.3 NTU upon sampling	1
4	WQ-TSS-002-102411		1152				X			upon sampling	1
5	WQ-TUR-003-102411		1214				X			Turbidity = 0.1 NTU upon sampling	1
6	WQ-TSS-003-102411		1214				X				1
7	WQ-TUR-003-102411-REP		1214				X				1
8	WQ-TSS-003-102411-REP		1214				X				1
9	WQ-TUR-004-102411		1235				X			Turbidity = 0.3 NTU upon sampling	1
10	WQ-TSS-004-102411		1235				X				upon sampling

Container Type PP  
Preservative AA

Relinquished By: [Signature] Date/Time: 10/25/11 1350  
[Signature] 10/25/11 1700

Received By: [Signature] Date/Time: 10/25/11 1350  
[Signature] 10/25/11 1700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.