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US Army Corps of Engineers
New England District

# FINAL REPORT

## 2010 Environmental Monitoring, Sampling, and Analysis Reports

## NEW BEDFORD HARBOR SUPERFUND SITE
## NEW BEDFORD, MASSACHUSETTS

**Contract No. W912WJ-09-D-0001-0010-03**

**Superfund Records Center**
**SITE:** New Bedford
**BREAK:** 7.5
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I. Water Quality Monitoring Summary Report
II. Sediment Monitoring Summary Report
III. 2010 Biannual Groundwater Monitoring at the Sawyer Street Confined Disposal Facility
IV. Sediment Trap Study Summary Report
V. North of Wood Street Post-Remediation Monitoring


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

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July 2011


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2010

# FINAL REPORT NEW BEDFORD HARBOR SUPERFUND SITE

## 2010 Environmental Monitoring, Sampling, and Analysis Reports

WOODS HOLE GROUP

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# Letter of Transmittal

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Ms. Elaine Stanley, USEPA, Region I (1 hard copy with 1 CD attached [pdf's]}

Ms. Kimberly White USEPA, Region I (~~1~~ 2 hard copy with ~~1~~ 2 CD attached [pdf's]}

**By:** Nadine Sweeney

# FINAL
# WATER QUALITY MONITORING SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE, OU #1

## Contract No. W912WJ-09-D-0001-0010-03

Prepared For:
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April 2011

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# FINAL
# WATER QUALITY MONITORING SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE
# OPERATIONAL UNIT #1
# NEW BEDFORD, MASSACHUSETTS

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**April 2011**

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# EXECUTIVE SUMMARY

In 2010, 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 and the potential associated impacts, 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 2010 dredge season.

Dredging, debris removal, and other support operations were performed between June and September 2010, and resulted in the removal of 26,411 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 compliance criteria for turbidity, 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 compliance criteria for Site water turbidity.

Boat-based *in-situ* measurements were evaluated against turbidity compliance criteria, which was defined as 100 Nephelometric Turbidity Units (NTU) above background or ambient turbidity. Consistent with previous years, a compliance criteria threshold 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 2010 environmental monitoring season the compliance criteria threshold was defined as 100 NTU above background, 300-feet down-current of the active work zone. At the start of the 2010 monitoring season, the protectiveness of the 100 NTU turbidity compliance criteria was reevaluated by performing toxicity bioassays using Site water of varying turbidity that was collected from two locations in the planned remedial work zone. The turbidity toxicity evaluation study indicated that the water at 100 NTU above background exhibited no adverse toxic effects on the bioassay subject organisms. Based on these results, the protectiveness of the turbidity compliance criterion was reaffirmed and used with confidence. Observations by the boat-based monitoring team confirmed that the compliance threshold was not exceeded during the 2010 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 of the dredging activity. Background turbidity levels ranged from >0 to 20 NTU compared to >0- 102 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 100-feet, well within the active work zone and compliance threshold.

Throughout the 2010 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 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 north of Wood Street. Water temperatures reached 30°C and dissolved oxygen concentrations 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 struggling, and a few were found dead; however, no large scale fish kills were observed. During the active dredge season, when fish were most abundant, there appeared to be no restriction of fish movement past the dredge area.

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.

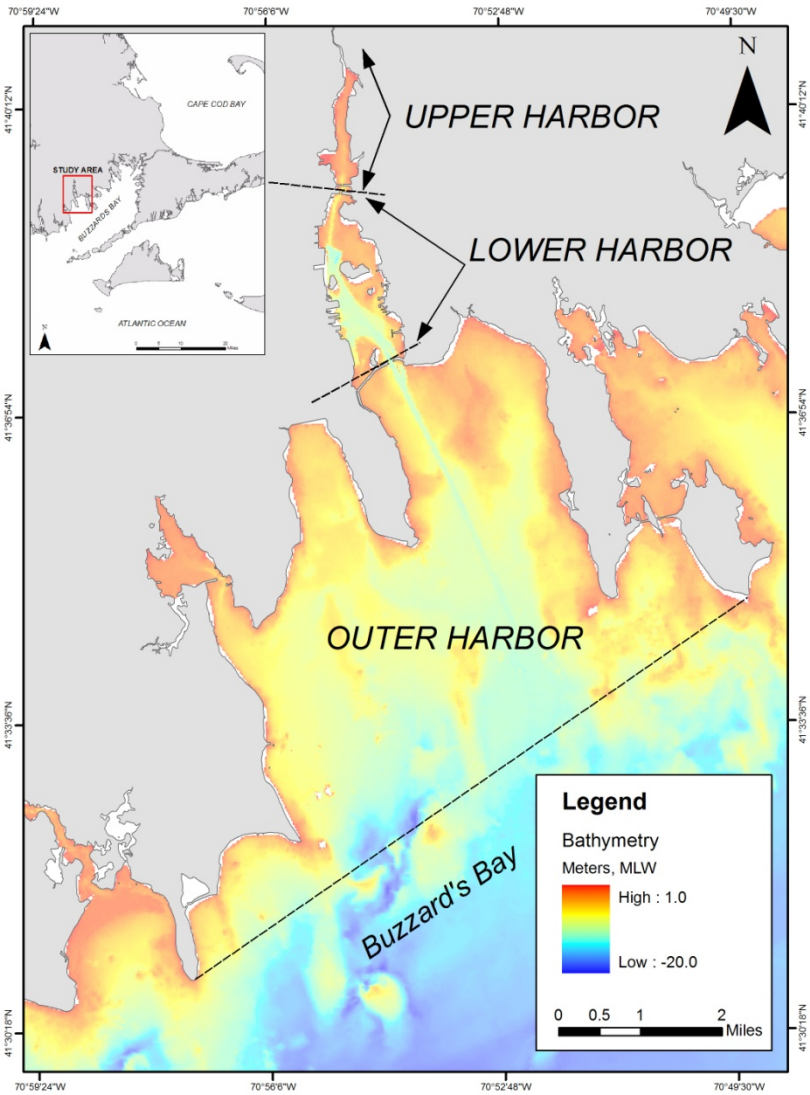


**Figure 1. Basemap of New Bedford Harbor Superfund Site in Southeastern, MA**

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 2010 water quality monitoring program was to conduct boat-based and fixed-station *in-situ* monitoring during dredging activity. Remediation of the Site involved the excavation and dredging of approximately 900,000 cubic yards of PCB-contaminated sediment. 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.

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 2010, remediation activities at the Site included hydraulic dredging and/or debris removal in five Dredge Areas: N, G, J, K and L (Figure 2). A sixth area, Area M, is located in the narrow channel south of the Wood Street Bridge. Area M was mechanically excavated from the shoreline after hydraulic dredging was completed in 2009.

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 compliance criterion for the 2010 season was defined as 100 Nephelometric Turbidity Units (NTU) above background turbidity levels. Background turbidity levels

typically ranged from 2–10 NTU depending location and environmental conditions. The turbidity compliance threshold was set at 100 NTU, measured 300 feet down-current of the active work-zone. The active work zone was defined as the area between the northern boundary of Area M and the southern boundary of Area L. In the event that no work was being done in Area L on an ebb tide, the southern boundary of the active work zone was instead 300 feet down-current of the southern boundary of Area K. The turbidity compliance criterion was supported by three toxicity dilution studies: one performed during the 2009 dredge season, and two performed at the beginning of the 2010 season (Woods Hole Group, 2010a). In previous years, monitoring occurred along a 600 foot boundary in addition to the 300 foot boundary. However, during the 2009 season use of the 600 foot boundary was discontinued following a recommendation by the EPA, which was based on the evaluation of the toxicity dilution study results. Additional information regarding the change in monitoring protocol is provided in the 2009 Water Quality Monitoring Summary Report (Woods Hole Group, 2010a).

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 exceedance criterion for that particular time would be 110 NTU. If values of ≥100 NTU above background were observed 300-feet down-current of the active work zone, and professional judgment was used attribute the exceedance to dredging related activities, the resident USACE NAE Project Engineer (Mr. Paul L'Heureux) was notified to implement corrective actions while WHG would proceed to collect water samples. Judgment used to determine the cause of an exceedance was based on an assessment of remediation activity, location, weather, tides, and knowledge of ambient water quality. 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, which is always located 1000-feet up-current of all activity. Figure 3 depicts the decision sequence for the 2010 water quality monitoring program.

After the full suite of water samples were collected, samples would be submitted for analysis. An initial toxicity analysis was 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 were 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.

An exceedance of the 100 NTU turbidity criterion was considered a "compliance threshold violation," if observed 300 feet down-current of the active work zone. This is in contrast to a "high turbidity event," which occurred if turbidity levels reached 100 NTU above background, but still within the active work zone, before reaching the 300-foot boundary. While a high turbidity event could be cause for concern and certain adjustments would be made to active dredging operations in the area, it did not constitute a project-specific compliance threshold violation and therefore did not require collection of water quality samples.

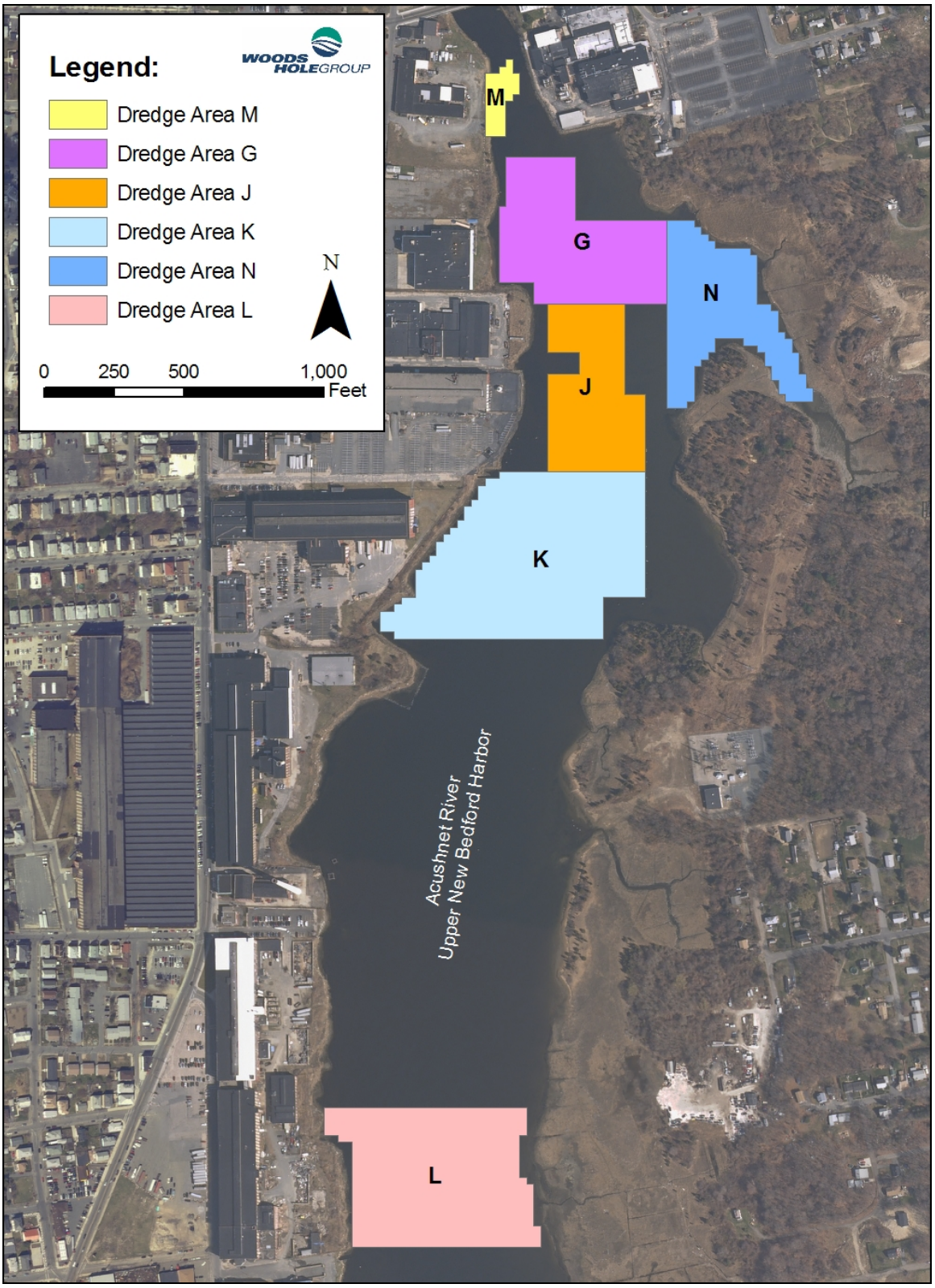


**Figure 2. Basemap of 2010 Remedial Dredging Areas**

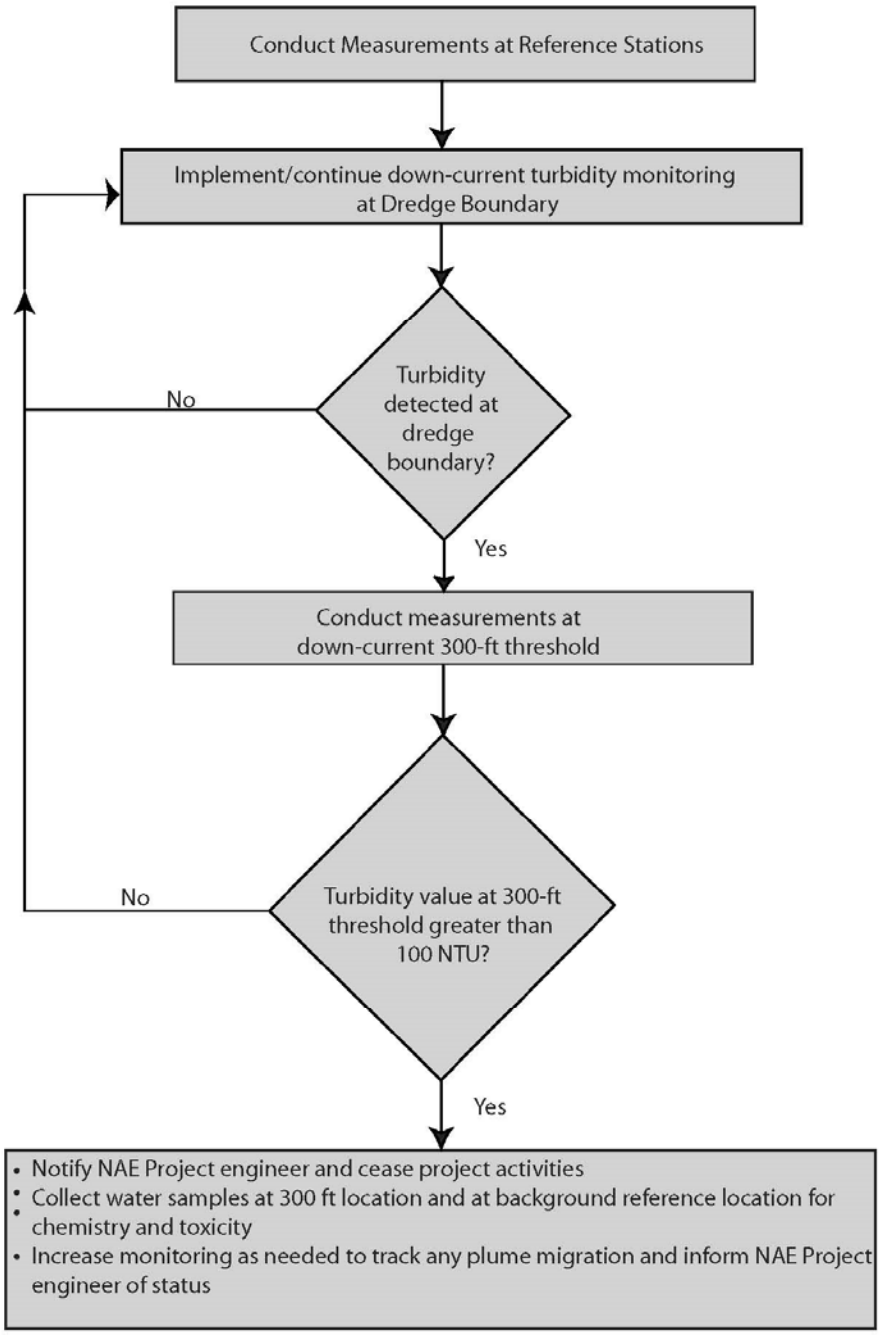


**Figure 3. Decision Sequence for 2010 Water Quality Monitoring**

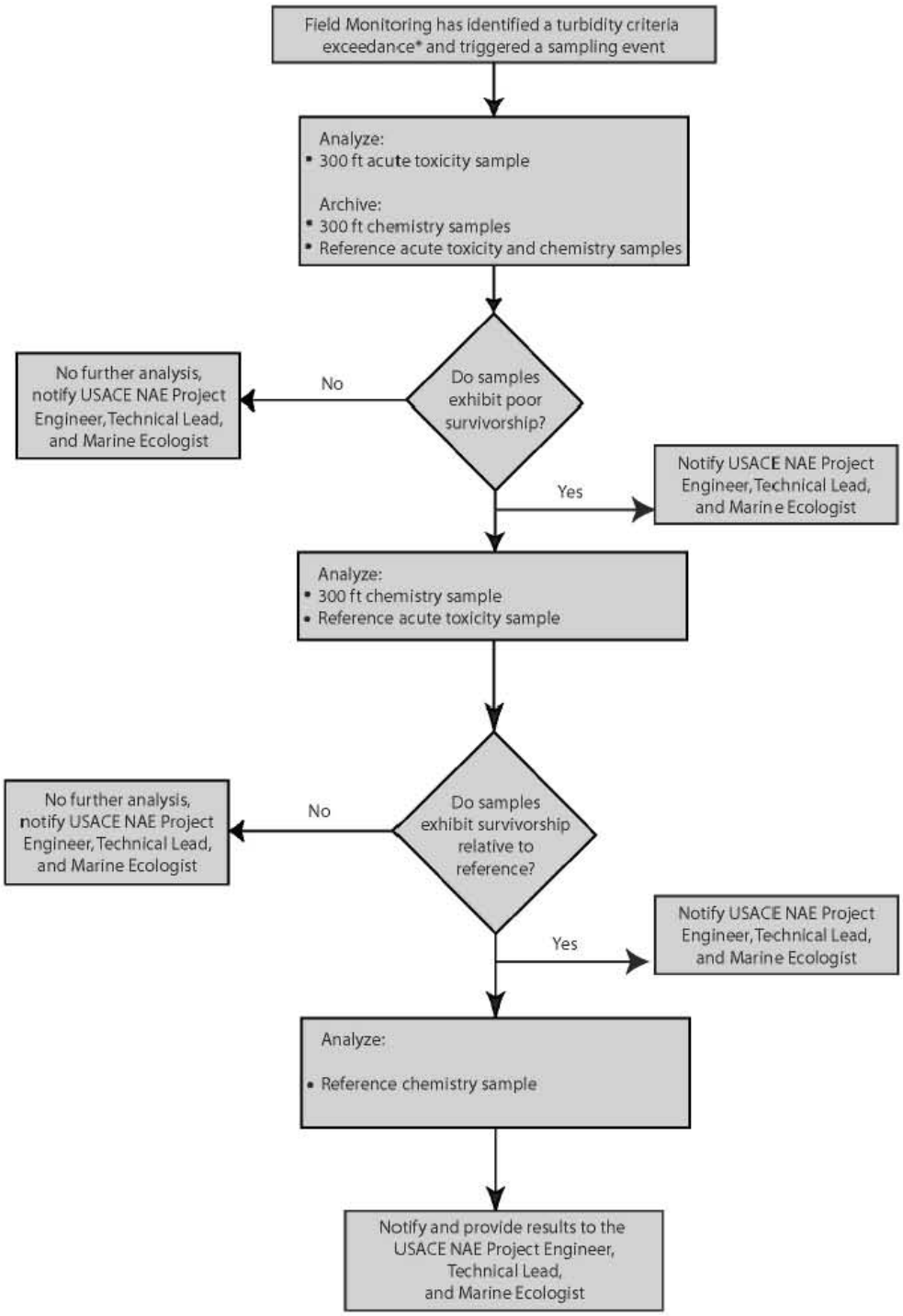


**Figure 4. Decision Sequence for Level III Water Quality Sample Analysis**

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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 (Woods Hole Group, 2010b) and Quality Assurance Project Plan (Woods Hole Group, 2010c).

## 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 compliance threshold, 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 was necessary throughout the dredging process in order to respond to changing field conditions. 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 for activities considered to have the greatest potential to impact water quality or when new conditions were encountered, such as the start of the season. Level I sampling required collection of discrete water samples at two designated stations: Reference and 300-feet down-current. 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. Level I monitoring was performed to confirm that the compliance 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.

- **Level III:**
  Level III represents routine, boat-based monitoring performed during dredging activities to evaluate *in-situ* turbidity readings against the project-specific turbidity compliance criterion. Collection of discrete water samples for laboratory analysis is conditional upon *in-situ* turbidity monitoring and occurs if there is an exceedance of the compliance criterion.

Complete details of these sampling methods are provided in the Field Sampling Plan (Woods Hole Group, 2010b) and Quality Assurance Project Plan (Woods Hole Group, 2010c).

### *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 at the beginning of the dredge season, Level III monitoring was conducted twice weekly during the course of the 2010 dredge season. Beginning in June and ending in September, Level III monitoring was typically scheduled on Mondays and Thursdays, throughout the active dredge season. 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 observation transects with the sonde. 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. During a flood tide this station was located 1000-feet south of the Area L southern boundary. Conversely, during an ebb tide, this station was located 1000-feet north of the northern boundary of Area M. 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 were monitored at the specified transects 300-feet down-current from the active work zone. Figure 5 depicts the

monitoring compliance transects for the 2010 water quality monitoring efforts. An exceedance of the 100 NTU (above background) compliance criterion at either of the 300-foot transects would result in a compliance threshold violation. If such a plume was identified and turbidity readings remained elevated 100 NTU above background for a sustained period, the resident Project Engineer Mr. Paul L'Heureux was to be notified and all dredge related operations were to be shut down until the condition abated. Due to the variable nature of a plume, both temporally and spatially, it is left to the professional judgment of the monitoring team to determine whether a plume has been sustained to warrant sample collection. An ephemeral spike in turbidity would not warrant sample collection.

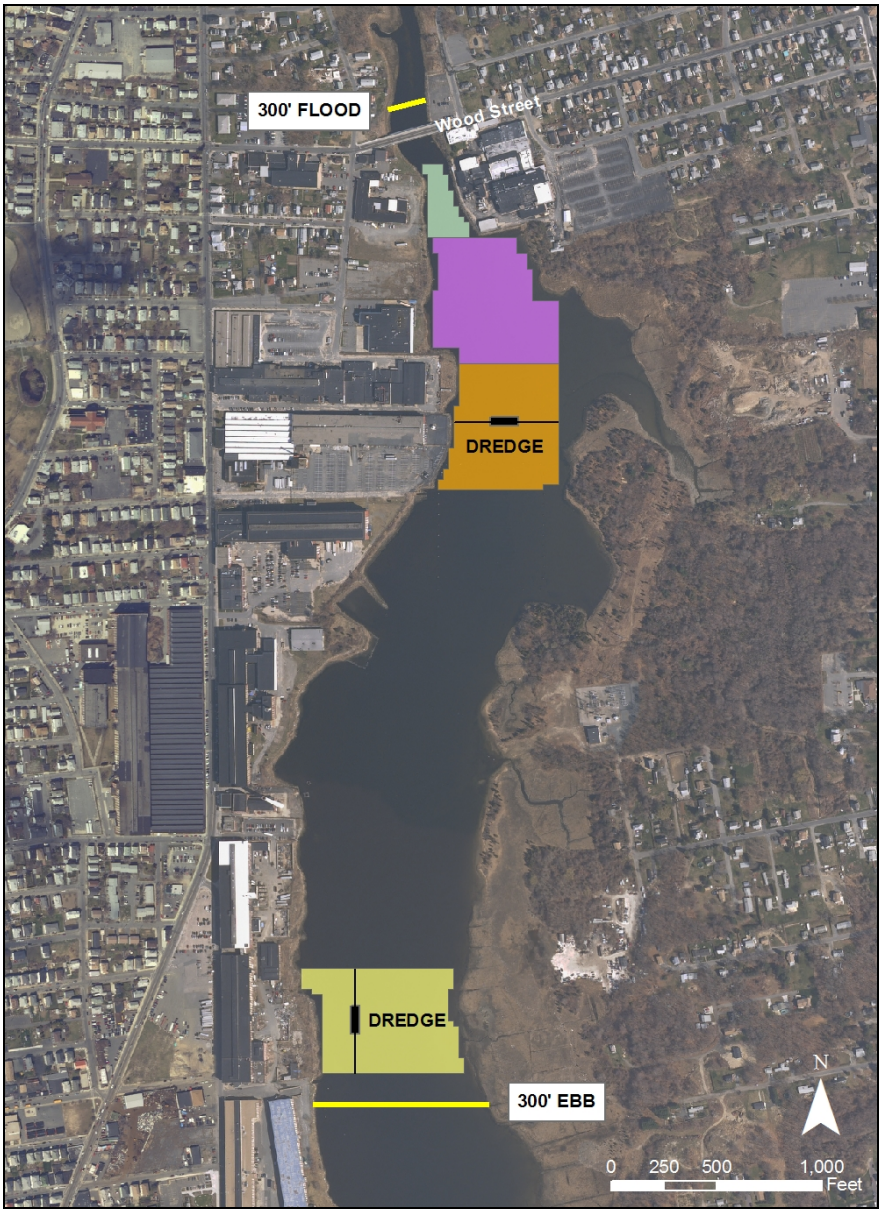


**Figure 5. Monitoring Transects for the Turbidity Criteria Compliance Threshold**

### *2.1.2 Fixed Station Water Quality Monitoring*

In addition to the active boat-based monitoring, fixed station water quality moorings were deployed at five locations throughout the upper portion of the estuary (Figure 6). Mooring locations included: 1) North of the Wood Street Bridge (NWS), 2) South of the Wood Street Bridge (SWS), 3) South of Area J (SAJ) or Area K (SAK), 4) South of Area L (SAL), and 5) North of the Coggeshall Street Bridge (NCS). Moorings were designed to float approximately 1.0–1.5 feet below the water surface (Figure 7). Each mooring was instrumented with a YSI 6920-V2 sonde that recorded depth, temperature, salinity, turbidity, and dissolved oxygen measurements. A measurement of these parameters was recorded 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 upward. Fixed-station IDs and locations are summarized in Table 1. The SAJ mooring station was relocated when work started in Area K; the mooring was moved south of Area K (SAK), where it remained for the duration of the 2010 monitoring season. The mooring stationed 300-feet north of the Coggeshall Street Bridge was added during the 2010 dredge season to provide better spatial coverage in the Upper Harbor. Unfortunately the mooring was lost over the Fourth of July holiday weekend. Multiple attempts to recover the instrument with a grapple hook, and a search by the New Bedford Marine Police Dive Team, were unsuccessful and it was assumed to have been stolen. The mooring station was not reoccupied due to: 1) risk of vandalism or theft, 2) station proximity to the Lower Harbor and associated boat traffic, and 3) adequate data coverage provided by the four remaining stations in the Upper Harbor. It was determined that the other mooring were not at risk of theft/vandalism due to the proximity of stations to the active work zone and no previous history of disturbance.

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

| Station ID | Position | Date Deployed | Date Recovered |
|---|---|---|---|
| **NWS** | 41°40.724 N<br>70°55.021 W | Mar. 25, 2010 | Nov. 22, 2010 |
| **SWS** | 41°40.679 N<br>70°55.003 W | Mar. 25, 2010 | Nov. 22, 2010 |
| **SAJ** | 41°40.367 N<br>70°54.954 W | Mar. 25, 2010 | Jul. 15, 2010 |
| **SAK** | 41°40.279 N<br>70°54.987 W | Jul. 15, 2010 | Nov. 22, 2010 |
| **SAL** | 41°39.910 N<br>70°55.023 W | Mar. 25, 2010 | Nov. 22, 2010 |
| **NCS** | 41°39.430 N<br>70°55.007 W | Mar. 25, 2010 | NA – presumed stolen<br>(data last recovered July 1, 2010) |

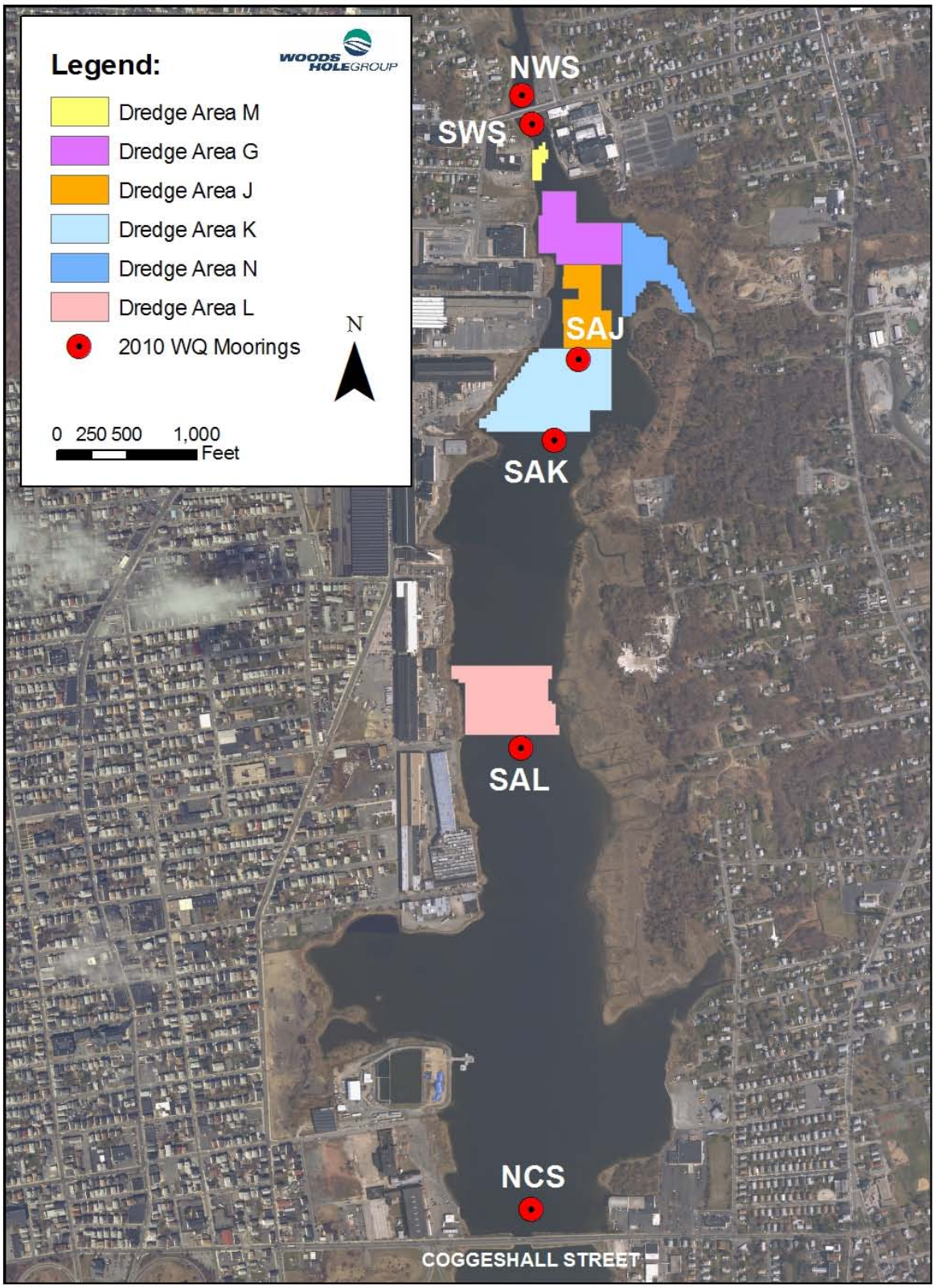


**Figure 6. 2010 Fixed Station *In-Situ* Water Quality Mooring Locations**

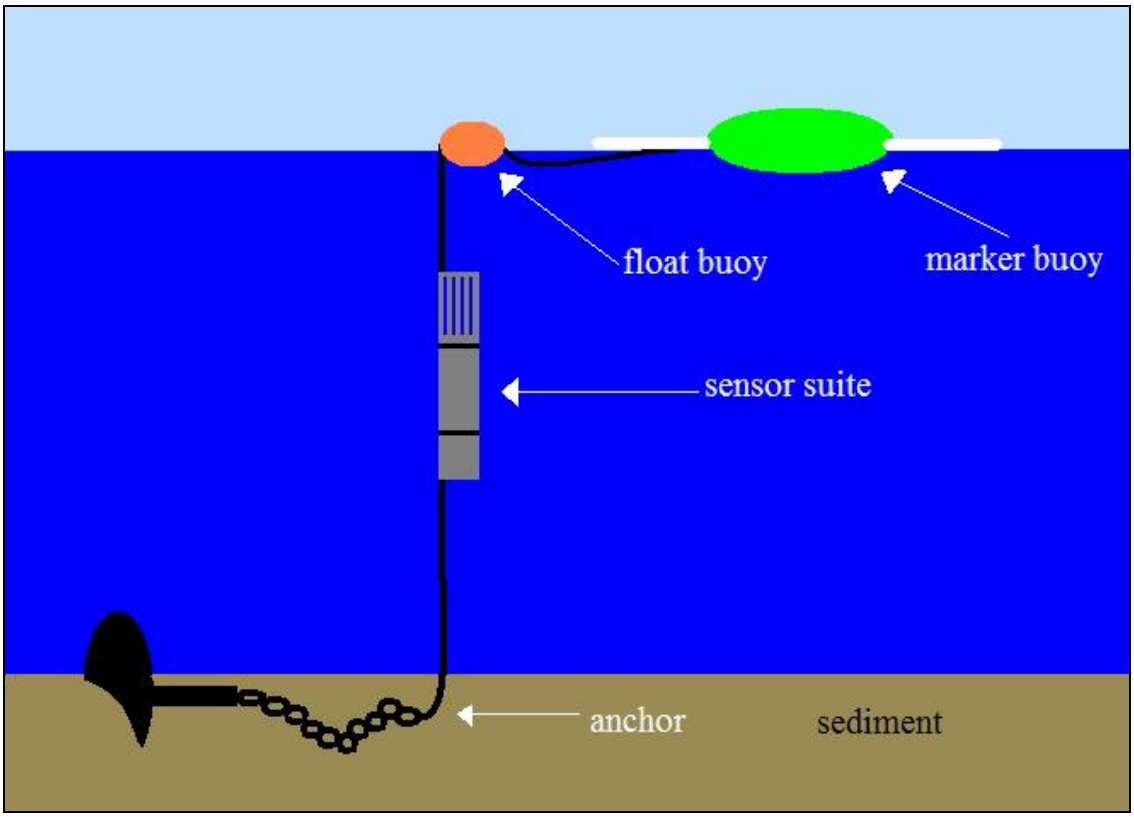


**Figure 7. Diagram of Fixed Station Water Quality Moorings**

A new feature introduced during the 2010 monitoring season was the addition of a data telemetry buoy system coupled with a YSI sonde. The NexSens MB-300 buoy and SDL500C telemetry system was introduced to the water quality monitoring program on a trial basis to evaluate the value to the program in providing additional access to data in near real-time. The telemetry buoy system was equipped with solar panels, providing power to the YSI sonde, and the internal data logger and cellular IP modem used to transmit data, at 15-minute intervals, to a computer at the WHG office in Falmouth, MA. A photograph of the telemetry buoy system is presented in Figure 8. Warning levels and alerts were established for a turbidity threshold with the telemetry system's software, enabling email notification to the WHG monitoring team members should turbidity reach 100 NTU or higher. The pilot telemetry system proved effective in alerting the WHG monitoring team in this manner.

The email alert system and real-time updates allowed field personnel to monitor water quality parameters seven days a week without presence on the water. The situation where the telemetry system added the most value during the 2010 dredge season was during the excavation of the Area M. During this process all water access north of this location was closed due to equipment blocking the passage of the monitoring vessel; however, since the telemetry buoy was deployed at the south of Wood Street (SWS) mooring station, the WHG team was able to maintain a monitoring presence north of Area M on the flood tide.

The telemetry buoy system was initially stationed at the SAL mooring station, but once the excavation work in Area M commenced, the telemetry system was repositioned at the South of Wood St. (SWS) station. The telemetry system remained at the SWS station for the remainder of the 2010 dredging season; because the majority of remedial work was performed in the Dredge Areas to the north, it was believed that this was the best use of the telemetry alert system. This approach effectively allowed WHG to continuously monitor the southern compliance threshold boundary, while simultaneously monitoring the active remediation work in northern Dredge Areas with boat-based *in-situ* observations.

**Figure 8. Data Telemetry Buoy System that was Coupled with the YSI Sonde**

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. Times of active dredging and debris removal in the areas immediately adjacent to each mooring were shaded on the figures to determine whether elevated turbidity levels could be attributed to dredging activities. Any dredge related activities in Areas N, M, G, J or K were shaded for the NWS, SWS, SAJ, and SAK mooring stations. Activity within Area L was shaded for the SAL mooring station. 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 and brought back to the lab trailer 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 YSI *in-situ* sensor was placed in the water adjacent to the tubing inlet 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 Volume | Sample Container | Preservation | Storage Condition | Holding Time | Analytical Lab |
|---|---|---|---|---|---|---|
| **TSS** | 1 L | HDPE Bottle | Ice | 4 ± 2 °C | 7 Days | **Alpha Analytical**<br>320 Forbes Blvd<br>Mansfield, MA 02767<br>Ph:508-822-9300 |
| **Turbidity** | 1 L | HDPE Bottle | Ice | 4 ± 2 °C | 48 Hours | |
| **PCB (unfiltered)** | 1 L | Wide-mouth Amber Glass Bottle | Ice | 4 ± 2 °C | 7 Days | |
| **PCB (dissolved)** | 1 L | Wide-mouth Amber Glass Bottle | Ice | 4 ± 2 °C | 7 Days | |
| **Total Metals** | 500 ml | HDPE Bottle | $HN0_3$ | 4 ± 2 °C | 6 Months | |
| **Toxicity** | 5 gallons | Cubitainer | Ice | 4 ± 2 °C | 24 Hours | **EnviroSystems, Inc**<br>One Lafayette Road<br>P.O. Box 778<br>Hampton, NH 03843<br>Ph: 603-926-3345 |

## 2.2 LABORATORY ANALYSIS

Laboratory testing was performed on preplanned discrete water samples. Contingency based samples (Level III) were not collected during the 2010 season. 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, 2010b).

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, 2010b).

### *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 2010B), which is based on a modified USEPA Method 160.2. In brief, a well-mixed sample was filtered through a 0.45 µm 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, 2010b), which is based on USEPA Method 180.1. Sample results were reported as NTU.

### *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 µm pore size) and the filtrate captured for analysis.

Polychlorinated biphenyl samples (total and dissolved) were extracted following modified EPA Method 3510C, AAL SOP "Extraction of Water Samples by Separatory Funnel" (Woods Hole Group, 2010b). 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 a modified USEPA Method 8082 (Woods Hole Group, 2010b). 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 (µg/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. 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 modified 2-day 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*, ≤5 days old, 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 for up to 6 days. Holding tanks were maintained in a flow-through culture mode at a temperature of 25±2°C. At the start of the assays the mysids were 7 days old. Juveniles were fed <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). Prior to use in the assays, the salinity of the samples was adjusted, as necessary, to predetermined levels using artificial sea salts for *A. bahia* and *A. punctulata* assays. When necessary, the salinity of samples for the *A. bahia* acute and chronic exposure assays were adjusted to 25±2‰ while samples used for the *A. punctulata* assays were adjusted to 30±2‰. 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±1°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 in a composite sample of the "old" test solution and in the "new" test solution prior to being added to the test chamber. 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 7 day assays were conducted at a temperature of 26±1°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 ≤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 103°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 x $10^7$ 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 Testing System (CETTS) 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 March 25, 2010, approximately 2.5 months prior to the onset of the dredging season. Monitoring with the fixed-station mooring ended on November 22, 2010, approximately 2 months after the dredging season was completed. Boat-based monitoring began with baseline samples collected in May 2010 and continued through the dredge season until the completion of demobilization activities in mid-September 2010. Remedial dredging began on June 14, 2010, and was completed on September 10, 2010.

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 2010 dredge season. All turbidity values referenced are the actual values as read from the sensor, and therefore, not corrected for background levels. 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).

**Week of May 10 – May 14, 2010 (Baseline)**

- **Days monitored**: Tuesday 5/11.
- **Areas of activity**: None.
- **Exceedances**: None.
- **Turbidity summary**:
  Tues: ebb reference (ref) = 3.0–3.5 NTU, ebb dredge area = 2.9–3.3 NTU, flood ref = 1.3–1.5 NTU, flood dredge area = 2.1–2.3 NTU
- **Wildlife**: None.
- **Notes**: Baseline water quality samples collected at ebb and flood reference locations and within the active dredge zone during both flood and ebb tidal cycles. Samples submitted for TSS and turbidity analyses only. No dredge related activities anywhere at this time (pre-season).

**Week of June 14 – June 18, 2010 (Week 1)**

- **Days monitored**: Monday 6/14, Tuesday 6/15, Wednesday 6/16 and Thursday 6/17.
- **Areas of activity**: Dredging in Areas G and J. Debris removal in Area G.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 6/14: ebb ref = 2.8–4.2 NTU, flood ref = 2.0–7.5 NTU, 300’ down-current of debris removal (DR) & dredge (DRG) in G = 5–35 NTU (ebb) & 4.5–6.0 NTU (flood);
  Tues – 6/15: ebb ref = 6.7–9.1 NTU, flood ref = 3.6–6.6 NTU, 300’ down-current of DR & DRG in G = 16.1–29.8 NTU, 300’ down-current of DRG in J = 13.4–28.9 NTU;

Weds – 6/16: ebb ref = 3.6–8.1 NTU, flood ref = 2.7–8.0 NTU, 250' down-current of DRG in G = 7–24 NTU (flood) & 5.3–24 NTU (ebb), 100' down-current of DRG in J = 10.7–28.2 NTU;

Thurs – 6/17: ebb ref = 10.2–13.6 NTU, flood ref = 2–22.6 NTU, 300' down-current of DRG in J = 4.5–55.2 NTU (flood) & 5.7–29.0 NTU (ebb), 300' down-current of DRG in G = 14.9–33.1 NTU, 300' down-current of DR & DRG in G = 17.4–47.7 NTU (flood) & 7.6–28.7 NTU (ebb)

- **Wildlife**: Abundant swans, seagulls, water fowl and shorebirds observed. Several fish were also sighted.
- **Notes**: On Monday 6/14, monitoring efforts were focused around the collection of Level I samples for analysis of all 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 same activities 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 M during the ebb tide. Turbidity was generally low surrounding the remediation activities. Dissolved oxygen concentrations ranged 2.4–7.9 mg/L.

  Tuesday 6/15 was the second day of Level I water quality monitoring. Samples were collected surrounding dredging activities in Areas G and J. Turbidities were observed to be between 10–30 NTU during sample collection at both the flood and ebb sampling locations. Collection of two dilution study samples was also performed (Level II): one in Area G and one in Area L, to represent the northern and southern dredge areas, respectively.

  On Wednesday 6/16, no debris removal operations occurred. Monitoring efforts surrounded dredging in Area G and J for both flood and ebb tides. Reference turbidity at both locations was approximately 8 NTU. Higher turbidities were observed at depth, with a maximum of 42 NTU 150-feet north of the dredge during the low, flooding tide. Turbidity was generally slightly elevated throughout the monitored area, including the reference stations.

  Turbidity on Thursday 6/17 was also elevated at the reference stations. The southern, flood reference location observed a maximum of 22.6 NTU at depth with lower turbidity closer to the surface. The northern, ebb reference station was slightly elevated: a maximum of 13.6 NTU was observed. Ephemeral plumes of high turbidity (maximum 55.2 NTU, generally 35–50 NTU) were observed occurring infrequently at a distance 300-feet north of the dredge in Area J during the flood tide. The plumes lasted less than one minute before dissipating to 20–30 NTU, or near background levels. Dissolved oxygen concentrations ranged between 2.1–9.0 mg/L.

**Week of June 21 – June 25, 2010 (Week 2)**

- **Days monitored**: Monday 6/21 and Thursday 6/24.
- **Areas of activity**: Dredging in Areas G, J, and L. Debris removal in Area G.
- **Exceedances**: None.

- **Turbidity summary**:
  Mon – 6/21: flood ref = 4.5–7.5 NTU, 200' down -current of DRG in G = 14.3–15.5 NTU, 200' down-current of DRG in J = 13.1–48.2 NTU (flood) and 8.3–9.1 NTU (ebb);
  Thurs – 6/24: ebb ref = 6.1–8.2 NTU, 200' down-current of DRG in G = 8.4–39.9 NTU, 100' down-current of DR in G = 9.5–17.9 NTU, 100' down-current of DRG in J = 10.5–23.5 NTU (flood) & 8.8–22.1 NTU (ebb)
- **Wildlife**: Several fish were observed jumping.
- **Notes**: During monitoring on Monday 6/21, no debris removal operations occurred. Monitoring efforts surrounded dredging in Area G and J during the flood tide. Reference turbidity at the southern location was between 4.5–7.5 NTU. Elevated turbidities were observed in the immediate vicinity of the dredge in Area J with a maximum of 79.5 NTU measured 150-feet north of the dredge during the low, flooding tide. Turbidity was generally slightly elevated throughout the monitored area during the flood tide. Water temperatures are increasing rapidly and dissolved oxygen concentrations are low throughout the harbor with as little as 0.5 mg/L recorded in Area G.

  Dissolved oxygen concentrations on Thursday 6/24 were also diminished at all monitoring stations. Reference turbidity ranged 6.1–8.2 NTU. Turbidity was generally low surrounding all remediation activities, which included debris removal in Area G and dredging in Areas G and J.

**Week of June 28 – July 2, 2010 (Week 3)**

- **Days monitored**: Monday 6/28 and Thursday 7/1.
- **Areas of activity**: Dredging in Areas G and J. Debris removal in Areas G and N.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 6/28: ebb ref = 3.2–5.3 NTU, 200' down-current of DRG in G = 14.3–15.5 NTU, 200' down-current of DRG in J = 13.1–48.2 NTU (flood) and 8.3–9.1 NTU (ebb);
  Thurs – 7/1: ebb ref = 8.1–10.0 NTU, flood ref = 2.2–6.1 NTU, 300' down-current of DR in N = 5.7–52.9 NTU, 100' down-current of DRG in G = 12.1–28.4 NTU, 100' N of Wood Street = 10.0–12.1 NTU, 100' S of Wood Street = 13.3–16.2 NTU, 300' S of J = 6.3–8.9 NTU
- **Wildlife**: Several fish were observed jumping. Many water fowl and shore birds were observed as well.
- **Notes**: Monitoring efforts on Monday 6/28 surrounded dredging in Area G and J during the ebb tide. Reference turbidity at the NWS location was between 3.2–5.3 NTU. Turbidity was slightly elevated (~15 NTU above background) 150' down-current from the dredge in Area J and 300' from debris removal in Area G. Dissolved oxygen spanned a large range in Area J, from 0.4–14.2 mg/L.

  Dissolved oxygen concentrations on Thursday 7/1 were observed to be between 7.0–12.7 mg/L. Reference turbidity was 2.2–6.1 NTU at the southern, flood reference location and 8.1–10.0 NTU at the northern, ebb reference station. The

area encompassing north of Wood Street, Area M, Area G and Area J all appeared to have elevated turbidity. The plume was observed to be highest in the vicinity of Area J, 300' south of debris removal in Area N during the ebb tide. A maximum turbidity reading of 52.9 NTU was observed, however turbidity generally ranged from 20–35 NTU. Turbidity readings were highest in the top foot of water, and ranged 5–20 NTU below the saltwater wedge, in water greater than one foot deep.

**Week of June 5 – July 9, 2010 (Week 4)**

- **Days monitored**: Tuesday 7/6 and Thursday 7/8.
- **Areas of activity**: Dredging in Areas G and J. Debris removal in Areas J and N.
- **Exceedances**: None.
- **Turbidity summary**:
  Tues – 7/6: flood ref = 2.1–5.6 NTU, 300' up-current of DRG in J = 5.8–12.5 NTU, 300' down-current of DRG in J = 14.8–46.7 NTU;
  Thurs – 7/8: ebb ref = 4.9–11.3 NTU, flood ref = 5.7–9.7 NTU, 300' down-current of DRG in J = 13.6–28.1 NTU (ebb) and 14.0–19.7, 300' down-current of DRG in G = 11.4–55.2 NTU
- **Wildlife**: Several finned fish were observed jumping. Numerous small minnows were observed throughout the harbor, particularly near the Sawyer Street docks.
- **Notes**: During monitoring on Tuesday 7/6, background turbidity readings were low, between 2–6 NTU. Dissolved oxygen concentrations were in the normal range (5–9 mg/L), with the exception of deeper depths that reached near-hypoxic conditions in the late afternoon. Monitoring efforts focused on the dredging in Area G and J during the flood tide. Turbidity occasionally elevated to ~40 NTU above background 300' down-current from the dredge in Area J but generally ranged from 15–30 NTU.

  During collection of data from the fixed water quality moorings on Tuesday, it was discovered that the mooring north of the Coggeshall Street Bridge was missing. After an extensive search, WHG was unable to locate the mooring or the YSI instrument attached to the anchor line.

  On Thursday 7/8, background turbidity was elevated at both reference locations, with a maximum of 9.7 NTU observed during the flood tide and 11.3 NTU observed during the ebb tide. Water temperatures at times exceeded 30° C (>85° F). Turbidity was slightly elevated in the vicinity of Areas G, J and N. A moderate to heavy, localized sheen was observed surrounding the dredge in Area G after work stopped due to low water levels in the morning hours. The sheen was detected again in the afternoon after work resumed in Area G. During operations in Area G, turbidity readings reached a maximum of 55.2 NTU, more than 45 NTU above background, and maintained values of 30–40 NTU above background for the duration of active dredging. The plume of turbidity and apparent oily sheen maybe have been the result of the prop-wash from push boats that were used to keep the dredge operating in a straight line. Debris removal in

Area N was also active at the time when the elevated turbidity readings were observed.

**Week of July 12 – July 16, 2010 (Week 5)**

- **Days monitored**: Monday 7/12 and Thursday 7/15.
- **Areas of activity**: Dredging in Areas G and J. Debris removal in Areas N and K.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 7/12: ebb ref = 5.7–9.3 NTU, flood ref = 7.4–9.4 NTU, 300' down-current of DRG in G = 5.2–16.9 NTU, 300' down-current of DRG in J = 6.8–14.9 NTU, 300' down-current of DR in K = 21.0–25.5 NTU;
  Thurs – 7/15: ebb ref = 5.5–12.1 NTU, flood ref = 2.5–5.6 NTU, middle of J = 4.0–17.8 NTU, 75' down-current of DR in K = 20–50 NTU
- **Wildlife**: Several swans, ducks, cormorants, gulls and osprey were observed. Small minnows were observed throughout the harbor.
- **Notes**: During monitoring on Monday 7/12, background turbidity readings were between 5.7–9.4 NTU. Dissolved oxygen concentrations were very low (1.0–3.2 mg/L) in the morning at the ebb reference location north of Wood Street. A plume of turbid water was observed within 200' of the debris removal barge in Area K. At the time, the barge was installing new sheet piles surrounding Area K. Turbidity values ranged from 20–26 NTU, less than 20 NTU above background at maximum; however there was a significant sheen on the water surrounding the barge and debris removal operations.

  The sheen in Area K was present on Thursday 7/15 as well, although spotty and less wide-spread. Turbidity readings in close proximity (<100') to the debris removal were elevated as high as 50 NTU above background during ephemeral spikes, and generally 10–40 NTU above background. Turbidity values diminished rapidly with increasing distance from the active operations. Background turbidity was elevated at the ebb reference location, ranging 5.5–12.1 NTU.

**Week of July 19 – July 23, 2010 (Week 6)**

- **Days monitored**: Monday 7/19 and Thursday 7/22.
- **Areas of activity**: Dredging in Areas G, J and K. Debris removal in Area K.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 7/19: flood ref = 2.4–7.9 NTU, 300' down-current of DR & DRG in K = 15.1–16.7 NTU, @ SWS = 8.5–15.1 NTU;
  Thurs – 7/22: ebb ref = 15.7–31.4 NTU, flood ref = 6.8–10.6 NTU, 200' down-current of DR & DRG in K = 12.5–62.8 NTU (ebb), 300' down-current of DR & DRG in K = 20.0–55.9 NTU (flood)
- **Wildlife**: Small minnows were observed throughout the harbor and other fish observed jumping. Terns were observed fishing in Areas J, K and L on Thursday 7/22.

- **Notes**: Monitoring on Monday 7/19 was interrupted when severe thunderstorms passed through the region and all personnel were ordered to evacuate the water. Dissolved oxygen concentrations were in the normal range, approximately 4.3–7.7 mg/L. A slight sheen was observed in the oil boom at the northern boundary of Area G during the flood tide while debris removal and dredging were active in Area K. Two debris removal barges were active in Area K during the monitored hours on Monday.

  On Thursday 7/22, high background turbidity readings were recorded at the ebb tide reference location 1000-feet north of Area M. Turbidity ranged 15.7–31.4 NTU and dissolved oxygen concentrations were extremely low: 0.7–2.2 mg/L. The flood tide reference readings were not as high; however they were slightly elevated as compared to previous weeks. Turbidity ranged 6.8–10.6 NTU at 1000-feet south of Area L. Dissolved oxygen concentrations increased throughout the day, reaching normal levels (4.3–9.1 mg/L) during the afternoon hours in all monitored areas. Frequent ephemeral plumes of turbidity were observed down current of the dredging and debris removal operations in Area K. Two debris removal barges were again active in Area K for most of the day on Thursday 7/22. The highest turbidity readings were generally observed between one to two feet depths, and spikes of up to 62.8 and 55.9 NTU were observed during the ebb tide and flood tide, respectively. The highest readings were brief, and turbidity was typically between 20–40 NTU at both locations.

**Week of July 26 – July 30, 2010 (Week 7)**

- **Days monitored**: Monday 7/26 and Wednesday 7/28.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area K
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 7/26: ebb ref = 8.9–11.6 NTU, 150’ down-current of DR in K = 11.4–102.1 NTU, 200’ down-current of dredge = 16.0–23.6 NTU (ebb) and 6.4–42.3 NTU (flood);
  Weds – 7/28: ebb ref = 4.7–14.7 NTU, flood ref = 1.4–16.4 NTU, 300’ down-current of DR & DRG in K = 6.3–14.1 NTU, 100’ down-current of DR in K = 44.2 NTU, 200’ down-current of DRG in K = 6.3–38.1 NTU
- **Wildlife**: Numerous terns and gulls feeding, occasional fish observed jumping, many cormorants, also osprey and a blue heron.
- **Notes**: On Monday 7/26, a slight sheen was observed in the oil boom around Area K while debris removal and dredging were active. Turbidity readings close to the debris removal in Area K (within 200 feet) were elevated to a maximum of 102.1 NTU. The plume was brief and localized to within the immediate vicinity of the active debris removal. Within ten minutes, turbidity values returned to near-background levels. The highest turbidity readings were observed during the ebb tide. During the flood tide, readings ranged from background to approximately 30 NTU above background. Dissolved oxygen concentrations were generally slightly low, ranging from a minimum of 2 mg/L at depth, to a maximum of 7 mg/L at the surface.

On Wednesday 7/28, background turbidity readings were 4.7–14.7 NTU during the ebb tide and 1.4–16.4 NTU during the flood tide. Turbidity values were highest in close proximity to the debris removal operations in Area K. At a distance of 100-feet down-current, a maximum of 44.2 NTU was recorded. An occasional high spike of turbidity was observed but not recorded, reaching approximately 50 – 60 NTU. Turbidity values decreased rapidly with increasing distance away from the operations. Dissolved oxygen concentrations were higher than on Monday, ranging from approximately 6.5 mg/L to almost 11 mg/L in near-surface waters during the afternoon.

**Week of August 2 – August 6, 2010 (Week 8)**

- **Days monitored**: Monday 8/2 and Thursday 8/5.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area K.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 8/2: flood ref = 2.2–6.4 NTU, 300' down-current of DR & DRG in K = 5.6–21.5 NTU (flood), 300' down-current of DR in K = 4.0–45.7 NTU (ebb);
  Thurs – 8/5: flood ref = 6.2–8.0 NTU, 300' down-current of DR & DRG in K = 7.3–14.1 NTU
- **Wildlife**: Numerous terns and gulls feeding, especially on Thursday. Occasional fish observed jumping and small fish observed in the top half-foot of water. Mating crabs were swimming near the Sawyer Street dock on Monday.
- **Notes**: A visible plume of turbidity was observed south of the debris removal barge in Area K while debris removal and dredging were active on Monday 8/2. Turbidity readings within the plume were between 4.0–45.7 NTU. During the flood tide, readings ranged from background to 21.5 NTU at a distance of 300-feet down north of the dredge in Area K. Dissolved oxygen concentrations fell within the normal range between 3.4 mg/L to 10.7 mg/L.

  Low turbidity readings surrounding all remediation activities were observed in the harbor on Thursday 8/5. Dissolved oxygen concentrations were very low in the morning but increased during the course of monitoring to normal levels (5–10 mg/L) during the afternoon. Lower concentrations were observed at depth throughout the day. Dredging and debris removal continued in Area K, and the dredging of Area G is almost complete, with the dredge working in the far southwest corner of Area G. Excavation in Area M was active during period of high water levels.

**Week of August 9 – August 13, 2010 (Week 9)**

- **Days monitored**: Monday 8/9 and Thursday 8/12.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area K.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 8/9: ebb ref = 4.1–7.2 NTU, flood ref = 6.8–8.1 NTU, 300' down-current of DRG in K = 5.0–24.0 NTU, @SAK = 16.0 NTU

Thurs – 8/12: ebb ref = 5.9–6.4, flood ref = 4.3–7.3 NTU, 250' down-current of DRG in G = 5.7–25.5 NTU, 300' down-current of debris removal in K = 5.0–73.6 NTU, 300' down-current of dredge in K = 8.7–32.3 NTU

- **Wildlife**: Abundant terns and gulls feeding in the northern areas.
- **Notes**: Dissolved oxygen concentrations were slightly elevated in surface water readings on Monday 8/9. Background turbidity was below 10 NTU, with a maximum turbidity reading of 24 NTU observed at a distance of 300 feet down-current of the dredge in Area K. Low turbidity observed throughout the harbor.

  Elevated turbidity was observed on Thursday 8/12 surrounding the dredging and debris removal in Area K. The highest readings were ephemeral and localized to the channel adjacent to Area K by the western shoreline. Turbidity was generally between 20–60 NTU, averaging approximately 45 NTU for the duration of activity in Area K. Brief spikes above 60 NTU, up to 73.6 NTU, were observed occasionally but dissipated quickly. Turbidity decreased with increasing distance down current. Dissolved oxygen concentrations were at normal levels (5–10 mg/L) during the monitored hours.

**Week of August 16 – August 20, 2010 (Week 10)**

- **Days monitored**: Monday 8/16 and Thursday 8/19.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area K. Excavation in Area M.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 8/16: flood ref = 4.8–6.5 NTU, 250' down-current of DRG & DR in K = 5.5–18.9 NTU, 200' down-current of DRG in G = 6.3–14.2 NTU, within 200' of DR in M = 4.0–8.1 NTU;
  Thurs – 8/19: flood ref = 5.0–9.7 NTU, 300' down-current of DR & DRG in K = 6.6–14.8 NTU (ebb) and 17.0–32.8 (flood), 300' down-current of DRG in G = 11.8–12.4 NTU
- **Wildlife**: Abundant terns, gulls feeding in the northern areas. Small baitfish observed in the surface water throughout the harbor. Some fish appeared stressed, and a few were observed dead. A large school of small fish (estimated in size at >1000) observed in the vicinity of the Wood Street Bridge.
- **Notes**: On Monday 8/16, water quality monitoring observed low turbidity readings surrounding all remedial activities. A sheen was observed emanating from the debris removal activity in Area K, moving north with the wind and tide into Areas J, G and M. A slight sheen was also observed during shoreline excavation in Area M. Dissolved oxygen concentration was 5–8 mg/L, the lower concentrations observed at deepest depths.

  Dissolved oxygen concentrations spiked in the afternoon on Thursday 8/19. Concentrations reached near 12 mg/L, beginning at normal to low concentrations in the morning (4–7 mg/L) and climbing throughout the afternoon. This trend is observed in the fixed station data. Low turbidity was observed surrounding all activities; the highest readings were less than 30 NTU above background during

active dredging and debris removal in Area K on the flood tide. A moderate sheen was observed near the debris removal activity, accompanied by a strong $H_2S$ or petrol odor.

**Week of August 23 – August 27, 2010 (Week 11)**

- **Days monitored**: Monday 8/23 and Thursday 8/26.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area K. Excavation in Area M.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 8/23: ebb ref = 5.3–6.1 NTU, 200' down-current of DR in K = 11.5–24.5 NTU, 200' down-current of DRG in K = 49.1–74.4 NTU (ebb) and 35.2–36.5 NTU (flood);
  Thurs – 8/27: ebb ref = 3.2–5.4 NTU, flood ref = 1.6–5.7 NTU, 100–300' down-current of DR in K = 6.0–42.3 NTU, 300' down-current of DRG in K = 5.1–28.5 NTU
- **Wildlife**: Abundant terns, gulls feeding in the northern areas. Fish jumping in all areas. Numerous blue crabs observed throughout the harbor, including on the fixed station water quality moorings.
- **Notes**: On Monday 8/23, water quality monitoring observed high turbidity readings surrounding the debris removal in Area K, even after work has ceased for a period of time. Dredging was active in Area K at the time as well. High readings (>50 NTU above background) were observed in close proximity to the debris removal barge and active dredge during the ebb tide. Similarly, turbidity readings elevated to approximately 30 NTU above background were observed in close proximity to the activity during the flood tide. Dissolved oxygen concentrations were very low, generally between 1–4 mg/L.

  Dissolved oxygen concentrations were very low again on Thursday 8/26, ranging approximately 3 – 6 mg/L. Low turbidity readings were observed surrounding all activities throughout the day. Slightly elevated readings (>40 NTU above background) were recorded in close proximity (within 200 feet) of debris removal in Area K, but decreased away from the activity.

**Week of August 30 – September 3, 2010 (Week 12)**

- **Days monitored**: Monday 8/30 and Thursday 9/2.
- **Areas of activity**: Dredging in Areas G and K. Debris removal in Area N.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 8/30: ebb ref = 3.1–3.2 NTU, flood ref = 1.4–4.2 NTU, 100–300' down-current of DRG in G = 2.5–8.9 NTU (flood) and 4.6–31.6 NTU (ebb), 100–300' down-current of DR in N = 8.6–35.3 NTU;
  Thurs – 9/2: ebb ref = 8.2–10.2 NTU, 200' down-current of DRG in G = 7.2–16.2 NTU, 200' down-current of DRG in K = 6.3–16.0 NTU
- **Wildlife**: Abundant terns, gulls feeding throughout the harbor. Many larger fish jumping. Blue crabs also observed.

- **Notes**: On Monday 8/30, low turbidity readings were observed throughout the harbor surrounding all dredge-related activities. The highest observed turbidity readings were in close proximity to active dredging in Area G and debris removal in Area N during the flood tide. Similarly, turbidity readings elevated to approximately 30 NTU above background were observed in close proximity to the activity during the ebb tide. A moderate sheen was observed near debris removal activities in Area N, but produced no significant associated turbidity plume.

  On Thursday 9/2, low turbidity readings were observed during monitored hours surrounding all activities. The ebb reference location observed slightly elevated readings as compared to previous weeks' data: 8.2–10.2 NTU. Generally, reference readings are less than 10 NTU. Dissolved oxygen concentrations ranged between 7–11 mg/L.

**Week of September 6 – September 10, 2010 (Week 13)**

- **Days monitored**: Wednesday 9/8 and Thursday 9/9
- **Areas of activity**: Dredging in Areas G and K.
- **Exceedances**: None
- **Turbidity summary**:
  Weds – 9/8: ebb ref = 5.8–10.4 NTU, flood ref = 11.4–12.9 NTU, 250' down-current of DRG in G = 4.8–7.1 NTU, 250' down-current of DRG in K = 4.8–6.1 NTU (ebb) and 8.8–19.2 NTU (flood), 100' from DRG in K = 11.0–28.7 NTU;
  Thurs – 9/9: ebb ref = 3.0–4.9 NTU, 275' down-current of DRG in G = 5.4–9.9 NTU, 200' down-current of DRG in K = 2.5–13.8 NTU
- **Wildlife**: Numerous terns, gulls, egret, herons, cormorants, osprey feeding throughout the harbor. Many larger fish jumping.
- **Notes**: On Wednesday 9/8, thunderstorms caused all dredge-related activities including water quality monitoring to stop in the morning hours. Very low turbidity readings were observed throughout the day surrounding all dredge-related activities. Turbidity values were slightly higher in the afternoon during the flood tide, with a maximum of 28.7 NTU observed within 100' of the dredge in Area K. Reference turbidity readings were slightly elevated, ranging from 6–13 NTU. Dissolved oxygen concentrations were in the normal range, 5–10 mg/L throughout the day. A slight to moderate sheen with an associated odor was observed near dredging operations in Area K. No associated turbidity plume was observed with the oily sheen.

  Turbidity readings were very low again on Thursday 9/9 surrounding all remediation activities. At low tide in close proximity to the dredging activities, occasional spikes into the teens were observed. A slight spotty sheen was observed near dredging in both Areas G and K but produced no associated turbidity plume

**Week of September 13 – September 17, 2009 (Week 14)**

- **Days monitored**: Monday 9/13 and Tuesday 9/14.
- **Areas of activity**: No active dredging. Demobilization.
- **Exceedances**: None.
- **Turbidity summary**:
  Mon – 9/13: flood ref = 0.9–2.9 NTU, Area K = 1.5–4.0 NTU, Pierce Mill Cove = 0.9–3.6 NTU, Sawyer Street Dock = 1.1–3.3 NTU;
  Tues – 9/14: flood ref = 0.9–3.4 NTU, ebb ref = 3.2–6.9 NTU, Pierce Mill Cove/Sawyer Street Dock = 2.2–4.6 NTU (flood) and 2.0–8.5 NTU (ebb)
- **Wildlife**: Many larger fish (bluefish) jumping. Numerous terns, gulls, egrets, herons, cormorants, osprey throughout the harbor. A dead gull and a dead cormorant observed north of Wood Street and in Area K, respectively, on Tuesday 9/14.
- **Notes**: On Monday 9/13, monitoring observed low turbidity throughout the harbor. Turbidity readings surrounding all demobilization activities were observed to be approximately background conditions. No oily sheens or odors were observed relating to the demobilization activities.

  Tuesday 9/14 observed similar conditions surrounding demobilization activities on the harbor. The highest turbidity reading observed was 8.5 NTU, during which time the vessel was approximately 200-feet from active work driving sheet piles in Pierce Mill Cove. A large algal bloom was observed north of Wood Street and in dredge areas M and G. When disturbed, the water appeared to be a cloudy greenish hue, and dissolved oxygen concentrations were elevated to >15 mg/L.

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# 4.0 DREDGING SUMMARY

Remedial dredging was initiated on June 14, 2010 and completed on September 10, 2010. In 2010, remediation activities at the Site included hydraulic dredging and/or debris removal in five Dredge Areas: N, G, J, K and L (Figure 2). A sixth area, Area M, is located in the narrow channel south of the Wood Street Bridge. In 2010, a portion of Area M was mechanically dredged from the shoreline after hydraulic dredging in 2009. 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 2010 season: DMU-1, DMU-2, DMU-3, DMU-4, DMU-10, DMU-12, DMU-13, DMU-14, 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 perimeter and dredge winching cables. The perimeter cable was run around the sheet piles at approximately the high tide mark. Also along the perimeter, floating, absorbent oil booms were placed to contain any surface oil slicks.

Dredging was performed by Sevenson Environmental Services Inc. (SES) under the direction of Jacobs Engineering (JE). SES utilized a Mud CatTM hydraulic dredge equipped with a horizontal auger (Figure 9). The dredge was propelled by winching itself along a transverse cable which spans the dredge area to opposite sides of the perimeter cable. 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 26,411 cubic yards of material in 2010.

**Figure 9. Mud CatTM 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 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 10). 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 secured to the debris removal platform or barge. Support boats were used throughout the operation to transport crews, maintain dredges, handle the pipeline, and move barges.

**Figure 10. Debris Removal Excavator and Debris Storage Scow**

The northern most portions of Areas M, N, and G 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 J, K, or L. 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 Areas M and G caused some concern that the equipment and dredge activity might impact the seasonal migration of anadromous fish species. For this reason, the excavation of Area M was only performed after the spring migration period to alleviate the potential for impacts on migratory fish species.

# 5.0 RESULTS

Results of the water quality monitoring of the 2010 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 was conducted in an adaptive manner in response 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. 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. At lower tides, the northern portion of the river was nearly impassable, making it difficult to monitor work performed in Areas M and G during these periods. Due to the narrow river channel and shallow water depths at this location, however, there was increased potential for water quality impacts. Monitoring in this restrictive location was successfully accomplished using the fixed station YSI sonde and buoyed telemetry system.

### *5.1.1 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 2010. 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 during low tidal periods, which is sometimes reflected in the volume of boat-based monitoring data collected from that location for a particular day.

#### ***5.1.1.1 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 compliance threshold 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 <1 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 <1–102

NTU. Variations in turbidity were observed due to proximity to dredging activities, and environmental conditions. The maximum turbidity observation of 102 NTU was observed on July 26, 2010 in Area K. It occurred during an ebb tide, in a plume that migrated 200-feet south of the debris removal barge. Readings within the plume ranged from background to 102 NTU, and dissipated with increasing distance from the active operation. The plume was ephemeral and water quality parameters returned to background conditions within 10 minutes of observation.

Turbidity plumes observed during boat-based monitoring were generally weak (<30 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. Often, the plumes occurred south of debris removal in Area K on an ebb tide and north of debris removal in Areas M, G and J on the flood tide. At times, such as on August 2, 2010, a plume of turbidity was visible, but water quality readings indicated the turbidity remained below 50 NTU.

Oily sheens were observed while monitoring turbidity near dredging and debris removal operations, particularly during operations in Area K. Although sheens were likely produced as a result of disturbing bottom sediments, both high and low turbidity values were observed when surface sheens were present. Sheens often persisted long after turbidity subsided to background levels.

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. Close monitoring of these activities and conditions ensured that elevated turbidity plumes did not migrate outside of the active work zone. In general, dredging itself did not produce high turbidities in surrounding areas.

#### *5.1.1.2 Dissolved Oxygen Summary*

At the request of the USACE, WHG closely monitored the concentration of dissolved oxygen during the 2010 season on account of the concern for potential impacts to anadromous fish and other fish species and migration.

At several times during the season, dissolved oxygen concentrations decreased to hypoxic conditions throughout the system (0.4–2.8 mg/L); this is a naturally occurring phenomenon during summer months in estuarine systems. Dissolved oxygen readings of <1 mg/L were frequently observed north of Wood Street and in the vicinity of Areas M and G. These water quality conditions occur naturally in shallow stratified estuaries, but provided a warning for the dredging operators to be cautious as to not exacerbate the situation. 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 north of Wood Street. On occasion, these fish appeared to be stressed, possibly due to the low dissolved oxygen levels in the estuary. While a few dead fish were observed, no large scale fish-kills were observed. 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 2010 Fish Migration Impact Plan (Jacobs Engineering Group, 2010). Dredging operations had little or no effect on the fish migration or the overall health of the local fish and wildlife population.

### *5.1.2 Fixed-Station Continuous Monitoring*

Five water quality instruments (YSI 6920 sondes) were deployed on March 25, 2010, 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) North of the Wood Street Bridge (NWS), 2) South of the Wood Street Bridge (SWS), 3) South of Area J (SAJ), 4) South of Area L (SAL), and 5) North of the Coggeshall Street Bridge (NCS) (Table 1). The instruments remained at these stations for the duration of the 2010 environmental monitoring season, apart from two deviations. The first deviation that occurred was the loss of the mooring and instrument at the NCS station, which was presumable caused by vandalism/theft; this station was not reoccupied. The second deviation occurred when station SAJ was repositioned to the south of Area K (SAK) after debris removal work started in Area K. Fixed-station instrumentation and equipment was recovered for the 2010 environmental monitoring season on November 22nd. 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 above. 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. 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 DO.

Dredging operations frequently stopped and started due to mechanical or physical issues and the location of active operations was highly variable. Moreover, the 2010 active dredge zone was divided into six 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, the examination of the work record (logs) of dredge activity for each area, and a comparison with the mooring data in closest proximity has allowed for a cause-effect relationship to be determined. This type of comparison was performed throughout the 2010 environmental monitoring season, and

both work schedule and water quality data were plotted together in weekly reports to the USACE.

The fixed-station mooring data indicate the occurrence of turbidity signals that were related to dredge activity. These signals are manifested as peaks in turbidity above background levels at times that correspond to active dredge operations in the adjacent dredge area (Figure 11). The background turbidity signal in the estuary 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. When evaluating the following criteria: 1) proximity to and timing of active dredging operations, 2) weather conditions, 3) tide conditions, and 4) ambient water quality conditions, one may be able to determine the cause of turbidity fluctuation.

The turbidity levels in the 2010 environmental monitoring time series did not exceed the project-specific compliance criteria (100 NTU), except when the optical sensor itself experienced significant biofouling that compromised readings. 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.

At times, the cause-effect relationship between turbidity and forcing mechanism (e.g., debris removal rake) is apparent; this was the case at the SAJ station between July 8 and 15, 2010. Figure 11 depicts data for this time period and provides information regarding active remedial operations in Areas J and G. Periods of sustained elevated turbidity are observed during dredge-related activity in the adjacent areas. During this particular deployment period, preparations were made to move dredge activity into Area K. The highest turbidity recorded was on July 12, 2010, during the driving of sheet piles in Area K. Due to the proximity of the mooring to the dredge activities, the turbidity measurements are relatively high (83 NTU maximum). This is the only occasion, throughout the entire 2010 environmental monitoring season, when turbidity readings were sustained and elevated to such levels. Noticeable spikes in turbidity readings also occurred during weekends and inoperable hours.

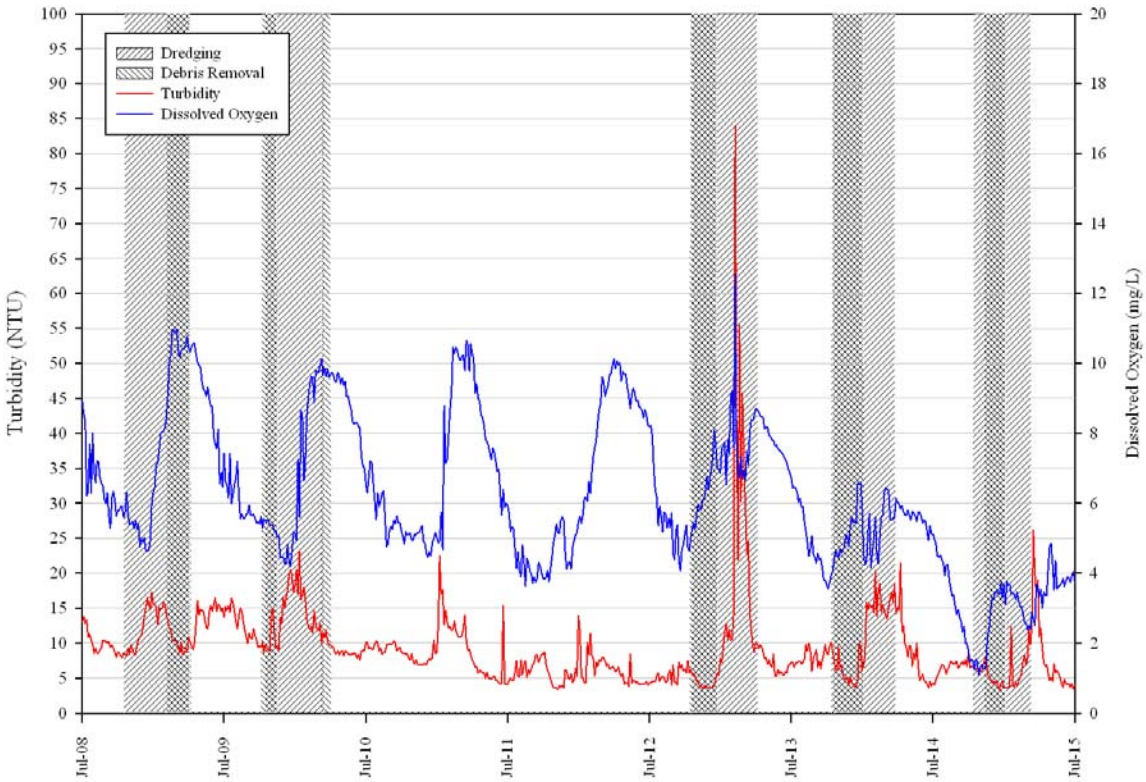


**Figure 11. Example of Turbidity Levels Related to Dredging and Support Operations in the Northern Part of the Estuary, July 8–15, 2010**

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, 0.4–17.5 mg/L. During August, normal conditions (1–6 mg/L) in the northern areas of the estuary were followed by supersaturated DO concentrations as high as 17.5 mg/L. The rapid change in DO was observed at all mooring stations in the harbor. The data plotted in Figure 12 depict this phenomenon, as observed at the station NWS between August 26 and September 3. During this period, hypoxic conditions prevail over the first two days, and are followed by readings of supersaturated water August 31–September 2. Figure 12 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 <1 mg/L at night, and between 3–5 mg/L during peak hours of the day. However, over the next three days DO concentrations steadily increased to super-saturated conditions, >8.6mg/L. 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. Fluctuations in DO were noticeable in all areas of the harbor.

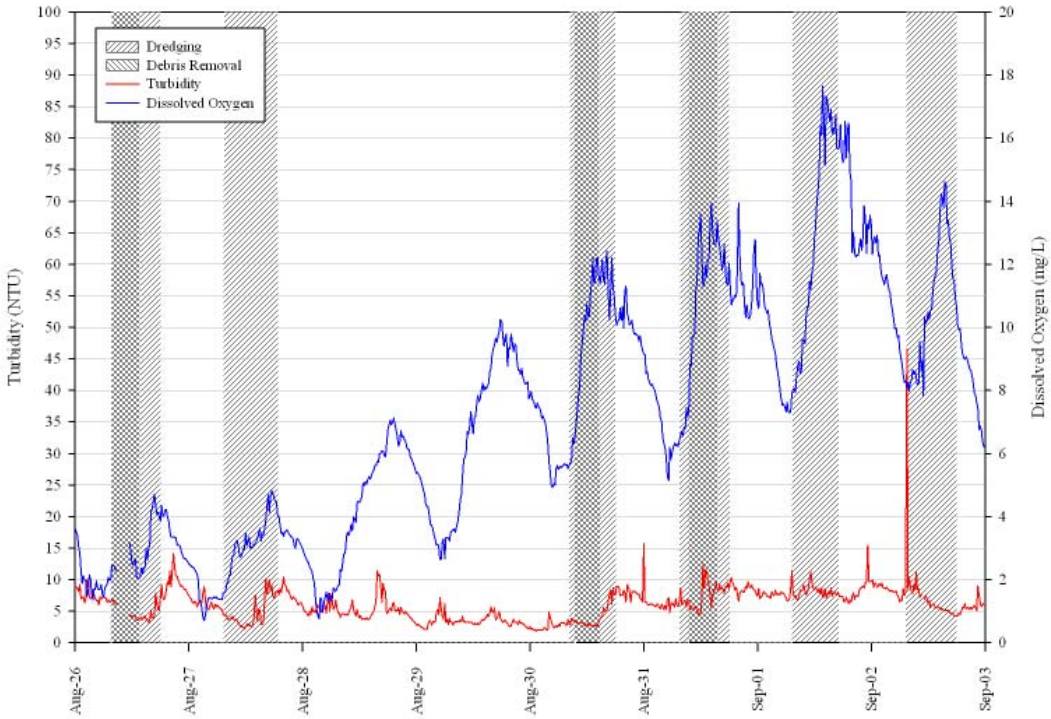


**Figure 12. Example of Rapid Changes in Dissolved Oxygen, August 26–September 3, 2010**

Water temperature in the 2010 active work zone ranged from a minimum of 6.2 °C, recorded at station NWS on March 28, to a maximum of 31.6°C, recorded at the same location on July 7. Figure 13 presents the average water temperature for each calendar month at station SAJ/SAK over the course of the deployment (March 25–November 22, 2010).

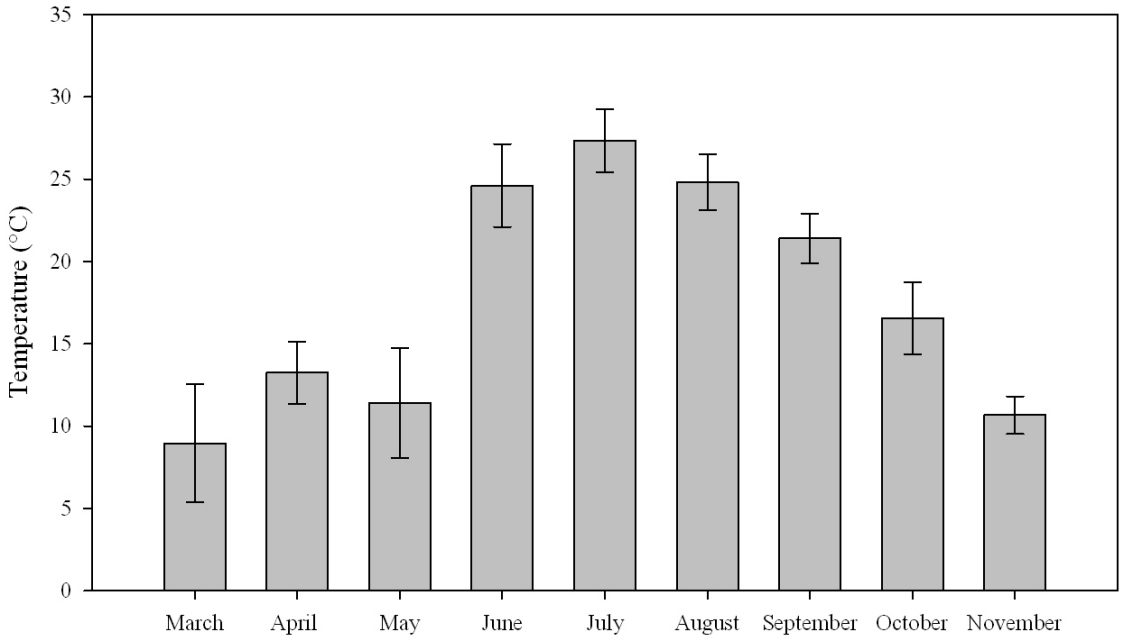


**Figure 13. Average Monthly Water Temperature at the SAJ/SAK Fixed-Station *in-situ* YSI sonde, March 25 – November 22, 2010.**

### *5.1.3 Collection of Discrete Water Samples*

Discrete water samples were collected three times during the 2010 environmental monitoring season (Table 3). Sample collections occurred May 11, June 14, and June 15, 2010. 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, and utilized real-time *in-situ* data to guide monitoring and sample collection. Baseline samples (Level II) collected during the spring were used to establish reference conditions for the harbor and confirm the validity of *in-situ* measurements. On June 14 and 15, Level I water samples were collected from a reference station and an artificially created suspended sediment plume to establish near-baseline conditions and/or re-establish relationships between field measurements (i.e. turbidity) and toxicity results to verify the protectiveness of the project turbidity compliance threshold. Two toxicity evaluation studies were performed on June 15 to support the turbidity criterion compliance threshold.

#### ***5.1.3.1 Baseline Water Quality Samples***

The first sampling event was conducted on May 11, 2010 as part of the baseline monitoring and sampling performed before the start of the dredge season (Table 3). These samples were analyzed to reaffirm the relationship between turbidity and suspended solids, and verify the accuracy of the *in-situ* monitoring sensors. Samples were analyzed for turbidity and TSS only. 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 |
|---|---|---|---|
| **Baseline Water Quality Samples (Level II)** | 5/11/10 | WQ-_*_-001-051110 | 1000-ft north, ebb reference |
| | | WQ-_*_-002-051110 | Active dredge area, ebb tide |
| | | WQ-_*_-003-051110 | 1000-ft south, flood reference |
| | | WQ-_*_-004-051110 | Active dredge area, flood tide |
| **Level I Water Quality Samples** | 6/14/10 | WQ-_*_-001-061410 | 300-ft north of activity, flood tide |
| | | WQ-_*_-002-061410 | 1000-ft south, flood reference |
| | | WQ-_*_-003-061410 | 300-ft south of activity, ebb tide |
| | | WQ-_*_-004-061410 | 1000-ft north, ebb reference |
| | 6/15/10 | WQ-_*_-001-061510 | 300-ft north of activity, flood tide |
| | | WQ-_*_-002-061510 | 1000-ft south, flood reference |
| | | WQ-_*_-003-061510 | 300-ft south of activity, ebb tide |
| | | WQ-_*_-004-061510 | 1000-ft north, ebb reference |
| **Level II Toxicity Evaluation Dilution Study Samples** | 6/15/10 | DS-_*_-001-061510 | 100% plume water - Area G |
| | | DS-_*_-002-061510 | 75% plume, 25% reference - Area G |
| | | DS-_*_-003-061510 | 50% plume, 50% reference - Area G |
| | | DS-_*_-004-061510 | 25% plume, 75% reference - Area G |
| | | DS-_*_-005-061510 | 100% reference site water - NWS |
| | | DS-_*_-006-061510 | 100% plume water - Area L |
| | | DS-_*_-007-061510 | 75% plume, 25% reference - Area L |
| | | DS-_*_-008-061510 | 50% plume, 50% reference - Area L |
| | | DS-_*_-009-061510 | 25% plume, 75% reference - Area L |
| | | DS-_*_-010-061510 | 100% reference site water - NWS |

* three digit code for type of analysis required (e.g., TUR for turbidity)

#### *5.1.3.2 Level I Water Quality Samples*

Water quality samples were collected June 14–15, 2010 as part of the Level I monitoring performed at the start of the 2010 dredge season. These samples were analyzed in order to assess the protectiveness of the project's compliance threshold 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 Area G. 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).

#### *5.1.3.3 Level II Toxicity Evaluation Dilution Study Samples*

Level II water quality samples were collected June 15, 2010 for two toxicity evaluation dilution studies. The goal of the water toxicity evaluation dilution studies was to evaluate the turbidity criterion with the intent to verify that the project remains ecologically protective. Simply put, the methodology required that toxicity bioassays be performed in site water samples of varied turbidities to determine if there was a correlation between turbidity and toxicity. This was accomplished by the creation of an artificial suspended sediment plume, and the collection of enough water from the plume and from a background station to complete five dilutions of varying turbidities for analysis. A plume with a turbidity of 200 NTU was targeted, and toxicity analyses were performed on water samples diluted (in the field) to a turbidity of approximately 200 NTU, 150 NTU, 100 NTU, 50 NTU and background. Boat based *in-situ* monitoring of the plume provided real-time turbidity readings while samples of approximately 200 NTU were collected at two locations. Four of the five toxicity sample cubitainers were filled to 100%, 75%, 50% and 25% capacity. The fifth cubitainer was filled with natural, low-turbidity water from the reference station up-current. The three cubitainers that were partially filled with water from the artificial plume were topped off with the low-turbidity reference site water; this produced a dilution of the same 200 NTU water parcel for the respective collection area.

Four samples were collected from Area G, and four from Area L (Table 3). The two reference station samples were collected north of Woods Street due to the ebb tide during sample collections (Table 3). The ten samples were sent to ESI for toxicity analyses. A small sample of well-mixed water was collected from each cubitainer and sent to AAL for turbidity analysis. The actual turbidity results for the five Area G water samples were: 180, 160, 110, 37, and 8.1 for the 100%, 75%, 50%, 25%, and reference waters, respectively. The turbidity results for the five Area L water samples were: 230, 190, 160, 41, and 7.1 for the 100%, 75%, 50%, 25%, and reference waters, respectively.

ESI evaluated the results of acute and chronic toxicity assays performed using the mysid shrimp, *Americamysis bahia*, and the sea urchin, *Arbacia punctulata*. Results were consistent with the 2009 toxicity dilution study and supported the continued use of the 100 NTU project specific compliance criteria. A complete discussion of the toxicity results is included in Section 5.2.3.

## 5.2 LABORATORY TESTING SUMMARY

A summary of the results from the three water sampling events are provided in this section. The first event on May 11, 2010, which established baseline levels for background conditions on the harbor, included only TSS and turbidity analyses. A complete suite of samples were collected on the second event, taking place June 14 and June 15, 2010 during Level I monitoring. The Level I samples were analyzed for toxicity, TSS, turbidity, dissolved and total PCBs. The third sample collection event was a two-part dilution study, performed on June 15, 2010. These samples were collected for toxicity and turbidity analysis in order to confirm the project's water quality compliance criterion.

### *5.2.1 Total Suspended Solids and Turbidity*

TSS concentrations from the May 11, 2010 baseline sampling event ranged from 5.0 mg/L, at the flood reference site, to 10.0 mg/L, within the planned active work zone during the ebb tide. Turbidity ranges from the *in-situ* water quality monitoring sonde are comparable with the lab-based results, however all values reported by AAL were slightly higher (although negligible) than *in-situ* observations (Table 4). The difference between the lab and field turbidity measurements may be attributed to the fact that the exact same parcel of water was not sampled, even though the water pump tube collecting the lab sample was mounted adjacent to the *in-situ* optical sensor.

Level I water quality samples collected June 14–15, 2010 resulted in TSS concentrations ranging from 8.8 mg/L at the flood reference site, to 67.3 mg/L at the site 300-feet north of dredge-related activity in Area G. Higher concentrations of TSS generally corresponded with higher turbidity values. The correlation between TSS and turbidity results for the baseline and Level I samples is presented in Figure 14.

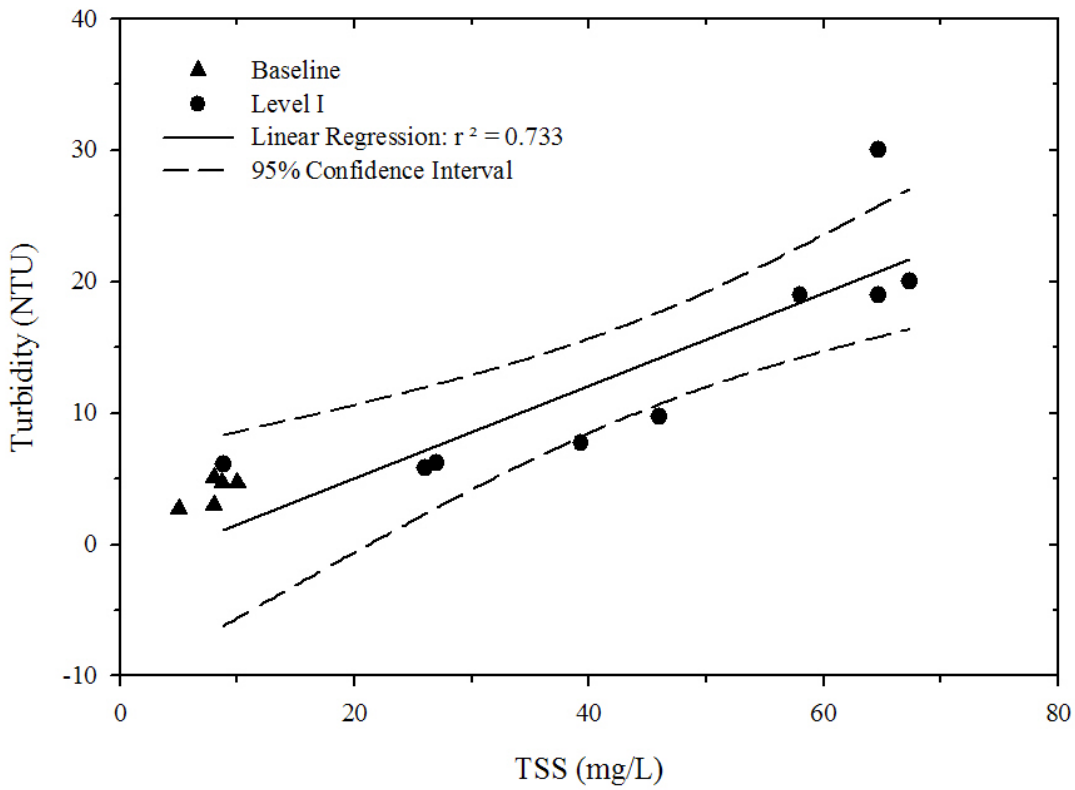


**Figure 14. Correlation between TSS and Turbidity Results from 2010 Baseline and Level I Samples**

Turbidity observations from *in-situ* monitoring during the water collection for the Level II samples collected on June 15, 2010 are also comparable to the laboratory results (Table 4). Suspended solids analysis was not performed on these 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) |
| Baseline Water Quality Samples (Level II) | 5/11/10 | WQ-_*_-001-051110 | 1000-ft north, ebb reference | 8 | 5.1 | 3.0-3.5 |
| | | WQ-_*_-002-051110 | Active dredge area, ebb tide | 8.7/10 | 4.7 | 2.9-3.3 |
| | | WQ-_*_-003-051110 | 1000-ft south, flood reference | 5 | 2.7 | 2.1-2.3 |
| | | WQ-_*_-004-051110 | Active dredge area, flood tide | 8 | 3 | 1.3-1.5 |
| Level I Water Quality Samples | 6/14/10 | WQ-_*_-001-061410 | 300-ft north of activity, flood tide | 39.3 | 7.7 | 5.5-6.3 |
| | | WQ-_*_-002-061410 | 1000-ft south, flood reference | 8.8 | 6.1 | 4.2-4.9 |
| | | WQ-_*_-003-061410 | 300-ft south of activity, ebb tide | 58/64.7 | 19/19 | 22.3-33.0 |
| | | WQ-_*_-004-061410 | 1000-ft north, ebb reference | 26 | 5.8 | 3.3-4.2 |
| | 6/15/10 | WQ-_*_-001-061510 | 300-ft north of activity, flood tide | 67.3 | 20 | 20.3-26.9 |
| | | WQ-_*_-002-061510 | 1000-ft south, flood reference | 27 | 6.2 | 5.4-6.6 |
| | | WQ-_*_-003-061510 | 300-ft south of activity, ebb tide | 64.7 | 30 | 18.6-28.9 |
| | | WQ-_*_-004-061510 | 1000-ft north, ebb reference | 46 | 9.7 | 7.7-8.6 |
| Level II Toxicity Evaluation Dilution Study Samples | 6/15/10 | DS-_*_-001-061510 | 100% plume water - Area G | NA | 180 | 180-220 |
| | | DS-_*_-002-061510 | 75% plume, 25% reference - Area G | NA | 160 | mixture |
| | | DS-_*_-003-061510 | 50% plume, 50% reference - Area G | NA | 110 | mixture |
| | | DS-_*_-004-061510 | 25% plume, 75% reference - Area G | NA | 37 | mixture |
| | | DS-_*_-005-061510 | 100% reference site water - Area G | NA | 8.1 | 7.7-8.6 |
| | | DS-_*_-006-061510 | 100% plume water - Area L | NA | 230 | 180-220 |
| | | DS-_*_-007-061510 | 75% plume, 25% reference - Area L | NA | 190 | mixture |
| | | DS-_*_-008-061510 | 50% plume, 50% reference - Area L | NA | 160 | mixture |
| | | DS-_*_-009-061510 | 25% plume, 75% reference - Area L | NA | 41 | mixture |
| | | DS-_*_-010-061510 | 100% reference site water - Area L | NA | 7.1 | 7.7-8.6 |

* three digit code for type of analysis required (e.g., TUR for turbidity)

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

Polychlorinated biphenyl testing for the NOAA-18 congeners was performed for one sampling event during the 2010 dredge season: the Level I samples collected June 14 and 15, 2010. 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. Results for individual congeners are reported with all complete analytical data in Appendix C. Concentrations of the NOAA-18 PCB congeners ranged from 0.219 µg/L to 1.489 µg/L in the total (unfiltered) water samples, and from 0.028 µg/L to 0.114 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 the reference sample sites, and as expected, the summed

concentrations were highest in the dredge area, down-current of active remediation activities.

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

| Sampling Event | Date | Sample ID | Sample Description | Lab Results | | |
|---|---|---|---|---|---|---|
| | | | | Turbidity (NTU) | NOAA-18 Congeners, Total (µg/L) | NOAA-18 Congeners, Dissolved (µg/L) |
| Level I Water Quality Samples | 6/4/10 | WQ-_*_-001-061410 | 300-ft north of activity, flood tide | 7.7 | 0.715 | 0.044 |
| | | WQ-_*_-002-061410 | 1000-ft south, flood reference | 6.1 | 0.252 | 0.043 |
| | | WQ-_*_-003-061410 | 300-ft south of activity, ebb tide | 19/19 | 1.231/1.226 | 0.114/0.108 |
| | | WQ-_*_-004-061410 | 1000-ft north, ebb reference | 5.8 | 0.671 | 0.084 |
| | 6/15/10 | WQ-_*_-001-061510 | 300-ft north of activity, flood tide | 20 | 1.391 | 0.046 |
| | | WQ-_*_-002-061510 | 1000-ft south, flood reference | 6.2 | 0.219 | 0.030 |
| | | WQ-_*_-003-061510 | 300-ft south of activity, ebb tide | 30 | 1.489 | 0.028 |
| | | WQ-_*_-004-061510 | 1000-ft north, ebb reference | 9.7 | 0.705 | 0.084 |

* three digit code for type of analysis required (e.g., TUR for turbidity)

### *5.2.3 Toxicity*

Toxicity exposure assays were performed on site water samples collected for two events, and results are summarized in Tables 6 and 7. Results are presented for the acute and chronic (sub-lethal) test endpoints: survival, growth, and reproduction. Results for test endpoints for each sample were statistically compared to those from both the event-specific site reference water and the laboratory control sample. The *A. punctulata* chronic fertilization assay was performed for both Level I and Level II water quality samples. Level I water quality samples were also tested for chronic toxic effects using the mysid shrimp *A. bahia* to examine survival and growth. Acute (48-hour) exposure assays using the mysid shrimp *A. bahia* were performed on the Level II toxicity evaluation dilution study sample.

Level I water quality samples collected on June 15, 2010 suggest a trend of reproductive failures by the sea urchin (*A. punctulata*) under chronic exposure to the southern flood reference sample. The ebb reference sample collected on June 15, 2010 also exhibited statistically different results than the laboratory control sample, however this may be a statistical artifact since any fertilization over 70% is considered to be non-toxic. The remaining *A. punctulata* assays for the Level I samples did not exhibit any adverse effects when compared to the laboratory control. Analytical water quality data do not indicate high concentrations of PCBs or suspended sediments in any of the Level I water quality samples.

## Table 6. Summary of toxicity results for Level I samples

| Sampling Event | Date | Sample ID (WQ-TOX-) | Sample Description | Lab Results | | | |
|---|---|---|---|---|---|---|---|
| | | | | Turbidity (NTU) | Sea Urchin *(A. punctulata)* | Mysid *(A. bahia)* | |
| | | | | | mean fertilization (%) | 7-day mean survival (%) | 7-day mean biomass (mg/mysid) |
| Level I Water Quality Samples | 6/14/10 | 001-061410 | 300-ft north of activity, flood tide | 7.7 | 97.6 | 85.0 | 0.478 |
| | | 002-061410 | 1000-ft south, flood reference | 6.1 | 97.4 | 90.0 | 0.445 |
| | | 003-061410 | 300-ft south of activity, flood tide | 19 | 97.4 | 90.0 | 0.485 |
| | | 004-061410 | 1000-ft north, ebb reference | 5.8 | 97.3 | 90.0 | 0.456 |
| | 6/15/10 | 001-061510 | 300-ft north of activity, flood tide | 20 | 94.7 | 90.0 | 0.341 |
| | | 002-061510 | 1000-ft south, flood reference | 6.2 | 45.1 | 87.5 | 0.320 |
| | | 003-061510 | 300-ft south of activity, flood tide | 30 | 95.2 | 85.0 | 0.335 |
| | | 004-061510 | 1000-ft north, ebb reference | 9.7 | 87.8 | 82.5 | 0.332 |

## Table 7. Summary of toxicity results for Level II samples

| Sampling Event | Date | Sample ID (WQ-TOX-) | Sample Description | Lab Results | | |
|---|---|---|---|---|---|---|
| | | | | Turbidity (NTU) | Sea Urchin *(A. punctulata)* | Mysid *(A. bahia)* |
| | | | | | mean fertilization (%) | 48-hr mean survival (%) |
| Level II Toxicity Evaluation Dilution Study Samples | 6/15/10 | 001-061510 | 100% plume water - Area G | 180 | 91.1 | 100.0 |
| | | 002-061510 | 75% plume, 25% reference - Area G | 160 | 85.5 | 100.0 |
| | | 003-061510 | 50% plume, 50% reference - Area G | 110 | 90.4 | 100.0 |
| | | 004-061510 | 25% plume, 75% reference - Area G | 37 | 91.9 | 100.0 |
| | | 005-061510 | 100% reference site water - Area G | 8.1 | 88.7 | 100.0 |
| | | 006-061510 | 100% plume water - Area L | 230 | 54.1 | 100.0 |
| | | 007-061510 | 75% plume, 25% reference - Area L | 190 | 39.3 | 100.0 |
| | | 008-061510 | 50% plume, 50% reference - Area L | 160 | 66.1 | 100.0 |
| | | 009-061510 | 25% plume, 75% reference - Area L | 41 | 85.1 | 100.0 |
| | | 010-061510 | 100% reference site water - Area L | 7.1 | 91.6 | 100.0 |

Toxicity assays performed on the samples collected during the Level II toxicity evaluation dilution study in Area G did not exhibit any significant adverse effects when compared to the laboratory control. The Area G plume water samples and background reference sample did result in lower *A. punctulata* fertilization rates when compared to the lab control, however these differences were not statistically significant. Furthermore, the 48-hour survival rates (*A bahia*) were 100% for all samples.

The samples from the toxicity evaluation dilution study in Area L exhibited significant differences in the *A. punctulata* fertilization assay for all except the reference and 25% plume samples. These dilution study samples were collected approximately one quarter mile north of the location where Level I southern (flood) reference samples were collected on the same day. The Level I southern (flood) reference toxicity sample also exhibited adverse effects in the sea urchin fertilization assay. Given the toxic effects observed in the reference sample and the low concentrations of PCBs in the samples, the adverse toxic results may not be a product of the artificially created suspended sediment plume. Although it cannot be verified, the toxicity observed in the *A. punctulata* assay could have been influenced by a combination of a heavy rainfall event (1.82 inches in 9 hours) that occurred two days prior to the sampling event, and the proximity of the sampling location to CSOs that may have flushed a localized contaminant into the harbor. Furthermore, 100% survival rates in the *A. bahia* assays confirmed that the 100 NTU turbidity criterion was ecologically protective for both the northern and southern dredge areas planned for the 2010 dredge season.

#### *5.2.4 Quality Control*

Complete laboratory QC data from AAL and ESI is included in the respective laboratory reports and are provided in Appendix 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 or telemetered 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 2010 environmental monitoring and remedial dredging season. Large numbers of fish were observed in the upper harbor, between the Sawyer Street CDF and the northern reaches of the estuary, north 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 (~3 mg/L compared to <1 mg/L, respectively). Although a dozen or fewer dead fish were observed on a given day during this period, no large-scale fish kill events occurred during the 2010 dredge season. The fish mortality that did occur is likely attributable to the poor 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 (Figure 15). Abundant waterfowl were observed during July in the northern dredge areas. These birds appeared to be feeding on small fish. At times, greater than a hundred birds were observed in Areas G, J, and K surrounding the dredging equipment and activities. The species most frequently present were cormorants, gulls, and terns. Pairs of swans were observed throughout the summer and in the early fall with their cygnets, feeding in the marsh grass and shallow water on the eastern shore of the Acushnet River, in Pierce Mill Cove, and north of Wood Street.

**Figure 15. Cormorants and Gulls Observed in Northern Active Dredge Zone**

### 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 2010 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 were elevated in 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.

The hydraulic dredging operation created virtually no measurable or 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 moderate sheen was observed down-wind or down-current of the dredge. In general, turbidity plumes of >100 NTU were spatially limited to <100-feet of the source, and temporally short-lived. 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-boats' propeller turbulence disturbed sediments and created narrow plumes of elevated turbidity.

Suspended sediment plumes related to debris removal activities were perhaps 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 early in the 2010 dredge season during the setup of Area K for dredging. The water quality mooring initially deployed south of Area J was immediately adjacent to the placement of sheet piles in Area K before the mooring was repositioned south of Area K. Boat-based monitoring and data from the mooring confirmed that positioning sheet piles disturbed bottom sediments and created a plume of turbid water within close proximity to the activity (Figure 11). Turbidity readings within the plume rapidly diminished with increasing distance away from the activity. The removal and placement of sheet piles was closely monitored for the duration of the 2010 environmental monitoring season to ensure that such plumes did not violate the compliance criterion threshold for the project.

A short-term, pulsed nature of the suspended sediment plumes was observed in the *in-situ* fixed-station data record. Turbidity spikes (30–80 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.

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# REFERENCES

Jacobs Engineering Group. 2010. 2010 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.

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. 2010b. 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 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group. 2010c. 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 0010-03 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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WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: June ~~16~~ 14, 2010

Weather: overcast, light breeze NNW to S

Tides:

| | | |
|---|---|---|
| high | @ | 10:04 |
| low | @ | 15:24 |
| high | @ | 22:21 |

Monitoring Period:

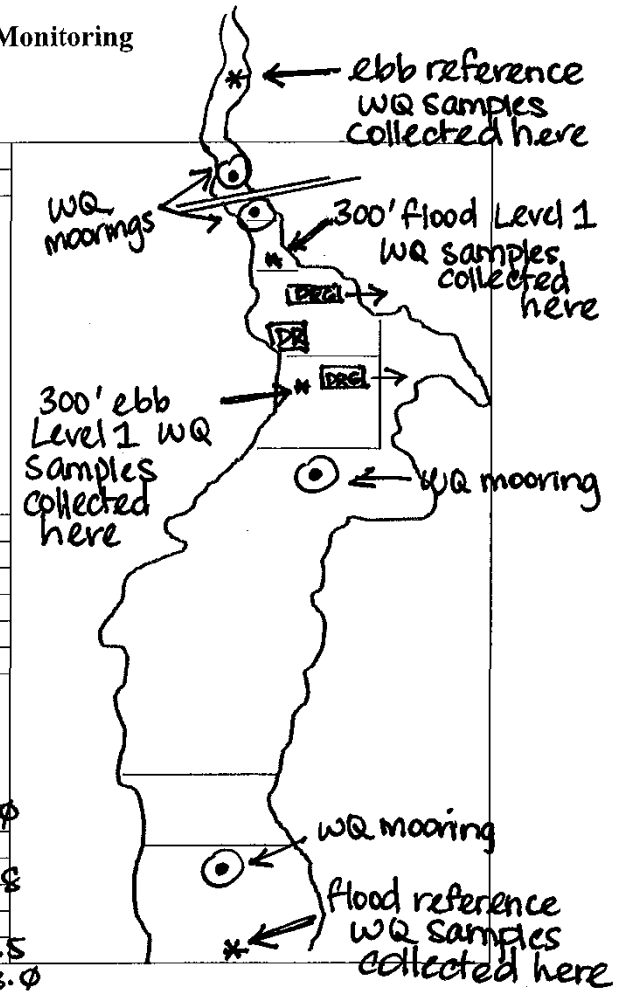
From: 08:50 To: 16:20

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Area G: active dredging and debris removal (high tide)

Area J: active dredging (low tide)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Area G, 300's of DR & DRG | 5-35 | 4.1-7.9 | 0.5-6.0 |
| Area G, 300' N of DR & DRG | 4.5-6.0 | 4.2-7.3 | 0.2-4.8 |
| ebb reference | 2.8-~~59~~ 4.2 | 2.4-6.3 | 0.5-2.5 |
| flood reference | 2.0-7.5 | 6.5-7.1 | 0.4-13.0 |

Oil Sheen/Debris:

abundant garbage throughout upper harbor and in oil boom.

Wildlife Observations:

Swans, shorebirds, a finned fish

Samples Collected for Laboratory Analysis - Sample IDs:

| | | | |
|---|---|---|---|
| TSS (1L) | WQ-TSS-(001→004)-06141 | Turbidity (1L) | WQ-TUR-(001→004)-06141 |
| Total PCB (1L) | WQ-TPC-(001→004)-06141 | Dissolved PCB (2x1L) | WQ-DPC-(001→004)-06141 |
| Toxicity (5 gal) | WQ-TOX-(001→004)-06141 | Metals (500ml) | WQ-MET-(001→004)-06141 |

Notes: 1st day of dredging, Level 1 water quality monitoring: samples collected at flood & ebb reference locations and 300 ft north & south of debris removal and dredging in Area G during flood & ebb tides, respectively. All water quality moorings deployed (5 total) and sediment trap south of Area J deployed.

Sampling Crew: D. Walsh, M. Walsh, D. Bailey, K. McCartney

Chief Scientist Signature: [signature]

1st day of dredging: Level 1 WQ monitoring

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | active dredging and debris removal |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Walsh |
| Sampling Technician | K. McCartney, D. Bailey |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | overcast, light breeze |

| | |
|---|---|
| Date | 6/14/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 10:04 |
| Low | 15:24 |
| High | 22:21 |
| Low | |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' N of G | 09:09 | 41°40.600' | 70°54.971' | 6.0 | 0.25 | 5.7 | 21.88 | 7.26 | 18.60 | site of 300' flood WQ samples |
| " | 09:10 | " | " | " | 1.53 | 4.9 | 23.50 | 6.33 | 18.74 | Level 1 sample collection |
| " | 09:11 | " | " | " | 3.07 | 5.1 | 25.14 | 5.74 | 18.88 | 1 hr before high tide |
| " | 09:12 | " | " | " | 4.20 | 5.6 | 26.56 | 4.65 | 19.00 | |
| " | 09:14 | " | " | " | 4.81 | 5.1 | 26.78 | 4.29 | 19.04 | |
| " | 09:17 | " | " | " | 0.38 | 5.8 | 21.83 | 6.97 | 18.60 | * depth of sample collection |
| 1000' S of L | 09:47 | 41°39.785' | 70°55.002' | 14.3 | 0.39 | 2.0 | 24.92 | 7.05 | 18.97 | site of 1000' flood ref WQ samples |
| " | 09:48 | " | " | " | 3.04 | 2.1 | 27.86 | 6.99 | 18.86 | Level 1 sample collection |
| " | 09:50 | " | " | " | 7.31 | 4.3 | 28.85 | 6.65 | 18.82 | |
| " | 09:51 | " | " | " | 10.10 | 5.3 | 29.92 | 6.62 | 18.82 | |
| " | 09:52 | " | " | " | 12.92 | 7.5 | 28.92 | 6.58 | 18.82 | |
| " | 09:57 | " | " | " | 7.94 | 4.3 | 28.78 | 6.63 | 18.82 | * depth of sample collection |
| 300' S of G | 12:06 | 41°40.512' | 70.54.932' | 7.5 | 0.66 | 22.9 | 21.84 | 7.85 | 18.89 | site of 300' ebb WQ samples |
| " | 12:07 | " | " | " | 2.12 | 12.8 | 26.88 | 5.61 | 19.09 | |
| " | 12:07 | " | " | " | 3.54 | 6.1 | 28.29 | 4.66 | 19.11 | |
| " | 12:08 | " | " | " | 6.03 | 7.5 | 28.50 | 4.12 | 19.13 | |
| " | 12:12 | " | " | " | 1.37 | 22.3 | 26.72 | 5.11 | 19.08 | * depth of sample collect |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area 6 |
| Dredging Description | active dredging and debris removal |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Walsh |
| Sampling Technician | K. McCartney |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | overcast light breeze |

| | |
|---|---|
| Date | 6/14/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 10:04 |
| Low | 15:24 |
| High | 22:21 |
| Low | |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000' N of M | 12:58 | 41°40.840' | 70°55.035' | 3.6 | 0.59 | 2.8 | 10.64 | 6.30 | 18.10 | site of 1000' ebb ref WQ samples |
| " | 12:59 | " | " | " | 1.53 | 3.9 | 26.33 | 3.01 | 19.21 | |
| " | 13:00 | " | " | " | 2.47 | 3.8 | 27.31 | 2.42 | 19.22 | |
| " | 13:04 | " | " | " | 1.40 | 3.5 | 23.91 | 2.98 | 19.13 | * depth of sample collech |
| | | | | | | | | | | |
| | | | | | | | | | | |
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WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | no dredging : baseline WQ sample collection |
| Dredging Description | none |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarney |
| Sampling Technician | D. Bailey |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | sunny, 50°, winds |

| | |
|---|---|
| Date | 5/11/10 |
| Page | 1 of 1 |

| Tide Information | |
|---|---|
| High | 0641 |
| Low | 1207 |
| High | 1856 |
| Low | |

| I.D. location | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | EBB REF | 09:26 | 41°40.~~840'~~ 835' | 70°55.038' | 2.9 | 0.07 | 1.6 | 452 | 10.91 | 12.75 | baseline ebb ref. |
| 001 | " | 09:27 | " | " | " | 1.28 | 2.8 | 27.19 | 9.75 | 15.15 | " |
| | " | 09:27 | " | " | " | 1.60 | 3.2 | 27.59 | 9.85 | 15.22 | *sample collected here |
| | EBB-SAMPLE | 10:22 | 41°40.472 | 70°54.924' | 4.0 | 0.28 | 1.7 | 27.51 | 11.75 | 15.23 | baseline dredge area on ebb tide (center of Area J) sample @ ~3 ft. |
| 002 | " | 10:23 | " | " | " | 1.50 | 1.9 | 28.27 | 10.14 | 14.48 | |
| | " | 10:25 | " | " | " | 3.10 | 2.6 | 28.94 | 9.38 | 14.36 | |
| | FLOOD REF | 14:05 | 41°39.796' | 70°55.008' | 9.3 | 2.20 | 1.2 | 27.04 | 11.83 | 15.19 | baseline flood ref |
| 003 | " | 14:07 | " | " | " | 5.02 | 1.6 | 27.84 | 10.61 | 14.01 | *sample collected here |
| | " | 14:08 | " | " | " | 7.00 | 1.8 | 28.60 | 10.10 | 13.99 | baseline flood ref. |
| 004 | FLOOD SAMPLE | 14:25 | 41°40.474' | 70°54.925' | 5.3 | ~~0.5~~ EGM 0.57 | 1.7 | 26.03 | 12.08 | 17.24 | baseline dredge area on flood tide (center of area J) sample @ ~3 ft. |
| | " | 14:27 | " | " | " | 3.3 | 3.5 | 28.24 | 12.01 | 15.58 | |
| | " | 14:28 | " | " | " | 3.7 | 3.1 | 28.24 | 12.07 | 15.61 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

~~SW-100Y~~ ~~WQ-001-062409~~ WQ-TSS-001-051110
TUR-0
+REP

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: June 15, 2010

Weather: sunny, wind 10-15 kts N (am) S (pm)

Tides:

| | | |
|---|---|---|
| low | @ | 04:30 |
| high | @ | 10:57 |
| low | @ | 16:16 |

Monitoring Period:

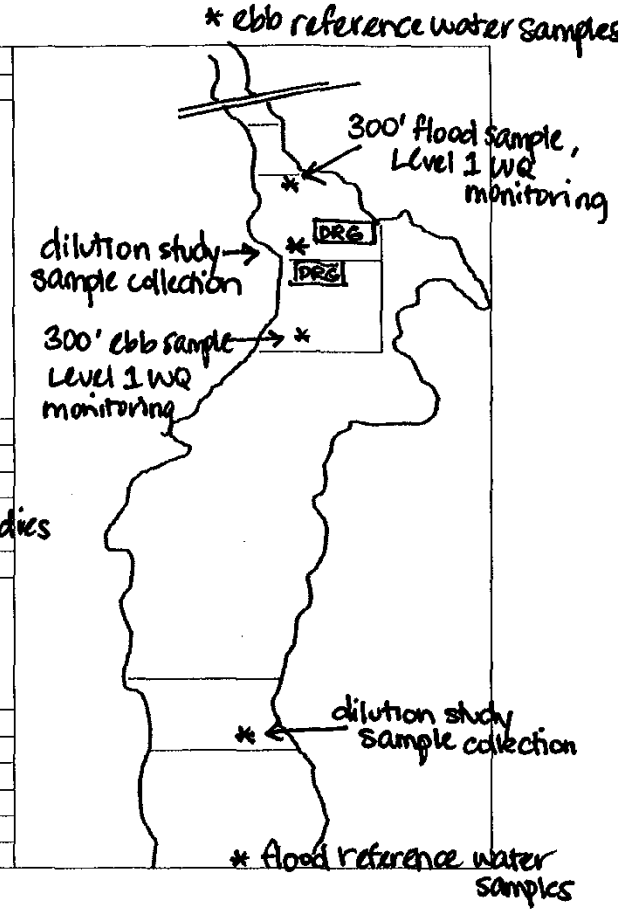
From: 0840 To: 15:10

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

morning: Area G - dredging and debris removal

afternoon: Area J - dredging
Area G > debris removal for dilution studies
Area L




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Area G, 300' S of DRG & DRG | 16.1-29.8 | 6.0-8.6 | 0.5-3.2 |
| Area J, 300' S of DRG | 13.4-28.9 | 6.2-9.0 | 0.6-5.0 |
| ebb reference (N) | 6.7-9.1 | 5.0-9.5 | 0.5-4.0 |
| flood reference (S) | 3.6-6.6 | 7.1-7.5 | 0.8-7.6 |
| Area G Dilution Study | ~180-220 | ~5.5 | 0.5 |
| Area L Dilution Study | ~180-220 | 8.1-11.1 | 1.0 |

Oil Sheen/Debris:

none detected

Wildlife Observations:

swans, shorebirds, osprey

Samples Collected for Laboratory Analysis - Sample IDs:

| | | | |
|---|---|---|---|
| | | | DS-TUR-(0001→0010)-061510 |
| TSS (1L) | WQ-TSS-(0001→0004)-061510 | Turbidity (1L) | WQ-TUR-(0001→0004)-061510 |
| Total PCB (1L) | WQ-TPC-(0001→0004)-061510 | Dissolved PCB (2x1L) | WQ-DPC-(0001→0004)-061510 |
| Toxicity (5 gal) | WQ-TOX-(0001→0004)-061510<br>DS-TOX-(0001→0010)-061510 | Metals (500ml) | WQ-MET-(0001→0004)-061510 |

Notes: Second day of Level 1 water quality monitoring: samples collected at flood and ebb reference locations and 300 ft. north and south of activity in G and J during flood and ebb tides, respectively. Two dilution studies performed, one in Area G and one in Area L. Samples collected of turbid water between 180-220 NTU and diluted with reference site water into the following: 100% plume water (~200 NT
75% plume, 25% ref. (~150
50% plume, 50% ref (~100 NTU
25% plume, 75% ref (~50 NT
100% reference (backgrou
Samples will be delivered to the labs this evening for analysis.

Sampling Crew: D. Walsh, M. Walsh, D. Bailey, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area J |
| Dredging Description | debris removal in G, dredging in G (am), in J (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Walsh |
| Sampling Technician | K. McCartney, D. Bailey |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny, wind 10-15 kts N |

| | |
|---|---|
| Date | ~~6/17~~ 6/15/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 10:57 |
| Low | 04:30 |
| High | 23:14 |
| Low | 16:16 |

| | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 300' N of G | 09:05 | 41°40.594' | 70°54.941' | 5.2 | 0.66 | 12.9 | 22.65 | 9.13 | 19.43 | ~~300' flood dredge area~~ |
| | " | 09:06 | " | " | " | 2.90 | 38.6 | 26.95 | 7.23 | 19.51 | ~~Level 1 sample~~ |
| | ~~" | | " | " | " | | | | | | (North of active dredging in G; debris removal in G)~~ |
| 300' flood sample: 001 | 300' N of G | 09:12 | 41°40.607' | 70° 54.964' | 4.6 | 0.58 | 18.2 | 22.83 | 8.57 | 19.64 | * RELOCATED more north |
| | " | 09:13 | " | " | " | 1.95 | 27.2 | 25.71 | 7.67 | 19.44 | too close to dredge. |
| | " | 09:14 | " | " | " | 3.13 | 16.1 | 26.94 | 6.67 | 19.54 | now 300' N of dredge in ~400' N of debris removal in |
| | " | 09:15 | " | " | " | 1.78 | 29.8 | 25.91 | 6.04 | 19.36 | * depth of sample collected |
| flood ref sample: 002 | 1000' S of L | 09:54 | 41° 39.802' | 70°54.995' | 14.1 | 0.86 | 3.9 | 27.06 | 7.48 | 19.54 | flood reference 1000's of |
| | " | 09:55 | " | " | " | 3.17 | 4.2 | 28.03 | 7.27 | 19.31 | level 1 samples |
| | " | 09:56 | " | " | " | 5.46 | 3.6 | 28.48 | 7.17 | 19.18 | |
| | " | 09:57 | " | " | " | 7.57 | 4.7 | 28.68 | 7.09 | 19.10 | * depth of sample collect |
| Dilution Study #1 | @DR in G | 12:08 | 41°40.549' | 70°54.948' | 5.3 | 0.53 | 188.1 | | | | during sampling |
| | | 12:09 | | | | | 196.0 | | 5.50 | | for dilution study, |
| | | 12:09 | | | | | 211.9 | | | | Area G (DS#1) |
| | | 12:09 | | | | | 227.8 | | | | |
| | | 12:10 | | | | | 205.2 | | | | |
| | | 12:13 | | | | | 200.7 | | | | |
| | | 12:17 | | | | | 228.1 | | | | |
| | | 12:19 | | | | | 227.8 | | | | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area J, Area L |
| Dredging Description | debris removal in L (dilution study) dredging in J (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Walsh |
| Sampling Technician | K. McCartney, D. Bailey |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | |

| | |
|---|---|
| Date | 6/15/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 10:57 |
| Low | 04:30 |
| High | 23:14 |
| Low | 16:16 |

| | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ebb ref sample: ØØ4 and dilution study ref samples | 1000' N of M | 12:51 | 41°40.837' | 70°55.037' | 5.0 | Ø.57 | 6.7 | 13.2Ø | 9.47 | 2Ø.Ø5 | collection of ref water for dilution studies and ebb ref Level 1 WQ samples |
| | " | 12:52 | " | " | " | 2.25 | 8.8 | 26.5Ø | 7.41 | 19.75 | |
| | " | 12:56 | " | " | " | 3.99 | 9.1 | 26.88 | 3.5Ø | 19.5Ø | |
| | " | 12:58 | " | " | " | 2.51 | 8.1 | 26.68 | 5.Ø9 | 19.67 | * depth of sample collec |
| | " | 13:20 | " | " | " | 25Ø | 7.7 | — | — | — | |
| Dilution study #2 | @DR in L | | 41°39.980' | 70°55.[illegible] | ~~5.9~~ 4.2 | 1.75 | ~~4.9~~ | | 8.43 | | during sampling for dilution study, Area L (DS #2) |
| | | 1314:03 | " | " | 4.2 | Ø.97 | 215.9 | | 11.10 | | |
| | | 14:03 | " | " | " | " | 1857 | | | | |
| | | 14:07 | | | | | 208-2 | | | | |
| | | 14:13 | | | | | 215.0 | | | | |
| | | 14:13 | | | | | 200.9 | | | | |
| | | 14:19 | | | | | 189.6 | | | | |
| 300' ebb sample: ØØ3 | 300' S of J | 14:35 | 41°40.459' | 70°54.93[illegible]' | 6.3 | Ø.6Ø | 21.Ø | 25.97 | 8.74 | 2Ø.23 | 300' S of dredge in J ebb samples (ØØ3) |
| | " | 14:37 | " | " | " | 2.52 | 25.1 | 25.79 | 9.ØØ | 2Ø.31 | |
| | " | 14:38 | " | " | " | 4.99 | 13.4 | 27.97 | 6.24 | 19.28 | Level 1 WQ monitorin |
| | " | 14:39 | " | " | " | 2.Ø5 | 2Ø.9 | 25.91 | 8.63 | 2Ø.22 | * depth of sample collecti |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 6/16/2010

Weather: Partly Cloudy Wind SW @ 5

Tides:

| | | |
|---|---|---|
| -0.1' | @ | 0514 |
| 4.2' | @ | 1151 |
| 0.0' | @ | 1711 |

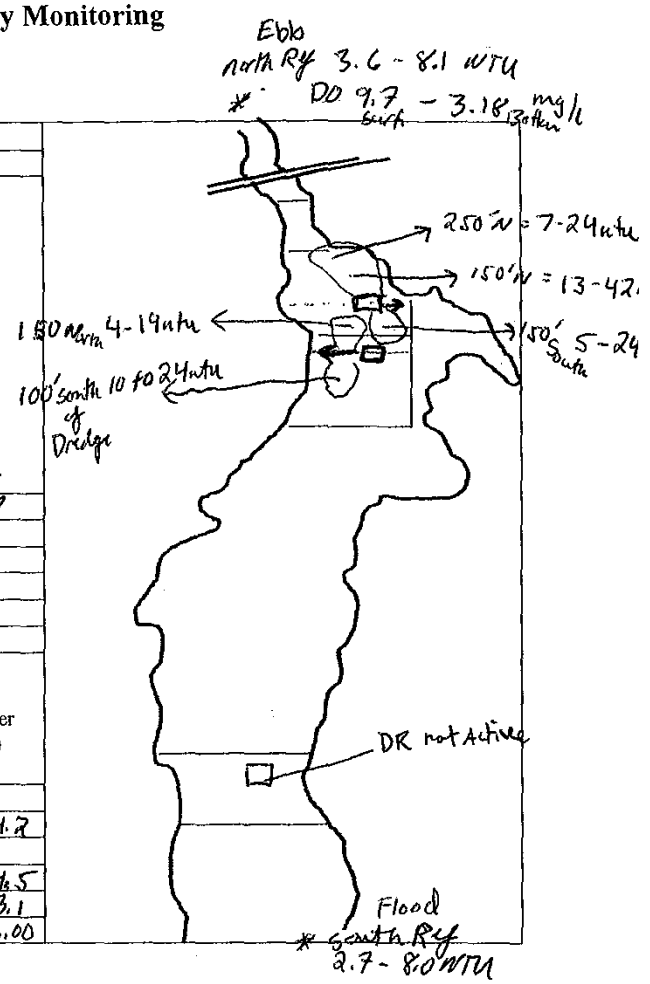
Monitoring Period:

From: ~~0915~~ 0830 To: 1545

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Morning: Active dredging Area J / No debris Removal / East to west
1030 Dredging Moved to Area G / No Debris Removal
Dredge working west to east
1500 Dredging moved to Area J




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Flood Area G 0940 | 15 - 22 ntu | 7.84 | 1.80 |
| Flood North Area G | 4 - 19 ntu | 9.55 | 0.5 - 1.5 |
| 150' N. Dredge Area G | 8 - ~~13~~ 42 | 6.81 | 2.3 - 4.2 |
| 250' N of Dredge | 7 - 24 | 8.26 | 4.2 |
| Ebb North Reference | 3.6 - 8.1 | 9.17 - 3.18 | 0.6 - 4.5 |
| Ebb 150' south of Dredge Area G | 5.3 - 24 | 10.28 - 8.53 | 0.4 - 3.1 |
| 100' south of Dredge Area J | 10.7 - 28.2 | 10.72 - 7.61 | 0.6 - 3.00 |

Oil Sheen/Debris:
No noticeable Sheen or Debris observed.

Wildlife Observations:
Several Fish, Ospreys, Egrets, Gulls, Swans

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: No debris removal Today. Monitored dredging in areas G and J for both Flood and Ebb - Background NTU's at both reference sites North and South were ~ 8 Ntu. This slight elevation was noticed throughout ~~all~~ dredge areas. Dissolved Oxygen ranged from a low of 3.2 mg/L (Bottom) N. of wood St. to 10.28 at the surface in the Dredge Areas

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

Higher NTU's (42) were noticed in Area G 150' north of Dredge during lower Flood tide.

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area J |
| Dredging Description | Active Dredging East to West Northern Boundary Area J |
| Survey Vessel | S/V George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | mostly cloudy / wind SW 5-10 |

| | |
|---|---|
| Date | 6/16/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 4.2' @ 11:51 |
| Low | -0.1' @ 05:14 |
| High | 4.6 @ 2351 |
| Low | 0.0 @ 1711 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000' Rip South | 0830 | 41°39.80 | 70° 55.00 | 9.7' | 1.39 | 2.7 | 26.34 | 7.07 | 20.58 | |
| | 0832 | | | | 3.51 | 2.3 | 27.61 | 7.84 | 20.25 | |
| | 0.834 | | | | 6.53 | 2.8 | 27.98 | 6.96 | 20.07 | |
| | 0835 | | | | 8.03 | 8.0 | 28.12 | 6.20 | 20.05 | |
| 150' north of Dredge | 0908 | 41° 40.543 | 70° 54.934 | 3.2 | 0.94 | 7.2 | 6.35 ~~7.80~~ | 8.75 | 19.28 | Dredging Area J Monitor in Area 6 |
| | 0910 | | | | 1.99 | 24.2 | 16.75 | 8.12 | 20.55 | |
| | 0940 | | | 3.7 | 1.80 | 19.3 | 13.81 | 7.84 | 20.20 | |
| 150' north of Dredge | 1055 | 41°40.60 | 70° 54.93 | 5.3 | 0.52 | 9.0 | 11.72 | 9.30 | 20.39 | Dredging Area 6 ~~Monitor at Boundary Area 6~~ |
| | 1058 | | | | 1.51 | 10.1 | 16.57 | 9.28 | 20.58 | |
| | 1059 | | | | 2.62 | 13.2 | 23.05 | 8.07 | 20.74 | |
| | 1100 | | | | 3.52 | 13.5 | 24.28 | 7.66 | 20.87 | |
| | 1133 | | | 5.6 | 4.55 | 42.5 | 25.07 | 8.27 | 20.87 | |
| | 1143 | | | 5.7 | 3.87 | 42.2 | 25.23 | 8.23 | 20.89 | |
| 250' north of Dredge | 1153 | 41° 40.613 | 70° 54.95 | 5.7 | 0.67 | 7.0 | 5.04 | 10.54 | 21.27 | Northern Boundary Area 6 |
| | 1154 | | | | 1.56 | 13.4 | 17.63 | 10.83 | 20.56 | |
| | 1155 | | | | 3.02 | 13.6 | 24.66 | 8.82 | 20.91 | |
| | 1157 | | | | 4.21 | 24.8 | 25.38 | 8.48 | 20.90 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | ① Area G - middle moving West to East |
| Dredging Description | ② Area J - Middle north moving East to West (1500) |
| Survey Vessel | S/V George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rodgers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Partly Cloudy Wind SW 10 |

| | |
|---|---|
| Date | 6/16/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 4.2' @ 1151 |
| Low | -0.1' @ 0514 |
| High | 4.6' @ 2351 |
| Low | 0.0 @ 1711 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 250' north of Dredge | 1219 | 41°40.613 | 70°54.957 | 5.7 | 4.24 | 21.8 | 25.54 | 8.26 | 20.91 | North Boundary of Area G |
| N. Reference | 1249 | 41°40.833 | 70°55.034 | 5.6 | 0.53 | 3.6 | 2.81 | 9.17 | 19.91 | |
| | 1251 | | | ~~3.22~~ | 3.22 | 8.2 | 23.72 | 6.05 | 20.78 | |
| | 1252 | | | | 4.5 | 8.1 | 24.42 | 3.18 | 20.54 | |
| 150' South of Dredge | 1308 | 41°40.535 | 70°54.903 | 4.0 | 0.45 | 5.3 | 9.52 | 10.28 | 21.72 | |
| | 1309 | ~~70°54.903~~ (4) | | | 1.5 | 7.9 | 19.20 | 9.90 | 21.35 | |
| 150' ~~from~~ South of Dredge | 1309 | | | | 3.1 | 22.9 | 23.52 | 8.53 | 21.14 | 150' South of Dredge in Area G - |
| | 1352 | | | | 2.73 | 27.3 | 23.32 | 7.54 | 21.09 | |
| 160' South of Dredge | 1533 | 41°40.480 | 70°54.951 | 4.5 | 0.68 | 10.7 | 7.27 | 10.72 | 22.31 | 100' South of Dredge in Area J |
| | 1532 | | | | 2.11 | 18.7 | 15.14 | 9.97 | 21.69 | |
| | 1533 | | | | 3.00 | 28.2 | 24.46 | 7.61 | 20.87 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: June 17, 2010

Weather: partly sunny, winds 5-15 kts NNW

Tides:

| | | |
|---|---|---|
| low | @ | 0600 |
| high | @ | 1246 |
| low | @ | 1811 |

Monitoring Period:

From: 09:00 To: 15:45

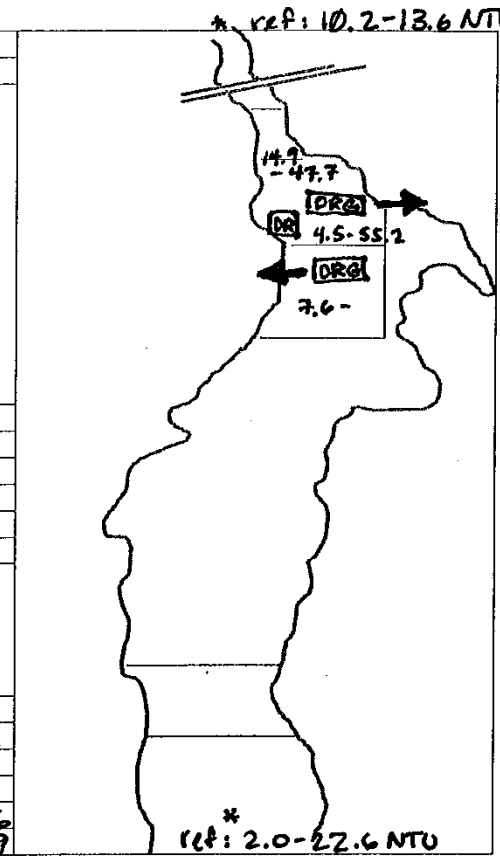
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Area L: moving pipeline, deploying oil boom

Area J: dredging (early am) (pm)

Area G: dredging (after 10:30 until 1500)
debris removal (12:00 to 1500)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Area J: 300' N of DRG | 4.5-55.2 | 3.8-9.0 | 0.5-3.0 |
| 300' S of DRG | 5.7-29.0 | 6.1-7.3 | 0.9-6.7 |
| Area G: 300' N of DRG | 14.9-33.1 | 3.0-8.0 | 0.7-3.6 |
| 300' N of DRG & DR | 17.4-47.7 | 4.5-5.4 | ~2.25 |
| 300' S of DRG & DR | 7.6-28.7 | 6.2-9.0 | 0.9-8.5 |
| Ebb reference | 10.2-13.6 | 2.1-8.5 | 0.6-4.6 |
| Flood reference | 2.0-22.6 | 5.5-8.3 | 0.3-6.9 |

Oil Sheen/Debris:

none detected

Wildlife Observations:

swans, egrets, gulls

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Ephemeral plumes of 50 NTU+ turbidity (max 55.2 NTU) observed 300' N and S (flood and ebb) of dredge in Area J. Plumes lasted less than 1 minute before disparsing and occurred infrequently. High reference turbidity readings observed 1000' S of Area L (flood reference), approximately 23 NTU one foot off bottom. Lower reference turbidity observed on ebb tide (max 13.6 NTU). Oil boom deployed in Area L today and preparations were made for dredging to begin

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area L, Area J |
| Dredging Description | moving pipeline in L, dredging in J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, wind 5-10 kts NW |

| | |
|---|---|
| Date | 6/17/2010 |
| Page | 1 of 4 |

| Tide Information | |
|---|---|
| High | 0009 |
| Low | 0600 |
| High | 1246 |
| Low | 1811 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| S flood ref | 09:11 | 41°39.802' | 70°55.009' | 9.3 | 0.27 | 2.0 | 23.47 | 8.22 | 21.15 | 1000' S of L |
| " | 09:12 | " | " | " | 4.27 | 2.8 | 28.24 | 7.25 | 20.39 | |
| " | 09:13 | " | " | " | 8.08 | 22.6 | 28.50 | 5.60 | 20.31 | |
| " | 09:14 | " | " | " | 6.90 | 17.2 | 28.46 | 5.54 | 20.31 | |
| 300' N DRG in J | 09:31 | 41°40.537' | 70°54.941' | 3.3 | 0.56 | 4.5 | 3.90 | 9.04 | 21.44 | 300' north of dredge in J |
| " | 09:32 | " | " | " | 1.2 | 18.2 | 19.22 | 7.34 | 20.85 | |
| " | 09:34 | " | " | " | 1.5 | 14.4 | 12.27 | 8.12 | 20.76 | |
| " | 09:43 | " | " | " | 2.95 | 36.0 | 25.23 | 4.37 | 20.73 | ephemeral plumes up to ~55 NTU observed lasting <1 min, infrequent (every 15-3 mins) |
| " | 09:45 | " | " | " | 2.90 | 39.6 | 25.35 | 3.88 | 20.73 | |
| " | 09:46 | " | " | " | 2.95 | 52.3 | 25.40 | 3.97 | 20.71 | |
| " | 09:48 | " | " | " | 2.75 | 24.2 | 24.22 | 4.18 | 20.77 | |
| " | 09:49 | " | " | " | 2.47 | 27.0 | 24.49 | 4.41 | 20.74 | |
| " | 09:55 | " | " | " | 2.57 | 55.2 | 25.55 | 3.84 | 20.71 | |
| " | 09:56 | " | " | " | 2.56 | 20.1 | 25.55 | 4.20 | 20.71 | |
| " | 10:01 | " | " | " | 2.53 | 16.6 | 25.10 | 4.38 | 20.75 | |
| " | 10:08 | " | " | " | 2.54 | 10.5 | 25.06 | 4.52 | 20.75 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | dredging in G (late am) debris removal in G (noon) |
| Survey Vessel | R/V George Hampton |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | overcast, wind 5-15 kts N/N |

| | |
|---|---|
| Date | 6/17/2010 |
| Page | 2 of 4 |

| Tide Information | |
|---|---|
| High | 0009 |
| Low | 0600 |
| High | 1246 |
| Low | 1811 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300'N DRGinG | 10:31 | 41°40.604' | 70°54.970' | 4.7 | 0.69 | 15.1 | 11.99 | 8.01 | 21.01 | 300' north of dredge in G |
| " | 10:32 | " | " | " | 1.59 | 17.9 | 18.84 | 7.20 | 20.81 | |
| " | 10:33 | " | " | " | 2.55 | 17.4 | 22.66 | 5.63 | 20.76 | |
| " | 10:34 | " | " | " | 3.60 | 14.9 | 24.51 | 3.30 | 20.80 | |
| " | 10:35 | " | " | " | 4.14 | 15.3 | 24.49 | 3.05 | 20.79 | |
| " | 11:02 | " | " | " | 2.52 | 33.1 | 23.04 | 5.26 | 20.81 | |
| " | 11:24 | " | " | " | 2.51 | 23.3 | 24.10 | 5.01 | 20.83 | |
| " | 11:34 | " | " | " | 2.52 | ~~24.32~~ KM | 19.9 24.32 | 5.44 | 20.83 | |
| " | 11:35 | " | " | " | 2.08 | 28.2 | 24.36 | 5.47 | 20.83 | |
| " | 11:36 | " | " | " | 1.18 | 15.0 | 22.64 | 6.04 | 20.89 | |
| " | 11:38 | " | " | " | 2.25 | 25.8 | 24.20 | 4.98 | 20.84 | |
| " | 12:01 | " | " | " | 2.30 | 28.0 | 25.14 | 5.04 | 20.82 | 300' N of debris removal |
| " | 12:05 | " | " | " | 2.25 | 17.7 | 24.59 | 5.03 | 20.84 | |
| " | 12:07 | " | " | " | 2.27 | 25.3 | 24.76 | 5.52 | 20.83 | |
| " | 12:30 | " | " | " | 2.26 | 23.3 | 26.33 | 4.77 | 20.79 | |
| " | 12:40 | " | " | " | 2.26 | 17.4 | 26.33 | 5.31 | 20.83 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | dredging in G, debris removal in G |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, wind 5-15 kts NW |

| | |
|---|---|
| Date | 6/17/10 |
| Page | 3 of 4 |

| Tide Information | |
|---|---|
| High | ØØØ9 |
| Low | Ø6ØØ |
| High | 1246 |
| Low | 1811 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| N ebb ref | 13:01 | 41°4Ø.837' | 7Ø°55.Ø31' | 6.5 | Ø.64 | 1Ø.2 | 17.45 | 8.52 | 21.Ø9 | 1000' N of M |
| " | 13:03 | " | " | " | 2.54 | 1Ø.7 | 24.33 | 3.42 | 2Ø.8Ø | |
| " | 13:04 | " | " | " | 4.58 | 13.6 | 25.2Ø | 2.15 | 2Ø.68 | |
| 300'S DR in G | 13:24 | 41°4Ø.47Ø' | 7Ø°54.943' | 9.6 | Ø.89 | 11.4 | 23.79 | 9.Ø3 | 21.25 | 300' S of DR; DRG in G |
| " | 13:25 | " | " | " | 2.53 | 9.2 | 27.53 | 6.54 | 2Ø.72 | |
| " | 13:26 | " | " | " | 4.5Ø | 7.6 | 28.Ø5 | 6.49 | 2Ø.64 | |
| " | 13:27 | " | " | " | 6.52 | 9.1 | 28.35 | 6.65 | 2Ø.57 | |
| " | 13:29 | " | " | " | 8.46 | 16.4 | 28.39 | 6.19 | 2Ø.51 | |
| " | 14:06 | " | " | " | 7.84 | 13.8 | 28.49 | 6.69 | 2Ø.53 | |
| " | 14:15 | " | " | " | 7.80 | 17.9 | 28.51 | 6.63 | 2Ø.52 | |
| " | 14:16 | " | " | " | 7.81 | 28.7 | 28.51 | 6.63 | 2Ø.52 | |
| " | 14:17 | " | " | " | 7.83 | 18.Ø | 28.51 | 6.63 | 2Ø.52 | |
| " | 14:22 | " | " | " | 7.76 | 24.6 | 28.52 | 6.6Ø | 2Ø.53 | |
| " | 14:28 | " | " | " | 7.83 | 18.1 | 28.54 | 6.63 | 2Ø.53 | |
| " | 14:30 | " | " | " | 1.29 | 8.Ø | 27.68 | 6.2Ø | 2Ø.71 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area J |
| Dredging Description | debris removal in southern G/northern J, dredging in J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | sunny, winds 5-15 kts NW |

| | |
|---|---|
| Date | 6/17/10 |
| Page | 4 of 4 |

| Tide Information | |
|---|---|
| High | 0009 |
| Low | 0600 |
| High | 1246 |
| Low | 1811 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300'S of DR | 14:52 | 41°40.449' | 70°54.964' | 8.6 | 1.14 | 9.9 | 27.79 | 5.98 | 20.70 | 300'S of DR at G/J boundary |
| " | 14:54 | " | " | " | 2.50 | 12.4 | 27.23 | 5.88 | 20.72 | |
| " | 14:55 | " | " | " | 5.25 | 8.9 | 28.36 | 5.84 | 20.56 | |
| " | 14:57 | " | " | " | 6.70 | 12.8 | 28.44 | 5.75 | 20.54 | |
| 300'S of DR G/J | 15:13 | 41°40.431' | 70°54.933' | 7.8 | 0.92 | 10.1 | 24.76 | 6.95 | 20.23 | 300'S of dredge in J |
| " | 15:14 | " | " | " | 2.49 | 5.7 | 28.33 | 7.28 | 20.68 | |
| " | 15:15 | " | " | " | 4.97 | 8.0 | 28.55 | 6.95 | 20.54 | |
| " | 15:17 | " | " | " | 6.20 | 21.4 | 28.59 | 6.70 | 20.53 | |
| " | 15:19 | " | " | " | 6.71 | 29.0 | 28.59 | 6.16 | 20.59 | |
| " | 15:21 | " | " | " | 5.61 | 10.9 | 28.58 | 6.75 | 20.53 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 6/18/2010

Weather: Sunny Clear Light North wind/Variable

Tides:

| | | |
|---|---|---|
| 4.3 ⊖ | @ | 1342 |
| 0.0 ⊖ | @ | 0651 |
| 0.4 | @ | 1925 |

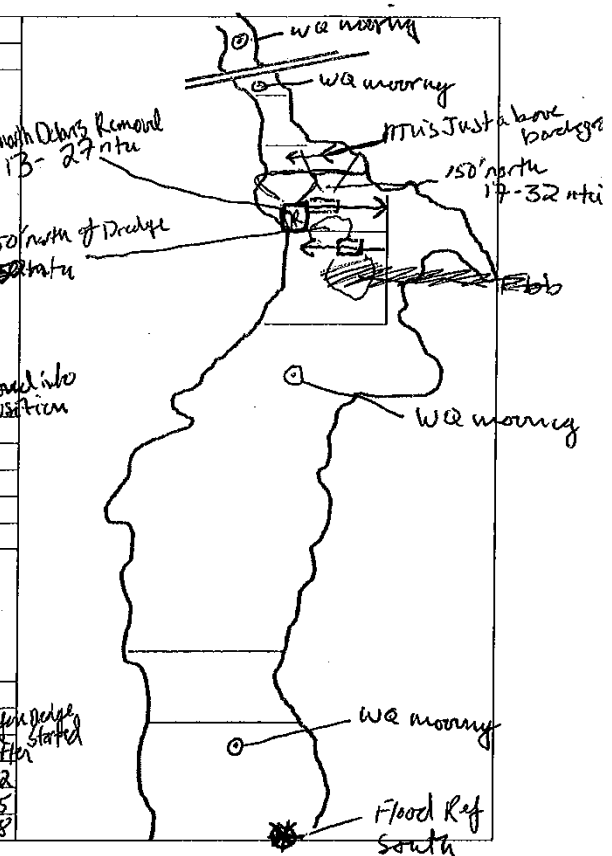
Monitoring Period:

From: 0830 To: 1540

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

Dredging Activity:

0911 - Slept Go Dredging in Area J / No Debris Removal (Tide)
1156 - Dredging moved to Area G / Debris Removal ~~started~~ moved into position
1200 - Debris Removal Started




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Flood Area G 0907 | 22 - 53 ntu | 5.5-6.8 mg/L | 0.88 |
| Flood Area G 1007 | 14 - 20 Ntu | 6.8 mg/L | 0.89 |
| north of Dredge area G | 4.7 - 15 NTU | 9.32 mg/L | 1.61 Before Dredge started |
| north of Dredge Area G | 17 - 32 NTU | 8.85 - 6.11 mg/L | 4.1 After |
| north of Debris Removal Area G | 13 - 21 NTU | 11.69 - 7.2 mg/L | 0.8 - 5.2 |
| South Boundary Area G (Dredge) | 6 - 27 NTU | 11.72 - 8.9 mg/L | 1.2 - 3.5 |
| South Boundary Area G (DR) | 9 - 28 NTU | 11.60 8.87 | 1.2 - 3.8 |

Oil Sheen/Debris:
No sheen/Debris Associated with Dredge / Slight to moderate sheen associated with Debris Removal

Wildlife Observations:
Occasional Fish, Gulls, Swans, Osprey

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Background Turbidity relatively high at reference sites South Ref 3.4 - 10.7 NTU
Saw Steady 40-50 ntu 150' from dredge at lower tide (movement restricted due to tide)
As tide Filled in turbidity dropped to 14-20 ntu 150' from dredge. On outgoing Tide Close proximity to Dredge and Debris Removal showed NTU's in the single digits to high twenties (6-28) but levels again dropped to just above background beyond the 150' range (8-20 ntu)

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area J |
| Dredging Description | East to west Northern area of J Stop and Go/no Debris Removal in morning |
| Survey Vessel | George Hampson |
| Chief Scientist | M. WALSH |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny Wind light North / variable |

| | |
|---|---|
| Date | 6/18/10 |
| Page | 1 of ~~2~~ 3 |

| Tide Information | |
|---|---|
| High | 4.3 @ 1342 |
| Low | 0.0 @ 0651 |
| High | |
| Low | 0.4 @ 1925 |

| | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flood | South Reference | 0845 | 41°39.794 | 70°55.008 | 9.6 | 1.02 | 3.4 | 25.62 | 6.81 | 20.36 | |
| | | 0846 | | | | 5.2 | 6.6 | 28.85 | 6.14 | 20.15 | |
| | | 0847 | | | ~~7.2~~ | ~~12.07~~ 12 | 10.7 | 29.04 | 5.75 | 20.03 | |
| | | 0848 | | | | 8.50 | 21.5 | 29.08 | 5.17 | 19.98 | |
| Flood | South edge of Area G | 0907 | | | 2.4 | 0.57 | 22.7 | 25.82 | 5.93 | 20.72 | Dredging in Area J |
| | | 0907 | | | ~~1.9~~ | 1.41 | 29.2 | 27.51 | 5.50 | 20.52 | 150' north of Dredge |
| | | 0920 | | | 2.5 | 0.87 | 49.3 | 25.83 | 4.98 | 20.70 | |
| | | 1007 | | | | 0.88 | 14.2 | 27.26 | 6.81 | 20.87 | |
| | | 1057 | | | 4.1 | 1.58 | 27.2 | 27.52 | 6.60 | 20.95 | |
| Flood Area G | 150' north of Dredge | 1152 | 41°40.584 | 70°54.907 | | 1.61 | 47-15 | 27.10 | 8.14 | 21.43 | Activity moved to Area G Dredge |
| | | | | | ~~6.0~~ | ~~1.95~~ | ~~32.7~~ | ~~26.69~~ | ~~7.18~~ | ~~21.44~~ | Reading before Dredge started |
| | 150' north of Area G Dredge | 1208 | | | 6.0 | 1.95 | 32.7 | 26.69 | 7.18 | 21.44 | ~~Debris removal has started~~ |
| | 150' north of Debris Removal | 1230 | 41°40.570 | 70°54.983 | 7.1 | 0.85 | 13.7 | 23.95 | 11.69 | 22.91 | Dredge working |
| | | 1231 | | | | 3.05 | 21.2 | 27.24 | 8.41 | 21.24 | Debris Removal |
| | | 1232 | | | | 5.2 | 20.5 | 27.76 | 7.92 | 20.76 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | West to East Dredging / SW corner Debris Removal |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, wind variable |

| | |
|---|---|
| Date | 6/18/2010 |
| Page | 2 of 3 |

| Tide Information | |
|---|---|
| High | 4.3 @ 1342 |
| Low | 0.0 @ 0651 |
| High | |
| Low | 0.4 @ 1925 |

| | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | GWS mooring | 1322 | 41°.40.682 | 70°55.007 | 8.6 | 1.12 | 13.0 | 24.21 | 14.55 | 22.86 | |
| | | 1323 | | | | 4.02 | 13.1 | 27.32 | 8.34 | 21.19 | |
| | | 1324 | | | | 6.25 | 17.4 | 27.48 | 4.70 | 20.97 | |
| | NWS mooring | 1337 | 41°.40.775 | 70°55.022 | 6.6 | 1.23 | 10.8 | 25.57 | 15.45 | 22.78 | |
| | | 1339 | | | | 2.92 | 11.9 | 27.10 | 8.99 | 21.53 | |
| | | 1339 | | | | 5.26 | 11.8 | 27.43 | 6.13 | 21.03 | |
| Ebb | North Bypass | 1352 | 41° 40.833 | 70° 55.031 | 6.3 | 1.12 | 13.1 | 22.79 | 15.33 | 22.48 | |
| | | 1353 | | | | 3.01 | 11.2 | 27.12 | 11.03 | 21.47 | |
| | | 1354 | | | | 5.44 | 9.6 | 27.44 | 5.21 | 21.16 | |
| Ebb | 150' South of Dredge | 1436 | | | 5.5 | 2.78 | 26.7 | 26.42 | 9.07 | 22.01 | Area G |
| | | | | | | | | | | | |
| Ebb | 150' South east of DRemoval | 1443 | | | 5.6 | 2.93 | 28.4 | 26.88 | 7.54 | 21.20 | Area G |
| South | of Area J mooring | 1453 | 41° 40.370 | 70° 54.956 | 10.6 | 1.14 | 5.4 | 26.10 | 10.98 | 24.26 | |
| | | 1454 | | | | 4.84 | 4.4 | 28.41 | 7.95 | 20.84 | |
| | | 1455 | | | | 8.52 | 12.9 | 28.66 | 6.26 | 20.63 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | |
| Survey Vessel | George Hampson |
| Chief Scientist | M. WALSH |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | |
| Weather Conditions | Sunny / wind WSW 10 |

| | |
|---|---|
| Date | 6/18/2010 |
| Page | 3 of 3 |

| Tide Information | |
|---|---|
| High | 4.3 @ 1342 |
| Low | 0.0 @ 0651 |
| High | |
| Low | 0.4 @ 1925 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| South of Area ~~Stat~~ L mooring | 1510 | 41°39.912 | 70°55.016 | 8.1 | 1.02 | 9.6 | 28.07 | 8.52 | 22.34 | |
| | 1511 | | | | 4.21 | 4.2 | 28.48 | 7.81 | 21.78 | |
| | 1512 | | | | 7.01 | 10.8 | 28.96 | 6.57 | 20.27 | |
| | 1529 | 41°39.426 | 70°55.003 | 17.3 | 1.12 | 2.1 | 28.76 | 8.60 | 21.95 | |
| | 1530 | | | | 6.14 | 2.3 | 28.88 | 8.63 | 21.67 | |
| | 1531 | | | | 15.17 | 4.9 | 29.43 | 7.33 | 20.31 | |
| | | | | | | | | | | |
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# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 06/21/10

Weather: Sunny, Wind 1-3 Knts N

Tides:

| | | |
|---|---|---|
| High | @ | 04:07 |
| Low | @ | 09:52 |
| High | @ | 16:40 |

Monitoring Period:

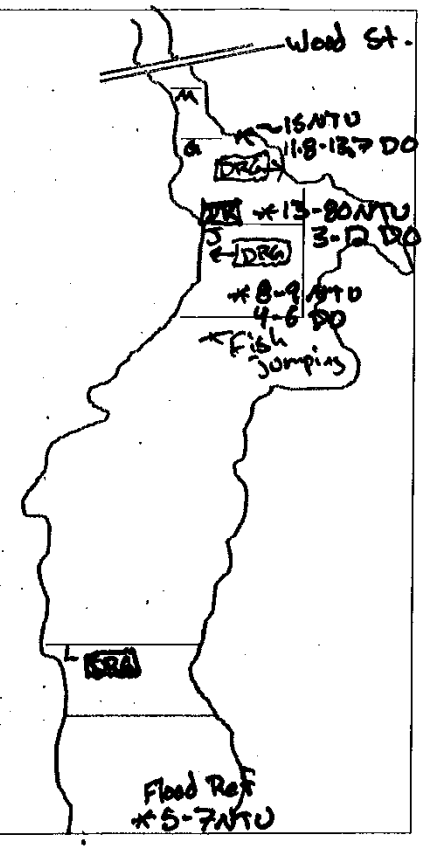
From: 9:15 To: 15:45

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

Dredging Activity:

Morning: Dredging in Area J

Afternoon: Dredging in Area J, then Area G




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| 1000' S Area G (Ref) | 4.5-7.5 | 5.3-7.0 | 0.8-6.2 |
| 200' S Area J | 8.3-9.1 | 4.4-6.1 | 0.5-3.3 |
| 150' N DRG Area J | 30.4-79.5 | 3.1-4.6 | 0.5-5.05 |
| 200' N DRG Area J | 13.1-48.2 | 9.6-12.7 | 0.7-2.8 |
| 200' N DRG Area G | 14.3-15.5 | 11.83-13.79 | 0.7-2.5 |

Oil Sheen/Debris: None Detected

Wildlife Observations: Fish jumping south of Area J, Birds throughout harbor (Swans, Gulls, Egrets)

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: No Debris removal while monitoring took place. Background turbidity was low around 8NTU, highest turbidity levels were recorded just north of dredging when tide started to flood. Dissolved oxygen was found to be elevated north of dredging in G.

Sampling Crew: D. Bailey, M. Walsh

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Dredging in Area 5 |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | |
| Vessel Captain | M. Walsh |
| Other Personnel | |
| Weather Conditions | Sunny, Wind N 1-3 knts |

| | |
|---|---|
| Date | 06/21/10 |
| Page | 1 of 1 |

| Tide Information | |
|---|---|
| High | 04:07 |
| Low | 09:52 |
| High | 16:40 |
| Low | 23:18 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000'S Area L (Ref) | 09:25 | 41°39.800 | 70°54.994 | 7.9 | 0.89 | 4.6 | 7.03 | 26.80 | 24.20 | |
| | 09:28 | " " | " " | " | 3.98 | 4.5 | 5.92 | 28.94 | 22.43 | |
| | 09:30 | " " | " " | " | 6.18 | 7.5 | 5.32 | 28.96 | 22.36 | |
| 200'S DRG | 09:46 | 41°40.443 | 70°54.918 | 5.4 | 0.52 | 9.1 | 6.12 | 26.87 | 24.32 | |
| in Area 5 | 09:48 | | | " | 3.30 | 8.3 | 4.42 | 28.42 | 23.64 | |
| 150'N DRG | 10:24 | 41°40.517 | 70°54.921 | 6.2 | 0.52 | 30.4 | 4.67 | 27.42 | 24.33 | |
| in Area 5 | 10:25 | ~~70°54.921~~ | " " | " | 2.13 | 41.2 | 3.66 | 27.90 | 23.80 | |
| | 10:27 | " " | " " | " | 3.97 | 68.3 | 3.19 | 28.18 | 23.59 | |
| | 10:29 | " " | " " | " | 5.05 | 79.5 | 3.28 | 28.18 | 23.61 | |
| 200'N DRG | 13:33 | 41°40.529 | 70°54.928 | 3.7 | 0.65 | 13.1 | 12.69 | 26.55 | 26.27 | |
| in Area 5 | 13:34 | " " | " " | " | 1.37 | 48.2 | 10.42 | 26.96 | 25.73 | |
| | 13:35 | " " | " " | " | 2.78 | 48.2 | 9.62 | 27.11 | 25.49 | |
| 200'N DRG | 14:15 | 41°40.599 | 70°54.928 | 3.7 | 0.70 | 14.3 | 13.79 | 26.17 | 27.01 | |
| in Area G | 14:16 | | | | 2.53 | 15.5 | 11.83 | 26.77 | 26.07 | |
| | | | | | | | | | | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 6/24/10

Weather: Hazy, Hot, Humid

Tides:

| | | |
|---|---|---|
| High | @ | 0650 |
| Low | @ | 1239 |
| High | @ | 1912 |

Monitoring Period:

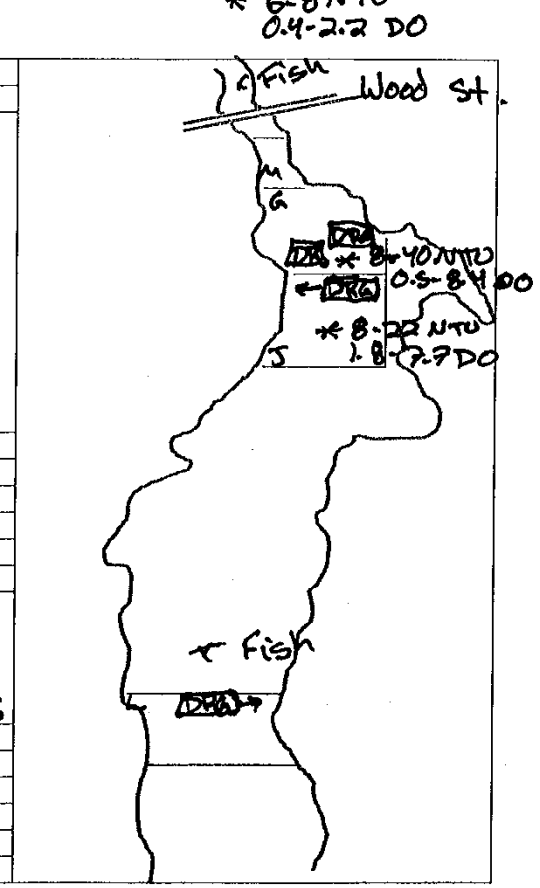
From: 0820 To: 1530

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Debris Removal in Area G
Dredging in Area G and J

Afternoon:
Dredging in Area L




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| 1000' NWS (Ref) | 6.1-8.2 | 0.4-2.2 | 0.5-3.5 |
| 200' S Area G DRG | 8.4-39.9 | 0.5-8.4 | 0.5-6.0 |
| 100' S DR Area G | 9.5-17.9 | 1.4-8.2 | 0.5-6.0 |
| 100' S DRG Area J | 8.8-22.1 | 1.8-7.7 | 0.5-3.4 |
| 150' N DRG Area J | 10.5-23.5 | 0.9-8.9 | 0.5-5.5 |

Oil Sheen/Debris:
None

Wildlife Observations:
Fish jumping North of Wood St. and North of Area L
Many Birds - Swans, 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: Very low dissolved oxygen throughout harbor, very little turbidity

Sampling Crew: D. Bailey, M. Walsh

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Debris Removal in Area G, Dredging in Area J |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | |

| | |
|---|---|
| Date | 6/24/10 |
| Page | of |

| Tide Information | |
|---|---|
| High | 0650 |
| Low | 0109 |
| High | 1912 |
| Low | 1239 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Ebb Ref. | 0840 | 41°40.831 | 70°55.031 | 4.9 | 0.51 | 6.1 | 2.22 | 3.63 | 24.61 | |
| " | 0843 | " | " | " | 2.06 | 8.0 | 2062 | 26.97 | 24.96 | |
| " | 0844 | " | " | " | 3.45 | 8.2 | 0.39 | 27.64 | 24.74 | |
| 200' S Area | 0921 | 41°40.520 | 70°54.906 | 7.6 | 0.48 | 5.7 | 8.35 | 22.22 | 24.34 | |
| G DRG | 0922 | " | " | " | 1.50 | 22.9 | 6.19 | 25.20 | 24.39 | |
| " | 0923 | " | " | " | 2.51 | 39.9 | 4.50 | 26.03 | 24.40 | |
| " | 0925 | " | " | " | 6.01 | 8.4 | 0.54 | 28.56 | 23.79 | |
| 100'S DR. | 10:06 | 41°40.503 | 70°54.937 | 8.5 | 0.48 | 9.5 | 8.24 | 21.03 | 24.55 | |
| 200'S DRG | 10:08 | " | " | " | 1.89 | 17.9 | 5.21 | 25.54 | 24.64 | |
| in Area G | 10:09 | " | " | " | 6.04 | 7.7 | 1.40 | 28.59 | 23.84 | |
| 100' S of | 10:56 | 41°40.445 | 70°54.930 | 6.4 | 0.54 | 10.6 | 7.73 | 22.64 | 24.92 | |
| DRG in Area | 10:57 | " | " | " | 2.00 | 22.1 | 5.29 | 25.51 | 24.51 | |
| J | 10:57 | " | " | " | 3.41 | 8.8 | 1.82 | 28.21 | 24.16 | |
| 150' N of | 13:27 | 41°40.513 | 70°54.937 | 6.9 | 0.52 | 13.2 | 8.90 | 21.76 | 27.01 | |
| DRG in Area | 13:28 | " | " | " | 2.13 | 13.7 | 8.98 | 23.95 | 25.71 | |
| J | 13:29 | " | " | " | 4.25 | 23.5 | 3.47 | 27.86 | 24.22 | |
| | 13:30 | | | | 5.55 | 10.5 | 0.88 | 28.42 | 23.81 | |

**New Bedford Harbor Water Quality Monitoring**
**Daily Field Report**

Date: June 28, 2010
Weather: Hazy, Hot, Humid
Tides:

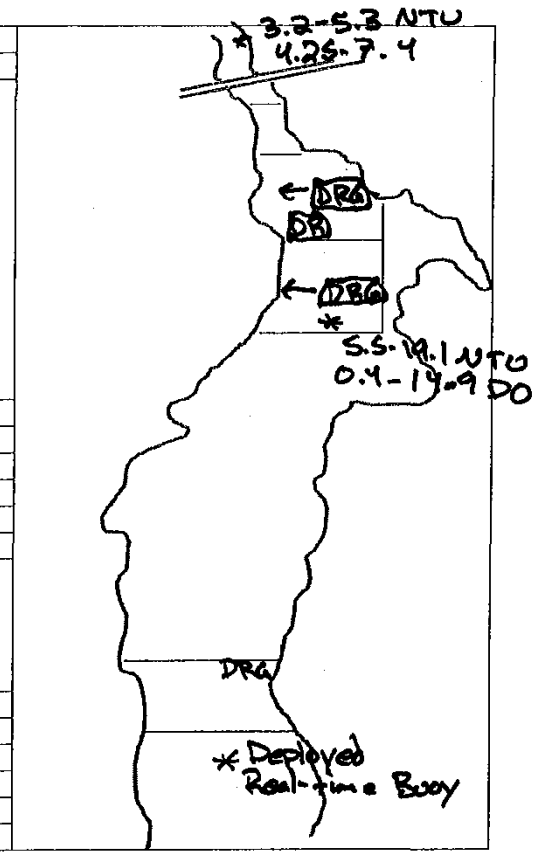
| | | |
|---|---|---|
| High | @ | 09:53 |
| Low | @ | 15:24 |
| High | @ | 22:08 |

Monitoring Period:

From: 11:20 To: 14:05

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Debris Removal in SW corner of G
Dredging in middle of Area G + J




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| 1000' NWS Ebb Ref | 3.2-5.3 | 4.25-7.4 | 0.5-2.5 |
| 150' S of DRG in J + 300' S of DR in G | 5.5-19.1 | 0.4-14.2 | 0.5-6.0 |

Oil Sheen/Debris:
None

Wildlife Observations:
Many birds - Gulls, Swans, Cormorants, Terns

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Deployed real-time buoy south of Area L. Very low DO found at depth.

Sampling Crew: D. Bailey, M. Walsh

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | DR SW corner of Area G |
| Dredging Description | DRG middle of Area G + Area J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Hazy, Hot, Humid |

| | |
|---|---|
| Date | 6/28/10 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | ~~03:35~~ 09:53 |
| Low | 03:35 |
| High | 22:08 |
| Low | 15:24 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Ebb (Ref) | 12:47 | | | 4.0 | 0.52 | 3.2 | 7.40 | 7.91 | 25.83 | |
| 1000' N of Wood St. | 12:48 | | | " | 2.55 | 5.3 | 4.25 | 26.70 | 26.51 | |
| | | | | | | | | | | |
| 150'S of | 13:32 | 41°48.431 | 70°54.926 | 7.7 | 0.51 | 10.1 | 14.19 | 22.23 | 28.46 | |
| DRG in Area | 13:34 | " " | " " | " | 1.99 | 19.1 | 11.29 | 25.27 | 27.28 | |
| | 13:36 | " " | " " | " | 4.11 | 5.5 | 7.12 | 27.93 | 26.15 | |
| | 13:38 | " " | " " | " | 5.98 | 11.4 | 0.43 | 28.69 | 25.58 | |
| | 14:39 | " " | " " | | 0.52 | 12.5 | 13.92 | 21.35 | 29.09 | |
| | 14:40 | " " | " " | | 2.81 | 16.9 | 7.45 | 26.98 | 26.66 | |
| | 14:41 | " " | " " | | 4.07 | 9.1 | 2.93 | 28.18 | 25.91 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: July 1, 2010

Weather: sunny, winds 5-10 kts W (am) 15-20 kts NW (pm)

Tides:

| | | |
|---|---|---|
| low | @ | 0506 |
| high | @ | 1203 |
| low | @ | 1721 |

Monitoring Period:

From: 0810 To: 1540

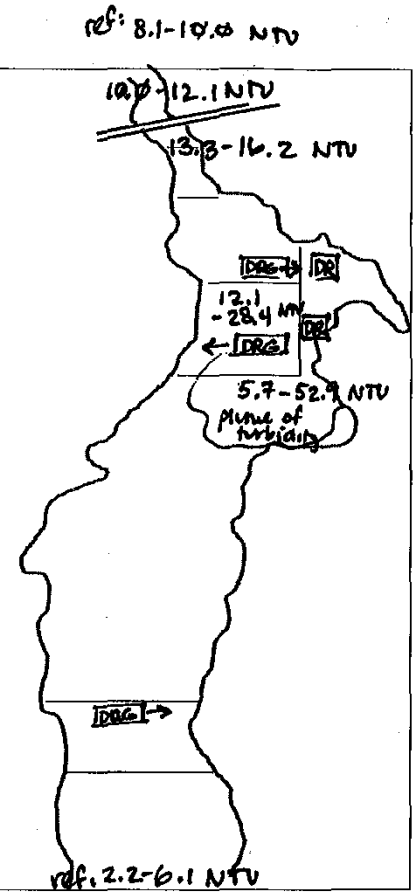
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Area J: dredging in am

Area G: dredging in am & pm

Area N: debris removal in pm




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood ref, 1000' S of L | 22-61 | 7.0-9.2 | 1.0-4.9 |
| ebb ref, 1000' N of M | 8.1-10.0 | 8.1-10.0 | 0.5-3.0 |
| NWS | 10.0-12.1 | 7.8-8.4 | 1.2-3.2 |
| SWS | 13.3-16.2 | 7.5-12.6 | 1.0-4.7 |
| 100' S of DRG in G | 12.1-28.4 | 9.8-10.0 | 1.1 |
| 300' S of DR in N | 5.7-52.9 | 7.7-12.9 | 0.8-4.5 |
| SAJ | 6.8-8.9 | 7.3-12.7 | 1.2-5.4 |

Oil Sheen/Debris:

none detected

Wildlife Observations:

swans, gulls, small bait fish near Sawyer St. dock

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: A plume of turbidity was observed in the vicinity of Area J, South of debris removal in Area N. Maximum value of 52.9 was recorded only briefly and values generally ranged from 20-35 NTU. Turbidity was highest in the top foot of water and ranged 5-20 NTU below 1 foot. Turbidity was also elevated north of operations, near Wood Street (max ≈ 20 NTU). Dissolved oxygen conc. elevated (>9 mg/L) around Area J, Area G, Wood St in top 2 ft of water.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | am: Area G, Area J pm: DR in Area N, DRG in G |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, winds 5-10 kts W, increasing 15-20 kts NW |

| | |
|---|---|
| Date | 7/1/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 0506 |
| Low | 1203 |
| High | 1721 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref (S) | 1150 | 41°39.797' | 70°54.974' | 6.1 | 1.07 | 2.2 | 9.15 | 24.40 | 23.96 | 1000's of L |
| " | 1151 | " | " | " | 3.50 | 2.3 | 8.88 | 24.51 | 23.82 | " |
| " | 1152 | " | " | " | 4.88 | 6.1 | 7.00 | 24.83 | 23.38 | " |
| @ NCS | 1143 | 41°39.440' | 70°55.104' | 17.5 | 1.50 | 2.0 | 7.80 | 24.67 | 23.29 | 300' N of bridge |
| " | 1144 | " | " | " | 6.50 | 2.1 | 7.11 | 24.93 | 23.09 | |
| " | 1145 | " | " | " | 15.40 | 4.1 | 5.71 | 25.28 | 22.82 | |
| @ SAJ | 1205 | 41°40.369' | 70°54.951' | 6.2 | 1.20 | 8.9 | 12.74 | 23.25 | 25.45 | 300' S of J |
| " | 1206 | " | " | " | 3.90 | 6.3 | 10.34 | 24.41 | 24.40 | |
| " | 1207 | " | " | " | 5.40 | 7.3 | 7.30 | 24.54 | 24.41 | |
| @ SNS | 1220 | 41°40.683' | 70°55.004' | 5.0 | 0.98 | 13.3 | ~~22.20~~ 12.57 | 22.20 | ~~28~~ 26.21 | 100' S of bridge |
| " | 1221 | " | " | " | 2.00 | 15.2 | ~~23.24~~ 9.12 | 23.24 | 25.59 | |
| " | 1222 | " | " | " | 4.70 | 16.2 | ~~23.42~~ 7.52 | 23.42 | 25.09 | |
| @ NWS | 1229 | 41°40.721' | 70°55.017' | 3.9 | 1.24 | 10.0 | 8.47 | 23.37 | 23.29 | 100' N of bridge |
| " | 1230 | " | " | " | 2.60 | 10.4 | 8.57 | 23.34 | 23.09 | |
| " | 1231 | " | " | " | 3.20 | 12.1 | 7.84 | 23.38 | 22.82 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | DRG in Area G, DR in Area N (pm) |
| Dredging Description | |
| Survey Vessel | RV George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | |
| Weather Conditions | Sunny, winds 15-20 kts NW |

| | |
|---|---|
| Date | 7/1/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 0506 |
| Low | 1203 |
| High | 1721 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ebbref(N) | 1236 | 41°40.840' | 70°55.039' | ~~0.56~~ 3.6 | 0.56 | 8.1 | 10.10 | 23.10 | 26.54 | |
| " | 1237 | " | " | 3.6 | 2.53 | 9.5 | 6.29 | 23.33 | 25.95 | |
| " | 1238 | " | " | 3.6 | 3.07 | 10.0 | 4.91 | 23.37 | 25.99 | |
| 100's of DRGing | 1255 | — | — | — | 1.17 | 12.1 | 10.00 | 23.12 | 25.26 | in Area J |
| " | 1256 | — | — | — | 1.19 | 13.5 | 9.81 | 23.14 | 25.20 | |
| 300's of DR in N | 1312 | 41°40.408 | 70°54.911 | 5.8 | 0.83 | 28.4 | 12.03 | 22.42 | 25.69 | S of J, 300's of DR 600's of DRG |
| " | 1313 | " | " | " | 2.11 | 21.1 | 11.85 | 23.05 | 25.01 | |
| " | 1315 | " | " | " | 4.17 | 5.7 | 8.07 | 24.37 | 24.38 | |
| " | 1316 | " | " | " | 4.53 | 6.3 | 7.75 | 24.39 | 24.35 | |
| " | 1318 | " | " | " | 0.78 | 30.4 | 11.70 | 22.36 | 25.80 | |
| " | 1323 | " | " | " | 0.79 | 38.2 | 11.68 | 22.23 | 25.86 | |
| " | 1329 | " | " | " | 0.82 | 52.9 | 11.87 | 22.23 | 25.71 | |
| " | 1400 | " | " | " | 0.78 | 37.0 | 11.77 | 22.13 | 25.39 | |
| " | 1421 | " | " | " | 0.80 | 21.4 | 11.35 | 22.18 | 25.92 | |
| " | 1437 | " | " | " | 0.81 | 16.1 | 10.65 | 22.68 | 25.80 | |
| " | 1500 | " | " | " | 0.83 | 18.5 | 11.10 | 22.41 | 26.06 | |
| " | 1522 | " | " | " | 0.84 | 17.6 | 12.51 | 21.74 | 26.06 | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: July 6, 2010
Weather: sunny, 95°, wind 5-10 kts SW
Tides:

| | | |
|---|---|---|
| high | @ | 0318 |
| low | @ | 0859 |
| high | @ | 1546 |

Monitoring Period:

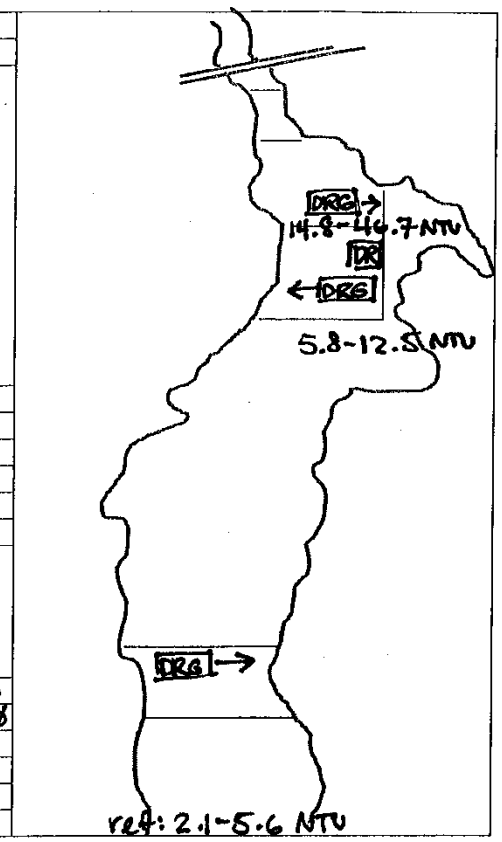
From: 0845 To: 1545

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Area J: dredging (am), debris removal (pm)
Area G: dredging (late am/pm)

Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood reference | 2.1-5.6 | 5.2-8.1 | 0.7-9.0 |
| 300' upcurrent DRG in J | 5.8-12.5 | 6.5-8.3 | 0.9-3.0 |
| 300' downcurrent DRG in J | 14.8-46.7 | 2.6-6.3 | 0.9-4.0 |




Oil Sheen/Debris:
none observed

Wildlife Observations:
numerous 1-2" minnows throughout harbor, especially NWS and at Sawyer dock.
great blue heron, gulls, swans

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: YSI mooring located approximately 150' N of Coggeshall St. found missing at 13:00. was deployed on 7/1/2010 on a bright pink/orange Gloucester buoy. Attempted to locate buoy / YSI instrument: unsuccessful.
Elevated turbidity observed at depth 300' N of dredge in J. Infrequent ephemera plumes of 30-50 NTU observed but generally 15-30 NTU.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area J |
| Dredging Description | am: dredging in J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | / |
| Vessel Captain | D. Rogers |
| Other Personnel | / |
| Weather Conditions | Sunny, 95°, wind 5-10 kts SW |

| | |
|---|---|
| Date | 4/6/10 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | ~~0859~~ 0318 |
| Low | ~~0318~~ 0859 |
| High | 1546 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref. | 0906 | 41°39.760' | 70°54.997' | 9.5 | 0.70 | 2.6 | 8.08 | 23.97 | 25.76 | 1000' S of L |
| " | 0907 | " | " | " | 4.57 | 2.1 | 6.01 | 24.73 | 23.88 | " |
| " | 0908 | " | " | " | 8.95 | 5.6 | 5.23 | 24.78 | 23.59 | " |
| 300' S of DRG in J | 0927 | 41°40.383' | 70°54.939' | 4.3 | 0.86 | 6.5 | 7.49 | 23.84 | 26.31 | before dredging starts |
| " | 0928 | " | " | " | 1.65 | 7.3 | 7.21 | 24.12 | 25.72 | " |
| " | 0928 | " | " | " | 2.94 | 12.5 | 6.51 | 24.21 | 25.53 | " |
| " | 0958 | " | " | " | 1.87 | 10.1 | 7.32 | 24.03 | 26.14 | during active dredging |
| " | 1015 | " | " | " | 1.88 | 7.7 | 7.77 | 23.84 | 26.62 | " |
| " | 1025 | " | " | " | 1.88 | 5.8 | 8.05 | 23.89 | 26.65 | " |
| " | 1034 | " | " | " | 1.88 | 4.7 | 8.26 | 23.90 | 26.78 | " |
| 300' N of DRG in J | 1045 | 41°40.521' | 70°54.947' | 4.8 | 0.89 | 14.8 | 5.90 | 23.98 | 26.30 | during active dredging |
| " | 1047 | " | " | " | *2.26 | 20.2 | 5.43 | 24.09 | 25.82 | " |
| " | 1048 | " | " | " | 4.01 | 32.5 | 2.62 | 24.14 | 25.60 | " |
| " | 1052 | " | " | " | 2.36 | 26.6 | 6.29 | 24.00 | 26.09 | " |
| " | 1111 | " | " | " | 2.36 | 46.7 | 5.10 | 24.00 | 26.20 | " |
| " | 1112 | " | " | " | 2.36 | 31.2 | 5.14 | 24.12 | 26.05 | " |
| " | 1120 | " | " | " | 2.38 | 43.0 | 5.12 | 24.11 | 25.74 | " |
| " | 1126 | " | " | " | 2.40 | 36.4 | 5.33 | 24.10 | 25.82 | " |
| " | 1135 | " | " | " | 2.39 | 20.8 | 5.90 | 24.05 | 26.06 | " |
| " | 1152 | " | " | " | 2.39 | 15.1 | 6.57 | [illegible] | [illegible] | " |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: ~~7/6/2010~~ July 8, 2010

Weather:

Tides:

| | | |
|---|---|---|
| high | @ | 05:20 |
| low | @ | 10:48 |
| high | @ | 17:45 |

Monitoring Period:

From: 08:20 To: 15:50

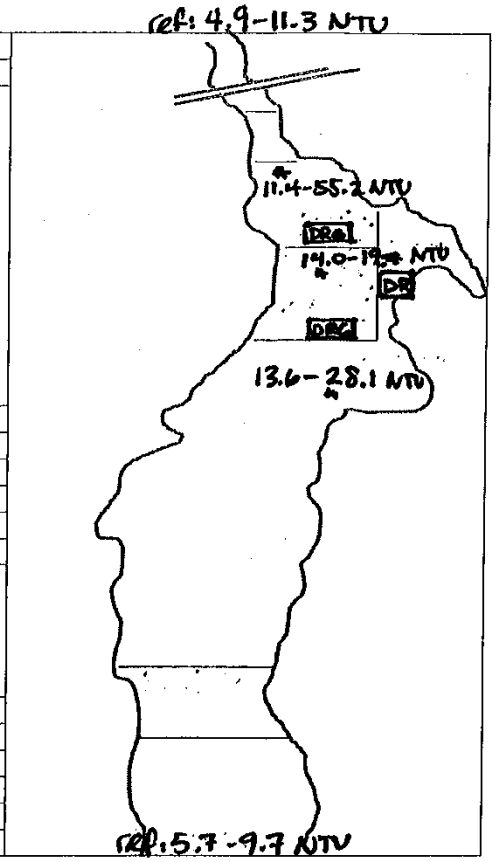
Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Area J: dredging (am)

Area G: dredging (pm)

Area N: debris removal (early am, late pm)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| ebb reference | 4.9-11.3 | 1.4-4.1 | 0.7-2.2 |
| flood reference | 5.7-9.7 | 3.4-7.9 | 0.7-6.5 |
| 300' S DRG in J | 13.6-28.1 | 5.3-9.0 | 0.6-5.0 |
| 300' N DRG in J | 14.0-19.7 | 8.3-8.9 | 0.6-5.1 |
| 300' N DRG in G | 11.4-55.2 | 9.1-11.8 | 0.5-2.8 |

Oil Sheen/Debris:

moderate, localized sheen observed near dredge in G during am after dredging ceased.

Wildlife Observations:

finned fish jumping, swans, gulls, osprey

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: A moderate, localized sheen was detected in Area G surrounding dredge and pipeline. Dredge was currently inactive. Reference turbidities were slightly elevated and turbidity throughout areas G and J were elevated at least 5-10 NTU above background. During dredging of Area G in the afternoon, turbidity was elevated to ~30-55 NTU approx ½ hour after dredging initiated. Maximum of 55.2 NTU observed, generally 35-45 NTU 300' N of the active dredge in G.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature: Karen McCa

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area J |
| Dredging Description | am: dredging in J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | overcast / partly sunny, winds 5-10 kts SE |

| | |
|---|---|
| Date | 7/8/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 0520 |
| Low | 1048 |
| High | 1745 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ebb ref | 08:55 | 41°40.838' | 70°55.032' | 2.8 | 0.76 | 4.9 | 4.10 | 16.01 | 27.52 | 1000' N of Area M |
| ebb ref | 08:55 | " | " | " | 1.52 | 7.5 | 3.11 | 23.24 | 28.89 | " |
| ebb ref | 08:56 | " | " | " | 2.20 | 11.3 | 1.39 | 23.59 | 28.77 | " |
| 300's DRG in J | 09:33 | 41°40.368' | 70°54.933' | 3.3 | 0.51 | 15.7 | 6.22 | 23.86 | 28.00 | Currently inactive |
| 300's DRG in J | 09:34 | " | " | " | 1.41 | 21.5 | 5.54 | 23.93 | 27.92 | previously operating |
| 300's DRG in J | 09:35 | " | " | " | 2.94 | 14.2 | 5.08 | 24.19 | 27.62 | ~30 mins prior |
| " | 09:44 | " | " | " | 1.54 | 17.6 | 5.88 | 23.89 | 27.87 | ↓ |
| " | 09:51 | " | " | " | 1.55 | 28.1 | 5.22 | 23.87 | 28.04 | dredging active |
| " | 10:01 | " | " | " | 1.54 | 13.6 | 5.87 | 23.86 | 28.09 | |
| " | 10:28 | " | " | " | 1.52 | 15.1 | 5.42 | 24.03 | 27.92 | |
| " | 10:52 | " | " | " | 1.53 | 16.5 | 6.87 | 23.83 | 28.36 | |
| " | 11:23 | " | " | " | 1.51 | 25.6 | 5.85 | 23.92 | 28.21 | |
| " | 11:30 | " | " | " | 1.54 | 22.3 | 6.36 | 23.87 | 28.34 | ↓ |
| flood ref | 11:40 | 41°39.800' | 70°55.015' | 8.8 | 0.70 | 8.0 | 7.86 | 24.52 | 27.80 | 1000' S of Area L |
| flood ref | 11:41 | " | " | " | 4.44 | 5.7 | 7.17 | 24.69 | 27.21 | " |
| flood ref | 11:43 | " | " | " | 6.5~~8.10~~ | ~~8~~9.7 | 3.40 | 24.80 | 26.43 | " |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area J |
| Dredging Description | pm: dredging in J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | partly sunny, winds 5-15 kts SE |

| | |
|---|---|
| Date | 7/8/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 0520 |
| Low | 1048 |
| High | 1745 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' N DRG in J | 12:51 | 41°40.517' | 70°54.925' | 7.1 | 0.64 | 14.2 | 8.96 | 23.67 | 29.30 | 300' N of active dredge in Area J |
| " | ~~12:52~~ | " | " | " | 3.20 | 14.0 | 8.95 | 23.73 | 29.27 | |
| " | 12:53 | " | " | " | 5.12 | 16.1 | 8.30 | 23.77 | 29.17 | |
| " | 13:10 | " | " | " | 1.14 | 15.8 | 8.37 | 23.66 | 29.17 | |
| " | 13:16 | " | " | " | 1.15 | 16.4 | 8.64 | ~~24~~ 14.96 | 29.20 | |
| " | 13:49 | " | " | " | 1.13 | 19.7 | 8.60 | 23.85 | 29.31 | |
| " | 14:15 | " | " | " | 1.14 | 16.1 | 8.78 | 23.73 | 29.49 | |
| 300' N DRG in G | 14:26 | 41°40.589' | 70°54.956' | 3.7 | 0.49 | 11.4 | 11.75 | 21.18 | 31.04 | 300' N of active dredge in Area G |
| " | 14:27 | " | " | " | 1.90 | 13.7 | 9.67 | 23.71 | 29.55 | |
| " | 14:30 | " | " | " | 2.75 | 15.2 | 9.41 | 23.73 | 29.49 | |
| " | 14:33 | " | " | " | 2.03 | 13.9 | 9.84 | 23.68 | 29.63 | |
| " | 14:52 | " | " | " | 2.06 | 15.1 | 11.20 | 23.40 | 30.00 | |
| " | 15:02 | " | " | " | 2.01 | 48.5 | 9.47 | 23.55 | 30.06 | |
| " | 15:05 | " | " | " | 2.02 | 52.0 | 9.36 | 23.52 | 30.11 | |
| " | 15:11 | " | " | " | 2.00 | 50.9 | 9.17 | 23.51 | 30.11 | |
| " | 15:15 | " | " | " | 2.01 | 39.7 | 9.37 | 23.57 | 30.01 | |
| " | 15:29 | " | " | " | 2.00 | 36.8 | 8.74 | 23.66 | 29.85 | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: July 12, 2010

Weather: sunny, 85°, winds 5-10 kts SW

Tides:

| | | |
|---|---|---|
| low | @ | 02:42 |
| high | @ | 08:54 |
| low | @ | 14:22 |

Monitoring Period:

From: 08:45 To: 15:45

Tidal Stages: HWS Ebb LWS Flood

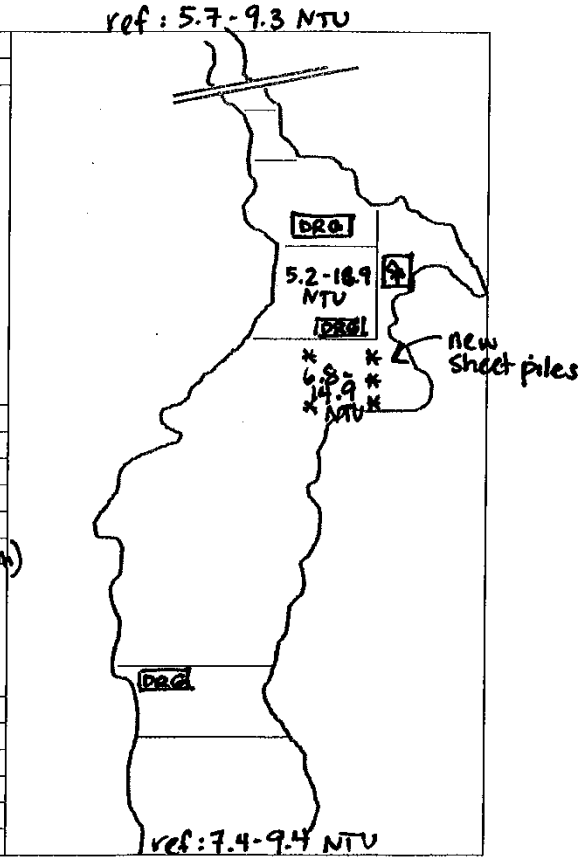
Dredging Activity:

Area G: dredging (early am)

Area N: debris removal (am)

Area K: driving new sheet piles

Area J: removing sheet piles (am), dredging (pm)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| ebbreference | 5.7-9.3 | 1.0-3.2 | 0.8-5.6 |
| flood reference | 7.4-9.4 | 7.7-8.0 | 0.9-6.2 |
| 300's of dredge in G | 5.2-16.9 | 4.9-7.0 | 0.6-9.8 |
| 300's of dredge in J | 6.8-14.9 | 5.2-8.4 | 0.4-4.3 |
| *also in close proximity to driving sheet piles in K | | | |
| 300' N of DR in K | 21.0-25.5 | 7.6-7.9 | 1.0-2.2 |

Oil Sheen/Debris:

slight sheen in Area K associated with installation of new sheet piles & $H_2S$ odor

Wildlife Observations:

ducks, swans, numerous small fish (minnows) throughout harbor

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: A plume of turbidity was observed in Area K in close proximity (within 200') of the installation of new sheet piles in Area K. Turbidity readings ranged and a slight sheen was evident off the surface in Area K. Very low DO concentrations were observed north of Wood Street in the morning.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area J, Area N |
| Dredging Description | dredging in G, removal of sheet piles in J, debris removal in N |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | sunny, 90° |

| | |
|---|---|
| Date | 7/12/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| ~~High~~ | |
| Low | 02:42 |
| High | 08:54 |
| Low | 14:22 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ebb ref | 09:37 | 41°40.840' | 70°55.038 | 6.4 | 0.84 | 5.7 | 3.19 | 28.42 | 28.64 | 1000' N of Area M |
| ebb ref | 09:39 | " | " | " | 2.97 | 7.9 | 1.40 | 29.10 | 28.72 | |
| ebb ref | 09:40 | " | " | " | 5.58 | 9.3 | 1.04 | 29.12 | 28.67 | S of DRG, close to removal of sheet piles in Area J (~100'-300') |
| 300's DRG in G | 09:59 | 41°40.456' | 70°54.903' | 11.5 | 0.66 | 7.1 | 6.96 | 29.45 | 27.82 | |
| " | 10:00 | " | " | " | 5.04 | 5.2 | 5.46 | 29.60 | 27.45 | |
| " | 10:02 | " | " | " | 9.74 | 7.9 | 4.95 | 29.65 | 27.25 | |
| " | 10:13 | " | " | " | 3.15 | 10.4 | 5.80 | 29.41 | 27.70 | |
| " | 10:21 | " | " | " | 3.14 | 12.2 | 6.32 | 29.39 | 27.77 | |
| " | 10:41 | " | " | " | 3.16 | 14.4 | 6.07 | 29.33 | 27.83 | |
| " | 10:53 | " | " | " | 3.18 | 16.9 | 5.78 | 29.35 | 27.82 | |
| 300' S of DRG in J | 11:16 | 41°40.386' | 70°54.918' | 5.3 | 0.43 | 13.6 | 6.22 | 29.43 | 27.97 | before dredge begins |
| " | 11:21 | " | " | " | 2.27 | 10.3 | 5.97 | 29.48 | 27.84 | 200' W of driving sheet piles in Areas O/K |
| " | 11:23 | " | " | " | 4.29 | 6.8 | 5.21 | 29.58 | 27.53 | |
| " | 11:26 | " | " | " | 0.92 | 14.9 | 6.09 | 29.42 | 27.99 | |
| " | 12:16 | " | " | " | 0.93 | 11.4 | 6.90 | 29.31 | 28.40 | |
| " | 12:21 | " | " | " | 1.15 | 14.7 | 7.04 | 29.25 | 28.51 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K Area J |
| Dredging Description | driving of sheet piles in K, dredging in J |
| Survey Vessel | R.V. George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, winds 15-20 kts S |

| | |
|---|---|
| Date | 7/12/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | |
| Low | 02:42 |
| High | 08:54 |
| Low | 14:22 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 150' E of DR in K | 12:36 | 41°40.386' | 70°54.922 | 5.0 | 1.12 | 14.8 | 7.29 | 29.27 | 28.55 | DR driving new sheet piles in Area K |
| " | 12:41 | " | " | " | 1.11 | 12.4 | 7.45 | 29.28 | 28.65 | ↓ |
| " | 13:07 | " | " | " | 1.12 | 12.0 | 8.14 | 29.23 | 28.93 | ↓ |
| 300' S of DR in J | 13:35 | " | " | " | 1.12 | 12.7 | 8.40 | 29.07 | 29.16 | dredging in J resumes |
| " | 13:53 | " | " | " | 1.14 | 12.4 | 8.65 | 29.05 | 29.29 | ↓ |
| " | 14:00 | " | " | " | 1.14 | 13.7 | 7.89 | 29.06 | 29.21 | ↓ |
| " | 14:10 | " | " | " | 1.12 | 12.1 | 8.40 | 28.98 | 29.32 | ↓ |
| flood ref | 14:51 | 41°39.793' | 70°55.018' | 7.0 | 0.94 | 7.4 | 8.01 | 29.69 | 28.72 | 1000' S of Area L |
| flood ref | 14:52 | " | " | " | 3.45 | 8.2 | 7.95 | 29.74 | 28.70 | ↓ |
| flood ref | 14:53 | " | " | " | 6.20 | 9.4 ~~39.4~~ | 7.78 | 30.02 | 28.62 | ↓ |
| 300' N DR in K | 15:11 | 41°40.415' | 70°54.944' | 3.3 | 1.11 | 22.4 | 7.82 | 28.93 | 29.48 | DR driving new sheet piles in Area K. |
| " | 15:12 | " | " | " | 1.54 | 24.9 | 7.79 | 28.93 | 29.50 | ↓ |
| " | 15:14 | " | " | " | 2.23 | 24.4 | 7.75 | 28.95 | 29.48 | ↓ |
| " | 15:21 | " | " | " | 1.44 | 23.9 | 7.67 | 28.96 | 29.52 | ↓ |
| " | 15:24 | " | " | " | 0.74 | 21.0 | 7.88 | 28.91 | 29.54 | ↓ |
| " | 15:29 | " | " | " | 1.90 | 25.5 | 7.74 | 28.97 | 29.52 | |
| " | 15:34 | " | " | " | 1.91 | 23.1 | 7.91 | 28.96 | 29.58 | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 7/15/2010

Weather: Overcast misty NNE@ 10 / mostly Cloudy

Tides:

| | | | |
|---|---|---|---|
| Low | -0.4 | @ | 0451 |
| High | 4.7 | @ | 1131 |
| Low | ~~17:05~~ -0.1 | @ | 1705 |

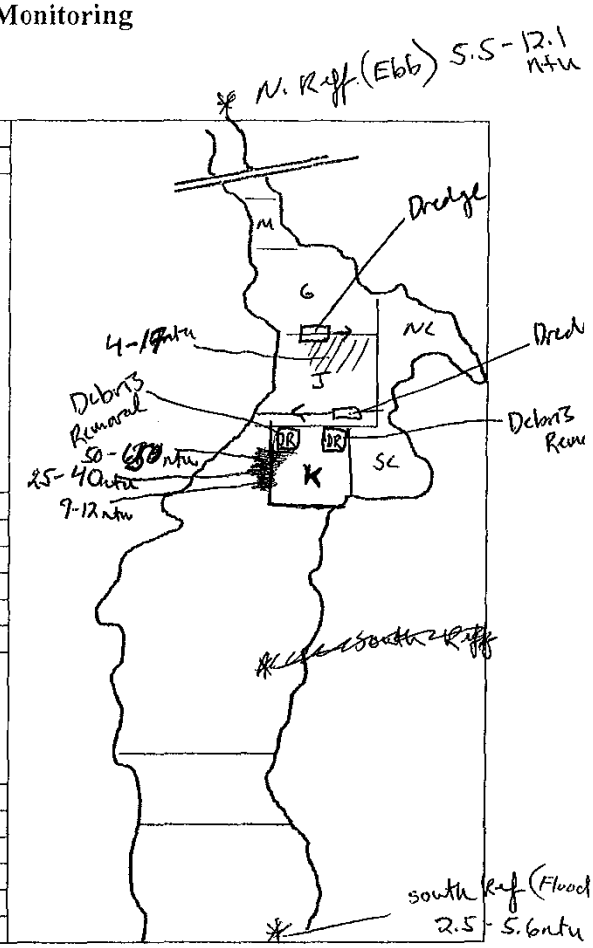
Monitoring Period:

From: 0837 To: 1555

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

Dredging Activity:

Morning Dredging Southern Boundry of Area J
Midday Dredging Boundry of G and J
Morning Debris Removal North Area K (Stop and Go)
Afternoon Dredging on South Boundry Area J
Afternoon Debris Removal n/th Boundry Area K




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| middle Area J | 4 - 9 | 6.3-3.4 | 1.4-7.9 |
| middle Area J | 4 - 10.1 | 3.4 5.4 | 1.6-7.7 |
| " " | 4 - 17.8 | | |
| South middle Area K | 7.0-7.1 | 4.16-5.49 | 0.79-3.21 |
| Area 75' south of NW Debris Removal | 20 - 50 | 5.4 | 0.8 - 1.8 |

Oil Sheen/Debris:
spotty sheen Associated with Debris Removal and Dredge in Area K

Wildlife Observations:
Gulls, Terns, Osprey, Cormorants

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Morning - recovered, cleaned, calibrated, redeployed YSI moorings.
Afternoon - Relatively high Turbidity readings observed within 100' of N.East Debris Removal 25-50 ntu's some higher short lived spikes to 65 ntu. Readings diminished quickly with distance. In general, given all the Activity in a close area turbidity remained low in all areas greater than 150'-200' feet from activity with readings from 4-17 ntu but mainly just above background of 8-14 ntu.

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Mim Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | South boundary of Area J / Boundary line of G+J |
| Dredging Description | North Boundary of Area K (& Debris Removal) |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Overcast, misty wind NNE @ 10 / mostly cloudy |

| | |
|---|---|
| Date | 7/15/2010 |
| Page | 1 of 2 |

| Tide Information | | |
|---|---|---|
| High | 1131 | 4.7' |
| Low | 0451 | -0.4' |
| High | 2351 | 4.5' |
| Low | 1765 | -0.1 |

| | Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flood | 1000 South Rf | 0837 | | | 9.2 | 1.09 | 2.5 | 3.68 | 28.28 | 25.76 | |
| | | 0838 | | | | 3.57 | 2.5 | 3.76 | 28.37 | 25.94 | |
| | | 0840 | | | | 8.91 | 5.6 | 3.06 | 29.47 | 26.37 | |
| Ebb | 1000 North Rf | 1209 | | | 6.5 | .82 | 5.5 | 3.62 | 27.17 | 26.88 | |
| | | 1211 | | | ~~2.28~~ | 2.29 | 4.8 | 2.92 | 27.88 | 26.91 | |
| | | 1212 | | | | 5.56 | 12.1 | 0.66 | 28.13 | 27.16 | |
| | 250' south of Bridge | 1236 | | | 9.9 | 1.45 | 8.2 | 6.37 | 27.77 | 26.42 | Area J |
| | | 1231 | | | | 4.20 | 5.4 | 4.90 | 28.32 | 26.20 | |
| | | 1232 | 41°40.480 | -70°54.925 | | 7.97 | 9.2 | 3.43 | 28.72 | 26.17 | |
| | | 1327 | | | | 1.60 | 10.2 | 5.84 | 27.85 | 27.14 | |
| | | 1338 | | | | 1.61 | 17.8 | 4.54 | 26.68 | 26.66 | |
| | 175-225' south of Bridge | 1351 | 41°40.391 | -70°54.927 | 5.9 | 0.81 | 9.3 | 6.17 | 27.67 | 27.07 | |
| | | 1352 | | | | 2.12 | 8.3 | 4.69 | 28.58 | 26.25 | |
| | | 1354 | | | | 4.45 | 5.8 | 3.37 | 29.17 | 26.11 | |
| | | | | | | | | | | | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | South boundary of Area J / Debris Removal NE + NW corners of Area K |
| Dredging Description | East to west Area J |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | mostly Cloudy / wind NNE @ 5-10 |

| | |
|---|---|
| Date | 7/15/2010 |
| Page | 2 of 2 |

| Tide Information | | |
|---|---|---|
| High | 1131 | 4.7' |
| Low | 0451 | -0.4' |
| High | 2351 | 4.5' |
| Low | 1705 | -0.1' |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| South middle Area K | 1419 | 41°40.363 | | 4.71 | 0.79 | 9.1 | 5.49 | 28.03 | 26.71 | |
| | 1420 | 70° 54.737 | | ~~2.58~~ | 2.58 | 8.5 | 4.59 | 28.59 | 26.46 | |
| | 1421 | | | ~~2~~ | 3.21 | 7.0 | 4.16 | 28.75 | 26.37 | |
| ~~75~~ south of Debris Removal | 1449 | moving | | | 1.8 | 48.7 | 5.49 | 26.86 | 26.71 | |
| 100' south of NW Debris Removal outside Area K | 1520 | moving | | 4.00 | 2.11 | 43.5 | 5.80 | 27.87 | 26.91 | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: 7-19-10
Weather: Sunny AM, Rain in the afternoon
Tides:

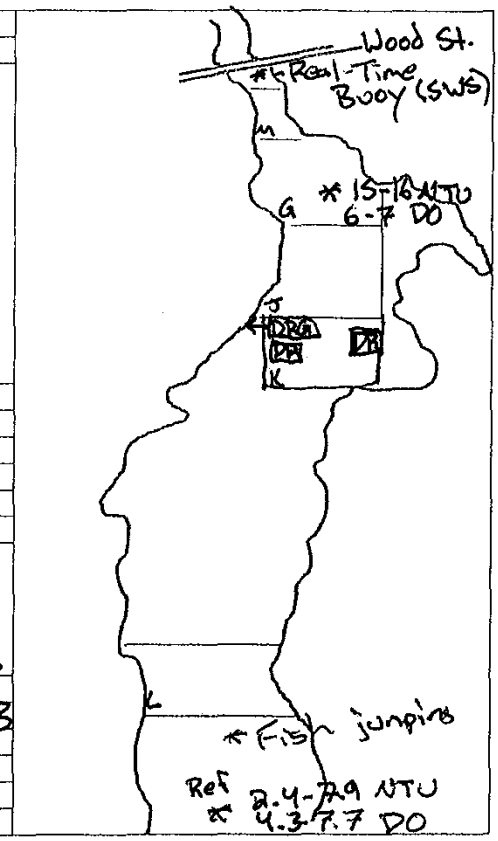
| | | |
|---|---|---|
| Low | @ | 0818 |
| High | @ | 1518 |
| Low | @ | 2152 |

Monitoring Period:

From: 0830 To: 1200

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Debris Removal + Dredging in Area K
All activity stopped @ 1200 due to weather




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Flood Ref. | 2.4-7.9 | 4.3-7.7 | 0.8-9.5 |
| 300' N of DR+DRA in K | 15.1-16.7 | 6-6.7 | 0.8-5.3 |
| SWS Mooring | 8.5-15.1 | 5.7-7.0 | 0.9-6.6 |

Oil Sheen/Debris:
Slight sheen around boom north of G

Wildlife Observations:
Fish jumping south of Area L, Many birds throughout harbor

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Moved real-time buoy from S Area L to south of wood St. (SL
redeployed ~~buoy~~ sonde from south Wood St. to South of Area L

Sampling Crew: D. Bailey, D. Rodgers

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | 2 Debris Removal in Area K, DRG in Area K |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | |
| Vessel Captain | D. Bodgers |
| Other Personnel | — |
| Weather Conditions | Sunny ~8 8C's |

| | |
|---|---|
| Date | 7-18-10 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | 0240 |
| Low | 0818 |
| High | 1518 |
| Low | 2152 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Flood ref. 1000's of L | 0904 | 41°39.803 | 70°54.994 | 10.0 | 0.84 | 2.4 | 7.68 | 28.44 | 27.77 | |
| | 0905 | " " | " " | " | 4.46 | 3.0 | 5.41 | 30.02 | 26.36 | |
| | 0906 | " " | " " | " | 9.58 | 7.9 | 4.28 | 30.05 | 26.25 | |
| 300' N of DRG in DRG in Area K | 1111 | 41°40.486 | 70°54.915 | 6.8 | 0.75 | 15.1 | 6.68 | 28.58 | 28.13 | |
| | 1112 | " " | " " | " | 2.05 | 15.7 | 6.66 | 28.64 | 28.10 | |
| | 1113 | " " | " " | " | 3.06 | 16.7 | 6.43 | 28.73 | 28.03 | |
| | 1114 | " " | " " | " | 5.28 | 16.1 | 6.05 | 29.16 | 27.64 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: July 22, 2010
Weather: sunny, 85°
Tides:

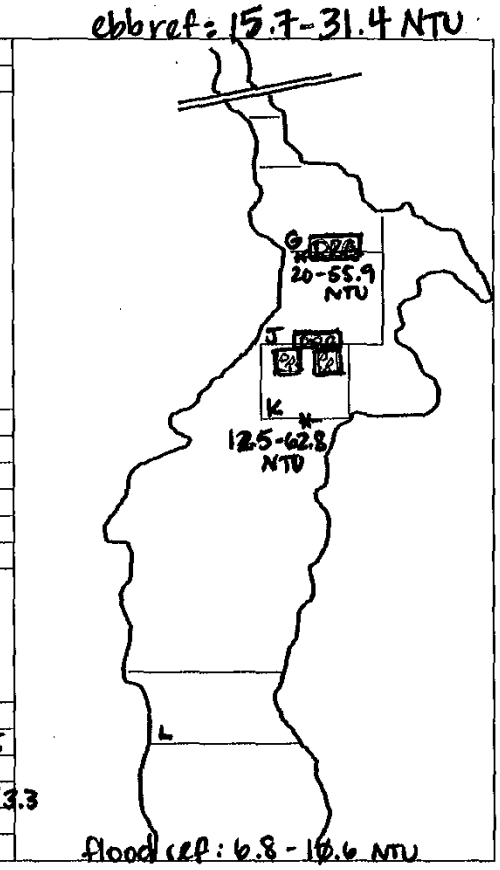
| | | |
|---|---|---|
| high | @ | 0544 |
| low | @ | 1108 |
| high | @ | 1819 |

Monitoring Period:

From: 08:30 To: 15:30

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Area G - dredging (early am)
Area K - two debris removal (all day)
- dredging (late am, pm)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| ebb reference | 15.7-31.4 | 0.7-2.2 | 0.7-2.6 |
| flood reference | 6.8-10.6 | 7.5-9.1 | 0.8-3.8 |
| 300' N of ↗ debris removal & dredging in K | 20.0-55.9 | 5.2-8.3 | 0.4-2.5 |
| 200' S of ↗ | 12.5-62.8 | 4.3-7.3 | 0.8-~~2.5~~ 3.3 |

Oil Sheen/Debris:
none detected

Wildlife Observations:
terns fishing throughout harbor, numerous small fish observed in top ½ ft of water north of wood street

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Very high background turbidity observed north of wood St. on ebb tide, ranging 15.7-31.4 NTU, averaging approx. 25 NTU. Brief ephemeral plumes of up to 30 NTU above background observed 200' downcurrent of two operational debris removals in Area K. During flood tide, turbidity 300' N of the same activity in Area K ranged 20.0-55.9, approximately 45 NTU above background.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area K |
| Dredging Description | dredging in G, 2 debris removal in K |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | sunny, 85°, winds 10-15 kts W |

| | |
|---|---|
| Date | July 22, 2010 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | 0544 |
| Low | 1108 |
| High | 1819 |
| Low | — |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ebb ref | 09:01 | 41°40.837' | 70°55.037 | 3.3 | 0.74 | 31.4 | 24.88 | 0.66 | 27.84 | 1000' N of Area M |
| ebb ref | 09:02 | " | " | " | 1.51 | 25.1 | 25.40 | 0.99 | 27.94 | |
| ebb ref | 09:03 | " | " | " | 2.60 | 26.4 | 25.76 | 0.87 | 27.99 | |
| ebb ref | 09:04 | " | " | " | 0.18 | ~~21.1~~ 15.7 | 23.98 | 2.15 | 27.48 | |
| 200's DR in K | 09:32 | 41°40.335' | 70°54.940' | 4.2 | 0.82 | 18.8 | 22.95 | 7.26 | 26.99 | 200's of 2 DR barges in Area K |
| " | 09:34 | " | " | " | 2.01 | 27.0 | 27.09 | 5.37 | 26.90 | |
| " | 09:35 | " | " | " | 3.24 | 19.3 | 22.80 | 4.36 | 26.63 | during dredging in G |
| " | 09:37 | " | " | " | 1.49 | 34.2 | 24.53 | 5.30 | 27.20 | |
| " | 09:40 | " | " | " | 1.50 | 14.1 | 23.07 | 6.97 | 27.08 | |
| " | 09:47 | " | " | " | 1.46 | 50.9 | 23.60 | 5.79 | 27.01 | |
| " | 09:49 | " | " | " | 1.47 | 32.2 | 25.22 | 6.00 | 27.17 | |
| " | 09:58 | " | " | " | 1.48 | 62.8 | 25.60 | 5.76 | 27.18 | |
| " | 10:01 | " | " | " | 1.46 | 21.1 | 26.81 | 5.46 | 27.19 | |
| " | 10:26 | " | " | " | 1.50 | 33.4 | 26.33 | 5.04 | 27.09 | |
| " | 10:43 | " | " | " | 1.49 | 12.5 | 28.22 | 4.61 | 26.86 | dredging in K begins |
| " | 11:09 | " | " | " | 1.63 | 23.3 | 25.87 | 6.71 | 27.22 | |
| " | 11:17 | " | " | " | 1.65 | 48.0 | 27.15 | 5.87 | 27.24 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | debris removal in K (2), dredging in K |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | sunny, 85°, winds NW 10-15 kts |

| | |
|---|---|
| Date | July 22, 2010 |
| Page | 2 of |

| Tide Information | |
|---|---|
| High | 0544 |
| Low | 1108 |
| High | 1819 |
| Low | — |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 12:08 | 41°39.796' | 70°54.986' | ~~3.3~~ 4.3 | 0.79 | 10.6 | 25.27 | 9.08 | 27.78 | 1000' S of L |
| flood ref | 12:09 | " | " | " | 3.59 | 6.8 | 28.41 | 8.15 | 26.83 | |
| flood ref | 12:12 | " | " | " | 3.80 | 8.5 | 28.60 | 7.49 | 26.64 | |
| 300' N DR in K | 12:29 | 41°40.488' | 70°54.936' | 3.5 | 0.45 | 20.0 | 25.69 | 8.51 | 28.75 | 300' N of 2 DR in K |
| " | 12:30 | " | " | " | 1.65 | 40.5 | 26.40 | 5.68 | 27.72 | |
| " | 12:31 | " | " | " | 2.49 | 41.1 | 27.09 | 5.20 | 27.29 | |
| " | 12:34 | " | " | " | 1.38 | 26.2 | 25.85 | 7.33 | 28.36 | |
| " | 12:54 | " | " | " | 1.46 | 36.6 | 25.81 | 6.44 | 28.32 | |
| " | 13:02 | " | " | " | 1.41 | 59.9 | 26.07 | 5.64 | 27.62 | dredging in K resumes |
| " | 13:12 | " | " | " | 1.42 | 42.0 | 25.65 | 6.29 | 28.30 | |
| " | 13:17 | " | " | " | 1.41 | 31.7 | 25.51 | 7.57 | 28.49 | |
| " | 13:34 | " | " | " | 1.36 | 53.7 | 25.68 | 6.90 | 27.99 | |
| " | 14:14 | " | " | " | 1.40 | 24.4 | 26.89 | 8.01 | 28.23 | |
| " | 14:17 | " | " | " | 1.41 | 45.0 | 26.15 | 7.27 | 28.30 | |
| " | 14:23 | " | " | " | 1.42 | 22.9 | 27.23 | 8.25 | 28.24 | |
| " | 14:49 | " | " | " | 1.40 | 40.9 | 26.68 | 7.26 | 28.06 | |
| " | | " | " | " | 1.38 | 36.0 | 26.24 | 7.58 | 28.38 | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 7/26/2010

Weather: Sunny Clear, wind Northerly @ 5-10 increased WSW 10-20

Tides:

| | | |
|---|---|---|
| 3.8' | @ | 0852 |
| 0.3' | @ | 1410 |
| 4.1' | @ | 2113 |

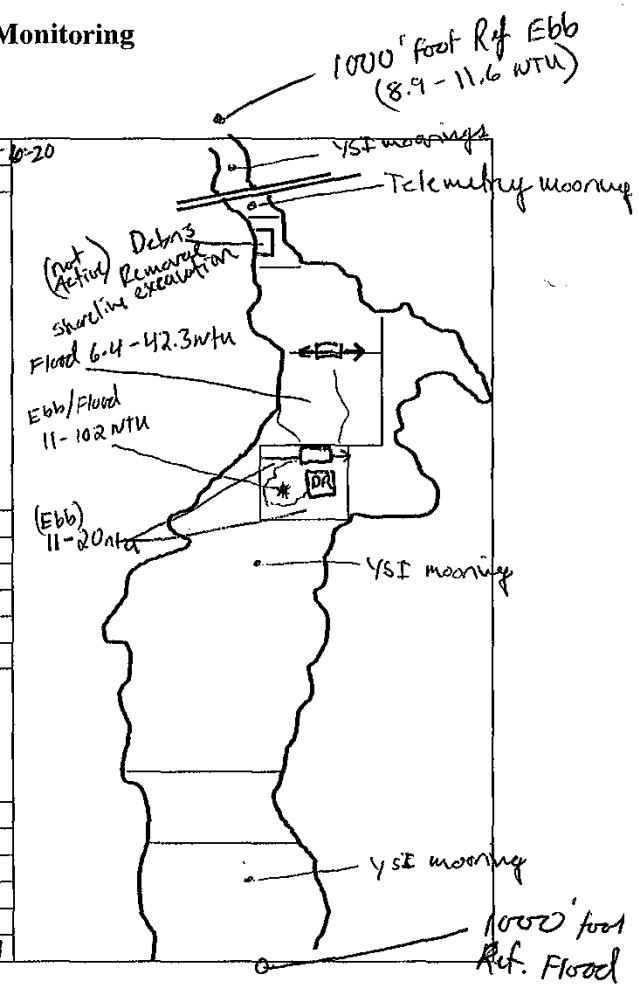
Monitoring Period:

From: 0850 To:

Tidal Stages: (HWS Ebb LWS Flood)

Dredging Activity:

Morning Dredging on Boundry of G and I
Debris Removal throughout morning in Area K
1340 All Activity stopped
1418 Dredge begins work
1440 Debris Removal begins work again




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| WEST boundry of (K) | 12 - 19 | 6 - 7 | 1 - 2' |
| 150' SW of Debris Removal | 19 - 38 | 6.9 - 4.6 | 0.6 - 2.4 |
| " " | 102 | 4.6 | 1.63 |
| " " | 17 - 102 | 4.8 - 5.8 | 1.64 |
| 200' South of Dredge | 16 - 23 | 4.8 - 4.9 | 1.63 - 1.74 |
| 250' North of Dredge | 6.4 - 42.3 | 3.2 - 7.3 | 0.32 - 5.04 |

Oil Sheen/Debris:

No sheen/Debris observed associated with Dredge/Debris Removal. slight sheen observed around boom

Wildlife Observations:

Occasional Fish jumping, numerous terns, Cormorants, and gulls, Osprey, 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: YSI moorings recovered, cleaned, calibrated and redeployed. A range of NTU's from Ebb - Background values to above 100 NTU observed within close proximity to Debris Removal and Down river of Dredge. Values dropped back to low to High teens outside the 200' range. Flood - Background values to 42 NTU observed ~ 250' north of Dredge and Debris Removal Activity. NTU levels Averaged in the mid to High teens. Dissolved Oxygen levels ranged from 3 mg/L near bottom to 7 mg/L at the surface throughout all Area

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Mike Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | ~~West~~ Area G/J, Area K, Debris Removal Area K |
| Dredging Description | West to east in Area G/J, west to east in Area K |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | AM Sunny, wind NNW @ 5-10 / PM mostly sunny, wind west 10-20 |

| | |
|---|---|
| Date | 7/26/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 3.8' @ 0852 |
| Low | 0.3' @ 1410 |
| High | 4.1 @ 2113 |
| Low | |

| | Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ebb | 1000' North Ref | 1139 | | | 2.8 | 0.73 | 8.9 | 21.15 | 3.02 | 26.73 | |
| | | 1140 | | | | 1.82 | 11.6 | 27.53 | 2.55 | 26.82 | |
| | | | | | | | | | | | |
| | 150' from Debris Removal | 1249 | | | 4.2 | 0.607 | 73.4 | 23.95 | 6.96 | 26.77 | |
| | | 1251 | | | | 1.320 | 35.2 | 24.12 | 6.07 | 26.34 | |
| | | 1252 | | | | 2.431 | 19.0 | 27.96 | 4.61 | 25.66 | |
| | 150' SW of Debris Removal | 1300 | 41°40.365 | -70°54.945 | 4.1 | 1.63 | 102.1 | 26.11 | 4.85 | 25.91 | |
| | " | 1308 | | | 4.0 | 1.63 | 64.2 | 25.26 | 4.83 | 26.14 | |
| | " | 1310 | | | 4.0 | 1.63 | 23.4 | 25.22 | 5.07 | 26.12 | |
| | " | 1317 | | | 4.0 | 1.64 | 18.7 | 27.70 | 4.44 | 25.79 | |
| | " | 1331 | | | 3.9 | 1.64 | 16.9 | 26.79 | 5.01 | 26.12 | |
| | " | 1335 | | | 3.9 | 1.63 | 11.4 | 27.38 | 4.91 | 25.80 | Debris Removal stopped |
| | " | 1355 | | | 3.8 | 1.63 | 23.6 | 26.51 | 4.83 | 26.47 | NO ACTIVITY DRG or DR |
| | 200' South of Dredge | 1424 | | | 4.5 | 1.74 | 16.0 | 27.79 | 5.97 | 26.75 | Dredge Active |
| | | | | | | | | | | | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | North Boundry of Area K / Middle of Area K |
| Dredging Description | West to East in Area K |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Mostly Sunny, Breezy WNW 10-20 |

| | |
|---|---|
| Date | 7/26/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 3.8' @ 0852 |
| Low | 0.3' @ 1410 |
| High | 4.1' @ 2113 |
| Low | |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 250' north of Dredge | 1443 | 41° 40.451 | -70° 54.934 | 5.9 | 0.32 | 6.4 | 22.95 | 7.36 | 27.32 | Dredge and Debris |
| | 1445 | | | | 2.07 | 14.2 | 27.40 | 5.01 | 26.05 | Removal Active |
| | 1446 | 41° 40.451 | -70° 54.934 | | 5.04 | 9.7 | 28.04 | 3.24 | 25.71 | Switch Flood Tide |
| " | 1503 | | | | 0.57 | 18.2 | 26.13 | 5.83 | 26.57 | |
| " | 1510 | | | | 1.57 | 42.3 | 23.55 | 5.61 | 26.75 | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 7/28/2010

Weather: Sunny, Hot, Breezy @ 15-20 gusting to 25

Tides:

| | | |
|---|---|---|
| 0.2 @ | @ | 0326 |
| 3.9 @ | @ | 1009 |
| 0.3 @ | @ | 1535 |

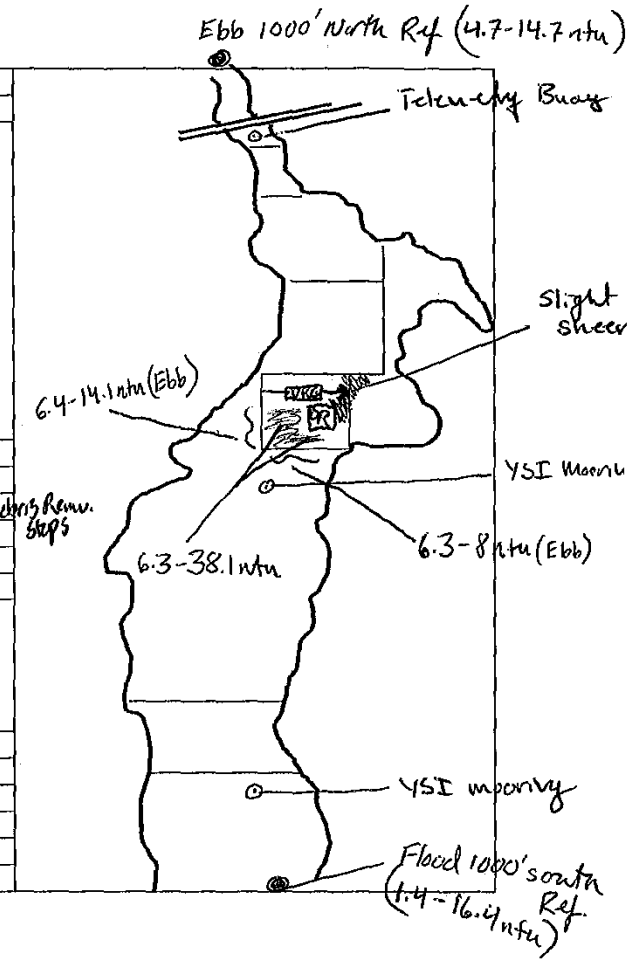
Monitoring Period:

From: 0920 To: 1545

Tidal Stages: (HWS) (Ebb) LWS Flood

Dredging Activity:

AM Clogged pipeline No dredging
AM Stop and go Debris Removal
10:40 Dredging begins
11:20 Dredge stops pumps full / 1201 Dredge Resumes / 1315 Debris Removal stops
1420 Dredge stops pumps full / 1500 Dredge Resumes
1450 Debris Removal Resumes




Turbidity Summary:

| | Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/~~water~~ Depth (ft) |
|---|---|---|---|---|
| Flood | 1000' South Ref | 1.4-16.4 | 6.46-4.69 | 1.29-9.97 |
| Ebb | 1000' North Ref | 4.7-14.7 | 6.98-1.78 | 1.14-9.78 |
| Outside | South Boundary of K | 6.3-8 | 8.39 | 1.78 |
| | Southwest Boundary of K | 6.4-14.1 | 7.27-8.51 | 1.81-2.21 |
| | 100' Southwest of Debris Remo. | 44.2 | 7.83 | 2.49 |
| | 200' south of Dredge | 6.3-38.1 | 8.99-10.90 | 0.78-5.07 |

Oil Sheen/Debris:
Slight sheen observed around Debris Removal And Dredge

Wildlife Observations:
Numerous Terns and Gulls feeding, Occasional Osprey and Egrets, Blue Herons, Seen.

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: YSI mooring Data downloaded. Turbidity readings ranged from single digits to 20-40 ntu for short periods while both Debris removal and Dredge were working. An occasional higher spike was seen but not reproducible (50-60 ntu). During slack low and in conjunction with the gusty southwest wind elevated readings were seen (20-40 ntu) when either the Dredge or Debris Removal were working.

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Mike Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | North side Area K / Debris Removal middle of Area K |
| Dredging Description | West to East / ~~not Active~~ Debris Removal Stop and Go |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, Hot, Breezy SW 10-15 gusting to 25 |

| | |
|---|---|
| Date | 7/28/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 3.9' @ 1009 |
| Low | 0.2' @ 0326 |
| High | 3.8' @ 1226 |
| Low | 0.3' @ 0535 |

| | Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flood | 1000' south Ref | 0937 | | | 11.5 | 1.29 | 1.4 | 6.46 | 28.56 | 24.80 | |
| | | 0938 | | | ~~4.6~~ | 4.6 | 1.5 | 5.35 | 29.56 | 24.23 | |
| | | 0939 | | | | 9.97 | 16.4 | 4.69 | 29.62 | 24.14 | |
| Ebb | 1000' North Ref | 1009 | | | 5.4 | 1.14 | 4.7 | 6.98 | 26.04 | 27.00 | |
| | | 1010 | | | | 2.40 | 5.3 | 5.81 | 26.87 | 26.98 | |
| | | 1011 | | | | 4.78 | 14.7 | 1.78 | 27.09 | 27.03 | |
| | South Boundary of Area K | 1055 | | | | 1.78 | 6.3 | 8.39 | 25.01 | 26.16 | 500' from Dredge |
| South | West Boundary of Area K | 1100 | Vessel | | | 2.01 | 14.1 | 8.50 | 26.50 | 26.15 | 300' from Dredge |
| | " | 1108 | | | | 1.81 | 3.3 | 7.27 | 26.95 | 26.56 | 200' from Dredge |
| | " | 1136 | | Moving | | 2.21 | 6.4 | 8.51 | 26.22 | 26.64 | 200' from Debris Removal |
| | 100' south of Debris Removal | 1142 | | | | 1.74 | 9.6 | 8.66 | 25.42 | 26.50 | |
| | 100' south west of Debris Removal | 1147 | | | | 2.49 | 44.2 | 7.83 | 26.22 | 26.41 | |
| | 200' south west of Dredge / Debris Remo. | 1157 | 41° 40.359 | -70° 54.953 | 6.3 | 0.78 | 10.5 | 8.99 | 24.85 | 26.65 | |
| | | 1159 | ~~70° 54.953~~ | | | 3.52 | 20.9 | 6.33 | 27.83 | 26.10 | |
| | | 1200 | | | | 5.07 | 14.4 | 5.26 | 28.84 | 25.41 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | North Side of Area K / Debris Removal Middle of Area K |
| Dredging Description | West to East / Debris Removal Stop and Go |
| Survey Vessel | George Hampson |
| Chief Scientist | M Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, Hot, Breezy SW @ 10-15 Increasing 15-20 gusting to 25 |

| | |
|---|---|
| Date | 7/28/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 3.9' @ 1009 |
| Low | 0.2' @ 0326 |
| High | 3.2' @ 2226 |
| Low | 0.3' @ 1535 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 200' South west of Dredge and Debris Remv. | 1228 | 41° 40.359 | -70°54.953 | 6.0 | 2.08 | 6.3 | 26.27 | 8.98 | 26.88 | |
| 200' South of Dredge | 1340 | | | 4.7 | 2.13 | 30.1 | 25.04 | 10.04 | 27.32 | Turbidity Appears due to shallow water and High Wind |
| 200' South of Dredge | 1425 | | | 4.4 | 1.87 | 14.7 | 23.60 | 10.90 | 27.80 | |
| " | 1450 | | | 3.7 | 1.85 | 38.1 | 22.59 | 10.87 | 28.08 | Debris Removal Resumed |
| " | 1526 | | | 3.8 | 1.25 | 48.6 | 22.44 | 11.14 | 27.48 | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: August 2, 2010
Weather: sunny, 75°, winds 5kts SE-S GORGEOUS!
Tides:

| | | |
|---|---|---|
| low | @ | 06:21 |
| high | @ | 13:22 |
| low | @ | 19:10 |

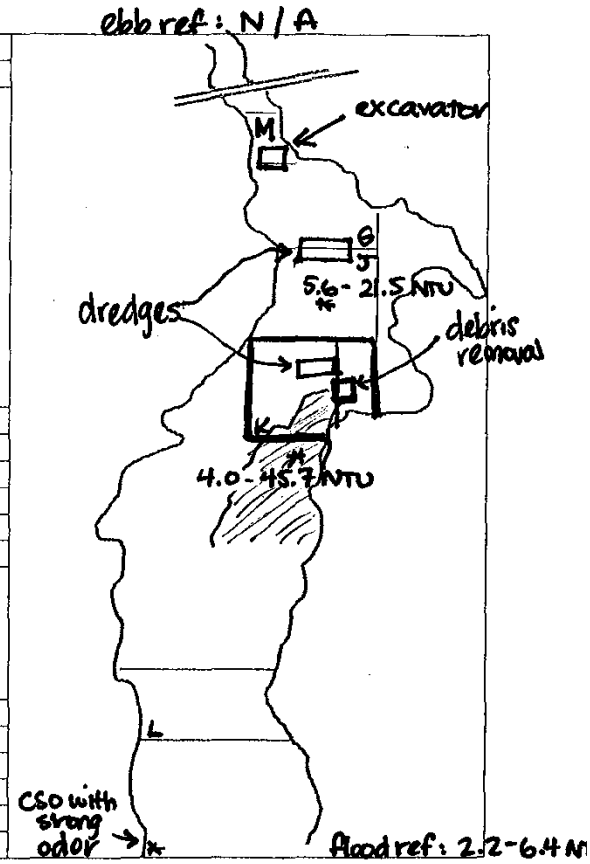
Monitoring Period:

From: 0830 To: 15:40

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
morning: dredging in Area K
debris removal in Area K

afternoon: dredging at boundary of G/J
debris removal in Area K




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood ref | 2.2-6.4 | 5.7-8.2 | 0.9-4.6 |
| ebb ref → NA: could not pass pipeline in J / cables | | | |
| 300' N DRG in K & DR in K | 5.6-21.5 | 3.4-10.7 | 1.0-5.9 |
| 300' S DR in K | 4.0-45.7 | 7.2-10.7 | 1.0-4.4 |

Oil Sheen/Debris:
Strong wastewater odor near CSO south of Area L

Wildlife Observations:
many waterfowl, occasional fish jumping, crab swimming near Sawyer St. dock

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: A very strong wastewater odor was noted in the vicinity of the CSO north of Pierce Mill Cove on the western bank during low tide in the morning. Monitoring efforts surrounded dredging in Area K and the boundary of Areas G & J, and debris removal in K observed slightly elevated turbidities, especially during the ebb tide, south of the activity. Readings were ~15 NTU above background during the flood tide and ~40 NTU above background during ebb. During the ebb tide, the plume was clearly visible, distinct from the clearer water in the channel to the west, however ach turbidity values in the plume did not exceed 50 NTU at a distance of 300' down current of activity. Dissolved oxygen concentrations were in a normal range throughout the day. An ebb reference reading was not possible due to the location of equipment

Sampling Crew: K. McCarthy, D. Rogers

Chief Scientist Signature: Kathleen McCarthy

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | dredging in K |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, 75°, winds 5kts SE-S |

| | |
|---|---|
| Date | ~~8/3~~ 8/2/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 01:00 |
| Low | 06:21 |
| High | 13:22 |
| Low | 19:10 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 08:52 | 41°39.819' | 70°54.984' | 5.8 | 0.97 | 2.2 | 8.18 | 28.11 | 24.13 | |
| flood ref | 08:53 | " | " | " | 4.19 | 2.7 | 6.26 | 29.36 | 23.97 | |
| flood ref | 08:54 | " | " | " | 4.59 | 6.4 | 5.74 | 29.39 | 24.14 | |
| 300' N DRG in K | 09:11 | 41°40.473' | 70°54.910' | 7.6 | 1.01 | 16.6 | 6.14 | 27.19 | 24.80 | |
| " | 09:12 | " | " | " | 4.07 | 9.8 | 5.04 | 27.89 | 24.75 | |
| " | 09:14 | " | " | " | 5.89 | 19.5 | 3.49 | 28.10 | 24.69 | |
| " | 09:15 | " | " | " | 1.56 | 19.7 | 6.02 | 27.36 | 24.86 | depth of highest turbidity reading |
| " | 09:21 | " | " | " | 1.45 | 13.6 | 7.04 | 27.31 | 24.88 | |
| " | 09:29 | " | " | " | 1.45 | 21.5 | 6.65 | 27.35 | 24.90 | |
| " | 09:46 | " | " | " | 1.45 | 10.1 | 8.30 | 26.77 | 25.14 | |
| " | 10:03 | " | " | " | 1.47 | 12.7 | 8.03 | 27.07 | 25.09 | |
| " | 10:17 | " | " | " | 1.46 | 7.6 | 8.35 | 26.70 | 24.97 | |
| " | 10:34 | " | " | " | 1.47 | 8.9 | 8.66 | 26.84 | 25.05 | dredging paused |
| " | 10:43 | " | " | " | 1.43 | 6.1 | 9.64 | 26.50 | 25.11 | active debris removal in K → ~900' away |
| " | 11:09 | " | " | " | 1.47 | 7.0 | 9.72 | 26.89 | 25.08 | dredging resumed |
| " | 11:21 | " | " | " | 1.46 | 7.7 | 8.62 | 27.01 | 25.04 | |
| " | 11:24 | " | " | " | 1.47 | 5.6 | 9.02 | 27.07 | 24.95 | |
| " | 12:09 | " | " | " | 1.44 | 8.0 | 9.67 | 26.98 | 25.25 | |
| " | 12:24 | " | " | " | 1.88 | 9.6 | 9.70 | 27.29 | 25.14 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K, Area G/J |
| Dredging Description | dredging in Area G/J (boundary), debris removal in Area K |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, 75°, winds 5kts SE-S |

| | |
|---|---|
| Date | 8/2/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 01:00 |
| Low | 06:21 |
| High | 13:22 |
| Low | 19:10 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | Salinity | DO | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300'S DRink | 13:24 | 41°40.307' | 70°54.957' | 5.8 | 0.98 | 11.0 | 27.99 | 10.00 | 25.42 | |
| " | 13:25 | " | " | " | 2.40 | 4.0 | 28.27 | 9.45 | 25.13 | |
| " | 13:29 | " | " | " | ~~5.0~~ 4.40 | 12.7 | 28.28 | 9.39 | 25.05 | |
| " | 13:35 | " | " | " | 1.28 | 13.6 | 27.86 | 9.94 | 25.46 | |
| " | 13:41 | " | " | " | 1.26 | 22.7 | 27.85 | 9.43 | 25.50 | |
| " | 13:48 | " | " | " | 1.27 | 30.1 | 27.83 | 9.14 | 25.68 | |
| " | 14:22 | " | " | " | 1.28 | 24.4 | 27.95 | 9.10 | 25.51 | |
| " | 14:28 | " | " | " | 1.28 | 35.2 | 27.90 | 8.62 | 25.47 | |
| " | 14:35 | " | " | " | 1.25 | 43.0 | 27.90 | 8.16 | 25.36 | |
| " | 14:39 | " | " | " | 1.26 | 45.7 | 27.70 | 7.21 | 25.44 | |
| " | 14:42 | " | " | " | 1.27 | 27.6 | 27.74 | 8.36 | 25.39 | |
| " | 14:49 | " | " | " | 1.26 | 10.9 | 27.82 | 10.28 | 25.91 | |
| " | 14:54 | " | " | " | 1.27 | 7.1 | 27.76 | 10.62 | 25.95 | |
| " | 15:09 | " | " | " | 1.25 | 19.0 | 27.66 | 10.04 | 25.90 | |
| " | 15:16 | " | " | " | 1.24 | 16.4 | 27.62 | 9.79 | 25.89 | |
| " | 15:28 | " | " | " | 1.27 | 12.3 | 27.62 | 9.56 | 25.83 | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: August 5, 2010
Weather: overcast, hazy, 85°, Thunderstorms in morning
Tides: mnds 10-15 kts SW

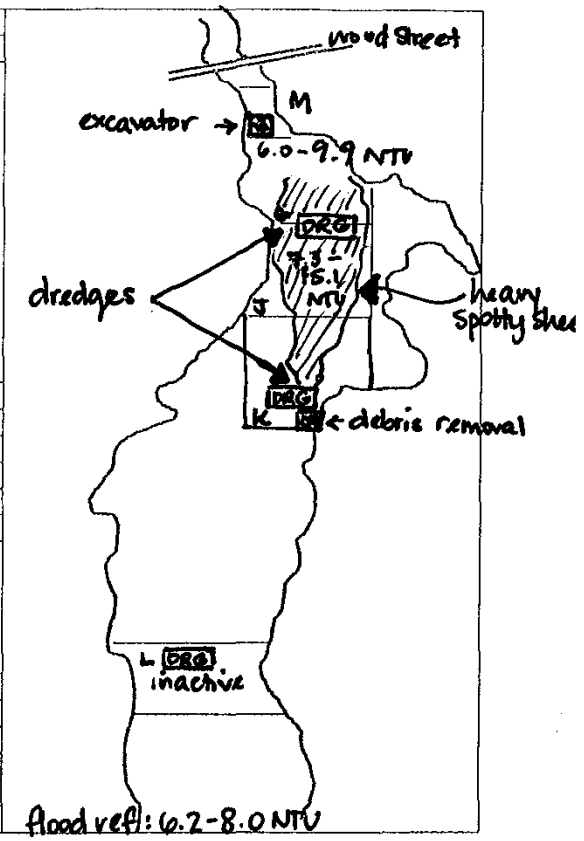
| | | |
|---|---|---|
| high | @ | 03:44 |
| low | @ | 09:15 |
| high | @ | 16:12 |

Monitoring Period:

From: 08:50 To: 15:50

Tidal Stages: HWS Ebb LWS Flood (no work ≈ 10:15 - 12:15 due to thunderstorms)

Dredging Activity:
morning: dredging in Area K
afternoon: debris removal in Area K
dredging in Area K
dredging in Area G




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| • flood reference | 6.2-8.0 | 3.95-5.05 | 1.0-7.4 |
| • 300' N of dredge in Area K | 7.3-12.6 | 1.90-5.25 | 0.8-5.5 |
| • 300 N of dredge in G | 6.0-9.9 | 4.88-9.71 | 0.8-4.3 |
| • 300' N of dredge & debris removal in K | 8.2-15.1 | 3.11-7.43 | 0.9-5.6 |

Oil Sheen/Debris:
Sheen and strong odor from CSOs near Coggeshall St. and Pierce Mill Cove
heavy oily sheen observed spreading north from dredge & debris removal in Area K during flood tide with strong SW wi

Wildlife Observations:
many terns fishing in Areas G, J, N and K during morning

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 dissolved oxygen concentration during morning hours observed throughout harbor. Numerous terns and other water fowl observed fishing / feeding in northern areas and near wood Street. Work was shut down for two hours in the late morning due to thunderstorms in the area. Turbidity was generally low surrounding all activity in Area K during the morning and early afternoon and was low surrounding activity in Area G in the late afternoon.

Sampling Crew: K. McCartney, D. Rogers

Chief Scientist Signature: Karen McCar

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | dredging in K (am), debris removal in K (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | Dan Rogers |
| Other Personnel | — |
| Weather Conditions | overcast, hazy, 85°, T-storms, winds 10-15 kts SW |

| | |
|---|---|
| Date | 8/5/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 0344 |
| Low | 0915 |
| High | 1612 |
| Low | 2300 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref. | 09:00 | 41°39.835 | 70°55.ϕϕ4 | 9.5 | 1.ϕ2 | 6.2 | 5.ϕ5 | 27.54 | 25.46 | |
| flood ref. | 09:01 | " | " | " | 5.3ϕ | 6.8 | 3.95 | 29.77 | 25.2ϕ | |
| flood ref | 09:02 | " | " | " | 7.4ϕ | 8.ϕ | 4.22 | 30.1ϕ | 25.ϕ9 | |
| 300' N DRG in K | 09:36 | 41°40.472 | 70°54.911' | 5.8 | ϕ.84 | 7.4 | 4.11 | 22.88 | 25.57 | dredging paused |
| " | 09:37 | " | " | " | 3.4ϕ | 7.3 | 2.83 | 27.12 | 25.51 | |
| " | 09:38 | " | " | " | 5.52 | 7.9 | 1.9ϕ | 27.74 | 25.39 | |
| " | 09:40 | " | " | " | 1.51 | 9.8 | 3.65 | 24.76 | 25.55 | dredging resumes |
| " | 09:43 | " | " | " | 1.53 | 12.6 | 3.93 | 24.44 | 25.52 | |
| " | 10:12 | " | " | " | 1.55 | 9.1 | 5.25 | 24.ϕ9 | 25.6ϕ | |
| 300' N DRG, DRG in K | 13:39 | 41°40.468' | 70°54.937' | 6.5 | ϕ.99 | 13.4 | 6.16 | 25.59 | 26.32 | both dredging & |
| " | 13:41 | " | " | " | 3.26 | 9.2 | 5.57 | 25.73 | 25.92 | debris removal active |
| " | 13:42 | " | " | " | 5.59 | 8.2 | 3.11 | 26.36 | 25.6ϕ | |
| " | 13:45 | " | " | " | 1.63 | 1ϕ.2 | 5.96 | 25.75 | 26.29 | |
| " | 13:54 | " | " | " | 1.63 | 12.9 | 6.71 | 25.59 | 26.47 | |
| " | 13:55 | " | " | " | ϕ.99 | 13.5 | 7.ϕ9 | 25.12 | 26.5ϕ | |
| " | 14:18 | " | " | " | ϕ.98 | 12.4 | 7.43 | 25.13 | 26.88 | |
| " | 14:27 | " | " | " | ϕ.99 | 15.1 | 7.36 | 25.1ϕ | 26.79 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | dredging in Area G (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | overcast, winds 10-15 kts SW |

| | |
|---|---|
| Date | 8/5/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 0344 |
| Low | 0915 |
| High | 1612 |
| Low | 2300 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' N DRG in G | 14:40 | 41°40.602' | 70°54.966' | 5.2 | 0.82 | 6.3 | 9.48 | 20.85 | 27.47 | setting up dredge in G |
| " | 14:41 | " | " | " | 2.69 | 8.9 | 6.76 | 25.05 | 26.28 | |
| " | 14:43 | " | " | " | 4.25 | 9.9 | 4.95 | 25.72 | 25.75 | |
| " | 14:58 | " | " | " | ~~X~~ 2.16 | 9.3 | 6.37 | 22.00 | 27.19 | dredging active |
| " | 15:09 | " | " | " | 2.15 | 8.8 | 7.19 | 24.32 | 26.34 | |
| " | 15:14 | " | " | " | 2.16 | 8.2 | 8.40 | 21.35 | 27.42 | |
| " | 15:17 | " | " | " | 2.15 | 9.1 | 7.15 | 24.44 | 26.45 | |
| " | 15:22 | " | " | " | 2.16 | 7.4 | 8.77 | 23.60 | 26.75 | |
| " | 15:24 | " | " | " | 0.97 | 6.0 | 9.71 | 20.79 | 27.89 | |
| " | 15:28 | " | " | " | 4.24 | 8.7 | 4.88 | 25.87 | 25.94 | |
| " | 15:30 | " | " | " | 4.25 | 9.3 | 4.96 | 25.90 | 25.96 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: 8/9/10

Weather: Hazy, Humid, Wind SW 5-10 Knts

Tides:

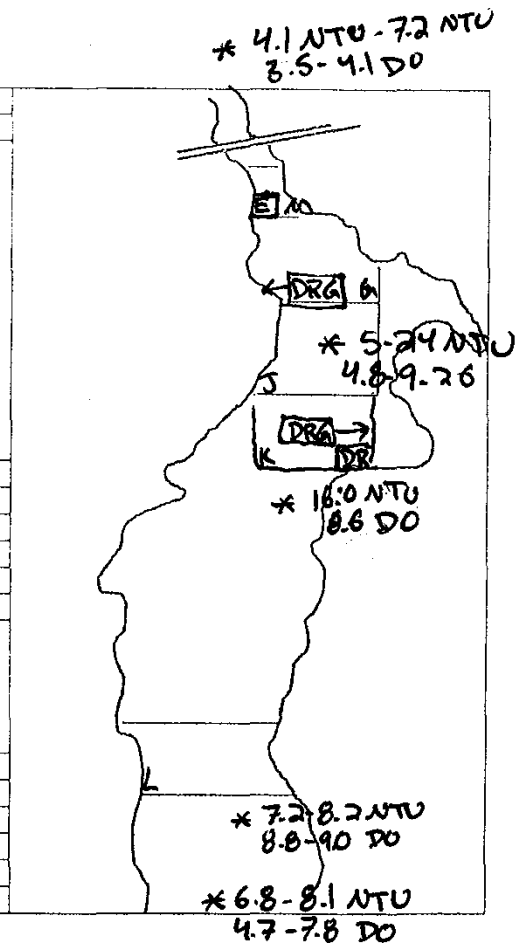
| | | |
|---|---|---|
| High | @ | 0742 |
| Low | @ | 1327 |
| High | @ | 2008 |

Monitoring Period:

From 0845 To: 1520

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

Dredging Activity:
Morning: Debris Removal in Area K
Shore line excavating in Area M
Dredging in Area G
Afternoon: Dredging in Area K




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Ebb Reference | 4.1-7.2 | 3.5-4.1 | 0.9-4.1 |
| Flood Reference | 6.8-8.1 | 4.7-7.8 | 1.0-8.2 |
| S Area L | 7.2-8.2 | 8.8-9.0 | 0.9-2.9 |
| S-Area-K | 16.0 | 8.6 | 2.7 |
| 300N of DRG in K | 5-24 | 4.8-9.20 | 0.9-6.3 |

Oil Sheen/Debris:
None

Wildlife Observations:
Terns, Gulls, Cormorants throughout harbor, feeding on small fish (Silver sides)

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Elevated dissolved oxygen concentration at surface water (>100). Birds throughout harbor feeding on bait fish (Menhaden, silver sides). Calibrated and cleaned all sondes including real-time sonde.

Sampling Crew: D. Bailey, M. Walsh

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | DB in Area K + M |
| Dredging Description | DRG in Area G/J |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | — |
| Vessel Captain | M. Webb. |
| Other Personnel | — |
| Weather Conditions | Hazy, Humid, Wind |

| | |
|---|---|
| Date | 8/9/10 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | 0742 |
| Low | 0116 |
| High | 2008 |
| Low | 1327 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Ebb Ref | 9:19 | 41°40.833 | 70°55.032 | 5.3 | 0.94 | 4.1 | 4.13 | 22.60 | 25.16 | |
| | 9:20 | " " | " " | " | 2.77 | 6.4 | 3.54 | 27.21 | 25.40 | |
| | 9:20 | " " | " " | " | 4.18 | 7.2 | 3.74 | 27.62 | 25.36 | |
| Flood Ref | 1336 | 41°39.803 | 70°54.907 | 9.3 | 1.01 | 6.8 | 7.75 | 28.73 | 26.45 | |
| | 1337 | " " | " " | " | 4.50 | 8.1 | 6.73 | 29.57 | 26.82 | |
| | ~~1338~~ | ~~" "~~ | ~~" "~~ | ~~"~~ | ~~8.18~~ | ~~7.2~~ | ~~4.76~~ | ~~29.53~~ | ~~25.06~~ | |
| SArea L | 1351 | 41°39.905 | 70°55.014 | 3.9 | 0.98 | 7.2 | 8.83 | 28.44 | 27.33 | |
| | 1352 | " " | " " | " | 2.90 | 8.2 | ~~26.57~~ 9.03 | 28.57 | 27.12 | |
| SArea K | 1405 | 41°40.283 | 70°54.988 | 2.7 | 1.54 | 16.6 | 8.61 | 27.24 | 27.58 | |
| 300' N of | 1413 | 41°40.427 | 70°54.923 | 6.9 | 0.90 | 11.8 | 9.20 | 25.98 | 27.80 | |
| DRG in K | 1414 | " " | " " | " | 3.01 | 11.7 | 8.67 | 27.57 | 26.16 | |
| | 1416 | " " | " " | " | 6.33 | 5.7 | 4.85 | 29.33 | 24.92 | |
| | 1444 | " " | " " | " | 1.59 | 24.0 | 9.21 | 26.69 | 27.89 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: August 12, 2010
Weather: sunny, 80° winds 5-10 kts E → SE
Tides:

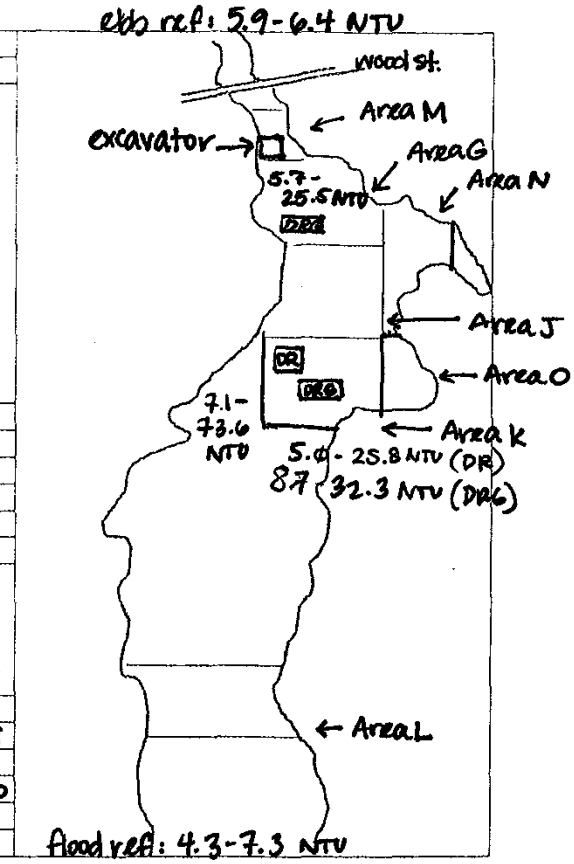
| | | |
|---|---|---|
| low | @ | 03:39 |
| high | @ | 10:15 |
| low | @ | 15:59 |

Monitoring Period:

From: 08:50 To: 1535

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
dredging in Area G (am & pm)
debris removal in Area K (late am)
excavation in Area M (pm)
dredging in Area K (pm)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood ref | 4.3-7.3 | 5.28-5.38 | 0.6-11.5 |
| ebb ref | 6.4-5.9 | 4.03-5.81 | 0.6-5.4 |
| 200'N of dredge in G | 5.7-25.5 | 4.21-6.24 | 0.6-4.8 |
| 300'S of debris removal in K | 5.0-25.8 | 4.67-7.08 | 0.7-7.1 |
| 300'SSW of DR in K | 7.1-73.6 | 4.76-7.51 | 0.7-4.0 |
| 300'S of dredge in K | 8.7-32.3 | 6.77-7.65 | 1.7 |

Oil Sheen/Debris:
spotty sheen near dredge in Area G

Wildlife Observations:
abundant terns, gulls, cormorants, etc fishing in northern areas

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Elevated turbidity was observed downcurrent of debris removal in Area K during the ebb tide. Readings were generally 20-60 NTU with a maximum of 73.6 NTU observed. The location of the elevated readings was between Area K and the western shoreline. Higher readings were observed at a depth of approximately 3 feet. Turbidity elsewhere (farther downstream or in Area K) was lower, not exceeding 30 NTU. Abundant waterfowl (terns, gulls, cormorants) were feeding throughout Areas K, O, J, N and G.

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area K |
| Dredging Description | dredging in G (am), debris removal in K (late am) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny, 80°, winds E → SE 5-10 kts |

| | |
|---|---|
| Date | 8/12/10 |
| Page | 1 of 3 |

| Tide Information | |
|---|---|
| High | — |
| Low | 03:39 |
| High | 10:15 |
| Low | 15:59 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 09:00 | 41°39.828' | 70°55.010' | 12.0 | 0.60 | 4.3 | 5.38 | 30.44 | 25.37 | |
| flood ref | 09:02 | " | " | " | 7.02 | 6.9 | 5.30 | 30.47 | 25.36 | |
| flood ref | 09:03 | " | " | " | 11.48 | 7.3 | 5.28 | 30.48 | 25.36 | |
| 250' N of DRGING | 09:25 | 41°40.579' | 70°54.960' | 7.0 | 0.61 | 5.7 | 6.24 | 29.03 | 25.88 | |
| " | 09:26 | " | " | " | 2.99 | 7.3 | 5.69 | 29.30 | 25.94 | |
| " | 09:27 | " | " | " | 4.75 | 25.5 | 4.21 | 29.41 | 25.81 | bumped bottom with sensor = higher turbidity |
| " | 09:29 | " | " | " | 3.59 | 11.5 | 4.74 | 29.32 | 25.92 | |
| " | 10:03 | " | " | " | 3.37 | 15.0 | 5.03 | 29.37 | 25.90 | |
| " | 10:10 | " | " | " | 3.37 | 21.4 | 4.37 | 29.38 | 25.78 | |
| " | 10:13 | " | " | " | 3.38 | 9.7 | 5.16 | 29.32 | 25.03 | |
| ebb ref | 10:39 | 41°40.835' | 70°55.035' | 6.6 | 0.60 | 5.9 | 5.81 | 27.95 | 26.96 | |
| ebb ref | 10:40 | " | " | " | 3.07 | 5.9 | 4.63 | 29.09 | 26.11 | |
| ebb ref | 10:41 | " | " | " | 5.35 | 6.4 | 4.03 | 29.09 | 25.91 | |
| 300' S DR in K | 11:26 | 41°40.339' | 70°54.960' | 8.8 | 0.75 | 6.7 | 6.43 | 29.69 | 25.95 | debris removal inactive |
| " | 11:27 | " | " | " | 4.00 | 5.0 | 5.43 | 29.98 | 25.63 | |
| " | 11:29 | " | " | " | 7.66 | 9.3 | 4.81 | 30.06 | 25.51 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K, Area G, Area M, |
| Dredging Description | debris removal in K (late am), dredging in G (am + pm), excavation in M (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthey |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | sunny, 80°, winds E → SE 5-10 kts |

| | |
|---|---|
| Date | 8/12/10 |
| Page | 2 of 3 |

| Tide Information | |
|---|---|
| High | — |
| Low | 03:39 |
| High | 10:15 |
| Low | 15:59 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300's DR in K | 11:35 | 41°40.339' | 70°54.960' | 8.8' | 7.10 | 8.7 | 4.81 | 30.07 | 25.52 | |
| " | 11:51 | " | " | " | 7.11 | ~~X~~ 5.4 | 4.67 | 30.09 | 25.54 | |
| " | 12:15 | " | " | " | 7.11 | 6.7 | 5.03 | 30.01 | 25.61 | |
| " | 12:29 | " | " | " | 6.94 | 12.0 | 4.74 | 30.02 | 25.58 | |
| " | 12:31 | " | " | " | 6.87 | 16.4 | 4.71 | 30.02 | 25.58 | |
| " | 12:34 | " | " | " | 6.90 | 25.8 | 4.79 | 30.01 | 25.58 | |
| " | 12:35 | " | " | " | 6.89 | 11.2 | 4.74 | 30.00 | 25.59 | |
| " | 12:54 | " | " | " | 0.69 | 6.6 | 7.08 | 29.57 | 26.55 | |
| 300' SSW DR in K | 13:03 | | | | 1.52 | 58.9 | 6.20 | 29.56 | 26.27 | moved outside of Area K, closer to western shoreline |
| " | 13:04 | Vessel | moving | | 0.53 | 50.6 | 6.36 | 29.32 | 26.28 | |
| " | 13:05 | | | | 3.20 | 21.8 | 5.07 | 29.82 | 25.80 | |
| 300' SSW DR in K | 13:15 | 41°40.342' | 70°54.993' | 6.4' | 0.70 | 7.1 | 7.51 | 29.52 | 26.80 | |
| " | 13:16 | " | " | " | 1.45 | 23.2 | 7.05 | 29.54 | 26.75 | |
| " | 13:18 | " | " | " | 2.99 | 46.6 | 6.03 | 29.53 | 26.49 | |
| " | 13:19 | " | " | " | 4.02 | 14.0 | 4.95 | 29.85 | 25.74 | |
| " | 13:22 | " | " | " | 3.21 | 53.1 | 5.15 | 29.75 | 25.95 | |
| " | 13:25 | " | " | " | 3.22 | 59.5 | 5.84 | 29.50 | 26.62 | |
| " | 13:29 | " | " | " | 3.22 | 25.0 | 4.79 | 29.80 | 25.91 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K, Area G, Area M |
| Dredging Description | debris removal in K (pm) dredging in G (pm) excavation in M (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | sunny, 80° winds E → SE 5-10 kts |

| | |
|---|---|
| Date | 8/12/10 |
| Page | 3 of 3 |

| Tide Information | |
|---|---|
| High | — |
| Low | 03:39 |
| High | 10:15 |
| Low | 15:59 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' SSW of DR in K | 13:32 | 41°40.342' | 70°54.993 | 6.4 | 3.18 | 68.4 | 5.12 | 29.46 | 26.77 | |
| " | 13:35 | " | " | " | 3.21 | 73.6 | 5.17 | 29.72 | 25.88 | |
| " | 13:35 | " | " | " | 3.21 | 45.5 | 4.76 | 29.66 | 26.02 | |
| " | 13:39 | " | " | " | 3.20 | 44.4 | 4.97 | 29.74 | 25.88 | |
| 300' S of DR in K | 14:46 | 41°40.296' | 70°54.972' | 8.5.0 | 1.68 | 32.3 | 6.78 | 29.74 | 26.45 | |
| " | 14:49 | " | " | " | 1.69 | 28.3 | 6.88 | 29.72 | 26.39 | |
| " | 14:55 | " | " | " | 1.70 | 9.8 | 7.40 | 29.63 | 26.44 | |
| " | 15:03 | " | " | " | 1.70 | 8.7 | 7.65 | 29.58 | 26.50 | |
| " | 15:10 | " | " | " | 1.70 | 12.6 | 6.77 | 29.61 | 26.37 | |
| " | 15:15 | " | " | " | 1.64 | 13.1 | 7.25 | 29.53 | 26.45 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 8/16/2010

Weather: Overcast Rain/Drizzle Wind 5-15 SWest

Tides:

| | | |
|---|---|---|
| 3.8' | @ | 0117 |
| 0.2' | @ | 0633 |
| 4.3' | @ | 1353 |

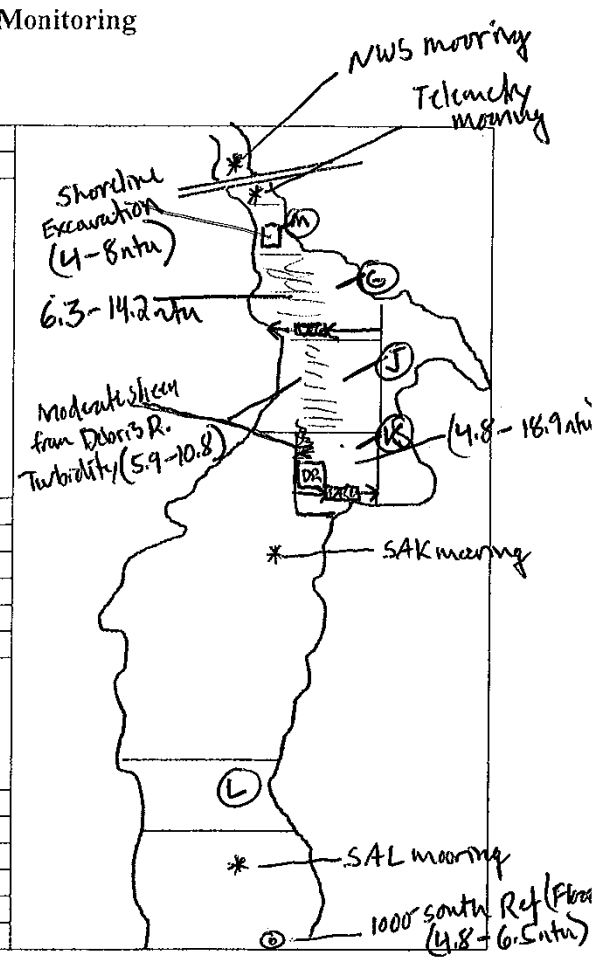
Monitoring Period:

From: 0900 To: 1545

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

Dredging Activity:

West to east in South portion of Area K
1026 Dredge Activity moves to Area G
1026 Debris Removal moves to S. West corner of Area K
1400 Debris Removal Stopped
1400 Shoreline excavation Begins
1500 Shoreline excavation ends.




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/~~water~~ Depth (ft) |
|---|---|---|---|
| Area K vessel moving | 6.5-12.5 | 5.3-5.5 | 1.2-1.3 |
| Area K 250' North of Dredge | 5.5-18.9 | 5.1-5.4 | 0.9-6.1 |
| Area K 250' North of Debris Rem. | 5.9-10.8 | 5.8-6.3 | 0.9-7.0 |
| Area G 200' North of Dredge | 6.3-14.2 | 6.22-7.97 | 1.8-3.6 |
| Area M 50' to 150' from Shoreline excavation (vessel mooring) | 4.0-8.1 | 5.9-7.8 | 1.0'-3.0' |

Oil Sheen/Debris: Slight to moderate sheen observed Along western boundary of Area K from debris Removal. This sheen Appeared to move north with wind and tide to Area J, G and M. A Slight sheen WAS observed in Area M due to shoreline excavation.

Wildlife Observations:
Numerous Terns, Gulls and Cormorants Feeding.

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Turbidity levels remained <20 ntu in All Areas today. Within 50' feet of shoreline excavation turbidity did not exceed 8.1 ntu. 250 feet north of Dredging with push boats working turbidity only reached 18.9 ntu. Dissolved Oxygen levels ranged between 5.13 - 8.1 mg/L throughout all areas.

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K / South – No Active debris Removal |
| Dredging Description | West to East |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | |
| Weather Conditions | Overcast Rain/Drizzle SW 5-10 |

| | |
|---|---|
| Date | 8/16/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 3.8' @ 1:17 |
| Low | 0.2' @ 0633 |
| High | 4.3' @ 1353 |
| Low | 0.7' @ 2026 |

| | Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flood | 1000' Ref | 0921 | | | 9.9 | 0.59 | 6.2 | 5.73 | 30.38 | 23.53 | |
| | | 0922 | | | | 4.49 | 4.8 | 5.72 | 30.50 | 23.54 | |
| | | 0923 | | | | 8.31 | 6.5 | 5.47 | 30.59 | 23.54 | |
| 150' North of Dredge | | 0941 | | | | 1.24 | 12.4 | 5.34 | 29.44 | 23.29 | Area K |
| 250' North of Dredge | | 0945 | vessel moving | | | 1.32 | 6.5 | 5.54 | 29.46 | 23.33 | " " |
| | | 0947 | | | 7.2 | 0.99 | 6.9 | 5.40 | 29.49 | 23.37 | Area K |
| | | 0949 | | | 7.2 | 3.65 | 5.5 | 5.43 | 29.50 | 23.41 | " " |
| | | 0951 | | | 7.2 | 6.10 | 4.7 | 5.13 | 29.59 | 23.50 | Area K |
| 250' North of Dredge | | 1004 | | | | 0.90 | 9.2 | 5.20 | 29.51 | 23.34 | Push Boats working |
| | | 1007 | | | | 0.90 | 15.0 | 5.13 | 29.51 | 23.34 | |
| | | 1012 | | | | 0.90 | 18.9 | 5.36 | 29.47 | 23.16 | Area K |
| 250' North of Debris Removal | | 1106 | 41°40.438 | 70°54.949 | 8.3 | 1.01 | 6.8 | 6.15 | 29.51 | 23.30 | Debris Removal South west Corner of Area K |
| | | | | | 8.3 | 3.94 | 7.3 | 6.17 | 29.53 | 23.29 | Strong $H_2S$ odor downwind |
| | | | | | 8.3 | 7.03 | 10.8 | 5.86 | 29.54 | 23.27 | of D. Removal |
| " " | | 1122 | | | 8.4 | 0.96 | 5.9 | 6.32 | 29.52 | 23.36 | Area K |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | South Boundary of Area G / DRemoval SW corner of Area K |
| Dredging Description | East to West |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Cloudy (occasional showers) SW 5-10 |

| | |
|---|---|
| Date | 8/16/2010 |
| Page | 2 of 2 |

| Tide Information | | |
|---|---|---|
| High | 3.8' @ | 0117 |
| Low | 0.2' @ | 0633 |
| High | 4.3' @ | 1353 |
| Low | 0.7' @ | 2026 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ~~Area G~~ | 1259 | 41°40.581 | -70°54.962 | 5.4 | 1.10 | 7.6 | 7.50 | 28.51 | 23.63 | 200' north of Dredge |
| 200' north of Dredge | 1300 | ~~70°54.962~~ | | | 2.25 | 8.7 | 6.86 | 29.10 | 23.59 | Area G |
| | 1302 | | | | 4.42 | 9.4 | 6.22 | 29.27 | 23.56 | |
| | 1346 | | | | 1.88 | 6.3 | 7.97 | 28.63 | 23.73 | |
| | 1356 | | | | 3.65 | 14.2 | 6.68 | 29.28 | 23.64 | Area G |
| Vessel Moving | 1400-1430 | 50'-150' in all Areas surrounding shoreline excavation | | | 1.0-3.5 | 4-8 ntu | 5.9-8.1 | 28-29 | 23- | Area M |
| 250' south of Dredge | 1459 | 41°40.483 | -70°54.966 | 8.1 | 1.3 | 14.2 | 6.37 | 29.47 | 23.58 | Area J |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: August 19, 2010
Weather: sunny, 85°, winds 5-10 kts S
Tides:

| | | |
|---|---|---|
| high | @ | 04:21 |
| low | @ | 10:09 |
| high | @ | 17:03 |

Monitoring Period:

From: 09:00 To: 1600

Tidal Stages: HWS, Ebb, LWS, Flood

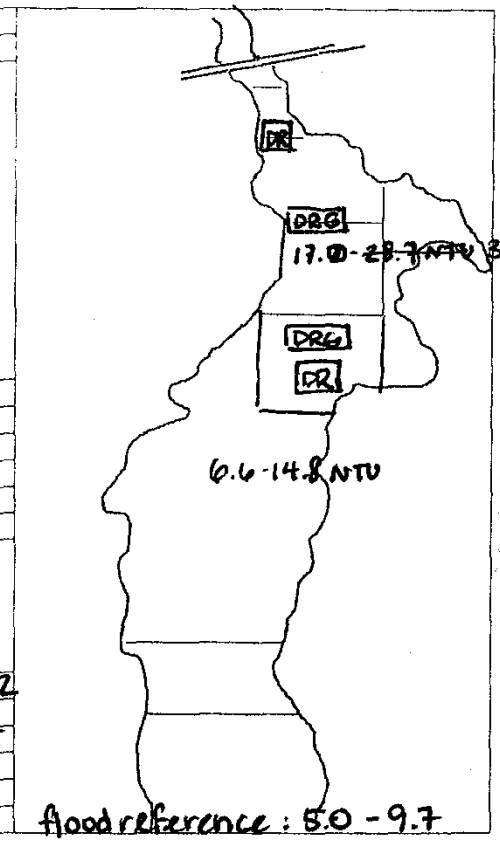
Dredging Activity:
Morning: dredging and debris removal in Area K

afternoon: dredging and debris removal in Area K

late afternoon: dredging in Area G

Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood reference | 5.0-9.7 | 4.89-10.10 | 0.8-7.1 |
| 300' S of DR/DRG in K | 6.6-14.8 | 4.12-9.80 | 0.8-3.2 |
| 300' N of DR/DRG in K | 17.0-32.8 | 2.37-9.35 | 1.0-6.1 |
| 300' N of DRG in G | 11.8-12.4 | 11.49-11.60 | 0.8-3.5 |




Oil Sheen/Debris:
Strong $H_2S$/petrol odor during debris removal in Area K. moderate sheen observed down current of activities in K

Wildlife Observations:
many birds (terns, gulls, cormorants, egrets, herons, osprey), a few stressed/dead fish north of wood street

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: A few stressed/dying/dead fish were observed (less than 10 fish total throughout day) mainly north of wood street. Many terns, gulls, cormorants, etc feeding on fish. A moderate sheen and strong $H_2S$ odor were noted during activities in Area K. Very high DO concentration during the afternoon. Low turbidity surrounding all operations (>30 NTU above background)

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | debris removal in K, dredging in K |
| Survey Vessel | RV George Hampson |
| Chief Scientist | K. McCarney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | sunny, 85° winds 5-10 kts S |

Date: 8/19/10
Page: 1 of

| Tide Information | |
|---|---|
| High | 04:21 |
| Low | 10:09 |
| High | 17:03 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300'S of DR in K | 09:19 | 41°40.303' | 70°54.969' | 4.0 | 0.86 | 8.5 | 8.00 | 28.69 | 24.95 | 300' S of DR, 600' S of DRG |
| " | 09:20 | " | " | " | 1.99 | 10.1 | 5.14 | 29.32 | 24.91 | |
| " | 09:21 | " | " | " | 3.20 | 12.4 | 4.12 | 29.42 | 24.89 | |
| " | 09:27 | " | " | " | 2.06 | 6.6 | 6.35 | 28.99 | 24.98 | |
| " | 09:42 | " | " | " | 0.28 | 7.0 | 8.54 | 28.29 | 25.41 | |
| " | 10:07 | " | " | " | 0.86 | 12.6 | 9.32 | 28.62 | 25.24 | |
| " | 10:12 | " | " | " | 0.84 | 14.8 | 9.35 | 28.49 | 25.43 | |
| " | 10:35 | " | " | " | 0.81 | 8.9 | 9.80 | 28.37 | 25.79 | |
| flood ref | 10:44 | 41°39.842' | 70°55.016' | 9.1 | 0.81 | 5.1 | 10.10 | 28.62 | 25.61 | |
| flood ref | 10:45 | " | " | " | 4.95 | 5.0 | 5.51 | 30.27 | 24.37 | |
| flood ref | 10:46 | " | " | " | 7.10 | 9.7 | 4.89 | 30.28 | 24.34 | |
| 300' N of DR in K | 10:56 | 41° 40.459' | 70°54.938' | 6.8 | 1.02 | 17.0 | 6.44 | 28.49 | 25.69 | 300' N of DR, ~ 200' N of DRG |
| " | 10:57 | " | " | " | 3.45 | 20.4 | 4.24 | 29.09 | 25.08 | |
| " | 10:58 | " | " | " | 6.09 | 13.7 | 2.37 | 29.37 | 24.93 | |
| " | 10:59 | " | " | " | 2.04 | 21.7 | 5.09 | 28.74 | 25.29 | |
| " | 11:04 | " | " | " | 2.00 | 25.0 | 4.82 | 28.79 | 25.25 | |
| " | 11:36 | " | " | " | 2.02 | 32.8 | 5.40 | 28.75 | 25.46 | |
| " | 11:57 | " | " | " | 2.01 | 26.6 | 6.13 | 28.72 | 25.63 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K / Area G |
| Dredging Description | dredging and debris removal in Area K, dredging in G |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Sunny, 85° winds 5-10 kts S |

| | |
|---|---|
| Date | 8/19/10 |
| Page | 2 of |

| Tide Information | |
|---|---|
| High | 04:21 |
| Low | 10:09 |
| High | 17:03 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' N of DR/DRG in K | 12:26 | 41°40.458' | 70°54.999' | 7.3 | 2.05 | 24.4 | 7.60 | 28.42 | 26.20 | |
| " | 12:44 | " | " | " | 2.04 | 28.7 | 6.92 | 28.45 | 25.99 | |
| " | 13:40 | " | " | " | 3.12 | 19.7 | 8.44 | 28.55 | 26.42 | |
| " | 14:17 | " | " | " | 3.10 | 17.2 | 9.45 | 28.50 | 26.59 | |
| 300' N of DRG in G | 15:04 | 41°40.597' | 70°54.952' | 4.8 | 0.89 | 12.4 | 11.53 | 28.24 | 27.49 | |
| " | 15:05 | " | " | " | 2.25 | 12.0 | 11.59 | 28.26 | 27.51 | |
| " | 15:06 | " | " | " | 3.52 | 11.9 | 11.49 | 28.29 | 27.57 | |
| " | 15:22 | " | " | " | 0.95 | 11.8 | 11.60 | 28.26 | 27.52 | |
| | | | | | | | | | | |
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WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 8/23/10

Weather: Rainy Wind: 15-25 Knots

Tides:

| | | |
|---|---|---|
| High | @ | 0738 |
| Low | @ | 1342 |
| High | @ | 1957 |

Monitoring Period:

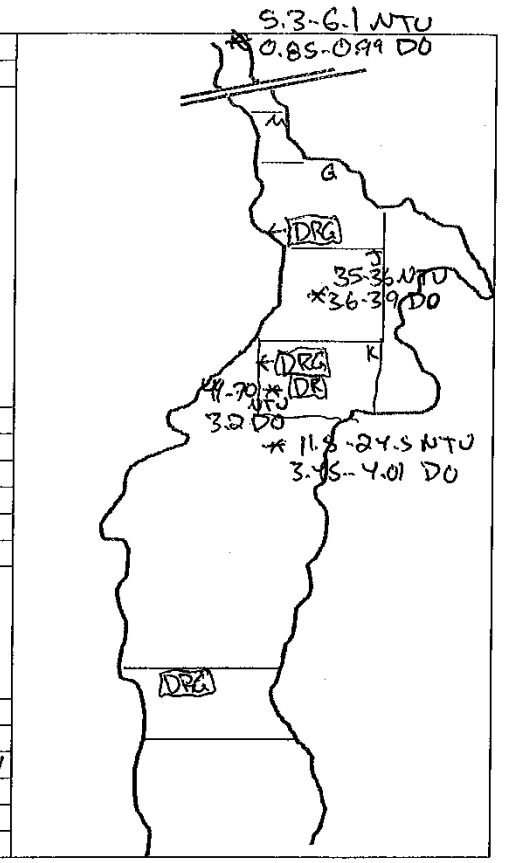
From: 0830 To: 1530

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:

Morning: Dredging in Area G
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) |
|---|---|---|---|
| Ebb Ref | 5.3-6.1 | 0.85-0.99 | 0.7-3.4 |
| 200'S of DR in Area K | 11.5-24.5 | 3.95-4.01 | 0.7-4.4 |
| 200'S of DRG in Area K | 49.1-74.4 | 3.2 | 0.9-3.94 |
| 200'N of DRG in Area K | 35.2-36.5 | 3.6-3.9 | 0.8-4.6 |

Oil Sheen/Debris:

None

Wildlife Observations:

Birds throughout the harbor feeding on bait fish

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Birds: Terns, Gulls, Great Blue Heron, Egrets

High turbidity observed next to debris removal in K after it had stopped for an extended period of time, 200' South of dredging in K.

Sampling Crew: D. Bailey, D. Rodgers

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Dredging in Area K + G |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | D. Bailey |
| Sampling Technician | — |
| Vessel Captain | D. Rodgers |
| Other Personnel | |
| Weather Conditions | Rainy |

| | |
|---|---|
| Date | 8/23/10 |
| Page | 1 of 1 |

| Tide Information | |
|---|---|
| High | 0738 |
| Low | 1342 |
| High | 1957 |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Ebb Ref | 9:16 | 41°40.834 | 70°55.035 | 4.4 | 0.70 | 6.1 | 0.99 | 28.21 | 24.68 | |
| | 9:17 | " " | " " | " | 2.30 | 5.6 | 0.85 | 28.94 | 24.68 | |
| | 9:18 | " " | " " | " | 3.42 | 5.3 | 0.97 | 28.97 | 24.60 | |
| 200' S of DR | 10:34 | 41°40.334 | 70°54.945 | 5.0 | 0.72 | 12.1 | 3.84 | 29.05 | 23.19 | |
| in K | 10:35 | " " | " " | " | 2.53 | 11.5 | 4.01 | 29.08 | 23.20 | |
| | 10:36 | " " | " " | " | 4.45 | 11.6 | 3.60 | 29.33 | 23.15 | |
| | 11:44 | " " | " " | " | 1.33 | 24.5 | 3.45 | 29.06 | 23.10 | |
| 200' S of | 13:14 | 41°40.360 | 70°54.956 | 4.4 | 0.90 | 74.4 | 3.29 | 28.83 | 23.13 | |
| DRG in K | 13:15 | 41°40.360 | 70°54.956 | " | 2.23 | 51.1 | 3.26 | 28.82 | 23.07 | |
| | 13:16 | " " | " " | " | 3.94 | 49.1 | 3.23 | 28.81 | 23.06 | |
| 200' N of | 14:18 | 41°40.456 | 70°54.910 | 5.9 | 0.82 | 35.2 | 3.90 | 28.82 | 22.74 | |
| DRG in K | 14:19 | " " | " " | " | 2.55 | 35.4 | 3.70 | 28.82 | 22.74 | |
| | 14:20 | " " | " " | " | 4.45 | 36.5 | 3.61 | 28.81 | 22.74 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: August 26, 2010

Weather: partly sunny, 75°, winds W → SW 5-10 kts

Tides:

| | | |
|---|---|---|
| low | @ | 02:51 |
| high | @ | 09:34 |
| low | @ | 15:14 |

Monitoring Period:

From: 08:40 To: 15:40

Tidal Stages: HWS Ebb LWS Flood

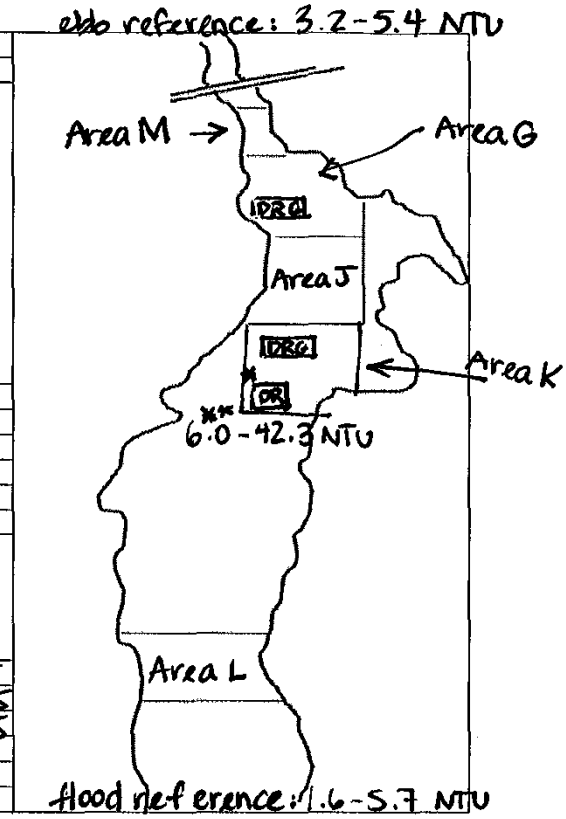
Dredging Activity:

morning: dredging in Area G
debris removal in Area K

afternoon: dredging in Area K

Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| ebb reference | 3.2-5.4 | 2.83-5.28 | 0.5-4.0 |
| 100'-300' S of DRG in K | 6.0-42.3 | 3.01-4.88 | 0.5-4.5 |
| ~300' S of DRG in K | 5.1-28.5 | 3.06-4.69 | 0.9-2.5 |
| flood reference | 1.6-5.7 | 4.71-5.72 | 1.0-17.5 |




Oil Sheen/Debris:
none observed

Wildlife Observations:
fish jumping, abundant terns, gulls, cormorants, numerous blue crabs

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: all water quality moorings were recovered for routine maintenance and redeployed. several blue crabs were observed on the moorings during recovery. Highest turbidity readings (near 50 NTU) were observed approx. 100' SW of debris removal in K. Turbidity decreased with increasing distance away from activity. Excavation of Area M was completed yesterday (8/25) and equipment was removed today.

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G Area K |
| Dredging Description | dredging in G (am) debris removal in K, dredging in K (pm) |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | sunny, winds W→SW 5-10 kts |

| | |
|---|---|
| Date | 8/26/10 |
| Page | 1 of — |

| Tide Information | |
|---|---|
| High | |
| Low | 02:51 |
| High | 09:34 |
| Low | 15:14 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| ebb ref | 11:27 | 41°40.833' | 70°55.038' | 5.4 | 0.55 | 3.2 | 5.28 | 15.92 | 20.70 | 1000' N of Area M |
| ebb ref | 11:27 | " | " | " | 2.71 | 3.7 | 283 | 27.16 | 21.49 | |
| ebb ref | 11:29 | " | " | " | 4.02 | 5.4 | 3.04 | 27.37 | 21.52 | |
| 300' S of DR in K | 11:49 | 41°40.278' | 70°54.982' | 6.5 | 0.66 | 19.4 | 3.62 | 25.50 | 21.54 | at the SAK mooring |
| " | 11:50 | " | " | " | 3.06 | 12.1 | 3.13 | 28.27 | 21.41 | " |
| " | 11:51 | " | " | " | 4.52 | 14.8 | 3.75 | 28.52 | 21.42 | " |
| S boundary of K | 12:12 | 41°40.332' | 70°54.970' | moving | 2.87 | 34.2 | 3.33 | 27.64 | 21.42 | 100' S of DR in K |
| SW boundary of K | 12:13 | 41°40.336 | 70°54.978' | moving | 2.54 | 39.9 | 3.29 | 27.71 | 21.44 | 100' SW of DR in K |
| 300' SW of DR in K | 12:21 | 41°40.301' | 70°54.992' | 6.2 | 0.55 | 42.3 | 3.78 | 25.57 | 21.58 | ~~300'~~ |
| " | 12:22 | " | " | " | 2.80 | 23.6 | 3.01 | 28.06 | 21.43 | |
| " | 12:23 | " | " | " | 5.01 | 19.6 | 3.01 | 28.37 | 21.42 | |
| " | 12:46 | " | " | " | 0.77 | 7.4 | 3.83 | 25.07 | 21.77 | |
| " | 13:10 | " | " | " | 0.87 | 6.0 | 4.88 | 24.00 | 24.97 | |
| 200' S of DR in K | 13:26 | 41°40.351' | 70°54.955' | | 0.88 | 5.6 | 4.69 | 22.02 | 22.65 | ~300' S/SW |
| " | 13:26 | " | " | " | 2.50 | 7.3 | 3.31 | 27.73 | 21.49 | |
| " | 13:27 | " | " | " | 1.74 | 6.8 | 3.64 | 26.41 | 21.82 | |
| " | 13:44 | " | " | " | 1.67 | 5.1 | 3.33 | 27.15 | 21.62 | |
| " | 13:59 | " | " | " | 1.67 | 7.8 | 3.48 | 25.81 | 21.90 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | dredging in Area K |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny |

| | |
|---|---|
| Date | 8/26/10 |
| Page | 2 of |

| Tide Information | |
|---|---|
| High | |
| Low | 02:51 |
| High | 09:34 |
| Low | 15:14 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' S of DR6 in K | 14:06 | 41°40.352' | 70°54.955' | | 1.67 | 14.8 | 3.30 | 26.76 | 21.72 | |
| " | 14:10 | " | " | | 1.58 | 28.5 | 3.06 | 26.65 | 21.77 | |
| " | 14:15 | " | " | | 1.55 | 12.1 | 3.64 | 24.55 | 22.28 | |
| " | 14:50 | " | " | | 1.61 | 20.1 | 3.96 | 23.78 | 22.59 | dredging stopped last 20min |
| " | 15:05 | " | " | | 1.62 | 16.7 | 3.47 | 25.12 | 22.33 | dredging still stopped |
| " | 15:15 | " | " | | 1.63 | 10.9 | 3.52 | 23.96 | 22.79 | " " |
| flood ref | 15:35 | 41°39.211' | 70°55.175' | 18.5 | 1.07 | 1.6 | 5.72 | 28.41 | 22.77 | |
| flood ref. | 15:36 | " | " | " | 7.55 | 1.8 | 5.06 | 28.92 | 21.69 | |
| flood ref | 15:37 | " | " | " | 17.45 | 5.7 | 4.71 | 29.59 | 21.46 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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**New Bedford Harbor Water Quality Monitoring**
**Daily Field Report**

Date: August 30, 2010
Weather: sunny, 80° wind NW → SW @ 5-10 kts
Tides:

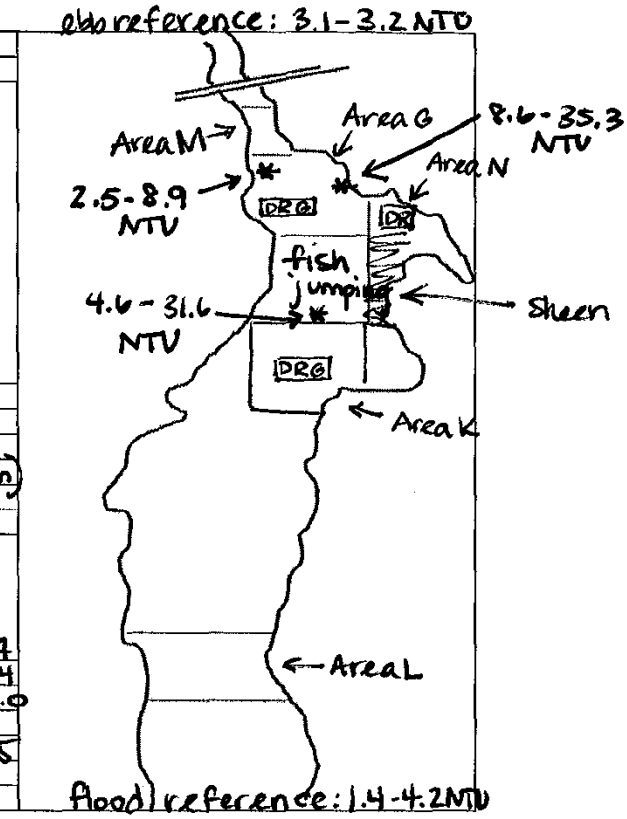
| | | |
|---|---|---|
| low | @ | 05:03 |
| high | @ | 12:01 |
| low | @ | 17:10 |

Monitoring Period:

From: 08:45 To: 15:45

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
dredging in Area K (early am & late pm)
dredging in Area G (am, early pm)
debris removal in Area N (am, early pm)




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood reference | 1.4-4.2 | 5.93-7.42 | 1.0-9.7 |
| ebb reference | 3.1-3.2 | 9.93-10.78 | 1.0-4.4 |
| 100'-300' N of dredge in G | 2.5-8.9 | 7.72-8.65 | 0.5-2.0 |
| " " and W of DR in N | 8.6-35.3 | 7.45-8.44 | ~2.0 |
| 200'-300' S of dredge in G | 4.6-31.6 | 8.08-11.65 | 0.4-1.5 |

Oil Sheen/Debris:
moderate sheen from debris removal in Area N

Wildlife Observations:
many larger fish jumping throughout harbor, numerous terns, gulls, cormorants (although fewer than past weeks)

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Low turbidity readings observed surrounding all activities. Higher (normal levels) DO concentration than last week. Many larger fish (snapper blues?) feeding on baitfish throughout harbor. moderate sheen observed near debris removal in Area N: no associated turbidity.

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area N |
| Dredging Description | dredging in G, debris removal in N |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny, 80°, wind NW → SW 5-10 kts |

| | |
|---|---|
| Date | 8/30/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | |
| Low | 05:03 |
| High | 12:01 |
| Low | 17:40 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 08:55 | GPS not functioning | | 11.0 | 1.04 | 1.4 | 7.42 | 27.91 | 22.81 | |
| flood ref | 08:57 | | | " | 5.04 | 3.2 | 6.03 | 29.03 | 22.37 | |
| flood ref | 08:58 | | | " | 9.65 | 4.2 | 5.93 | 29.03 | 22.36 | |
| 200' N of DRGing | 09:17 | | | 8.1 | 1.05 | 6.3 | 6.97 | 26.31 | 23.60 | dredge not currently active |
| " | 09:18 | | | " | 3.50 | 3.4 | 6.27 | 27.83 | 23.22 | |
| " | 09:20 | | | " | 6.71 | 8.8 | 3.88 | 28.35 | 23.13 | |
| 250' N of DRGing | 09:31 | | | 3.4 | 0.50 | 3.7 | 8.22 | 26.90 | 24.26 | mobilizing dredge |
| " | 09:31 | | | " | 2.01 | 2.9 | 8.11 | 27.33 | 24.11 | " |
| " | 10:02 | | | " | 0.97 | 2.5 | 8.65 | 27.23 | 24.35 | " |
| " | 10:31 | | | " | 0.97 | 4.8 | 8.50 | 27.34 | 24.21 | " |
| | 10:44 | | | " | 1.07 | 6.6 | 8.39 | 27.18 | 24.23 | 300' W of active DR in N |
| 300' NW of DR in N | 11:37 | | | moving | 2.47 | 8.6 | 8.22 | 27.81 | 23.88 | " |
| 100' W of DR in N | 11:39 | | | 5.8 | 2.08 | 27.0 | 8.15 | 27.50 | 23.86 | |
| " | 11:40 | | | " | 2.21 | 35.3 | 7.45 | 27.75 | 23.79 | vessel moving |
| " | 11:42 | | | " | 2.03 | 12.7 | 8.15 | 26.56 | 24.94 | |
| " | 11:42 | | | " | 2.21 | 10.6 | 8.44 | 27.77 | 24.03 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G, Area N |
| Dredging Description | dredging in G, debris removal in N |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny, 80°, wind S-10 kts NW → SW |

| | |
|---|---|
| Date | 8/30/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | |
| Low | 05:03 |
| High | 12:01 |
| Low | 17:40 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 100' N of DRG in G | 11:58 | GPS not | functioning | Moving | 2.28 | 8.9 | 8.22 | 27.33 | 24.25 | |
| 100' NW of DR in N | 12:14 | | | moving | 2.21 | 6.8 | 7.72 | 27.85 | 23.63 | |
| ebb ref | 12:31 | | | 5.4 | 1.01 | 3.1 | 10.55 | 26.78 | 25.02 | |
| ebb ref | 12:32 | | | " | 2.60 | 3.2 | 10.78 | 27.32 | 24.64 | |
| ebb ref | 12:32 | | | " | 4.35 | 3.1 | 9.93 | 27.47 | 24.49 | |
| 200' S of DR in N | 13:10 | | | moving | 1.52 | 17.2 | 11.49 | 27.67 | 24.29 | moderate sheen, $H_2S$ odor |
| 200' SW of DR in N | 13:26 | | | " | 1.00 | 7.0 | 9.92 | 27.06 | 24.57 | 250' SE of DRG in G |
| " | 13:29 | | | " | 1.19 | 4.6 | 11.10 | 27.01 | 24.94 | " |
| " | 13:43 | | | " | 0.61 | 9.0 | 9.94 | 27.03 | 24.70 | |
| " | 13:47 | | | " | 0.62 | 12.4 | 9.63 | 27.12 | 24.65 | |
| " | 14:24 | | | " | 0.40 | 8.5 | 11.65 | 25.25 | 25.42 | |
| 200' S of DRG in G | 14:59 | | | " | 1.12 | 10.8 | 11.42 | 27.32 | 25.59 | using push boats |
| " | 15:01 | | | | 1.13 | 31.6 | 8.68 | 27.56 | 24.27 | |
| " | 15:09 | | | | 0.93 | 22.2 | 8.14 | 27.72 | 23.96 | |
| " | 15:16 | | | | 0.77 | 14.0 | 9.67 | 27.43 | 24.23 | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: 9/02/2010

Weather: Hot, 80-90's, SW 10 Kts

Tides:

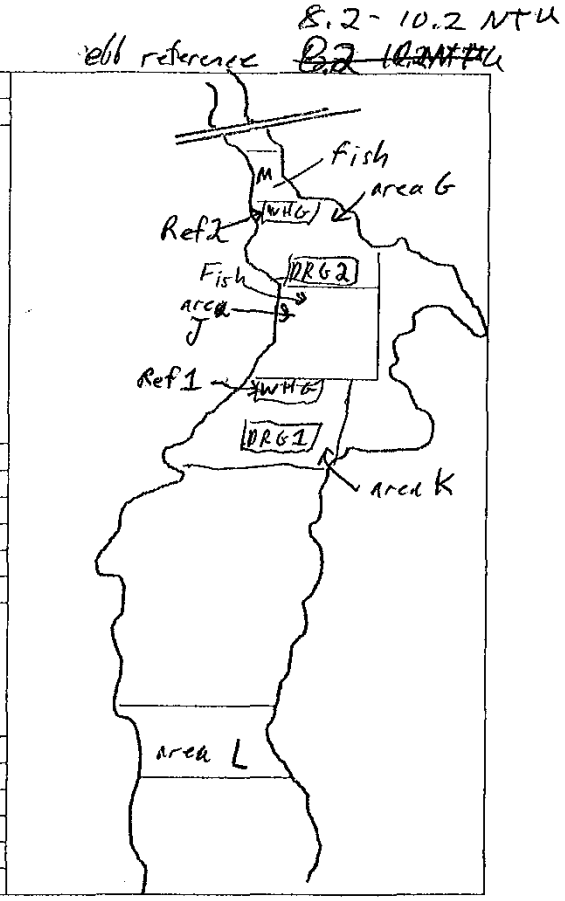
| | | |
|---|---|---|
| High | @ | 1441 |
| Low | @ | 0730 |
| | @ | |

Monitoring Period:

From: 0850 To: 1215

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Dredging in area K 0907 → 1002
Dredging in area G 1030 → end




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Ref 1 200ft N DRG1 | 6.3-16.0 | 8.04-10.67 | 1-5 |
| Ref2 200ft N DRG2 | 7.2-11.2 | 9.86-11.1 | 0.8-2.4 |
| Ebb reference | 8.2-10.2 | 7.7-8.14 | 0.6-2.3 |

Oil Sheen/Debris:
none observed

Wildlife Observations:
fish jumping, abundant terns, gulls, cormorants, blue crabs

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

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

Notes: All water quality moorings (NWS, SAL, SAK) data downloaded
Max turbidity 16 NTU. Operations ended early so boat could be pulled at high tide

Sampling Crew: M. Buck, D. Rogers

Chief Scientist Signature: [signature]

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K; Area G |
| Dredging Description | dredging in K & G |
| Survey Vessel | George Hampson |
| Chief Scientist | |
| Sampling Technician | Mitchell Buck |
| Vessel Captain | Dan Rogers |
| Other Personnel | |
| Weather Conditions | Sunny 80/90s, Wind SW 10 kts |

| | |
|---|---|
| Date | 9/2/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | |
| Low | 0730 |
| High | ~~0~~ MAB 1441 |
| Low | |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Area K Ref | 0915 | | | 6.1 ft | 1.094 ft | 8 NTU | 10.67 mg/L | 26.93 | 25.77 | GPS broke, no positions |
| Area K Ref | 0917 | | | ~~2.975~~ 6.1 | 2.975 | 8.1 | 10.32 | 28.32 | 25.83 | |
| Area K Ref | 0918 | | | 6.1 | 5.062 | 16.0 | 8.04 | 29.05 | 25.26 | |
| Area K | 0931 | | | 6.1 | 4.252 | 6.3 | 9.87 | 28.82 | 25.69 | |
| Area K | 0950 | | | 6.1 | 4.268 | 15.7 | 9.64 | 28.69 | 25.57 | |
| Area G Ref | 1014 | | | 3.2 | 0.817 | 8.1 | 9.86 | 25.93 | 26.12 | |
| Area G Ref | 1015 | | | 3.2 | 1.506 | 8.0 | 10.00 | 26.75 | 26.04 | |
| Area G Ref | 1016 | | | 3.2 | 2.21 | 11.2 | 9.96 | 27.27 | 26.07 | |
| Area G | 1030 | | | 3.2 | 1.904 | 8.8 | 9.95 | 27.27 | 26.02 | |
| N. Wood St. | 1050 | | | 3.1 | 0.658 | 8.2 | 8.94 | 24.74 | 26.37 | |
| N. Wood St | 1051 | | | 3.1 | 1.856 | 9.2 | 8.73 | 25.87 | 26.33 | |
| N. Wood St | 1052 | | | 3.1 | 2.285 | 10.2 | 7.7 | 26.72 | 26.26 | |
| Area G | 1109 | | | 3.9 | 0.866 | 7.8 | 10.41 | 25.84 | 26.34 | |
| Area G | 1110 | | | 3.9 | 2.093 | 9.0 | 10.20 | 27.08 | 26.03 | |
| Area G | 1111 | | | 3.9 | 2.40 | 9.0 | 11.1 | 27.60 | 25.99 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| **Dredging Location** | Area K, Area G |
| **Dredging Description** | dredging Area G & K |
| **Survey Vessel** | George Hampson |
| **Chief Scientist** | Mitchell Buck |
| **Sampling Technician** | — |
| **Vessel Captain** | Dan Rogers |
| **Other Personnel** | |
| **Weather Conditions** | Sunny, 80/90's, winds SW 10 kts |

| | |
|---|---|
| **Date** | 9/2/2010 |
| **Page** | 2 of 2 |

| **Tide Information** | |
|---|---|
| **High** | |
| **Low** | 0730 |
| **High** | 1441 |
| **Low** | |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Area G | 1125 | | | 1.33 ↔ | 3.9 | 7.9 | 10.76 | 26.2 | 26.31 | |
| Area G | 1130 | | | 3.9 | 1.31 | 7.2 | 10.78 | 26.12 | 26.35 | ended early to pull boat for hurricane Earl |
| | | | | | | | | | | |
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# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 9/8/2010 morning T-storms

Weather: partly Sunny Breezy Southwest ~15-25

Tides:

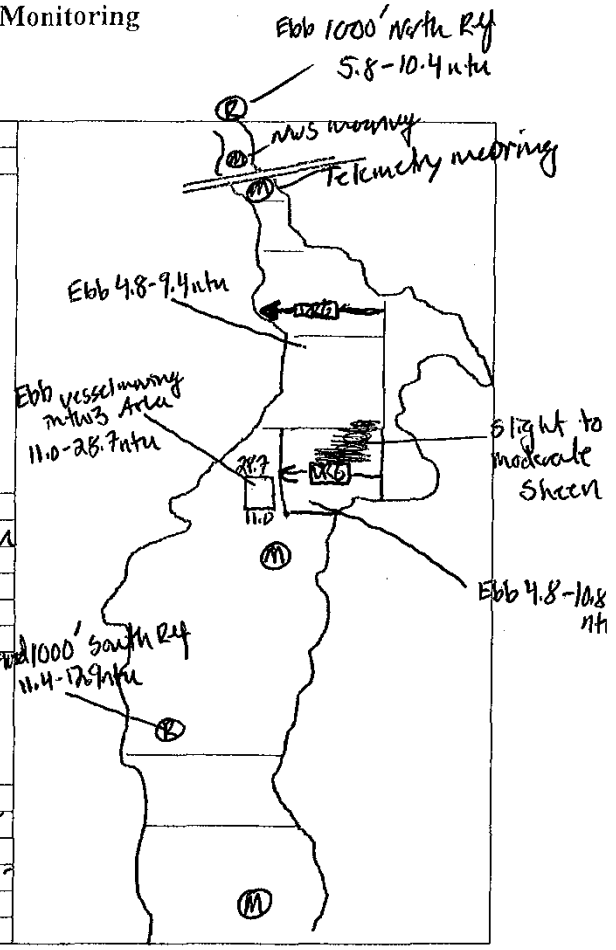
| | | |
|---|---|---|
| -0.4 | @ | 0140 |
| 5.1 | @ | 0812 |
| -0.6 | @ | 1354 |

Monitoring Period:

From: 0845 To: 1530

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

Dredging Activity:
East to West middle Southwest corner of Area G
East to west middle of Area K
No Debris Removal, Debris Removal finished for season




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| Ebb 1000' N. Ref | 5.8-10.4 | 4.8-5.9 | 0.5'-6.2' |
| Area G 250' South of Dredge | 4.8-7.1 | 6.9-5.2 | 0.4'-8.8' |
| Area K 200' South of Dredge | 4.8-6.1 | 7.0-7.8 | 0.6'-4.9' |
| vessel mooring | 11-28 | 8.6-9.2 | 0.5'-1.2 |
| Flood South Ref 1000' | 11.4-12.9 | 8.1-8.8 | 0.6'-2.2' |
| Area K 250' North of Dredge | 8.8-19.2 | 4.6-10.17 | 0.6-4.4 |

Oil Sheen/Debris:
Slight to moderate sheen (with odor) drifting north of Dredge in Area K on strong southwest wind

Wildlife Observations:
Many Terns, gulls, cormorants, Egrets and an occasional osprey feeding on small and larger fish breaking water surface

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes:
Called off water due to Thunderstorms from 1045-1145
Very low Turbidity values observed throughout the day. During morning hours Turbidity values rarely exceeded 10ntu near Dredge Activity. Only occasionally during the afternoon did turbidity values exceed 15-20 ntu near dredge Activity. An occasional spike to 28 ntu was observed in the afternoon within 75 feet of Dredge Activity, with a very low tide and a strong southwest wind. Dissolved Oxygen values ranged from 4.8 mg/L in the morning to 10 mg/L in the Afternoon

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G |
| Dredging Description | East to West in Southwest Corner of Area G |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Partly Sunny Breezy SWest ~15-25 T-Storms |

| | |
|---|---|
| Date | 9/8/2010 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 5.1 @ 0812 |
| Low | -0.4 @ 0140 |
| High | 4.9 @ 2035 |
| Low | -0.6 @ 1359 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000' north Ebb Riffle | 0910 | | | 7.1 | 0.52 | 5.8 | 5.91 | 18.66 | 22.52 | |
| | 0912 | | | | 3.42 | 6.6 | 5.06 | 25.39 | 23.58 | |
| | 0913 | | | | 6.20 | 10.4 | 4.82 | 25.74 | 23.56 | |
| 250' south of Dredge | 0940 | | | 11.8 | 0.45 | 7.1 | 6.98 | 23.49 | 23.35 | Dredging Area G |
| | 0941 | | | | 5.20 | 4.8 | 5.50 | 27.37 | 23.14 | |
| | 0942 | | | | 8.89 | 6.0 | 5.79 | 27.95 | 22.98 | |
| " " | 10:07 | | | | 0.68 | 9.4 | 7.44 | 23.18 | 23.21 | Dredging Area G |
| 200' south of Dredge Area K | 10:16 | 41° 40.353 | 70° 54.948 | 6.5 | 0.76 | 4.9 | 7.74 | 26.31 | 23.41 | Dredge moved to Area K |
| | 10:17 | | | | 3.01 | 4.8 | 7.02 | 26.58 | 23.17 | |
| | 10:19 | | | | 4.98 | 5.8 | 5.66 | 27.25 | 23.12 | |
| " " | 10:40 | | | 6.3 | 0.66 | 6.1 | 7.85 | 25.16 | 23.38 | " " |
| | 1203 | 41° 40.355 | 70° 54.945 | 4.3 | 0.65 | 5.5 | 8.77 | 24.02 | 23.40 | |
| 200' south of Dredge Area K | 1204 | | | | 2.99 | 10.8 | 6.21 | 26.57 | 23.21 | Dredging in Area K |
| " " | 1309 | " | " | 3.0 | 0.45 | 7.0 | 8.98 | 23.85 | 23.54 | " " |
| " | 1327 | " | " | 3.0 | 0.46 | 9.3 | 9.23 | 23.27 | 23.67 | " " |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area K |
| Dredging Description | west to East middle of Area K |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Mostly Sunny Breezy SW ~15 - 25 |

| | |
|---|---|
| Date | 9/8/2010 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 5.1 @ 0812 |
| Low | -0.4 @ 0140 |
| High | 4.9 @ 2035 |
| Low | -0.6 @ 13:59 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| vessel moving | 1343 | — | — | | 0.51 | 11.0 | 9.20 | 23.83 | 23.88 | 300' S. west of Dredge in Area K |
| " " | 1346 | — | — | | 0.57 | 17.6 | 8.62 | 24.05 | 24.03 | 250' west southwest of Dredge |
| " " | 1349 | — | — | | 0.54 | 23.4 | 8.57 | 23.76 | 23.89 | 200' south west of Dredge |
| " " | 1351 | — | — | | 0.54 | 21.6 | 8.66 | 23.83 | 23.89 | 150' south west of Dredge |
| " " | 1353 | — | — | | 0.49 | 23.4 | 8.86 | 24.00 | 23.73 | 100' south west of Dredge |
| " " | 1355 | — | — | | 1.21 | 28.7 | 9.04 | 22.99 | 23.92 | 75' west of Dredge |
| south Reference 200' north of Area L | 1402 | 41° 40.087 | 070° 55.077 | 4.4 | 0.69 | 11.4 | 8.81 | 25.46 | 24.18 | |
| | 1403 | | | | 2.25 | 12.9 | 8.14 | 26.19 | 23.98 | |
| 250' north of Dredge in Area K | 1414 | 41° 40.438 | 070° 54.944 | 5.7 | 0.62 | 10.2 | 10.17 | 21.00 | 24.20 | |
| | 1415 | | | 5.7 | 2.48 | 8.8 | 7.38 | 24.45 | 23.52 | |
| | 1416 | | | 5.7 | 4.41 | 13.1 | 4.61 | 27.65 | 23.4 | |
| " " | 1449 | " | " | | | 14.9 | 10.13 | 22.57 | 24.38 | |
| " " | 1503 | " | " | | 1.21 | 19.2 | 10.17 | 23.16 | 24.58 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: 9/9/2010

Weather: mostly Sunny / wind west @ 10-15

Tides:

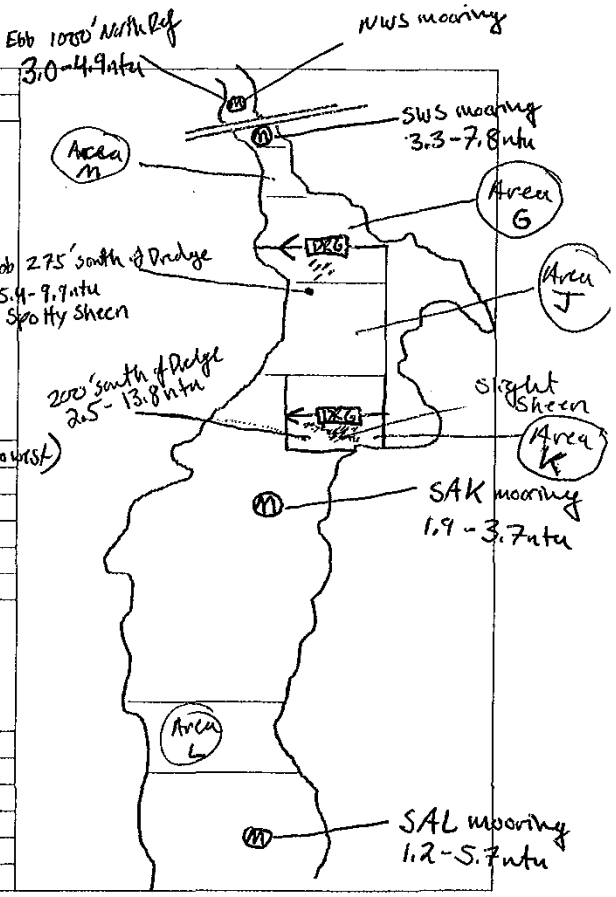
| | | |
|---|---|---|
| 4.9 5.4 | @ | 0902 |
| -0.6 | @ | 1451 |
| 4.9 | @ | 2124 |

Monitoring Period:

From: 0815 To: 1525

Tidal Stages: HWS Ebb LWS Flood

Dredging Activity:
Dredging Area K early morning (East to West)
Dredging Area G mid morning to early Afternoon (East to west)
Debris Removal Finished for Season




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/~~water~~ Depth (ft) |
|---|---|---|---|
| 1000' North Ref. | 3.0-4.9 | 5.35-6.76 | 0.5-2.56 |
| 275' South of Dredge Area G | 5.4-9.9 | 5.15-6.93 | 0.6-6.49 |
| 200' South of Dredge Area K | 2.5-13.8 | 6.93-8.08 | 0.9-2.1 |

Oil Sheen/Debris:
Spotty sheen observed during Dredging in Area G. Slight sheen observed South east of Dredge in Area K.

Wildlife Observations:
Numerous Gull, Terns, Egrets, Cormorants and Herons seen Feeding on large and small Fish breaking water surface.

Samples Collected for Laboratory Analysis - Sample IDs:

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

(Real-Time)

Notes: All moorings recovered, cleaned calibrated and redeployed. Telemetry buoy removed from South of wood street. Standard YSI mooring put back in its place.
Turbidity values in the single digits throughout the day (1.2 - 9.9 ntu) An occasional spike to the mid-teens was spotted when monitoring in close proximity to dredging and at time of low tide. Slight/spotty sheen was observed in both Areas G and K during dredging but there was no elevated turbidity Associated.

Sampling Crew: M. Walsh, D. Rogers

Chief Scientist Signature: Michael Walsh

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | Area G Middle |
| Dredging Description | East to West |
| Survey Vessel | George Hampson |
| Chief Scientist | M. Walsh |
| Sampling Technician | D. Rogers |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Mostly Sunny / wind WNW 10-15 |

| | |
|---|---|
| Date | 9/9/2010 |
| Page | 1 of |

| Tide Information | |
|---|---|
| High | 5.4' @ 0902 |
| Low | -0.6 @ 0230 |
| High | 4.9 @ 1424 |
| Low | -0.6 @ 1457 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 275' south of Dredge | 1241 | 41°40.502 | 070°54.938 | 7.5 | 0.62 | 5.4 | 6.93 | 27.32 | 23.59 | Dredging in Area G |
| " " | 1241 | | | | 3.59 | 4.9 | 5.94 | 28.73 | 22.60 | Inactive due to full |
| " " | 1242 | | | | 6.49 | 9.9 | 5.15 | 29.12 | 22.57 | Pipeline |
| 100' north Reference | 1229 | 41°40.720 | 070°55.072 | 3.7 | 0.55 | 3.0 | 6.76 | 27.23 | 23.61 | Taken at NWS mooring |
| | | | | | 1.59 | 3.5 | 5.94 | 28.09 | 23.24 | due to low Tide |
| | | | | | 2.56 | 4.9 | 5.35 | 28.25 | 23.01 | |
| | 1247 | Dredging moved to Area K due to low Tide | | | | | | | | |
| 200' south of Dredge | 1326 | 41°40.350 | 070°54.949 | 3.6 | 0.98 | 2.5 | 8.08 | 26.43 | 23.07 | Dredging inactive due |
| | 1327 | | | | 2.21 | 3.1 | 7.94 | 26.43 | 23.06 | to full system. |
| " " | 1345 | | | 3.2 | 0.87 | 2.5 | 8.45 | 26.35 | 23.01 | Dredging Active |
| | | | | | 2.15 | 5.7 | 6.93 | 28.74 | 22.84 | " " |
| " " | 1409 | | | | 1.759 | 13.8 | 7.59 | 28.05 | 23.00 | " " |
| " " | 1444 | | | 2.8 | 1.73 | 9.3 | 7.92 | 27.98 | 23.08 | " " |
| | | | | | | | | | | |
| | | | | | | | | | | |

New Bedford Harbor Water Quality Monitoring
Daily Field Report

Date: September 13, 2010
Weather: Overcast, few showers
Tides:

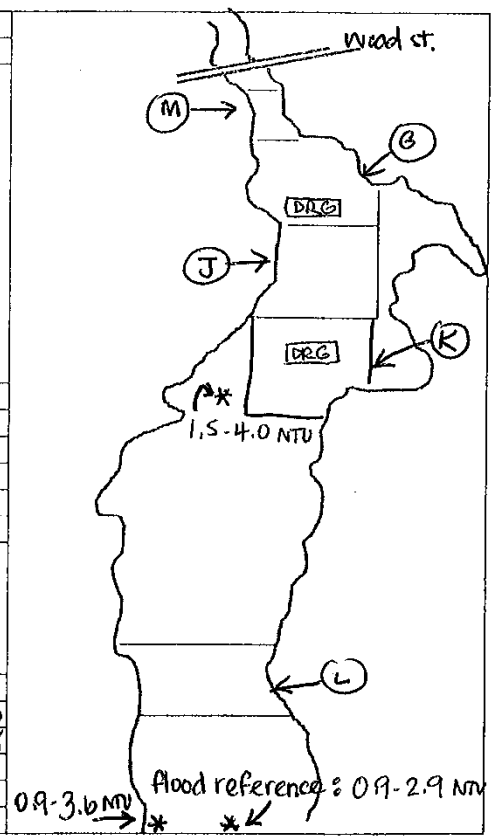
| | | |
|---|---|---|
| low | @ | 05:12 |
| high | @ | 12:32 |
| low | @ | 18:16 |

Monitoring Period:

From: 08:30 To: 15:15

Tidal Stages: HWS, Ebb LWS, Flood

Dredging Activity:
demobilization - no active dredging




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood reference | 0.9-2.9 | 6.01-6.67 | 1.0-8.3 |
| Areak | 1.5-4.0 | 6.06-7.12 | 1.5-5.2 |
| Pierce Min Cove | 0.9-3.6 | 6.17-6.71 | 0.5-5.0 |
| Sawyer St Dock | 1.1-3.3 | 6.73-7.08 | 0.4-0.8 |

Oil Sheen/Debris:
none observed

Wildlife Observations:
fewer gulls, terns, cormorants, egrets, etc., many swans near Sawyer St., 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: monitored removal of oil booms, moving of pipeline, removal of pipeline. Low turbidity throughout harbor. no observed oily sheens or odors associate with demobilization of dredge equipment.

Sampling Crew: D. Rogers, K. McCartney

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | |
| Dredging Description | DEMOBILIZATION - No active dredging |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Overcast, few showers |

Date: 9/13/10
Page: 1 of 2

| Tide Information | |
|---|---|
| High | — |
| Low | 05:12 |
| High | 12:32 |
| Low | 18:16 |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 08:49 | GPS not | working | 9.0 | 1.08 | 0.9 | 6.67 | 29.92 | 19.48 | |
| flood ref | 08:50 | | | " | 4.91 | 1.1 | 6.37 | 30.32 | 20.01 | |
| flood ref | 08:51 | | | " | 8.29 | 2.9 | 6.01 | 30.42 | 20.18 | |
| Area K | 09:55 | | | 5.6 | 1.52 | 1.5 | 7.12 | 29.23 | 19.82 | |
| Area K | 09:56 | | | " | 2.76 | 3.1 | 6.34 | 29.84 | 20.19 | |
| Area K | 09:57 | | | " | 5.19 | 4.0 | 6.06 | 29.90 | 20.23 | |
| 300' N Sawyer St | 10:15 | | | 5.7 | 1.30 | 1.6 | 6.24 | 30.47 | 20.14 | removal of oil boom |
| " | 10:16 | | | " | 2.59 | 2.0 | 6.21 | 30.47 | 20.15 | |
| " | 10:17 | | | " | 4.94 | 2.3 | 6.17 | 30.46 | 20.14 | |
| " | 10:36 | | | " | 1.44 | 2.8 | 6.22 | 30.57 | 20.07 | |
| " | 10:49 | | | " | 0.96 | 3.6 | 6.25 | 30.58 | 20.29 | |
| " | 11:40 | | | " | 1.17 | 1.7 | 6.38 | 30.60 | 20.34 | |
| " | 12:17 | | | " | 0.50 | 1.8 | 6.36 | 30.59 | 20.31 | |
| " | 12:43 | | | " | 1.87 | 2.0 | 6.33 | 30.44 | 20.23 | |
| " | 13:17 | | | " | 1.82 | 1.2 | 6.51 | 30.57 | 20.37 | |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | |
| Dredging Description | DEMOBILIZATION |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | D. Rogers |
| Other Personnel | — |
| Weather Conditions | Overcast |

| | |
|---|---|
| Date | 9/13/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | |
| Low | |
| High | |
| Low | |

| Station Name | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 300' Sawyer St. | 13:59 | | | 5.7 | 1.84 | 0.9 | 6.71 | 30.38 | 20.32 | |
| Sawyer St. | 14:29 | moving | | — | 0.54 | 1.5 | 6.90 | 30.42 | 20.29 | |
| " | 14:32 | ↓ | | — | 0.45 | 2.8 | 6.73 | 30.43 | 20.29 | |
| " | 14:44 | | | — | 0.38 | 3.3 | 6.92 | 30.41 | 20.33 | |
| " | 15:00 | | | — | 0.78 | 1.1 | 7.08 | 30.41 | 20.31 | |

WOODS HOLE GROUP

# New Bedford Harbor Water Quality Monitoring
## Daily Field Report

Date: September 14, 2010

Weather: sunny, pm showers, W → SW winds 10-15 kts

Tides:

| | | |
|---|---|---|
| low | @ | 05:58 |
| high | @ | 13:29 |
| low | @ | 19:49 |

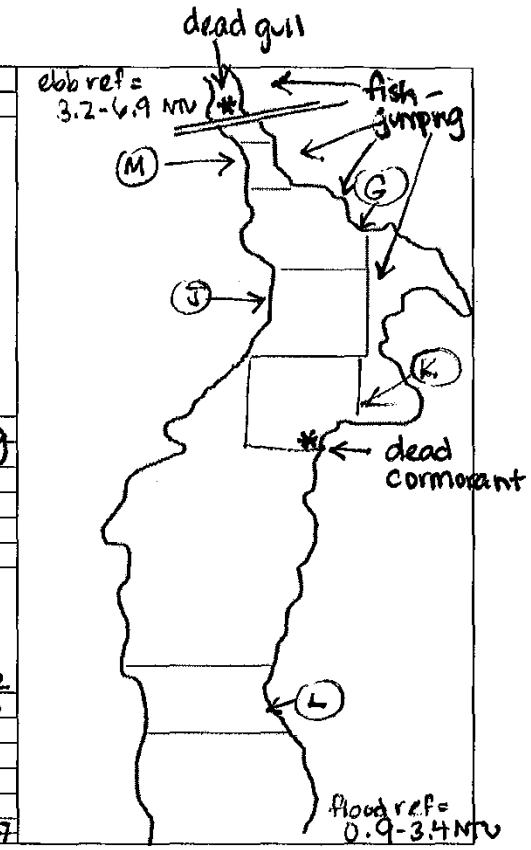
Monitoring Period:

From: 10:00 To: 16:00

Tidal Stages: HWS, Ebb, LWS, Flood

Dredging Activity:

DEMOBILIZATION - no active dredging




Turbidity Summary:

| Location | Turbidity range (NTU) | DO Conc range (mg/L) | Sensor/water Depth (ft) |
|---|---|---|---|
| flood reference | 0.9-3.4 | 6.15-7.38 | 1.0-10.2 |
| ebb reference | 3.2-6.9 | 7.45-15.45 | 0.5-5.3 |
| Pierce Mill cove/ Sawyer St dock | | | |
| → flood tide | 2.2-4.6 | 6.49-6.77 | 0.6-1.7 |
| → ebb tide | 2.0-8.5 | 6.56-7.52 | 0.5-1.7 |

Oil Sheen/Debris:

none observed

Wildlife Observations:

many fish jumping in northern areas (J, G, M and NNS) - blue fish. also osprey, terns, cormorants, gulls, herons, egrets, a dead gull was found north of Wood St a dead cormorant was found in Area K.

Samples Collected for Laboratory Analysis - Sample IDs:

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

Notes: Abundant fish observed jumping during high tide in northern areas. Two dead birds, a gull and a cormorant, were found North of Wood St and in Area K, respectively. Low turbidity observed throughout harbor surrounding all demobilizati activities, including moving pipeline, removing oil boom, and driving sheet piles. A larg algal bloom was observed in northern areas, producing elevated DO levels.

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature:

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | DEMOBILIZATION |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCarthy |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny, W 10-15 kts → SW, afternoon showers |

| | |
|---|---|
| Date | 9/14/10 |
| Page | 1 of 2 |

| Tide Information | |
|---|---|
| High | 00:55 |
| Low | 05:58 |
| High | 13:29 |
| Low | 19:49 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| flood ref | 10:17 | 41°39.809' | 70°55.001' | 11.0 | 1.05 | 0.9 | 7.38 | 29.79 | 19.58 | |
| flood ref | 10:18 | " | " | " | 5.00 | 1.1 | 6.64 | 30.38 | 19.81 | |
| flood ref | 10:19 | " | " | " | 10.23 | 3.4 | 6.15 | 30.43 | 19.73 | |
| Pierce Mill Cove | 10:49 | moving | | — | 0.60 | 2.7 | 6.49 | 30.40 | 20.11 | |
| flood Pierce Mill Cove | 10:58 | 41°39.745' | 70°55.068' | 6.0 | 1.71 | 3.7 | 6.51 | 30.37 | 20.01 | |
| Pierce Mill Cove | 11:52 | " | " | " | 1.68 | 2.2 | 6.77 | 30.40 | 20.32 | |
| Pierce Mill Cove | 12:15 | 41°39.729' | 70°55.108' | 5.7 | 0.67 | 3.0 | 6.64 | 30.46 | 20.46 | |
| Pierce Mill Cove | 12:17 | " | " | " | 1.68 | 4.6 | 6.56 | 30.49 | 20.35 | |
| Pierce Mill Cove | 13:09 | " | " | " | 1.66 | 3.3 | 6.79 | 30.51 | 20.55 | |
| ebb Pierce Mill Cove | 13:36 | " | " | " | 1.43 | 2.6 | 6.72 | 30.53 | 20.58 | |
| Pierce Mill Cove | 13:55 | " | " | " | 1.42 | 2.1 | 6.83 | 30.54 | 20.57 | |
| Pierce Mill Cove | 14:02 | — | moving | — | 0.99 | 8.5 | 6.96 | 30.35 | 20.65 | ~150' away from driving sheet pies |
| ebb ref | 14:24 | 41°40.838' | 70°55.041' | 6.0 | 0.50 | 6.9 | 15.45 | 24.59 | 21.42 | |
| ebb ref | 14:25 | | = | " | 2.75 | 3.2 | 10.79 | 28.26 | 20.74 | visible algae in water |
| ebb ref | 14:26 | | | " | 5.25 | 4.6 | 7.45 | 28.78 | 20.59 | many fish jumping |

WOODS HOLE GROUP

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

| | |
|---|---|
| Dredging Location | DEMOBILIZATION |
| Dredging Description | |
| Survey Vessel | R/V George Hampson |
| Chief Scientist | K. McCartney |
| Sampling Technician | — |
| Vessel Captain | M. Walsh |
| Other Personnel | — |
| Weather Conditions | Sunny afternoon showers, W → SW winds 10-15 kts |

| | |
|---|---|
| Date | 9/14/10 |
| Page | 2 of 2 |

| Tide Information | |
|---|---|
| High | 00:55 |
| Low | 05:58 |
| High | 13:29 |
| Low | 19:49 |

| Location | Time | Latitude | Longitude | Water Depth | Sample Depth | Turbidity | DO | Salinity | Temp | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Pierce Mill cove | 15:00 | moving | | — | 1.37 | 5.9 | 6.98 | 30.47 | 20.56 | |
| Pierce Mill cove | 15:07 | " | " | — | 0.50 | 2.1 | 7.33 | 30.45 | 20.61 | |
| Pierce Mill cove | 15:09 | " | " | — | 0.54 | 2.0 | 7.31 | 30.47 | 20.71 | |
| Pierce Mill cove | 15:22 | " | " | — | 1.38 | 2.6 | 7.52 | 30.43 | 20.72 | |
| Pierce Mill cove | 15:40 | " | " | — | 1.42 | 3.3 | 7.33 | 30.43 | 20.60 | |
| Pierce Mill cove | 15:50 | " | " | — | 1.43 | 2.9 | 7.22 | 30.45 | 20.63 | |
| Pierce Mill cove | 15:54 | " | " | — | 1.42 | 3.4 | 7.23 | 30.45 | 20.64 | |

# 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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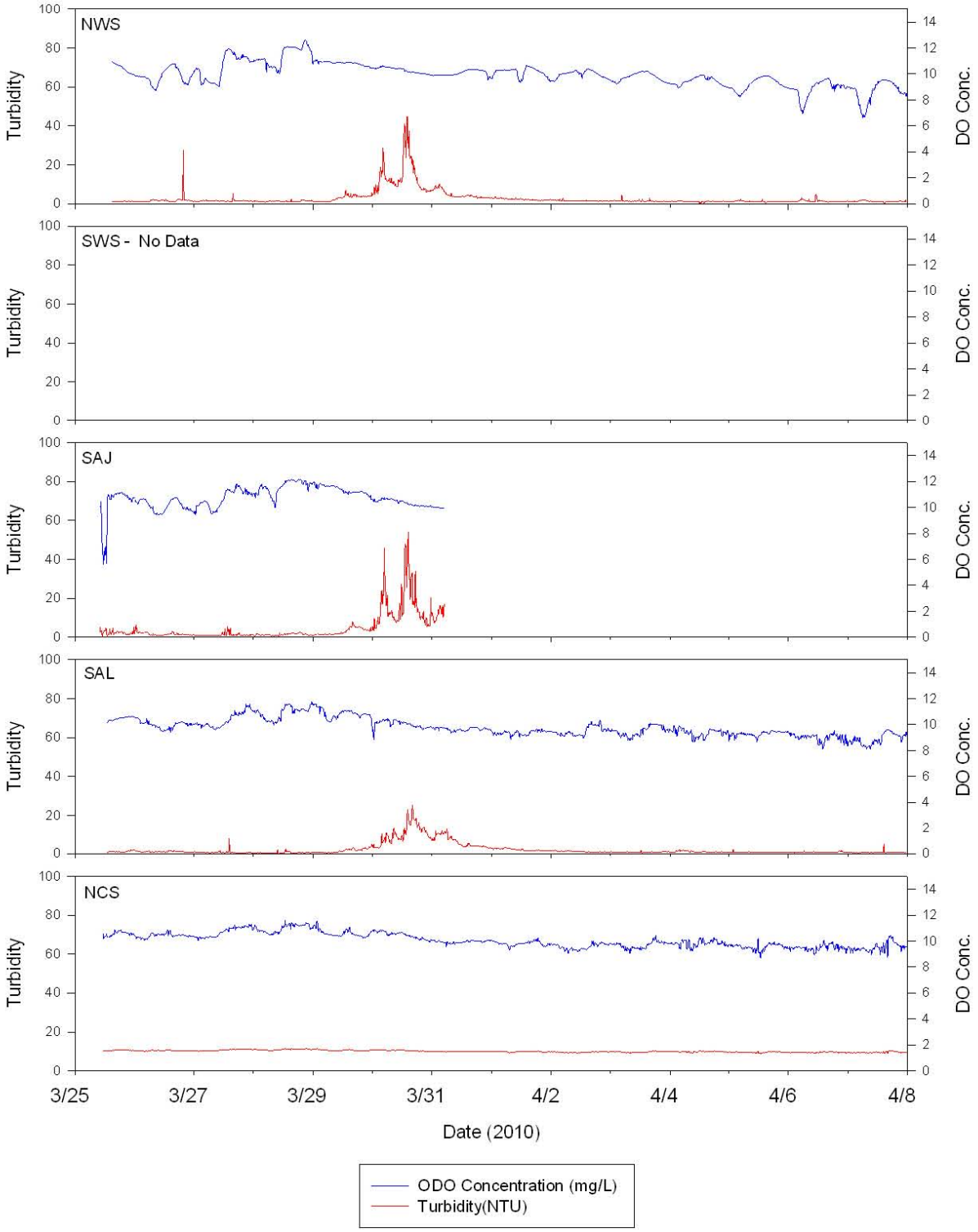
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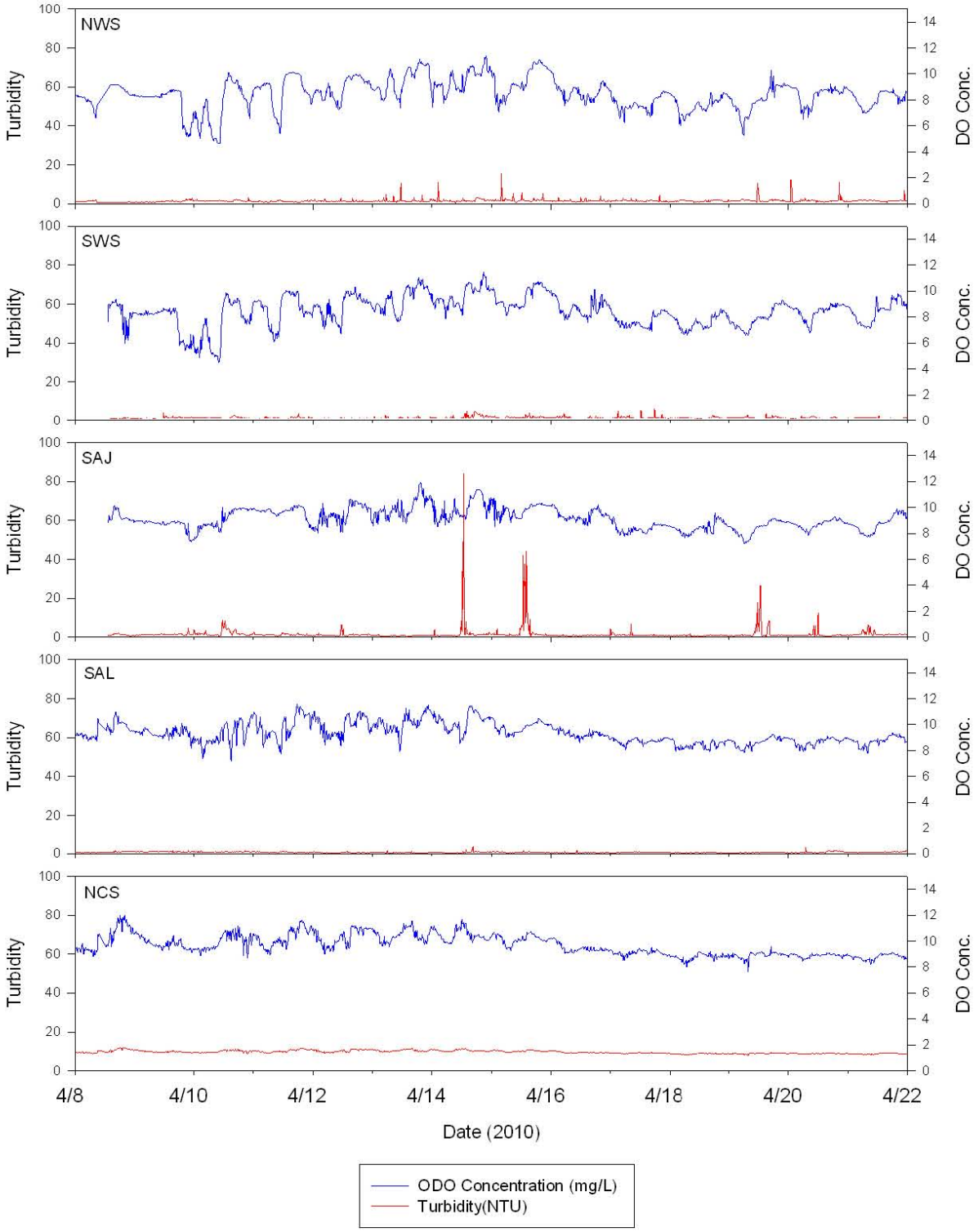
SWS - No Data
SAJ
SAL
NCS
Turbidity
DO Conc.
3/25
3/27
3/29
3/31
4/2
4/4
4/6
4/8
Date (2010)
ODO Concentration (mg/L)
Turbidity(NTU)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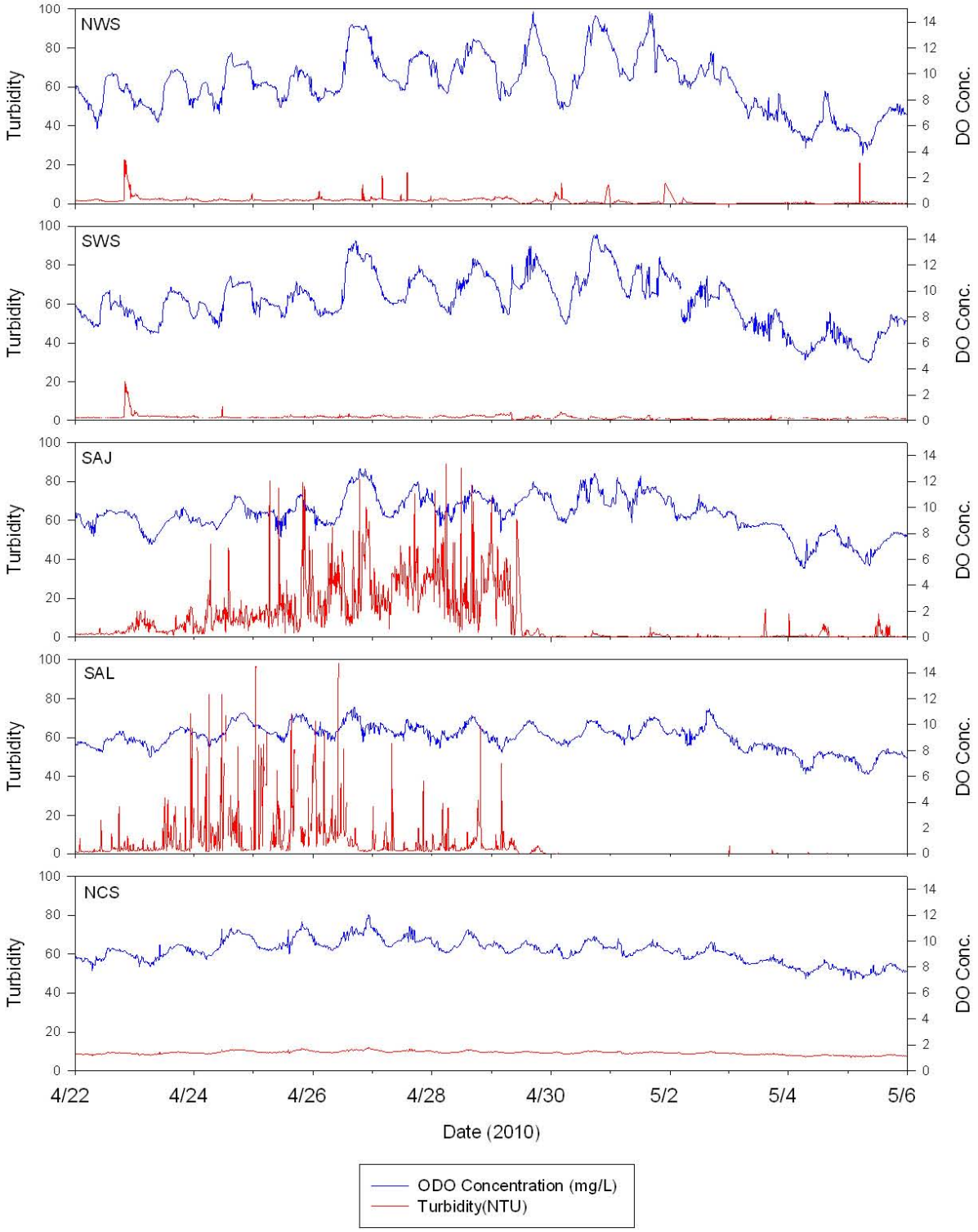
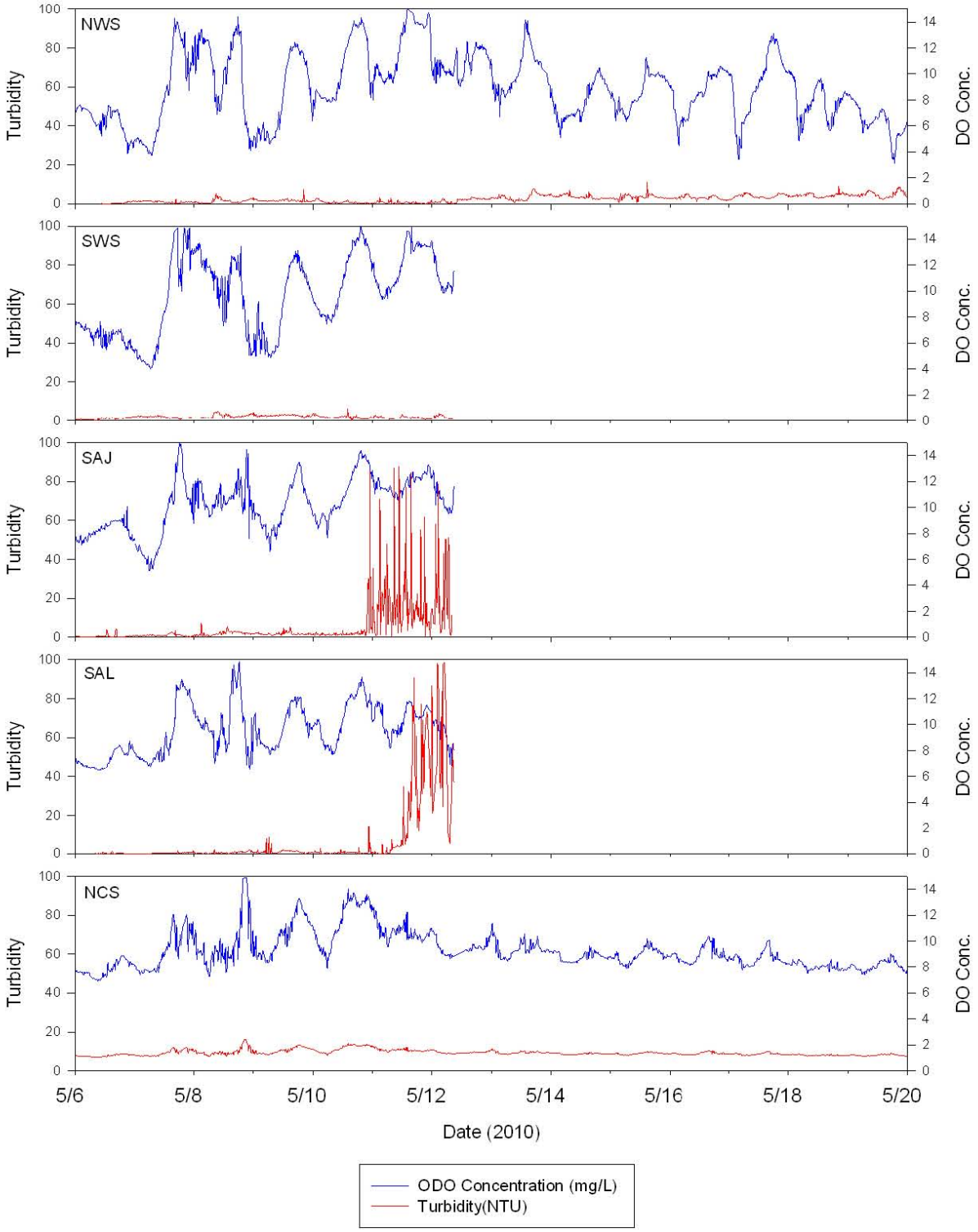
SWS
SAJ
SAL
NCS
Turbidity
DO Conc.
Date (2010)
4/8
4/10
4/12
4/14
4/16
4/18
4/20
4/22
ODO Concentration (mg/L)
Turbidity(NTU)


NWS
SWS
SAJ
SAL
NCS
Turbidity
DO Conc.
Date (2010)
4/22
4/24
4/26
4/28
4/30
5/2
5/4
5/6
ODO Concentration (mg/L)
Turbidity(NTU)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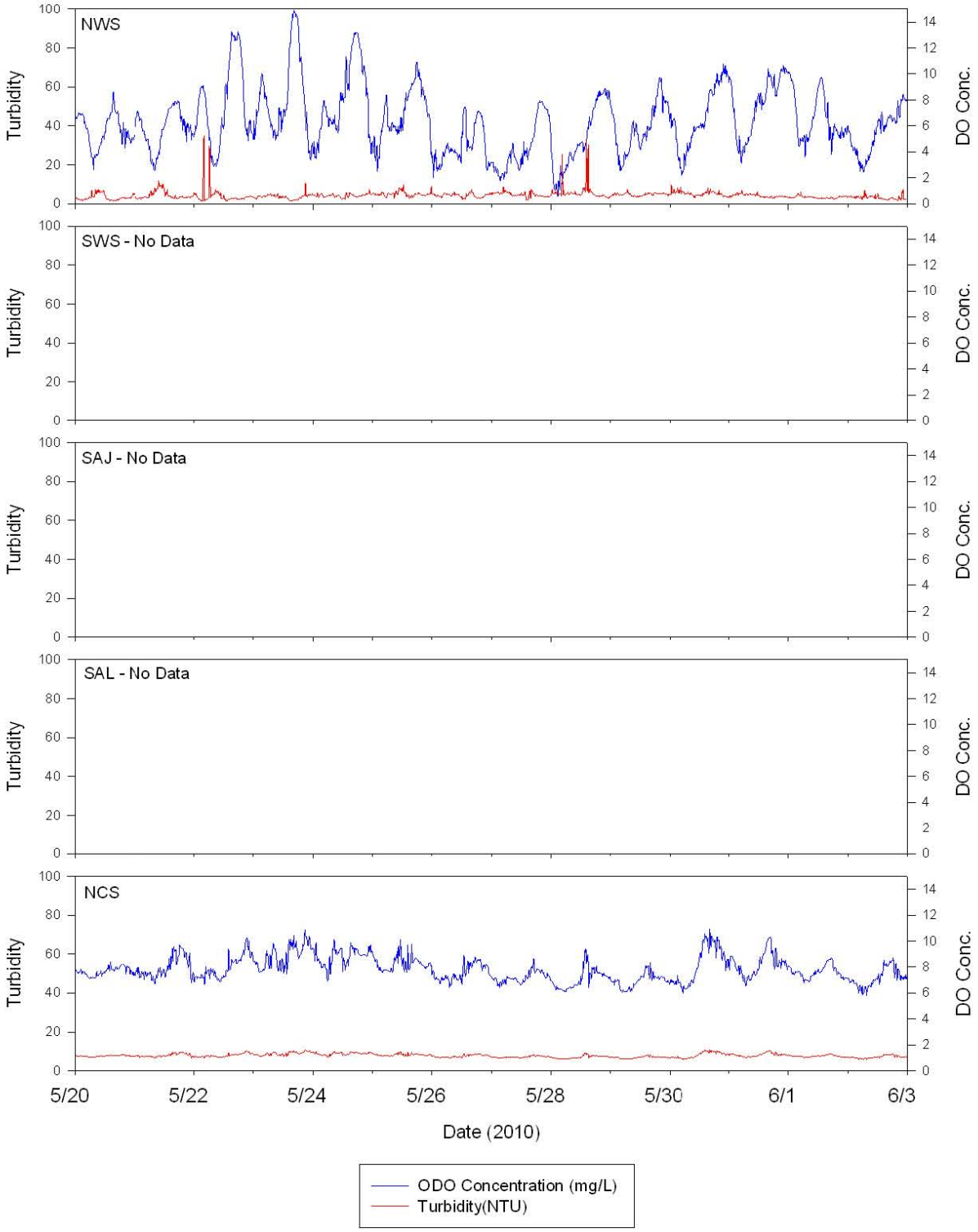
SWS
SAJ
SAL
NCS
Turbidity
DO Conc.
100
80
60
40
20
0
14
12
10
8
6
4
2
0
5/6
5/8
5/10
5/12
5/14
5/16
5/18
5/20
Date (2010)
ODO Concentration (mg/L)
Turbidity(NTU)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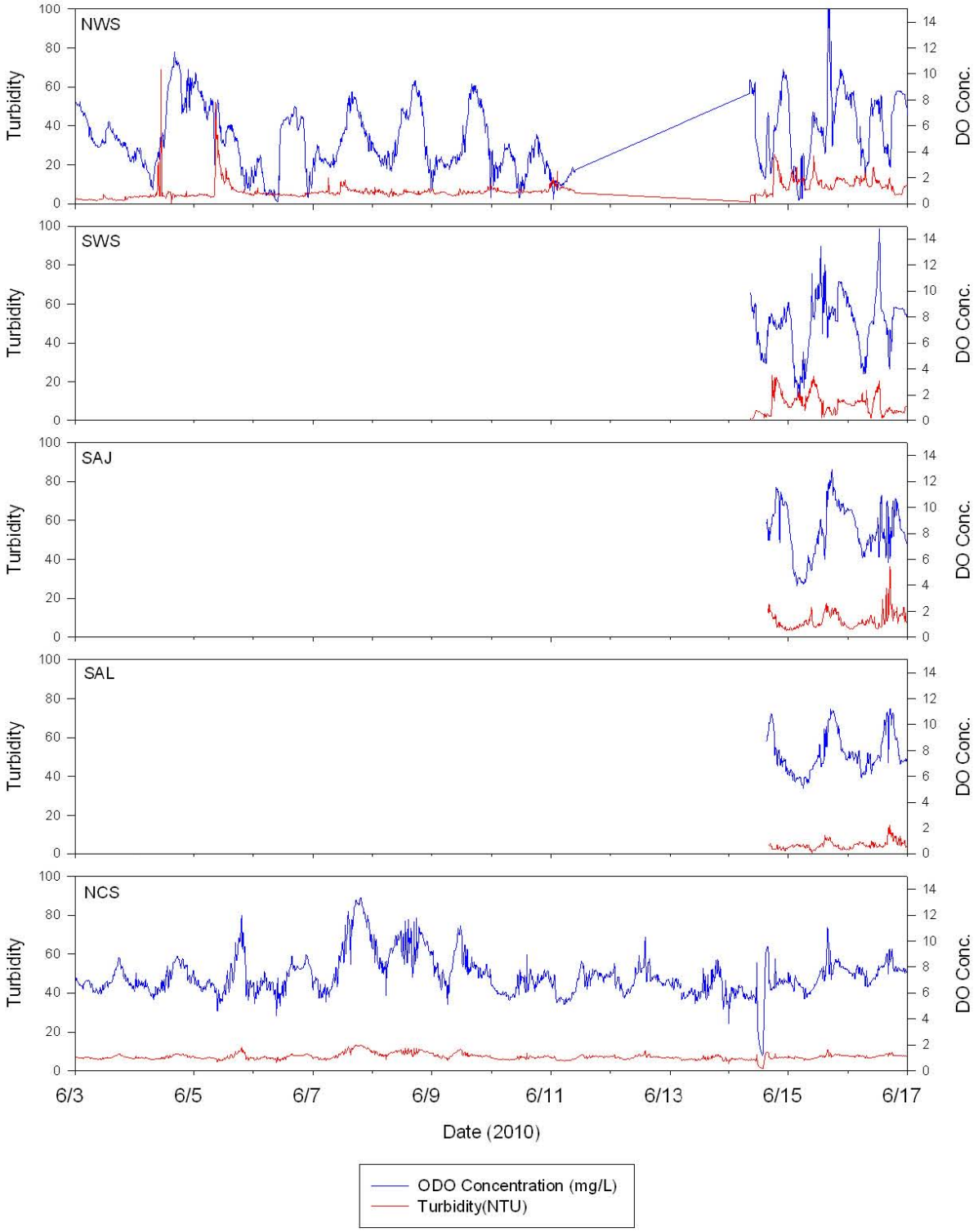
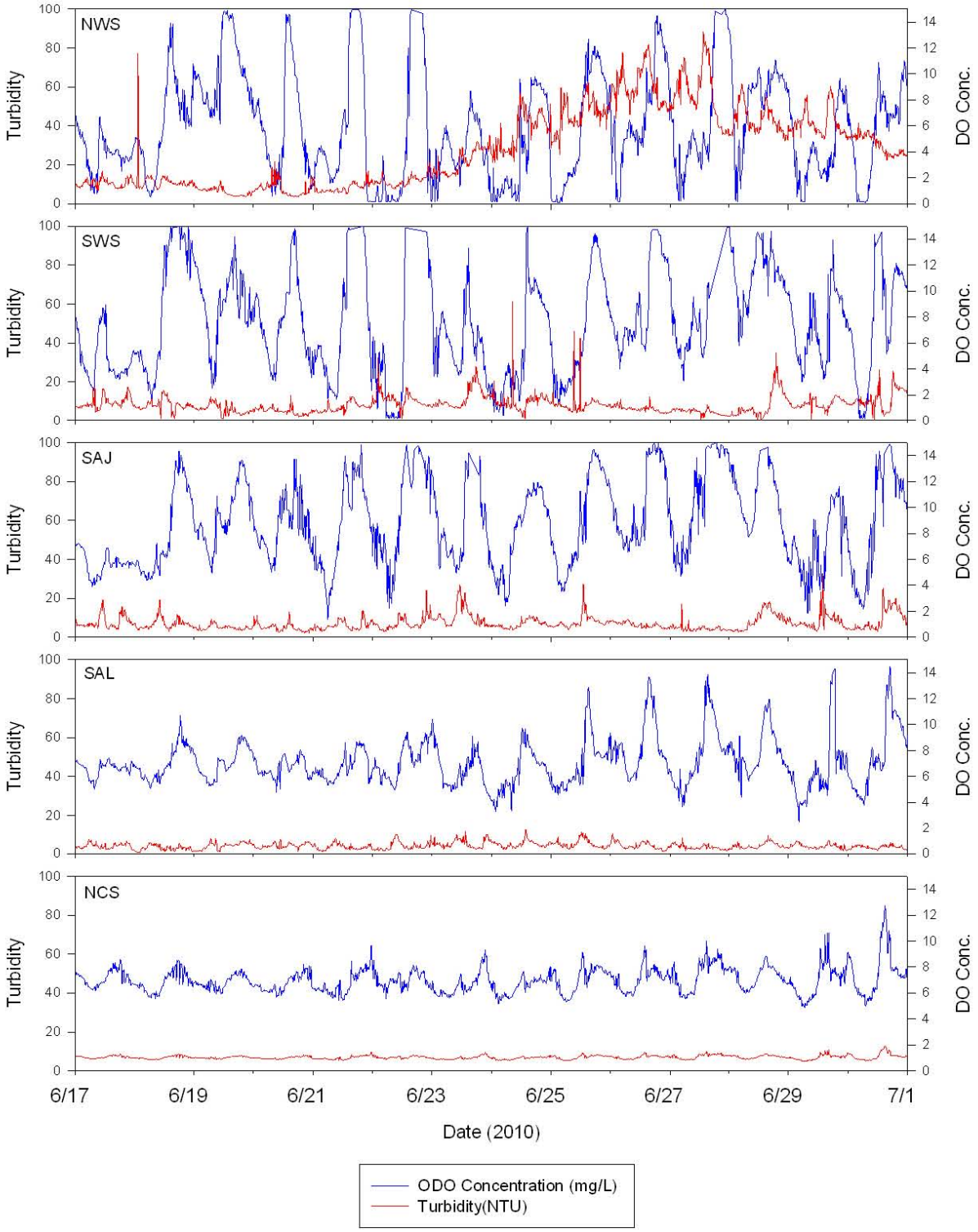
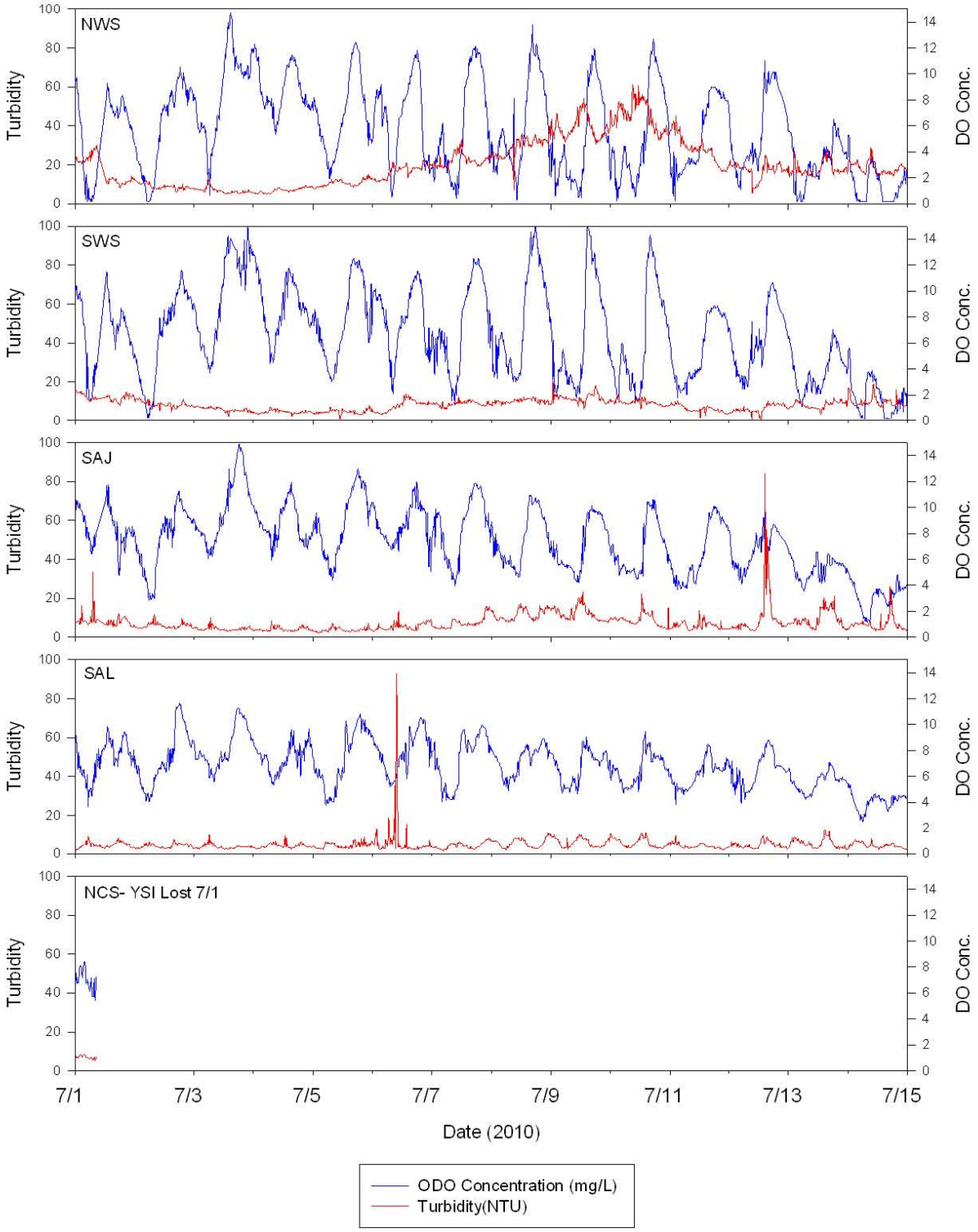
SAJ - No Data
SAL - No Data
NCS
Turbidity
DO Conc.
Date (2010)
5/20
5/22
5/24
5/26
5/28
5/30
6/1
6/3
ODO Concentration (mg/L)
Turbidity(NTU)


NWS
SWS
SAJ
SAL
NCS
Turbidity
DO Conc.
Date (2010)
6/3
6/5
6/7
6/9
6/11
6/13
6/15
6/17
ODO Concentration (mg/L)
Turbidity(NTU)


NWS
SWS
SAJ
SAL
NCS
Turbidity
DO Conc.
6/17
6/19
6/21
6/23
6/25
6/27
6/29
7/1
Date (2010)
ODO Concentration (mg/L)
Turbidity(NTU)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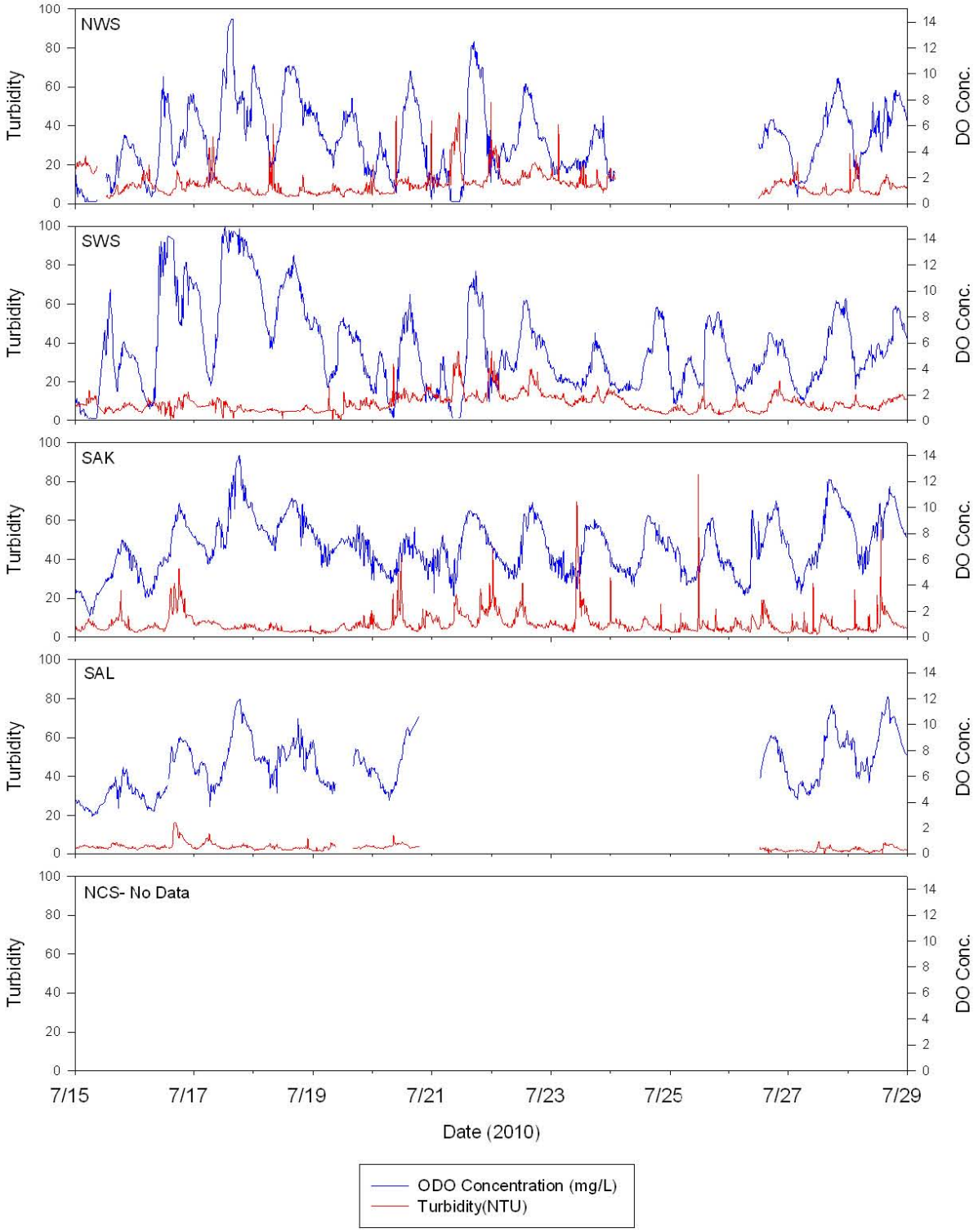
SWS
SAJ
SAL
NCS- YSI Lost 7/1
Turbidity
DO Conc.
Date (2010)
7/1
7/3
7/5
7/7
7/9
7/11
7/13
7/15
ODO Concentration (mg/L)
Turbidity(NTU)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SAL
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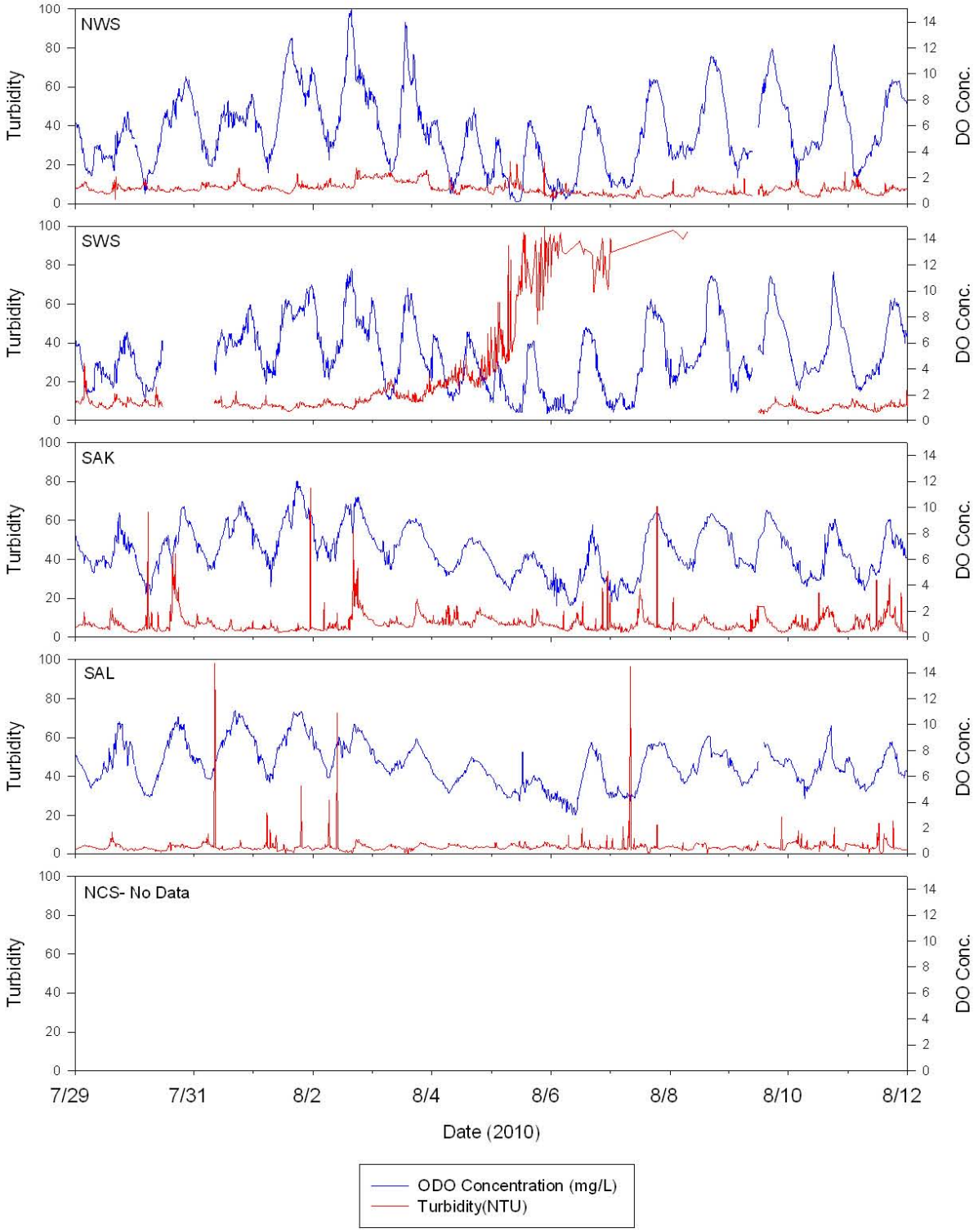
Turbidity
DO Conc.
Date (2010)
7/15
7/17
7/19
7/21
7/23
7/25
7/27
7/29
ODO Concentration (mg/L)
Turbidity(NTU)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SAK
SAL
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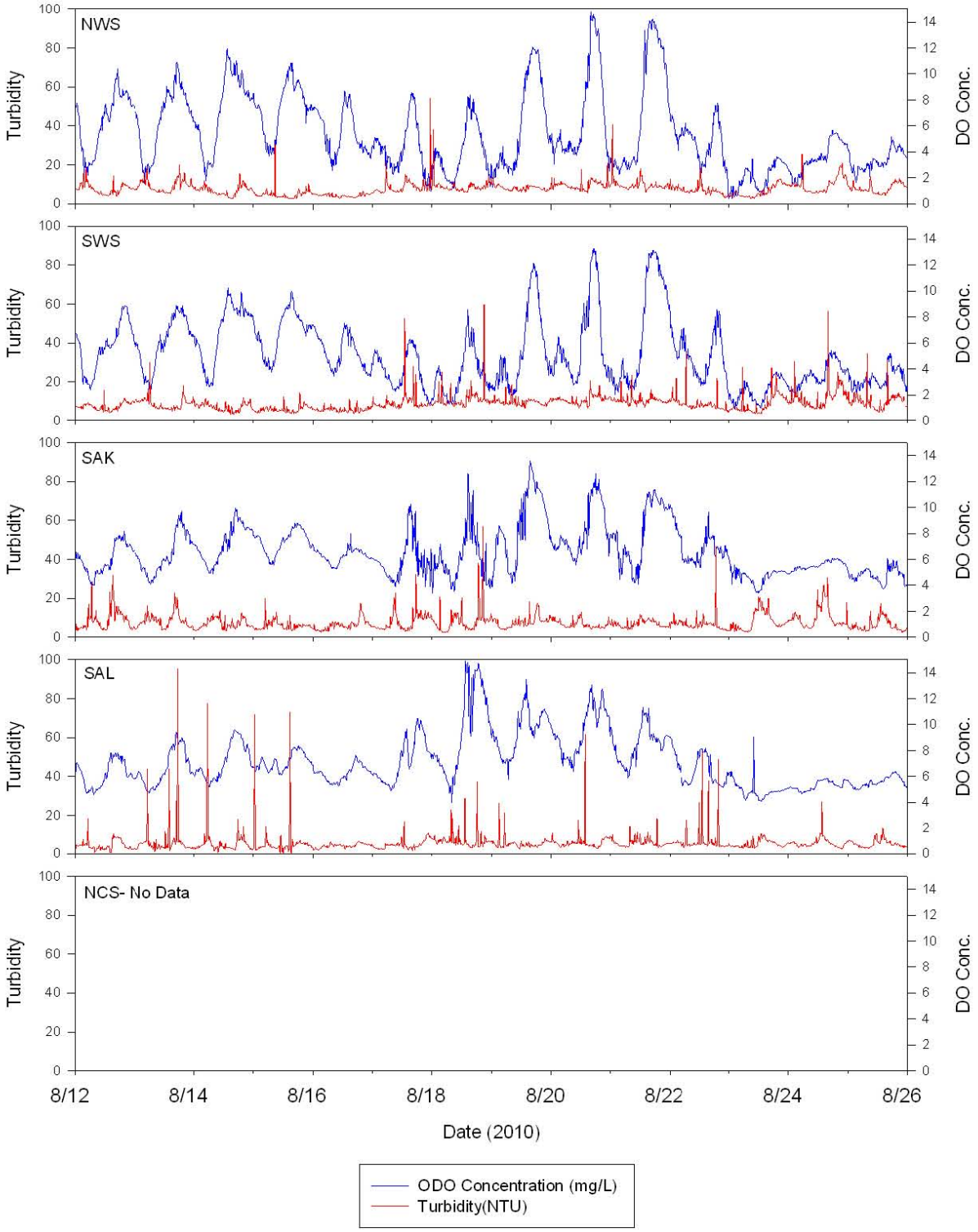
Turbidity
DO Conc.
Date (2010)
7/29
7/31
8/2
8/4
8/6
8/8
8/10
8/12
ODO Concentration (mg/L)
Turbidity(NTU)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SAL
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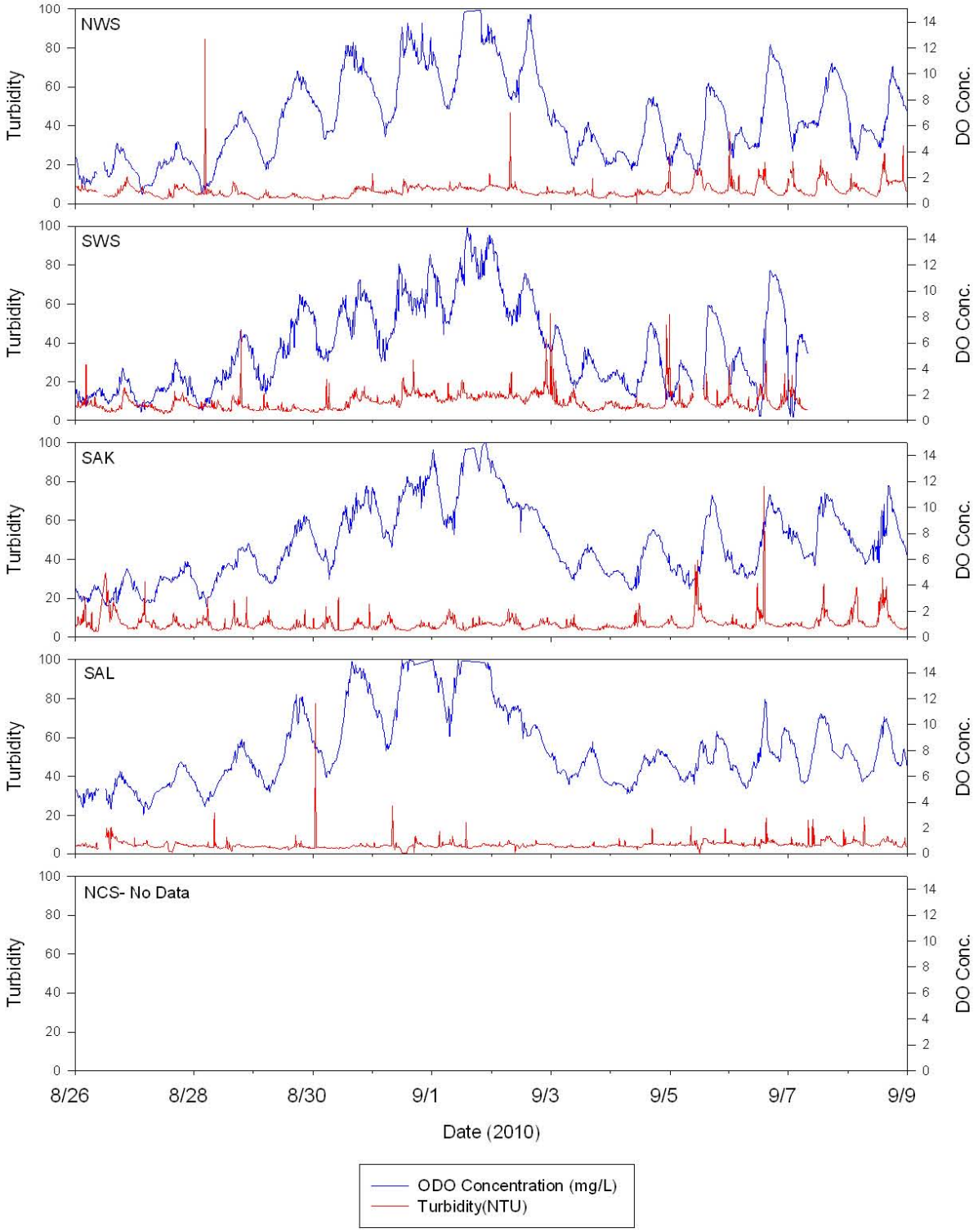
Turbidity
DO Conc.
Date (2010)
8/12
8/14
8/16
8/18
8/20
8/22
8/24
8/26
ODO Concentration (mg/L)
Turbidity(NTU)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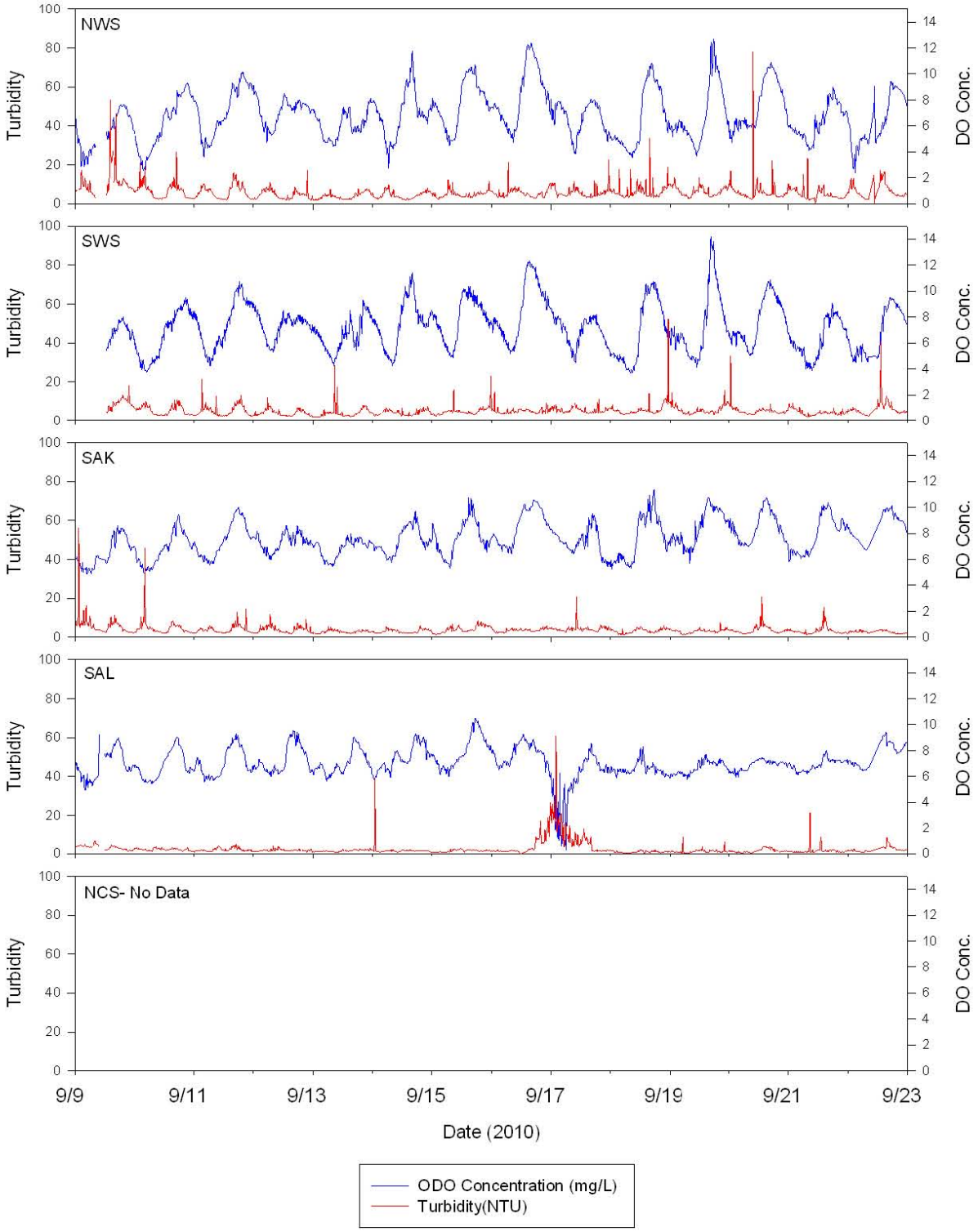
SWS
SAK
SAL
NCS- No Data
Turbidity
DO Conc.
Date (2010)
8/26
8/28
8/30
9/1
9/3
9/5
9/7
9/9
ODO Concentration (mg/L)
Turbidity(NTU)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Turbidity
DO Conc.
Date (2010)
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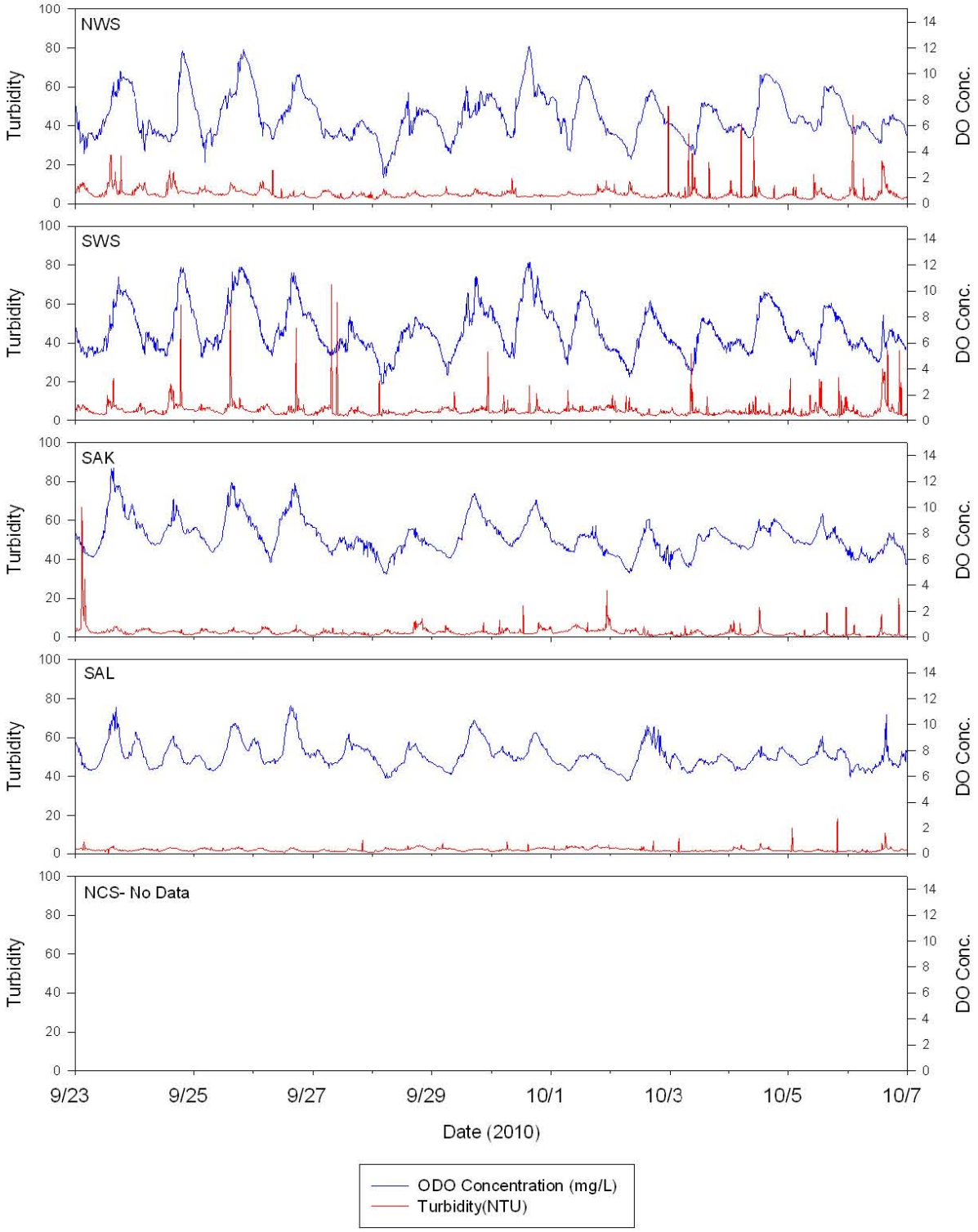
9/21
9/23
ODO Concentration (mg/L)
Turbidity(NTU)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SAK
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Turbidity
DO Conc.
Date (2010)
9/23
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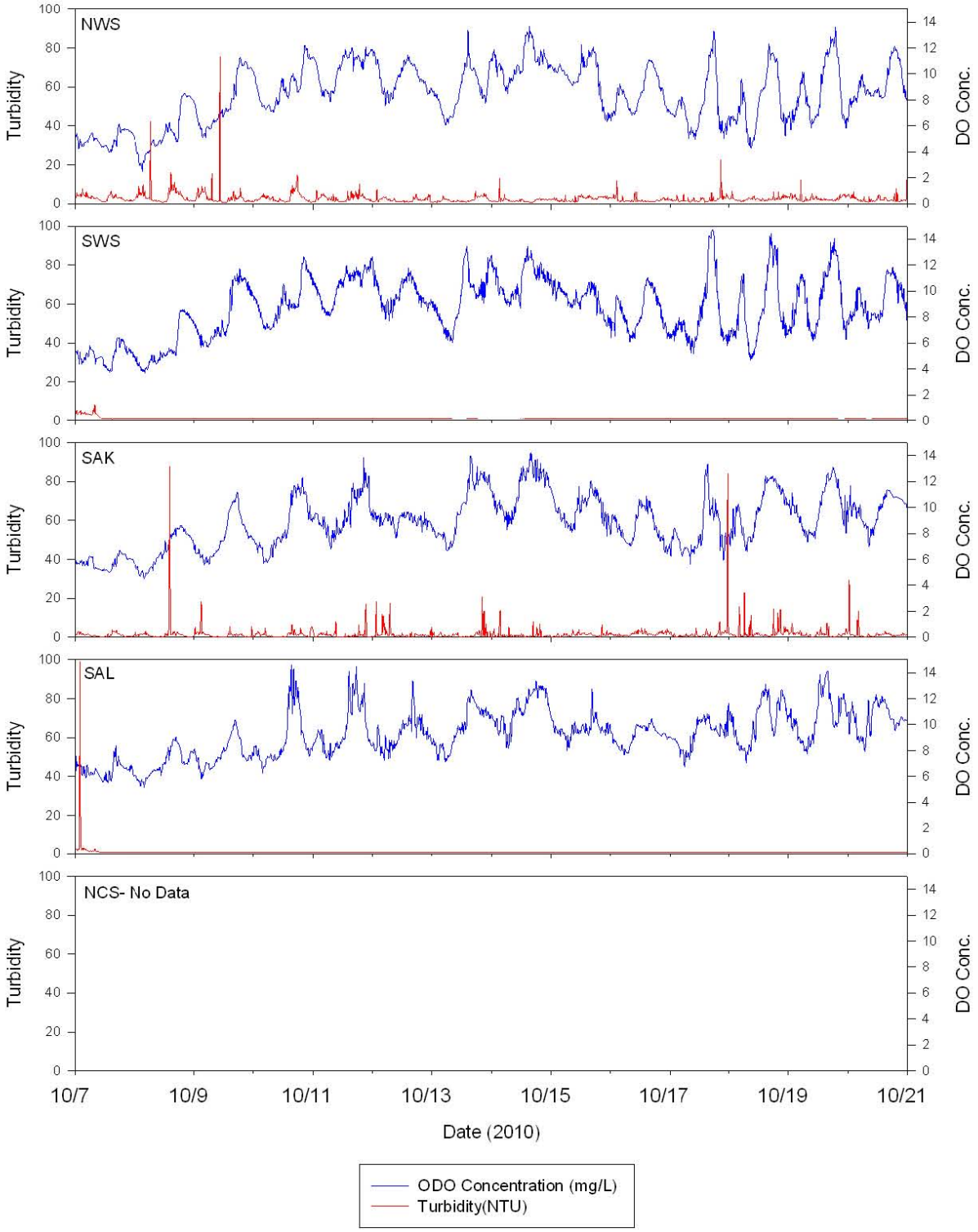
9/27
9/29
10/1
10/3
10/5
10/7
ODO Concentration (mg/L)
Turbidity(NTU)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Date (2010)
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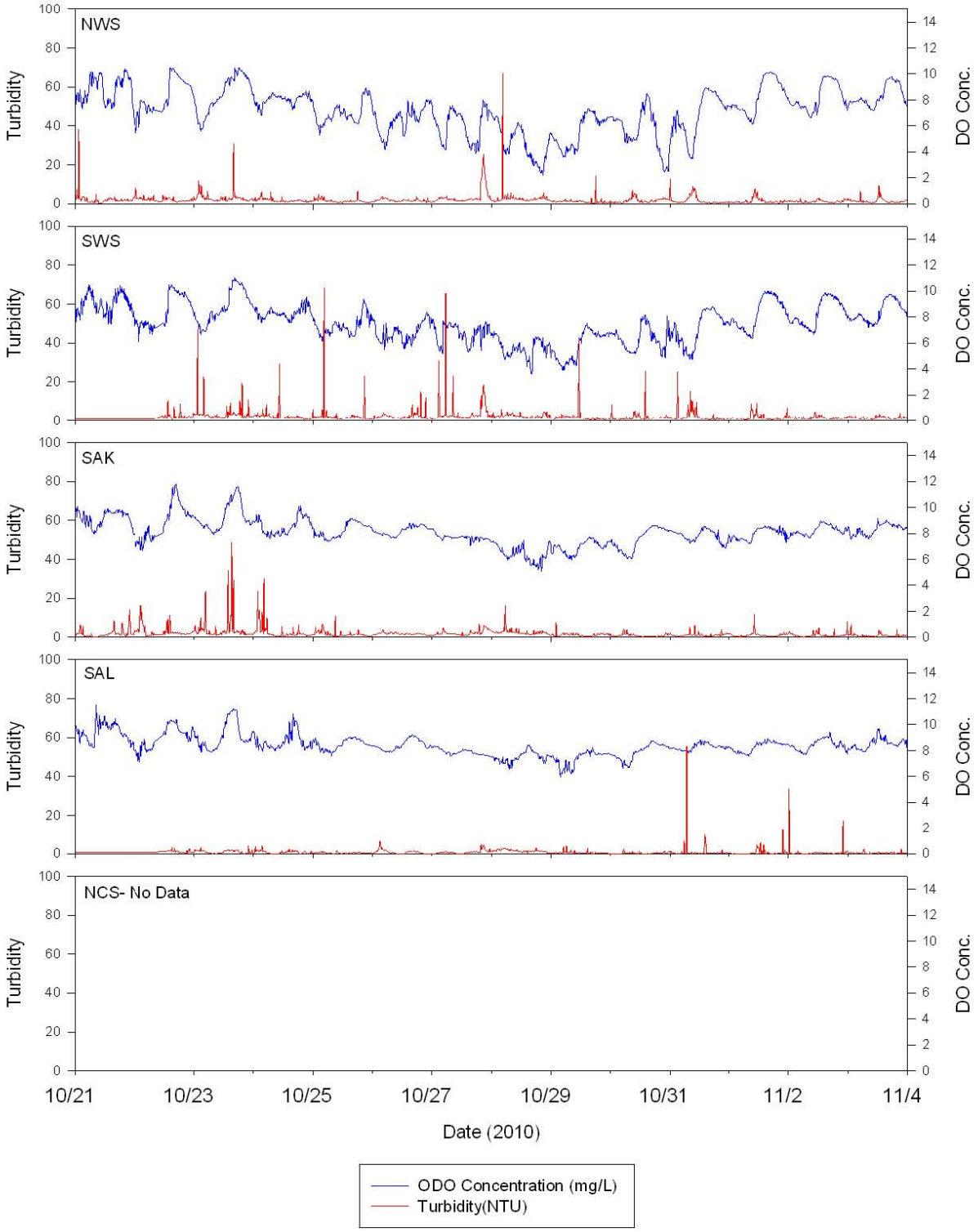
10/13
10/15
10/17
10/19
10/21
ODO Concentration (mg/L)
Turbidity(NTU)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SAL
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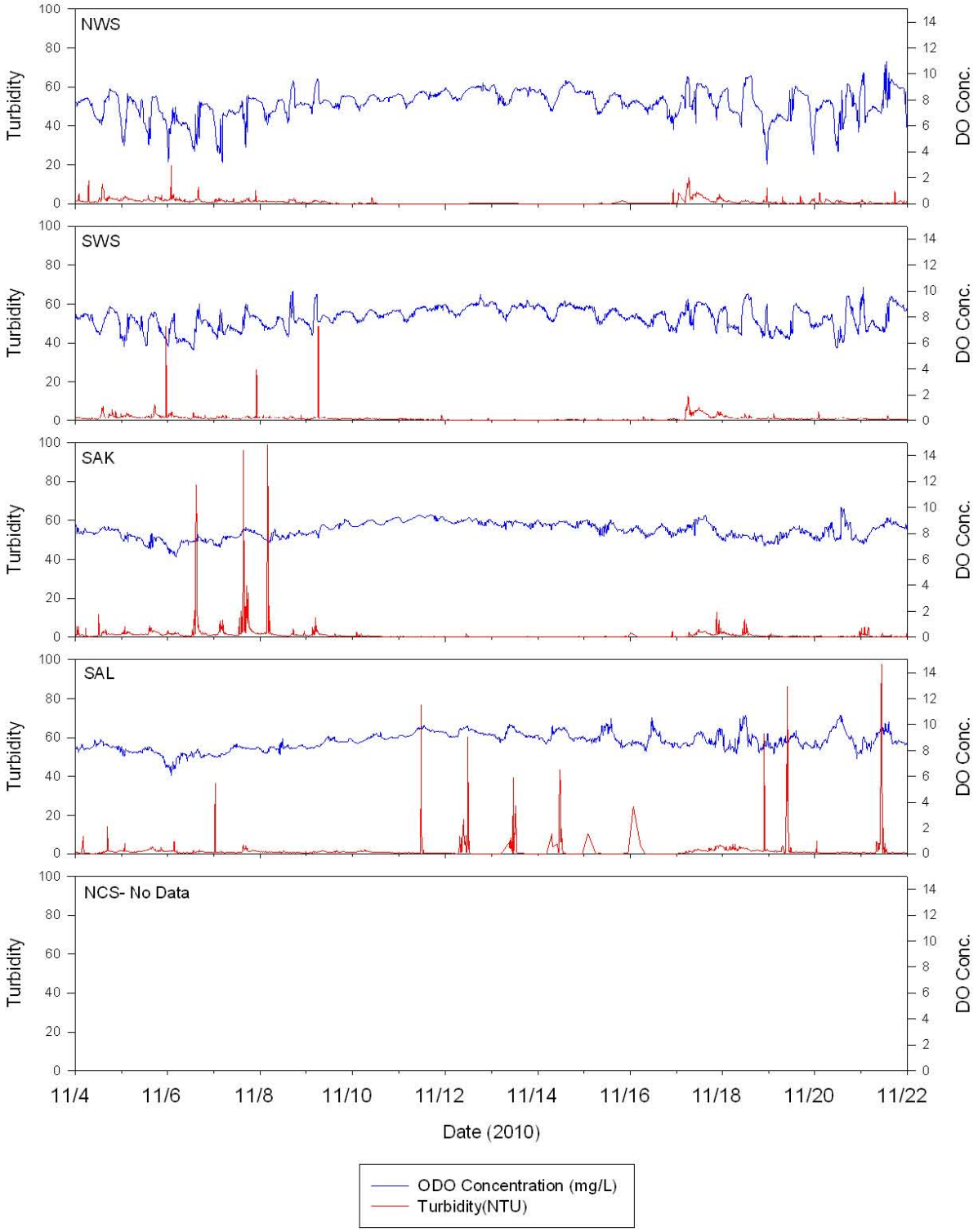
Turbidity
DO Conc.
Date (2010)
10/21
10/23
10/25
10/27
10/29
10/31
11/2
11/4
ODO Concentration (mg/L)
Turbidity(NTU)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Turbidity
DO Conc.
Date (2010)
11/4
11/6
11/8
11/10
11/12
11/14
11/16
11/18
11/20
11/22
ODO Concentration (mg/L)
Turbidity(NTU)

# 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: | L1008903 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 06/25/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1008903-01 | WQ-TPC-001-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-02 | WQ-DPC-001-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-03 | WQ-TSS-001-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-04 | WQ-TUR-001-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-05 | WQ-MET-001-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-06 | WQ-TPC-002-061410 | NEW BEDFORD, MA | 06/14/10 09:50 |
| L1008903-07 | WQ-DPC-002-061410 | NEW BEDFORD, MA | 06/14/10 09:50 |
| L1008903-08 | WQ-TSS-002-061410 | NEW BEDFORD, MA | 06/14/10 09:50 |
| L1008903-09 | WQ-TUR-002-061410 | NEW BEDFORD, MA | 06/14/10 09:50 |
| L1008903-10 | WQ-MET-002-061410 | NEW BEDFORD, MA | 06/14/10 09:20 |
| L1008903-11 | WQ-TPC-003-061410 | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-12 | WQ-TPC-003-061410 REP | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-13 | WQ-DPC-003-061410 | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-14 | WQ-DPC-003-061410 REP | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-15 | WQ-TSS-003-061410 | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-16 | WQ-TSS-003-061410 REP | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-17 | WQ-TUR-003-061410 | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-18 | WQ-TUR-003-061410 REP | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-19 | WQ-MET-003-061410 | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-20 | WQ-MET-003-061410 REP | NEW BEDFORD, MA | 06/14/10 12:15 |
| L1008903-21 | WQ-TPC-004-061410 | NEW BEDFORD, MA | 06/14/10 13:10 |
| L1008903-22 | WQ-DPC-004-061410 | NEW BEDFORD, MA | 06/14/10 13:10 |
| L1008903-23 | WQ-TSS-004-061410 | NEW BEDFORD, MA | 06/14/10 13:10 |
| L1008903-24 | WQ-TUR-004-061410 | NEW BEDFORD, MA | 06/14/10 13:10 |
| L1008903-25 | WQ-MET-004-061410 | NEW BEDFORD, MA | 06/14/10 13:10 |
| L1008903-26 | WQ-TPC-001-061510 | NEW BEDFORD, MA | 06/15/10 09:15 |
| L1008903-27 | WQ-DPC-001-061510 | NEW BEDFORD, MA | 06/14/10 09:15 |
| L1008903-28 | WQ-TSS-001-061510 | NEW BEDFORD, MA | 06/14/10 09:15 |
| L1008903-29 | WQ-TUR-001-061510 | NEW BEDFORD, MA | 06/14/10 09:15 |
| L1008903-30 | WQ-MET-001-061510 | NEW BEDFORD, MA | 06/14/10 09:15 |
| L1008903-31 | WQ-TPC-002-061510 | NEW BEDFORD, MA | 06/15/10 10:00 |

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1008903-32 | WQ-DPC-002-061510 | NEW BEDFORD, MA | 06/15/10 10:00 |
| L1008903-33 | WQ-TSS-002-061510 | NEW BEDFORD, MA | 06/15/10 10:00 |
| L1008903-34 | WQ-TUR-002-061510 | NEW BEDFORD, MA | 06/15/10 10:00 |
| L1008903-35 | WQ-MET-002-061510 | NEW BEDFORD, MA | 06/15/10 10:00 |
| L1008903-36 | WQ-TPC-003-061510 | NEW BEDFORD, MA | 06/15/10 14:45 |
| L1008903-37 | WQ-DPC-003-061510 | NEW BEDFORD, MA | 06/15/10 14:45 |
| L1008903-38 | WQ-TSS-003-061510 | NEW BEDFORD, MA | 06/15/10 14:45 |
| L1008903-39 | WQ-TUR-003-061510 | NEW BEDFORD, MA | 06/15/10 14:45 |
| L1008903-40 | WQ-MET-003-061510 | NEW BEDFORD, MA | 06/15/10 14:45 |
| L1008903-41 | WQ-TPC-004-061510 | NEW BEDFORD, MA | 06/15/10 13:15 |
| L1008903-42 | WQ-DPC-004-061510 | NEW BEDFORD, MA | 06/15/10 13:15 |
| L1008903-43 | WQ-TSS-004-061510 | NEW BEDFORD, MA | 06/15/10 13:15 |
| L1008903-44 | WQ-TUR-004-061510 | NEW BEDFORD, MA | 06/15/10 13:15 |
| L1008903-45 | WQ-MET-004-061510 | NEW BEDFORD, MA | 06/15/10 13:15 |
| L1008903-46 | WQ-TPC-001-061510-EB | NEW BEDFORD, MA | 06/15/10 15:10 |
| L1008903-47 | WQ-DPC-001-061510-EB | NEW BEDFORD, MA | 06/15/10 15:10 |
| L1008903-48 | WQ-MET-001-061510-EB | NEW BEDFORD, MA | 06/15/10 15:10 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1008903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 06/25/10 |

## 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.

---

Sample Receipt

Samples were received intact on June 15, 2010. 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.

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.
L1008903-01,11,12,26, and 36 were re-analyzed on dilution in order to quantitate the sample within the

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1008903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 06/25/10 |

**Case Narrative (continued)**

calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

The WG418400-4 and WG418400-5 MS/MSD recoveries, performed on L1008903-11, are outside the acceptance criteria for multipe compounds due to target hits in sample. The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD.

The WG418400-7 MS/MSD %RPD, performed on L1008903-13, are outside the acceptance criteria for Cl3-BZ#18 (35%). The spike recoveries are both within QC limits.

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: 06/25/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-01 | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-TPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 19:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.09579 | | ug/l | 0.00103 | -- | 1 |
| Cl3-BZ#18 | 0.21635 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#118 | 0.01913 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#187 | 0.0037 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#128 | 0.00336 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#180 | 0.00241 | | ug/l | 0.00103 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-01 | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-TPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 19:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.23035 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#52 | 0.25844 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#44 | 0.07843 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#101 | 0.04177 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#153 | 0.01876 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#105 | 0.00385 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#138 | 0.00808 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#170 | 0.00187 | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-01 D | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-TPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 16:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.14231 | | ug/l | 0.00515 | -- | 5 |
| Cl4-BZ#52 | 0.16966 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-01 D | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-TPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 16:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.12585 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-02 | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-DPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 20:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.02035 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00105 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 79 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-02 | Date Collected: | 06/14/10 09:20 |
| Client ID: | WQ-DPC-001-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 20:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00978 | | ug/l | 0.00105 | -- | 1 |
| Cl3-BZ#28 | 0.00457 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#52 | 0.00660 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#44 | 0.00171 | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#101 | 0.00107 | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-06 | Date Collected: | 06/14/10 09:50 |
| Client ID: | WQ-TPC-002-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 21:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.03639 | | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#52 | 0.04876 | | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#66 | 0.02414 | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#118 | 0.01534 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#138 | 0.01088 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#128 | 0.00291 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#180 | 0.00252 | | ug/l | 0.00100 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00100 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00100 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00100 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-06 | Date Collected: | 06/14/10 09:50 |
| Client ID: | WQ-TPC-002-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 21:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.01435 | | ug/l | 0.00100 | -- | 1 |
| Cl3-BZ#28 | 0.04252 | | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#44 | 0.01784 | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#101 | 0.01651 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#153 | 0.01232 | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#105 | 0.00352 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#187 | 0.00242 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#170 | 0.00166 | | ug/l | 0.00100 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-07 | Date Collected: | 06/14/10 09:50 |
| Client ID: | WQ-DPC-002-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 21:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00637 | | ug/l | 0.00104 | -- | 1 |
| Cl3-BZ#18 | 0.01514 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#52 | 0.00967 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#44 | 0.00272 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#118 | 0.00120 | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 57 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-07 | Date Collected: | 06/14/10 09:50 |
| Client ID: | WQ-DPC-002-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 21:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.00552 | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#101 | 0.00136 | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#153 | 0.00106 | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 57 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-11 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 22:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.34857 | E | ug/l | 0.00106 | -- | 1 |
| Cl3-BZ#18 | 0.38919 | E | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#52 | 0.49155 | E | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#118 | 0.03657 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#187 | 0.01135 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#128 | 0.00825 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#170 | 0.00640 | | ug/l | 0.00106 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl9-BZ#206 | 0.00167 | | ug/l | 0.00106 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-11 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/23/10 22:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.29204 | E | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#44 | 0.13914 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#101 | 0.05965 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#153 | 0.04510 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#105 | 0.00733 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#138 | 0.01930 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#180 | 0.00798 | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-11 D | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 17:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.21174 | | ug/l | 0.00532 | -- | 5 |
| Cl3-BZ#18 | 0.23110 | | ug/l | 0.00532 | -- | 5 |
| Cl4-BZ#52 | 0.28295 | | ug/l | 0.00532 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-11 D | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 17:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.16268 | | ug/l | 0.00532 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-12 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 02:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.37496 | E | ug/l | 0.00103 | -- | 1 |
| Cl3-BZ#18 | 0.37160 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#52 | 0.47042 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#118 | 0.03401 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#128 | 0.00786 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#170 | 0.00628 | | ug/l | 0.00103 | -- | 1 |
| Cl8-BZ#195 | 0.00192 | | ug/l | 0.00103 | -- | 1 |
| Cl9-BZ#206 | 0.00202 | | ug/l | 0.00103 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-12 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 02:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.26266 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#44 | 0.14870 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#101 | 0.06390 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#153 | 0.04337 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#105 | 0.01076 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#138 | 0.01830 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#187 | 0.01203 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#180 | 0.00897 | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-12 D | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 19:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.22297 | | ug/l | 0.00515 | -- | 5 |
| Cl3-BZ#18 | 0.22225 | | ug/l | 0.00515 | -- | 5 |
| Cl4-BZ#52 | 0.27006 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-12 D | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-TPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 19:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.15292 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-13 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-DPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 02:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.03155 | | ug/l | 0.00106 | -- | 1 |
| Cl3-BZ#18 | 0.04565 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#52 | 0.01655 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#118 | 0.00148 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#138 | 0.00205 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00106 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 66 | 30-150 |
| BZ 198 | 65 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-13 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-DPC-003-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 02:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.00771 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#44 | 0.00418 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#101 | 0.00254 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#153 | 0.0020 | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 66 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-14 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-DPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 04:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.04425 | | ug/l | 0.00105 | -- | 1 |
| Cl3-BZ#18 | 0.05083 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 86 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-14 | Date Collected: | 06/14/10 12:15 |
| Client ID: | WQ-DPC-003-061410 REP | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:28 |
| Analytical Date: | 06/24/10 04:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.00305 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#52 | 0.00760 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#44 | 0.00207 | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 86 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-21 | Date Collected: | 06/14/10 13:10 |
| Client ID: | WQ-TPC-004-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 05:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.09280 | | ug/l | 0.00105 | -- | 1 |
| Cl3-BZ#18 | 0.16644 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#118 | 0.01327 | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#138 | 0.00942 | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#128 | 0.00247 | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-21 | Date Collected: | 06/14/10 13:10 |
| Client ID: | WQ-TPC-004-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 05:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.15085 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#52 | 0.15093 | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#44 | 0.04497 | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#101 | 0.01985 | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#153 | 0.01285 | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#105 | 0.00252 | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#187 | 0.00291 | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#180 | 0.00215 | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-22 | Date Collected: | 06/14/10 13:10 |
| Client ID: | WQ-DPC-004-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 06:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.01599 | | ug/l | 0.00104 | -- | 1 |
| Cl3-BZ#18 | 0.05045 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#52 | 0.00889 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 50 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-22 | Date Collected: | 06/14/10 13:10 |
| Client ID: | WQ-DPC-004-061410 | Date Received: | 06/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 06:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.00516 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#44 | 0.00216 | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#101 | 0.00125 | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 50 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-26 | Date Collected: | 06/15/10 09:15 |
| Client ID: | WQ-TPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 06:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.22902 | E | ug/l | 0.00103 | -- | 1 |
| Cl3-BZ#18 | 0.37055 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#52 | 0.56534 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#118 | 0.04440 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#180 | 0.00756 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#170 | 0.00609 | | ug/l | 0.00103 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl9-BZ#206 | 0.00163 | | ug/l | 0.00103 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-26 | Date Collected: | 06/15/10 09:15 |
| Client ID: | WQ-TPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 06:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.33076 | E | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#44 | 0.15067 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#101 | 0.07659 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#153 | 0.05305 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#105 | 0.00827 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#138 | 0.01859 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#187 | 0.01194 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#128 | 0.00468 | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-26 D | Date Collected: | 06/15/10 09:15 |
| Client ID: | WQ-TPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 19:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.15464 | | ug/l | 0.00515 | -- | 5 |
| Cl3-BZ#18 | 0.25780 | | ug/l | 0.00515 | -- | 5 |
| Cl4-BZ#52 | 0.37695 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-26 D | Date Collected: | 06/15/10 09:15 |
| Client ID: | WQ-TPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 19:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.22124 | | ug/l | 0.00515 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-27 | Date Collected: | 06/14/10 09:15 |
| Client ID: | WQ-DPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 07:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.01393 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#52 | 0.01277 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00104 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-27 | Date Collected: | 06/14/10 09:15 |
| Client ID: | WQ-DPC-001-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 07:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00680 | | ug/l | 0.00104 | -- | 1 |
| Cl3-BZ#28 | 0.00698 | | ug/l | 0.00104 | -- | 1 |
| Cl4-BZ#44 | 0.00268 | | ug/l | 0.00104 | -- | 1 |
| Cl5-BZ#101 | 0.00172 | | ug/l | 0.00104 | -- | 1 |
| Cl6-BZ#153 | 0.00121 | | ug/l | 0.00104 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-31 | Date Collected: | 06/15/10 10:00 |
| Client ID: | WQ-TPC-002-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 08:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.02833 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#52 | 0.04445 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#66 | 0.02258 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#118 | 0.01448 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00106 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 65 | 30-150 |
| BZ 198 | 66 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-31 | Date Collected: | 06/15/10 10:00 |
| Client ID: | WQ-TPC-002-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 08:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.01322 | | ug/l | 0.00106 | -- | 1 |
| Cl3-BZ#28 | 0.03653 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#44 | 0.01599 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#101 | 0.01522 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#153 | 0.01188 | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#105 | 0.00335 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#138 | 0.00680 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#187 | 0.00239 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#128 | 0.00188 | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#180 | 0.00227 | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 66 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-32 | Date Collected: | 06/15/10 10:00 |
| Client ID: | WQ-DPC-002-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 10:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.01150 | | ug/l | 0.00111 | -- | 1 |
| Cl4-BZ#52 | 0.00596 | | ug/l | 0.00111 | -- | 1 |
| Cl4-BZ#44 | 0.00145 | | ug/l | 0.00111 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00111 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00111 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-32 | Date Collected: | 06/15/10 10:00 |
| Client ID: | WQ-DPC-002-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 10:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00716 | | ug/l | 0.00111 | -- | 1 |
| Cl3-BZ#28 | 0.00417 | | ug/l | 0.00111 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00111 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-36 | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-TPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 10:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.32927 | E | ug/l | 0.00100 | -- | 1 |
| Cl3-BZ#18 | 0.45457 | E | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#52 | 0.55662 | E | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#118 | 0.03650 | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#105 | 0.01031 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#187 | 0.01126 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#180 | 0.00817 | | ug/l | 0.00100 | -- | 1 |
| Cl9-BZ#206 | 0.00172 | | ug/l | 0.00100 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00100 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-36 | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-TPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 10:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.41808 | E | ug/l | 0.00100 | -- | 1 |
| Cl4-BZ#44 | 0.15310 | | ug/l | 0.00100 | -- | 1 |
| Cl5-BZ#101 | 0.06270 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#153 | 0.04350 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#138 | 0.01638 | | ug/l | 0.00100 | -- | 1 |
| Cl6-BZ#128 | 0.00398 | | ug/l | 0.00100 | -- | 1 |
| Cl7-BZ#170 | 0.00496 | | ug/l | 0.00100 | -- | 1 |
| Cl8-BZ#195 | 0.00146 | | ug/l | 0.00100 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-36 D | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-TPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 20:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.19860 | | ug/l | 0.00500 | -- | 5 |
| Cl3-BZ#18 | 0.32869 | | ug/l | 0.00500 | -- | 5 |
| Cl4-BZ#52 | 0.35369 | | ug/l | 0.00500 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-36 D | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-TPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 20:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.25362 | | ug/l | 0.00500 | -- | 5 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-37 | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-DPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 11:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#44 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00106 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 39 | | 30-150 |
| BZ 198 | 48 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-37 | Date Collected: | 06/15/10 14:45 |
| Client ID: | WQ-DPC-003-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 11:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00788 | | ug/l | 0.00106 | -- | 1 |
| Cl3-BZ#18 | 0.01320 | | ug/l | 0.00106 | -- | 1 |
| Cl3-BZ#28 | 0.00290 | | ug/l | 0.00106 | -- | 1 |
| Cl4-BZ#52 | 0.00368 | | ug/l | 0.00106 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00106 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 39 | | 30-150 |
| BZ 198 | 48 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-41 | Date Collected: | 06/15/10 13:15 |
| Client ID: | WQ-TPC-004-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 12:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.10654 | | ug/l | 0.00103 | -- | 1 |
| Cl3-BZ#18 | 0.19267 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#118 | 0.01080 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#187 | 0.00249 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#180 | 0.00192 | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#170 | 0.00132 | | ug/l | 0.00103 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 51 | | 30-150 |
| BZ 198 | 55 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-41 | Date Collected: | 06/15/10 13:15 |
| Client ID: | WQ-TPC-004-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 12:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.14248 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#52 | 0.16307 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#44 | 0.04601 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#101 | 0.01831 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#153 | 0.01135 | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#105 | 0.00253 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#138 | 0.00469 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#128 | 0.00124 | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 51 | | 30-150 |
| BZ 198 | 55 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-42 | Date Collected: | 06/15/10 13:15 |
| Client ID: | WQ-DPC-004-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 12:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.02416 | | ug/l | 0.00103 | -- | 1 |
| Cl3-BZ#18 | 0.04701 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#44 | 0.00152 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00103 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00103 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 74 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-42 | Date Collected: | 06/15/10 13:15 |
| Client ID: | WQ-DPC-004-061510 | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 12:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 0.00486 | | ug/l | 0.00103 | -- | 1 |
| Cl4-BZ#52 | 0.00656 | | ug/l | 0.00103 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00103 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-46 | Date Collected: | 06/15/10 15:10 |
| Client ID: | WQ-TPC-001-061510-EB | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 13:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 0.00230 | | ug/l | 0.00118 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00118 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00118 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 58 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-46 | Date Collected: | 06/15/10 15:10 |
| Client ID: | WQ-TPC-001-061510-EB | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 13:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00366 | | ug/l | 0.00118 | -- | 1 |
| Cl3-BZ#28 | 0.00205 | | ug/l | 0.00118 | -- | 1 |
| Cl4-BZ#52 | 0.00287 | | ug/l | 0.00118 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00118 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 58 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-47 | Date Collected: | 06/15/10 15:10 |
| Client ID: | WQ-DPC-001-061510-EB | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 14:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl4-BZ#52 | 0.00158 | | ug/l | 0.00114 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00114 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00114 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1008903-47 | Date Collected: | 06/15/10 15:10 |
| Client ID: | WQ-DPC-001-061510-EB | Date Received: | 06/15/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 06/17/10 16:32 |
| Analytical Date: | 06/24/10 14:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/21/10 |
| | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 0.00315 | | ug/l | 0.00114 | -- | 1 |
| Cl3-BZ#18 | 0.00291 | | ug/l | 0.00114 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/l | 0.00114 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903
**Project Number:** TO-0010-03 **Report Date:** 06/25/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 06/23/10 17:53
Analyst: NS

Extraction Method: EPA 3510C
Extraction Date: 06/17/10 16:28
Cleanup Method1: EPA 3630
Cleanup Date1: 06/21/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 Batch: WG418400-1 | | | | | |
| 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 | 78 | | 30-150 |
| BZ 198 | 97 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 06/23/10 17:53
Analyst: NS

Extraction Method: EPA 3510C
Extraction Date: 06/17/10 16:28
Cleanup Method1: EPA 3630
Cleanup Date1: 06/21/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 Batch: WG418400-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/l | 0.00100 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 97 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

| 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): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 QC Batch ID: WG418400-4 WG418400-5 QC Sample: L1008903-11 Client ID: WQ-TPC-003-061410 | | | | | | | | | | | | |
| Cl2-BZ#8 | 0.21174 | 0.104 | 0.23398 | **21** | Q | 0.17014 | **0** | Q | 40-140 | NC | Q | 30 |
| Cl3-BZ#18 | 0.23110 | 0.104 | 0.29815 | 64 | | 0.24560 | **14** | Q | 40-140 | **128** | Q | 30 |
| Cl4-BZ#52 | 0.28295 | 0.104 | 0.29680 | **13** | Q | 0.24546 | **0** | Q | 40-140 | NC | Q | 30 |
| Cl4-BZ#44 | ND | 0.104 | 0.17874 | 54 | | 0.15140 | **27** | Q | 40-140 | **67** | Q | 30 |
| Cl4-BZ#66 | ND | 0.104 | 0.18233 | **175** | Q | 0.15096 | **143** | Q | 40-140 | 20 | | 30 |
| Cl5-BZ#118 | 0.03657 | 0.104 | 0.10556 | 66 | | 0.09533 | 56 | | 40-140 | 16 | | 30 |
| Cl5-BZ#105 | ND | 0.104 | 0.09091 | 74 | | 0.08001 | 62 | | 40-140 | 18 | | 30 |
| Cl6-BZ#138 | ND | 0.104 | 0.10447 | 61 | | 0.08884 | 46 | | 40-140 | 28 | | 30 |
| Cl7-BZ#187 | 0.01135 | 0.104 | 0.07980 | 66 | | 0.06866 | 54 | | 40-140 | 20 | | 30 |
| Cl6-BZ#128 | 0.00825 | 0.104 | 0.08345 | 72 | | 0.07069 | 59 | | 40-140 | 20 | | 30 |
| Cl7-BZ#180 | ND | 0.104 | 0.07836 | 68 | | 0.07199 | 61 | | 40-140 | 11 | | 30 |
| Cl7-BZ#170 | 0.00640 | 0.104 | 0.07784 | 68 | | 0.06717 | 58 | | 40-140 | 16 | | 30 |
| Cl8-BZ#195 | ND | 0.104 | 0.07497 | 72 | | 0.06562 | 62 | | 40-140 | 15 | | 30 |
| Cl9-BZ#206 | 0.00167 | 0.104 | 0.08279 | 78 | | 0.07323 | 68 | | 40-140 | 14 | | 30 |
| Cl10-BZ#209 | ND | 0.104 | 0.07395 | 71 | | 0.06645 | 63 | | 40-140 | 12 | | 30 |
| Cl3-BZ#28 | 0.16268 | 0.104 | 0.19986 | **36** | Q | 0.17038 | **7** | Q | 40-140 | **133** | Q | 30 |
| Cl5-BZ#101 | 0.05965 | 0.104 | 0.11858 | 56 | | 0.11148 | 49 | | 40-140 | 13 | | 30 |
| Cl6-BZ#153 | 0.04510 | 0.104 | 0.09924 | 52 | | 0.08397 | **37** | Q | 40-140 | **34** | Q | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

| 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): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 QC Batch ID: WG418400-4 WG418400-5 | | | | | | | | | | | | |
| QC Sample: L1008903-11 Client ID: WQ-TPC-003-061410 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 87 | | 77 | | 30-150 |
| BZ 198 | 76 | | 65 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 QC Batch ID: WG418400-6 WG418400-7
QC Sample: L1008903-13 Client ID: WQ-DPC-003-061410

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cl2-BZ#8 | 0.03155 | 0.106 | 0.10145 | 66 | | 0.08476 | 50 | | 40-140 | 28 | | 30 |
| Cl3-BZ#18 | 0.04565 | 0.106 | 0.12358 | 73 | | 0.09960 | 51 | | 40-140 | **35** | Q | 30 |
| Cl3-BZ#28 | ND | 0.106 | 0.07478 | 56 | | 0.08060 | 61 | | 40-140 | 9 | | 30 |
| Cl4-BZ#52 | 0.01655 | 0.106 | 0.07644 | 56 | | 0.07883 | 58 | | 40-140 | 4 | | 30 |
| Cl4-BZ#44 | ND | 0.106 | 0.07107 | 63 | | 0.07982 | 71 | | 40-140 | 12 | | 30 |
| Cl4-BZ#66 | ND | 0.106 | 0.07200 | 68 | | 0.07797 | 73 | | 40-140 | 7 | | 30 |
| Cl5-BZ#101 | ND | 0.106 | 0.07234 | 64 | | 0.07867 | 70 | | 40-140 | 9 | | 30 |
| Cl5-BZ#118 | 0.00148 | 0.106 | 0.07720 | 71 | | 0.08235 | 76 | | 40-140 | 7 | | 30 |
| Cl5-BZ#105 | ND | 0.106 | 0.07675 | 72 | | 0.08412 | 79 | | 40-140 | 9 | | 30 |
| Cl6-BZ#138 | 0.00205 | 0.106 | 0.07559 | 69 | | 0.07972 | 73 | | 40-140 | 6 | | 30 |
| Cl7-BZ#187 | ND | 0.106 | 0.07116 | 67 | | 0.07446 | 70 | | 40-140 | 4 | | 30 |
| Cl6-BZ#128 | ND | 0.106 | 0.07686 | 72 | | 0.08184 | 77 | | 40-140 | 7 | | 30 |
| Cl7-BZ#180 | ND | 0.106 | 0.07516 | 71 | | 0.07952 | 75 | | 40-140 | 5 | | 30 |
| Cl7-BZ#170 | ND | 0.106 | 0.07480 | 70 | | 0.07664 | 72 | | 40-140 | 3 | | 30 |
| Cl8-BZ#195 | ND | 0.106 | 0.07702 | 72 | | 0.08010 | 75 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | ND | 0.106 | 0.08433 | 79 | | 0.08753 | 82 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | ND | 0.106 | 0.07628 | 72 | | 0.07903 | 74 | | 40-140 | 3 | | 30 |
| Cl6-BZ#153 | 0.0020 | 0.106 | 0.06927 | 63 | | 0.07246 | 66 | | 40-140 | 5 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

| 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): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 QC Batch ID: WG418400-6 WG418400-7 | | | | | | | | | | | | |
| QC Sample: L1008903-13 Client ID: WQ-DPC-003-061410 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 75 | | 78 | | 30-150 |
| BZ 198 | 83 | | 81 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1008903
**Report Date:** 06/25/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | | 01-02,06-07,11-14,21-22,26-27,31-32,36-3 | | Batch: | WG418400-2 | | WG418400-3 |
| Cl2-BZ#8 | 53 | | 55 | | 40-140 | 4 | | 30 |
| Cl3-BZ#18 | 58 | | 56 | | 40-140 | 2 | | 30 |
| Cl3-BZ#28 | 61 | | 60 | | 40-140 | 3 | | 30 |
| Cl4-BZ#52 | 63 | | 60 | | 40-140 | 5 | | 30 |
| Cl4-BZ#44 | 65 | | 62 | | 40-140 | 5 | | 30 |
| Cl4-BZ#66 | 67 | | 65 | | 40-140 | 3 | | 30 |
| Cl5-BZ#101 | 67 | | 64 | | 40-140 | 4 | | 30 |
| Cl5-BZ#118 | 71 | | 70 | | 40-140 | 2 | | 30 |
| Cl6-BZ#153 | 132 | | 130 | | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 73 | | 72 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 72 | | 70 | | 40-140 | 3 | | 30 |
| Cl7-BZ#187 | 66 | | 66 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 72 | | 71 | | 40-140 | 1 | | 30 |
| Cl7-BZ#180 | 70 | | 71 | | 40-140 | 0 | | 30 |
| Cl7-BZ#170 | 70 | | 71 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | 72 | | 73 | | 40-140 | 2 | | 30 |
| Cl9-BZ#206 | 78 | | 80 | | 40-140 | 2 | | 30 |
| Cl10-BZ#209 | 72 | | 73 | | 40-140 | 2 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1008903

**Report Date:** 06/25/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-02,06-07,11-14,21-22,26-27,31-32,36-3 | | | | Batch: WG418400-2 WG418400-3 | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 70 | | 63 | | 30-150 |
| BZ 198 | 81 | | 85 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-03
Client ID: WQ-TSS-001-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:20
Date Received: 06/14/10
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 | 39.3 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-04
Client ID: WQ-TUR-001-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:20
Date Received: 06/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 7.7 | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-08
Client ID: WQ-TSS-002-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:50
Date Received: 06/14/10
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 | 8.80 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-09
Client ID: WQ-TUR-002-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:50
Date Received: 06/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 6.1 | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-15
Client ID: WQ-TSS-003-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 12:15
Date Received: 06/14/10
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 | 58.0 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-16
Client ID: WQ-TSS-003-061410 REP
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 12:15
Date Received: 06/14/10
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 | 64.7 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-17
Client ID: WQ-TUR-003-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 12:15
Date Received: 06/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 19 | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-18
Client ID: WQ-TUR-003-061410 REP
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 12:15
Date Received: 06/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 19 | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-23
Client ID: WQ-TSS-004-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 13:10
Date Received: 06/14/10
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 | 26.0 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-24
Client ID: WQ-TUR-004-061410
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 13:10
Date Received: 06/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 5.8 | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-28
Client ID: WQ-TSS-001-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:15
Date Received: 06/15/10
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 | 67.3 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-29
Client ID: WQ-TUR-001-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/14/10 09:15
Date Received: 06/15/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 20 | | NTU | 0.40 | -- | 1 | - | 06/16/10 10:00 | 8,180.1 | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-33
Client ID: WQ-TSS-002-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 10:00
Date Received: 06/15/10
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 | 27.0 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-34
Client ID: WQ-TUR-002-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 10:00
Date Received: 06/15/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 6.2 | | NTU | 0.40 | -- | 1 | - | 06/16/10 10:00 | 8,180.1 | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-38
Client ID: WQ-TSS-003-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 14:45
Date Received: 06/15/10
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 | 64.7 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-39
Client ID: WQ-TUR-003-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 14:45
Date Received: 06/15/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 30 | | NTU | 0.40 | -- | 1 | - | 06/16/10 10:00 | 8,180.1 | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-43
Client ID: WQ-TSS-004-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 13:15
Date Received: 06/15/10
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 | 46.0 | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## SAMPLE RESULTS

Lab ID: L1008903-44
Client ID: WQ-TUR-004-061510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 06/15/10 13:15
Date Received: 06/15/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab | | | | | | | | | | |
| Turbidity | 9.7 | | NTU | 0.40 | -- | 1 | - | 06/16/10 10:00 | 8,180.1 | NR |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1008903

**Project Number:** TO-0010-03 **Report Date:** 06/25/10

# 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): 03,08,15-16,23,28,33,38,43 Batch: WG418791-1 | | | | | | | | | | |
| Solids, Total Suspended | ND | | mg/l | 1.00 | NA | 1 | - | 06/18/10 18:00 | 4,160.2 | ES |
| General Chemistry - Mansfield Lab for sample(s): 04,09,17-18,24 Batch: WG418795-1 | | | | | | | | | | |
| Turbidity | ND | | NTU | 0.40 | -- | 1 | - | 06/14/10 18:00 | 8,180.1 | ES |
| General Chemistry - Mansfield Lab for sample(s): 29,34,39,44 Batch: WG419187-1 | | | | | | | | | | |
| Turbidity | ND | | NTU | 0.40 | -- | 1 | - | 06/16/10 10:00 | 8,180.1 | NR |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1008903

**Report Date:** 06/25/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 03,08,15-16,23,28,33,38,43 Batch: WG418791-2 | | | | | | | | |
| Solids, Total Suspended | 98 | | - | | 80-120 | - | | 20 |
| General Chemistry - Mansfield Lab Associated sample(s): 04,09,17-18,24 Batch: WG418795-2 | | | | | | | | |
| Turbidity | 102 | | - | | 90-110 | - | | 10 |
| General Chemistry - Mansfield Lab Associated sample(s): 29,34,39,44 Batch: WG419187-2 | | | | | | | | |
| Turbidity | 104 | | - | | 90-110 | - | | 10 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 03,08,15-16,23,28,33,38,43 QC Batch ID: WG418791-3 QC Sample: L1008903-03 Client ID: WQ-TSS-001-061410 | | | | | | |
| Solids, Total Suspended | 39.3 | 40.0 | mg/l | 2 | | 20 |
| General Chemistry - Mansfield Lab Associated sample(s): 04,09,17-18,24 QC Batch ID: WG418795-3 QC Sample: L1008903-04 Client ID: WQ-TUR-001-061410 | | | | | | |
| Turbidity | 7.7 | 7.7 | NTU | 0 | | 10 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| B | Absent |
| C | Absent |
| E | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1008903-01A | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-01B | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-02A | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-02B | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-02C | Glass 60mL unpreserved | C | N/A | 3 | Y | Absent | FILTER() |
| L1008903-02D | Glass 60mL unpreserved | C | N/A | 3 | Y | Absent | FILTER() |
| L1008903-03A | Plastic 1000ml unpreserved | C | N/A | 3 | Y | Absent | A2-TSS-160(7) |
| L1008903-04A | Plastic 1000ml unpreserved | C | N/A | 3 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-05A | Plastic 500ml unpreserved | C | N/A | 3 | Y | Absent | HOLD(14) |
| L1008903-06A | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-06B | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-07A | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-07B | Amber 1000ml unpreserved | C | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-07C | Glass 60mL unpreserved | C | N/A | 3 | Y | Absent | FILTER() |
| L1008903-07D | Glass 60mL unpreserved | C | N/A | 3 | Y | Absent | FILTER() |
| L1008903-08A | Plastic 1000ml unpreserved | C | N/A | 3 | Y | Absent | A2-TSS-160(7) |
| L1008903-09A | Plastic 1000ml unpreserved | C | N/A | 3 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-10A | Plastic 500ml unpreserved | C | N/A | 3 | Y | Absent | HOLD(14) |
| L1008903-11A | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-11B | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-11C | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-11D | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1008903-12A | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-12B | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-13A | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-13B | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-13C | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-13D | Amber 1000ml unpreserved | A | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-13E | Glass 60mL unpreserved | A | N/A | 4 | Y | Absent | FILTER() |
| L1008903-13F | Glass 60mL unpreserved | A | N/A | 4 | Y | Absent | FILTER() |
| L1008903-13G | Glass 60mL unpreserved | A | N/A | 4 | Y | Absent | FILTER() |
| L1008903-13H | Glass 60mL unpreserved | A | N/A | 4 | Y | Absent | FILTER() |
| L1008903-14A | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-14B | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-14C | Glass 60mL unpreserved | B | N/A | 4 | Y | Absent | FILTER() |
| L1008903-14D | Glass 60mL unpreserved | B | N/A | 4 | Y | Absent | FILTER() |
| L1008903-15A | Plastic 1000ml unpreserved | A | N/A | 4 | Y | Absent | A2-TSS-160(7) |
| L1008903-16A | Plastic 1000ml unpreserved | A | N/A | 4 | Y | Absent | A2-TSS-160(7) |
| L1008903-17A | Plastic 1000ml unpreserved | A | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-18A | Plastic 1000ml unpreserved | A | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-19A | Plastic 500ml unpreserved | A | N/A | 4 | Y | Absent | HOLD(14) |
| L1008903-20A | Plastic 500ml unpreserved | B | N/A | 4 | Y | Absent | HOLD(14) |
| L1008903-21A | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-21B | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-22A | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-22B | Amber 1000ml unpreserved | B | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-22C | Glass 60mL unpreserved | B | N/A | 4 | Y | Absent | FILTER() |
| L1008903-22D | Glass 60mL unpreserved | B | N/A | 4 | Y | Absent | FILTER() |
| L1008903-23A | Plastic 1000ml unpreserved | B | N/A | 4 | Y | Absent | A2-TSS-160(7) |
| L1008903-24A | Plastic 1000ml unpreserved | B | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-25A | Plastic 500ml unpreserved | B | N/A | 4 | Y | Absent | HOLD(14) |
| L1008903-26A | Amber 1000ml unpreserved | D | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-26B | Amber 1000ml unpreserved | D | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-27A | Amber 1000ml unpreserved | D | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-27B | Amber 1000ml unpreserved | D | 7 | 4 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-27C | Glass 60mL unpreserved | D | N/A | 4 | Y | Absent | FILTER() |
| L1008903-27D | Glass 60mL unpreserved | D | N/A | 4 | Y | Absent | FILTER() |
| L1008903-28A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TSS-160(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1008903
**Report Date:** 06/25/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1008903-29A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-30A | Plastic 500ml unpreserved | E | N/A | 5 | Y | Absent | HOLD(14) |
| L1008903-31A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-31B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-32A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-32B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-32C | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-32D | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-33A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TSS-160(7) |
| L1008903-34A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-35A | Plastic 500ml unpreserved | E | N/A | 5 | Y | Absent | HOLD(14) |
| L1008903-36A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-36B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-37A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-37B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-37C | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-37D | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-38A | Plastic 1000ml unpreserved | E | N/A | 5 | Y | Absent | A2-TSS-160(7) |
| L1008903-39A | Plastic 1000ml unpreserved | E | N/A | 5 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-40A | Plastic 500ml unpreserved | E | N/A | 5 | Y | Absent | HOLD(14) |
| L1008903-41A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-41B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-42A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-42B | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-42C | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-42D | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-43A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TSS-160(7) |
| L1008903-44A | Plastic 1000ml unpreserved | D | N/A | 4 | Y | Absent | A2-TURBIDITY-180.1(2) |
| L1008903-45A | Plastic 500ml unpreserved | D | N/A | 4 | Y | Absent | HOLD(14) |
| L1008903-46A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-47A | Amber 1000ml unpreserved | E | 7 | 5 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1008903-47B | Glass 60mL unpreserved | E | N/A | 5 | Y | Absent | FILTER() |
| L1008903-48A | Plastic 500ml unpreserved | D | N/A | 4 | Y | Absent | HOLD(14) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1008903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 06/25/10 |

## 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.

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.

***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.

**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.

**H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

**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.

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1008903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 06/25/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1008903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 06/25/10 |

## 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 June 1, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

## Certificate/Approval Program Summary

Last revised June 17, 2010 - Westboro 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-0574. ***NELAP Accredited Solid Waste/Soil.***

*Drinking Water* (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)
*Wastewater/Non-Potable Water* (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH.)
*Solid Waste/Soil* (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons. )

**Maine Department of Human Services** Certificate/Lab ID: 2009024.
*Drinking Water* (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B,4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)
*Wastewater/Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA086.
*Drinking Water*
Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)
(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)
353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.
Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)
(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.
Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D
*Non-Potable Water*
Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)
(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Tl, V,Zn,Ca,Mg,Na,K)
245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)
(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 200307. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)
*Non-Potable Water* (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA935. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)
*Non-Potable Water* (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

**New York Department of Health** Certificate/Lab ID: 11148. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)
*Non-Potable Water* (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, S\M3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)
*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources** Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
*Non-Potable Water* (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)
*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NY-DOH Certificate for Potable and Non-Potable Water.

**Texas Commisson on Environmental Quality** Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S2¯D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

**Department of Defense** Certificate/Lab ID: L2217.
*Drinking Water* (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

*Non-Potable Water* (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 314, 120.1, 9050A , 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035, MassDEP EPH, MassDEP VPH.)

**Analytes Not Accredited by NELAP**
Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.

Serial_No:06251014:36

# CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab:

ALPHA Job #: L1668903

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: 61 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

**Project Information**

Project Name: NEW BEDFORD HARBOR
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:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

* Project SPECIFIC EDD, LEVEL III DATA REPORT
* PLEASE INCLUDE WITH OTHER SAMPLES (LEVEL I) submitted on 6/15, SAME SDG.

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Total PCB Cong - NHAB | Dissolved PCB Cong - NHAB | TSS | Turbidity | Metals (ARCHIVE) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | WQ-TPC-001-061410 | 6/14/10 | 0920 | SW | DRW | X | | | | | | 2 |
| 2 | WQ-DPC-001-061410 | 6/14/10 | 0920 | SW | DRW | | X | | | | | 2 |
| 3 | WQ-TSS-001-061410 | 6/14/10 | 0920 | SW | DRW | | | X | | | | 1 |
| 4 | WQ-TUR-001-061410 | 6/14/10 | 0920 | SW | DRW | | | | X | | | 1 |
| 5 | WQ-MET-001-061410 | 6/14/10 | 0920 | SW | DRW | | | | | X | ARCHIVE | 1 |
| 6 | WQ-TPC-002-061410 | | 0950 | | | X | | | | | | 2 |
| 7 | WQ-DPC-002-061410 | | 0950 | | | | X | | | | | 2 |
| 8 | WQ-TSS-002-061410 | | 0950 | | | | | X | | | | 1 |
| 9 | WQ-TUR-002-061410 | | 0950 | | | | | | X | | | 1 |
| 10 | WQ-MET-002-061410 | | 0950 | | | | | | | X | ARCHIVE | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Container Type | A | A | P | P | P |
| Preservative | A | A | A | A | A |

**SAMPLE HANDLING**

*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 6/14/10 1450 | [signature] | 6/14/10 1450 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab:

ALPHA Job #: L1008903

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Serial No:06251014:36

## 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: DWARSH@WHGRP.COM
☐ These samples have been previously analyzed by Alpha

## Project Information

Project Name: NEW BEDFORD HARBOR
Project Location: NEW BEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVE WARSH
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

## 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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

* Project Specific EDD and LEVEL III DATA REPORT
* LEVEL I Samples: PLEASE INCLUDE W/OTHER LEVEL I SAMPLES SUBMITTED ON 6/15 INTO ONE SDG.

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Total PCB Cong. (NOHA 18) | Dissolved PCB Cong. (NOHA 18) | TSS | Total Solids | Metals (Arsenic) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | WQ-TPC-003-061410 | 6/14/10 | 1215 | SW | DRW | X | | | | | | 2 |
| 12 | WQ-TPC-003-061410 REP | | 1215 | | | X | | | | | | 2 |
| -11 13 | WQ-TPC-003-061410 MS | | 1215 | | | X | | | | | | 1 |
| -11 14 | WQ-TPC-003-061410 MSD | | 1215 | | | X | | | | | | 1 |
| -13 15 | WQ-DPC-003-061410 | | 1215 | | | | X | | | | | 2 |
| -14 16 | WQ-DPC-003-061410 REP | | 1215 | | | | X | | | | | 2 |
| -13 17 | WQ-DPC-003-061410 MS | | 1215 | | | | X | | | | | 1 |
| -13 18 | WQ-DPC-003-061410 MSD | | 1215 | | | | X | | | | | 1 |
| -15 19 | WQ-TSS-003-061410 | | 1215 | | | | | X | | | | 1 |
| -16 20 | WQ-TSS-003-061410REP | | | | | | | 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 | A | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] 6/14/10 | 1650 | [signature] | 6/14/10 1650 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 3 OF 3

Serial No:06251014:36

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1008903

**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

**Project Information**

Project Name: NEW BEDFORD HARBOR

Project Location: NEW BEDFORD, MA

Project #: 10-0010-03

Project Manager: DAVE WALSH

ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

* Project Specific EDD and Level III DATA Report
* PLEASE INCLUDE W/OTHER LEVEL I samples submitted on 6/15 into one SDG.

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Total PCB Cong (NWAT-10) | Dissolved PCB Cong (NWAT-10) | TSS | Turbidity | METALS (ARCHIVE) | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -17 | WQ-TUR-003-061410 | 6/14/10 | 1215 | SW | DRW | | | | X | | | | | | | | | | 1 |
| -18 | WQ-TUR-003-061410 REP | 6/14/10 | 1215 | SW | DRW | | | | X | | | | | | | | | | 1 |
| -19 | WQ-MET-003-061410 | | 1215 | | | | | | | X | | | | | | | | ARCHIVE | 1 |
| -20 | WQ-MET-003-061410 REP | | 1215 | | | | | | | X | | | | | | | | ARCHIVE | 1 |
| -21 | WQ-TPC-004-061410 | | 1310 | | | X | | | | | | | | | | | | | 2 |
| -22 | WQ-DPC-004-061410 | | 1310 | | | | X | | | | | | | | | | | | 2 |
| -23 | WQ-TSS-004-061410 | | 1310 | | | | | X | | | | | | | | | | | 1 |
| -24 | WQ-TUR-004-061410 | | 1310 | | | | | | X | | | | | | | | | | 1 |
| -25 | WQ-MET-004-061410 | | 1310 | | | | | | | X | | | | | | | | ARCHIVE | 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 | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| 6/14/10 | 1650 | | 6/14/10 1650 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab:

ALPHA Job #: L1008903

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:06251014:36

**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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

*Project Specific EDD, Level III Data Report
*Please include with other samples (Level I) submitted on 6/14, see SDG

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Total PCB Cong-NOAA 18 | Dissolved PCB Cong-NOAA 18 | TSS | Turbidity | Metals (Archive) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1008903-26 | WQ-TPC-001-061510 | 6/15/10 | 0915 | SW | DRW | X | | | | | | 2 |
| 27 | WQ-DPC-001-061510 | | 0915 | | | | X | | | | | 2 |
| 28 | WQ-TSS-001-061510 | | 0915 | | | | | X | | | | 1 |
| 29 | WQ-TUR-001-061510 | | 0915 | | | | | | X | | | 1 |
| 30 | WQ-MET-001-061510 | | 0915 | | | | | | | X | Archive | 1 |
| 31 | WQ-TPC-002-061510 | | 1000 | | | X | | | | | | 2 |
| 32 | WQ-DPC-002-061510 | | 1000 | | | | X | | | | | 2 |
| 33 | WQ-TSS-002-061510 | | 1000 | | | | | X | | | | 1 |
| 34 | WQ-TUR-002-061510 | | 1000 | | | | | | X | | | 1 |
| 35 | WQ-MET-002-061510 | | 1000 | | | | | | | X | Archive | 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 | A | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Dave Walsh | 6/15/10 1716 | [illegible] | 6/15/10 1716 |
| William [illegible] | 6/15/10 1817 | Colleen Sullivan | 6/15/10 18:17 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab:

ALPHA Job #: L1008903

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:0625101436

**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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

* Project Specific EDD, Level III Data Report
* Please include with other samples (Level I) submitted on 6/14, same SDG

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Total PCB Cong Aroclor | Dissolved PCB Cong Aroclor | TSS | Turbidity | Metals (Arsenic) | | | | | | | | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1008903-36 | WQ-TPC-003-061510 | | 1445 | | | X | | | | | | | | | | | | | 2 |
| -37 | WQ-DPC-003-061510 | | 1445 | | | | X | | | | | | | | | | | | 2 |
| -38 | WQ-TSS-003-061510 | | 1445 | | | | | X | | | | | | | | | | | 1 |
| -39 | WQ-TUR-003-061510 | | 1445 | | | | | | X | | | | | | | | | | 1 |
| -40 | WQ-MET-003-061510 | | 1445 | | | | | | | X | | | | | | | | | 1 |
| -41 | WQ-TPC-004-061510 | | 1315 | | | X | | | | | | | | | | | | | 2 |
| -42 | WQ-DPC-004-061510 | | 1315 | | | | X | | | | | | | | | | | | 2 |
| -43 | WQ-TSS-004-061510 | | 1315 | | | | | X | | | | | | | | | | | 1 |
| -44 | WQ-TUR-004-061510 | | 1315 | | | | | | X | | | | | | | | | | 1 |
| -45 | WQ-MET-004-061510 | | 1315 | | | | | | | X | | | | | | | | | 1 |
| | Container Type | | | | | A | A | P | P | P | | | | | | | | | |
| | Preservative | | | | | A | A | A | A | A | | | | | | | | | |

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 6/15/10 1716 | [signature] | 6/15/10 1715 |
| [signature] | 6/15/10 1817 | [signature] | 6/15/10 18:17 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab:

ALPHA Job #: L1008903

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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

* Project specific EDD, Level II Data report
* Please include with other samples (level I) submitted on 6/14

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | Dissolved PCB Congs-NOAA 10 | Total PCB Congs-NOAA 10 | Metals | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1008903-46 | EB-061510-01 | 6/15/10 | 1510 | SW | DRW | X | X | X | | | | | | | | | | 3 |

**SAMPLE HANDLING**

*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| | | | |
|---|---|---|---|
| Container Type | A | A | P |
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 6/15/10 1716 | [signature] | 6/15/10 1716 |
| [signature] | 6/15/10 1817 | [signature] | 6/15/10 18:17 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

Serial_No:06251014:36

# APPENDIX D. ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL DATA (ON CD)

# APPENDIX D ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL DATA

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# Biomonitoring of Surface Water Samples
# New Bedford Harbor
# New Bedford, Massachusetts

## June 14 and 15, 2010 Level I Sampling Event

**NED ACOE Job Number: TO-0010-03**

**Task Order No.: ESI0002**

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 2010
Reference Number: Woods Hole Group, Inc. 19798-10-06

# Biomonitoring of Surface Water Samples
# New Bedford Harbor, New Bedford, Massachusetts

## June 14 and 15, 2010 Level I Sampling Event
## NED ACOE Job Number: TO-0010-03

## 1.0 INTRODUCTION

This report provides a summary of data generated from chronic exposure screening assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on eight grab surface water samples collected over a period of two days 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; 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.

### 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 for up to 6 days. Holding tanks were maintained in a flow-through culture mode at a temperature of 25±2°C. At the start of the assays the mysids were 7 days old. Juveniles were fed ≤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

Eight grab surface water samples were collected by Woods Hole Group, Inc. staff over a period of two days (June 14 & 15, 2010) in New Bedford Harbor. Samples were placed in polyethylene cubitainers for shipment to the laboratory. One 20 L cubitainer was collected for each sample. 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±2‰ while samples used for the *A. punctulata* assays were adjusted to 30±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* Chronic Exposure Bioassays

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 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.

#### 2.4.2 *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 $\propto < 0.05$. 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.

### 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 14 and 15, 2010 (respectively) sampling events. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

3.1 *Americamysis bahia* Chronic Exposure Bioassay

Minimum test acceptability criteria for the chronic exposure bioassay require ≥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 Tables 4 and 5 for test acceptability and data summary.

3.2 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punculata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Tables 4 and 5 for test acceptability and data summary.

## 4.0 REFERENCES


APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20th 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 Level I Surface Water Quality Monitoring June 14 and 15, 2010 Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Field ID | ESI Code | Type of Sample | Matrix | Collection | | Receipt | |
|---|---|---|---|---|---|---|---|
| | | | | Date | Time | Date | Time |
| WQ-TOX-001-061410 | 19798-001 | Grab | Water | 06/14/10 | 0920 | 06/14/10 | 1845 |
| WQ-TOX-002-061410 | 19798-002 | Grab | Water | 06/14/10 | 0950 | 06/14/10 | 1845 |
| WQ-TOX-003-061410 | 19798-003 | Grab | Water | 06/14/10 | 1215 | 06/14/10 | 1845 |
| WQ-TOX-004-061410 | 19798-004 | Grab | Water | 06/14/10 | 1310 | 06/14/10 | 1845 |
| WQ-TOX-001-061510 | 19798-009 | Grab | Water | 06/15/10 | 0915 | 06/15/10 | 1853 |
| WQ-TOX-002-061510 | 19798-010 | Grab | Water | 06/15/10 | 1000 | 06/15/10 | 1853 |
| WQ-TOX-003-061510 | 19798-011 | Grab | Water | 06/15/10 | 1445 | 06/15/10 | 1853 |
| WQ-TOX-004-061510 | 19798-012 | Grab | Water | 06/15/10 | 1315 | 06/15/10 | 1853 |

**Table 2 Summary of "As Received" Sample Physical and Chemical Characteristics. New Bedford Harbor Level I Surface Water Quality Monitoring June 14 and 15, 2010 Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Field ID | ESI Code | Ammonia* (mg/L) | pH (SU) | Salinity (‰) | Total Residual Chlorine (mg/L) |
|---|---|---|---|---|---|
| WQ-TOX-001-061410 | 19798-001 | <0.1 | 7.34 | 21 | <0.02 |
| WQ-TOX-002-061410 | 19798-002 | <0.1 | 7.64 | 28 | <0.02 |
| WQ-TOX-003-061410 | 19798-003 | <0.1 | 7.46 | 25 | <0.02 |
| WQ-TOX-004-061410 | 19798-004 | <0.1 | 7.26 | 23 | <0.02 |
| WQ-TOX-001-061510 | 19798-009 | <0.1 | 7.35 | 26 | <0.02 |
| WQ-TOX-002-061510 | 19798-010 | <0.1 | 7.61 | 28 | <0.02 |
| WQ-TOX-003-061510 | 19798-011 | <0.1 | 7.68 | 25 | <0.02 |
| WQ-TOX-004-061510 | 19798-012 | <0.1 | 7.27 | 26 | <0.02 |

**COMMENTS:**
* Ammonia samples were subsampled at ESI on June 15 and 16, 2010.

**Table 3 Reference Toxicant Summary. New Bedford Harbor Level I Surface Water Quality Monitoring June 14 and 15, 2010 Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Date | Endpoint | | Value | Historic Mean/ Central Tendency | Acceptable Range | Reference Toxicant |
|---|---|---|---|---|---|---|
| *A. bahia* | | | | | | |
| 06/23/10 | Survival | C-NOEC | 15.0 | 15.0 | 10.0 - 25.0 | SDS (mg/L) |
| 06/23/10 | Growth | C-NOEC | 15.0 | 10.0 | 5.0 - 15.0 | SDS (mg/L) |
| *A. punctulata* | | | | | | |
| 06/10/10 | Fertilization | C-NOEC | 1.0 | 10.0 | 5.0 - 20.0 | Copper (µg/L) |
| 06/10/10 | Fertilization | IC-25 | 8.9 | 17.6 | 0.0 - 50.4 | Copper (µg/L) |

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

**Table 4. Endpoint Summary Table - New Bedford Harbor Level I Surface Water Quality Monitoring June 14, 2010 Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Sample ID | Reps | Mean | Min | Max | CV | Significant Difference vs p Value | Lab |
|---|---|---|---|---|---|---|---|
| *Americamysis bahia* | | | Survival | | | | |
| Lab Control | | 82.5% | 60.0% | 100.0% | 15.5% | - | - |
| WQ-TOX-001 | 8 | 85.0% | 60.0% | 100.0% | 16.6% | 0.6454 | NO |
| WQ-TOX-002 | | 90.0% | 60.0% | 100.0% | 16.8% | 0.8551 | NO |
| WQ-TOX-003 | | 90.0% | 60.0% | 100.0% | 16.8% | 0.8551 | NO |
| WQ-TOX-004 | | 90.0% | 80.0% | 100.0% | 11.9% | 0.8861 | NO |
| *Americamysis bahia* | | | Growth - Biomass | | | | |
| Lab Control | | 0.340 | 0.230 | 0.416 | 17.7% | - | - |
| WQ-TOX-001 | 8 | 0.478 | 0.230 | 0.646 | 27.9% | 0.9909 | NO |
| WQ-TOX-002 | | 0.445 | 0.278 | 0.618 | 23.4% | 0.9868 | NO |
| WQ-TOX-003 | | 0.485 | 0.334 | 0.648 | 23.5% | 0.9967 | NO |
| WQ-TOX-004 | | 0.456 | 0.404 | 0.512 | 9.0% | 0.9998 | NO |
| *Americamysis bahia* | | | Growth - Dry Weight | | | | |
| Lab Control | 8 | 0.411 | 0.365 | 0.458 | 7.2% | - | - |
| *Arbacia punctulata* | | | Portion Fertilized | | | | |
| Lab Control | | 98.3% | 98.0% | 99.0% | 0.49% | - | - |
| WQ-TOX-001 | 4 | 97.6% | 95.2% | 100.0% | 2.34% | 0.3937 | NO |
| WQ-TOX-002 | | 97.4% | 95.2% | 99.0% | 1.68% | 0.1940 | NO |
| WQ-TOX-003 | | 97.7% | 96.2% | 99.0% | 1.35% | 0.2547 | NO |
| WQ-TOX-004 | | 97.3% | 95.2% | 98.0% | 1.44% | 0.1118 | NO |

**Table 5. Endpoint Summary Table - New Bedford Harbor Level I Surface Water Quality Monitoring June 15, 2010 Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Sample ID | Reps | Mean | Min | Max | CV | Significant Difference vs p Value | Lab |
|---|---|---|---|---|---|---|---|
| *Americamysis bahia* | | | Survival | | | | |
| Lab Control | | 75.0%* | 40.0% | 100.0% | 27.6% | - | - |
| WQ-TOX-001 | 8 | 90.0% | 80.0% | 100.0% | 11.9% | 0.9535 | NO |
| WQ-TOX-002 | | 87.5% | 60.0% | 100.0% | 17.0% | 0.9048 | NO |
| WQ-TOX-003 | | 85.0% | 20.0% | 100.0% | 32.7% | 0.7983 | NO |
| WQ-TOX-004 | | 82.5% | 60.0% | 100.0% | 20.2% | 0.7755 | NO |
| *Americamysis bahia* | | | Growth - Biomass | | | | |
| Lab Control | | 0.233 | 0.152 | 0.360 | 27.3% | - | - |
| WQ-TOX-001 | 8 | 0.341 | 0.282 | 0.410 | 13.6% | 0.9992 | NO |
| WQ-TOX-002 | | 0.320 | 0.258 | 0.394 | 15.0% | 0.9961 | NO |
| WQ-TOX-003 | | 0.335 | 0.092 | 0.438 | 32.1% | 0.9821 | NO |
| WQ-TOX-004 | | 0.332 | 0.246 | 0.452 | 22.6% | 0.9937 | NO |
| *Americamysis bahia* | | | Growth - Dry Weight | | | | |
| Lab Control | 8 | 0.320 | 0.253 | 0.505 | 25.4% | - | - |
| *Arbacia punctulata* | | | Portion Fertilized | | | | |
| Lab Control | | 93.8% | 92.6% | 96.2% | 1.75% | - | - |
| WQ-TOX-001 | 4 | 94.7% | 92.0% | 97.1% | 2.48% | 0.7385 | NO |
| WQ-TOX-002 | | 45.1% | 27.7% | 68.6% | 39.86% | 0.0004 | YES |
| WQ-TOX-003 | | 95.2% | 91.7% | 99.0% | 4.16% | 0.7907 | NO |
| WQ-TOX-004 | | 87.8% | 83.3% | 93.5% | 4.84% | 0.0199 | YES |

**COMMENTS:**

* The laboratory control failed to meet acceptability criteria for *A. bahia* survival in the second assay for samples collected on June 15, 2010, however all site samples met acceptability criteria. These data are considered provisionally valid. The laboratory control for the first assay for samples collected on June 14, 2010 met acceptability criteria and achieved 82.5% survival. If compared to the test samples from the June 15, 2010 samples the findings of non-significance would have been comparable as the site samples all achieved the same or higher survival rates.

# APPENDIX A

# SUPPORT DATA


| Contents | # Pages |
|---|---|
| Methods Summary | 1 |
| | |
| Study 19798: Sample Date June 14 & 15, 2010 | |
| *A. bahia* Bench Sheets & Statistical Analysis Report | 28 |
| *A. punctulata* Bench Sheets and Statistical Analysis Report | 14 |
| Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Records | 8 |
| Analytical Chemistry Report | 3 |
| Sample Receipt Records | 2 |
| Chain of Custody and Organism Shipping Information | 2 |
| | |
| Total Appendix Pages | 58 |

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

| Parameter | Method |
|---|---|
| **Acute Exposure Bioassays:** | |
| *Ceriodaphnia dubia, Daphnia pulex* | EPA-821-R-02-012 |
| *Pimephales promelas* | EPA-821-R-02-012 |
| *Americamysis bahia* | EPA-821-R-02-012 |
| *Menidia beryllina, Cyprinodon variegatus* | EPA-821-R-02-012 |
| **Chronic Exposure Bioassays:** | |
| *Ceriodaphnia dubia* | EPA-821-R-02-013 1002.0 |
| *Pimephales promelas* | EPA-821-R-02-013 1000.0 |
| *Cyprinodon variegatus* | EPA-821-R-02-014 1004.0 |
| *Menidia beryllina* | EPA-821-R-02-014 1006.0 |
| *Arbacia punctulata* | EPA-821-R-02-014 1008.0 |
| *Champia parvula* | EPA-821-R-02-014 1009.0 |
| **Trace Metals:** | |
| Trace Metals | EPA 200.7/SW 6010 and EPA 200.8/SW 6020 |
| Hardness | Standard Methods 20th Edition - Method 2340 B |
| **Wet Chemistries:** | |
| Alkalinity | EPA 310.2 |
| Chlorine, Residual | Standard Methods 20th Edition - Method 4500CLD |
| Total Organic Carbon | Standard Methods 20th Edition - Method 5310C |
| Specific Conductance | Standard Methods 20th Edition - Method 2510B |
| Nitrogen - Ammonia | Standard Methods 20th Edition - Method 4500NH3G |
| pH | Standard Methods 20th Edition - Method 4500H+B |
| Solids, Total (TS) | Standard Methods 20th Edition - Method 2540 B |
| Solids, Total Suspended (TSS) | Standard Methods 20th Edition - Method 2540 D |
| Solids, Total Dissolved (TDS) | Standard Methods 20th Edition - Method 2540 C |
| Dissolved Oxygen | Standard Methods 20th Edition - Method 4500-O G |

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SURVIVAL & OLD WATER QUALITIES

| STUDY: 19798 | 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 | 4 | 4 | 4 | 4 | 3 | 7.4 | 5.3 | 6.2 | 6.3 | 6.5 | 5.6 | 6.0 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.9 | 5.5 | 6.3 | 6.3 | 6.5 | 6.2 | 6.0 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 8.0 | 8. | 6.2 | 6.2 | 6.5 | 6.0 | 6.0 |
| | D | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 8.0 | 4.9 | 6.2 | 6.1 | 6.4 | 6.1 | 6.1 |
| | E | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 7.8 | 5.3 | 6.2 | 6.1 | 6.5 | 6.5 | 6.2 |
| | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 7.8 | 5.5 | 6.2 | 6.2 | 6.5 | 6.4 | 6.1 |
| | G | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 7.3 | 5.0 | 6.2 | 6.2 | 6.5 | 6.3 | 6.2 |
| | H | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 7.9 | 5.2 | 6.1 | 6.1 | 6.5 | 6.2 | 6.3 |
| -001 | A | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 7.1 | 4.6 | 6.0 | 6.2 | 6.0 | 5.8 | 5.9 |
| | B | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 7.2 | 4.5 | 5.7 | 5.9 | 6.0 | 5.7 | 5.2 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.9 | 4.5 | 5.6 | 5.2 | 5.4 | 5.8 | 5.3 |
| | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.5 | 4.5 | 5.4 | 5.2 | 5.6 | 5.2 | 5.4 |
| | E | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 6.6 | 4.4 | 5.2 | 5.3 | 5.8 | 5.5 | 5.8 |
| | F | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 6.7 | 4.8 | 5.3 | 5.3 | 5.8 | 5.7 | 5.6 |
| | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6.5 | 4.6 | 5.1 | 5.3 | 5.7 | 5.7 | 5.4 |
| | H | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 6.6 | 4.9 | 5.1 | 5.2 | 5.6 | 5.7 | 5.4 |
| -002 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6.5 | 5.1 | 5.6 | 5.3 | 6.4 | 6.4 | 6.3 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6.1 | 5.1 | 5.9 | 5.7 | 6.4 | 6.6 | 6.3 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.2 | 5.9 | 6.0 | 5.9 | 6.5 | 6.6 | 6.3 |
| | D | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 6.7 | 5.6 | 6.1 | 6.1 | 6.5 | 6.6 | 6.4 |
| | E | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 7.5 | 5.3 | 6.2 | 6.2 | 6.3 | 6.6 | 6.5 |
| | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.3 | 5.6 | 6.2 | 6.1 | 6.4 | 6.6 | 6.5 |
| | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.5 | 5.7 | 6.2 | 6.1 | 6.5 | 6.6 | 6.5 |
| | H | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 7.5 | 5.8 | 6.1 | 6.0 | 6.6 | 6.7 | 6.5 |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/15/10 | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21/10 | 6/22 | | | | | | | |
| TIME: | | 1500 | 1120 | 1145 | 1535 | 1225 | 1350 | 0955 | 1215 | | | | | | | |
| INITIALS: | | DM | KC | JQ | SJ | LB | JQ | KC | LB | | | | | | | |

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SURVIVAL & OLD WATER QUALITIES

| STUDY: 19798 | 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 | 5 | 7.4 | 4.3 | 6.0 | 6.0 | 6.0 | 6.0 | 6.5 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.6 | 5.2 | 5.8 | 5.9 | 6.0 | 6.1 | 6.4 |
| | C | 5 | 5 | 5 | 4 | 4 | 4 | 3* | 3 | 7.6 | 5.1 | 5.7 | 5.7 | 6.2 | 6.2 | 6.4 |
| | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.7 | 5.3 | 5.7 | 5.5 | 6.3 | 6.1 | 6.4 |
| | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.3 | 4.9 | 5.8 | 5.5 | 6.1 | 5.9 | 6.4 |
| | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.4 | 5.8 | 5.8 | 5.3 | 5.7 | 5.8 | 6.2 |
| | G | 5 | 5 | 5 | 5 | 5 | 4* | 4 | 4 | 7.1 | 5.9 | 5.7 | 5.3 | 6.3 | 5.9 | 6.2 |
| | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 7.4 | 5.8 | 5.8 | 5.5 | 6.3 | 6.1 | 6.3 |
| -004 | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.6 | 4.8 | 5.7 | 5.7 | 6.1 | 5.6 | 6.3 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.5 | 5.5 | 5.8 | 5.7 | 6.1 | 6.0 | 6.3 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.6 | 5.7 | 6.0 | 5.7 | 6.3 | 6.2 | 6.1 |
| | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 7.8 | 5.5 | 6.0 | 5.6 | 6.3 | 6.2 | 6.3 |
| | E | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 7.4 | 5.6 | 6.0 | 5.6 | 6.1 | 6.1 | 6.7 |
| | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7.6 | 5.8 | 6.1 | 5.6 | 6.1 | 5.7 | 6.4 |
| | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 7.6 | 5.3 | 6.1 | 5.6 | 6.2 | 6.1 | 6.3 |
| | H | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 7.7 | 5.7 | 6.1 | 5.6 | 6.3 | 6.3 | 6.3 |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/15/10 | 6/16/10 | 6/17/10 | 6/18 | 6/19 | 6/20 | 6/21/10 | 6/22 | | | | | | | |
| TIME: | | 1500 | 1120 | 1445 | 1335 | 1225 | 1350 | 0955 | 1215 | | | | | | | |
| INITIALS: | | DM | KC | JQ | JT | UD | JQ | KC | UD | | | | | | | |

*Misc. notes #8
*Misc notes #9 KC 6/21

# CETIS Summary Report

Report Date: 15 Jul-10 12:19 (p 1 of 2)
Test Code: 01-2148-7031/19798-Ab

**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Sample Code | Sample ID | Sample Date | Receive Date | Sample Age | Client Name | Project |
|---|---|---|---|---|---|---|
| 19798-000 | 17-0812-3739 | 14 Jun-10 11:00 | 15 Jun-10 11:00 | 28h | Woods Hole Group | Ecological Risk Assessme |
| 19798-001 | 02-8950-1966 | 14 Jun-10 09:20 | 14 Jun-10 18:45 | 30h | | |
| 19798-002 | 15-5773-3828 | 14 Jun-10 09:50 | 14 Jun-10 18:45 | 29h | | |
| 19798-003 | 11-7486-5003 | 14 Jun-10 12:12 | 14 Jun-10 18:45 | 27h | | |
| 19798-004 | 13-7764-6453 | 14 Jun-10 13:10 | 14 Jun-10 18:45 | 26h | | |

| Sample Code | Material Type | Sample Source | Station Location | Latitude | Longitude |
|---|---|---|---|---|---|
| 19798-000 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-Lab Control | | |
| 19798-001 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-001 | | |
| 19798-002 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-002 | | |
| 19798-003 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-003 | | |
| 19798-004 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-004 | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 07-1633-7891 | 7d Proportion Survived | Control Resp | 0.825 | 0.8 - NL | Yes | Result Within Limits |
| 10-1483-8429 | 7d Proportion Survived | Control Resp | 0.825 | 0.8 - NL | Yes | Result Within Limits |
| 18-1208-8396 | 7d Proportion Survived | Control Resp | 0.825 | 0.8 - NL | Yes | Result Within Limits |
| 21-1429-3148 | 7d Proportion Survived | Control Resp | 0.825 | 0.8 - NL | Yes | Result Within Limits |
| 06-0909-1160 | Mean Dry Biomass-mg | Control Resp | 0.34 | 0.2 - NL | Yes | Result Within Limits |
| 08-6442-2960 | Mean Dry Biomass-mg | Control Resp | 0.34 | 0.2 - NL | Yes | Result Within Limits |
| 09-1295-3086 | Mean Dry Biomass-mg | Control Resp | 0.34 | 0.2 - NL | Yes | Result Within Limits |
| 19-9996-5116 | Mean Dry Biomass-mg | Control Resp | 0.34 | 0.2 - NL | Yes | Result Within Limits |
| 06-0909-1160 | Mean Dry Biomass-mg | PMSD | 0.268 | 0.11 - 0.37 | Yes | Result Within Limits |
| 08-6442-2960 | Mean Dry Biomass-mg | PMSD | 0.236 | 0.11 - 0.37 | Yes | Result Within Limits |
| 09-1295-3086 | Mean Dry Biomass-mg | PMSD | 0.221 | 0.11 - 0.37 | Yes | Result Within Limits |
| 19-9996-5116 | Mean Dry Biomass-mg | PMSD | 0.134 | 0.11 - 0.37 | Yes | Result Within Limits |

**7d Proportion Survived Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.825 | 0.777 | 0.873 | 0.6 | 1 | 0.0234 | 0.128 | 15.5% | 0.0% |
| 19798-001 | 8 | 0.85 | 0.797 | 0.903 | 0.6 | 1 | 0.0258 | 0.141 | 16.6% | -3.03% |
| 19798-002 | 8 | 0.9 | 0.844 | 0.956 | 0.6 | 1 | 0.0276 | 0.151 | 16.8% | -9.09% |
| 19798-003 | 8 | 0.9 | 0.844 | 0.956 | 0.6 | 1 | 0.0276 | 0.151 | 16.8% | -9.09% |
| 19798-004 | 8 | 0.9 | 0.86 | 0.94 | 0.8 | 1 | 0.0195 | 0.107 | 11.9% | -9.09% |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.34 | 0.317 | 0.362 | 0.23 | 0.416 | 0.011 | 0.0603 | 17.7% | 0.0% |
| 19798-001 | 8 | 0.478 | 0.428 | 0.528 | 0.23 | 0.646 | 0.0244 | 0.133 | 27.9% | -40.7% |
| 19798-002 | 8 | 0.445 | 0.407 | 0.484 | 0.278 | 0.618 | 0.019 | 0.104 | 23.4% | -31.1% |
| 19798-003 | 8 | 0.485 | 0.442 | 0.527 | 0.334 | 0.648 | 0.0208 | 0.114 | 23.5% | -42.7% |
| 19798-004 | 8 | 0.456 | 0.441 | 0.471 | 0.404 | 0.512 | 0.00753 | 0.0412 | 9.04% | -34.2% |

**Mean Dry Weight-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.411 | 0.4 | 0.422 | 0.365 | 0.458 | 0.00539 | 0.0295 | 7.19% | 0.0% |
| 19798-001 | 8 | 0.557 | 0.511 | 0.604 | 0.383 | 0.807 | 0.0225 | 0.123 | 22.1% | -35.6% |
| 19798-002 | 8 | 0.497 | 0.462 | 0.533 | 0.37 | 0.642 | 0.0174 | 0.0954 | 19.2% | -21.0% |
| 19798-003 | 8 | 0.553 | 0.494 | 0.611 | 0.334 | 0.783 | 0.0288 | 0.158 | 28.5% | -34.4% |
| 19798-004 | 8 | 0.51 | 0.493 | 0.526 | 0.44 | 0.585 | 0.00794 | 0.0435 | 8.53% | -24.0% |

Americamysis 7-d Survival, Growth and Fecundity Test — EnviroSystems, Inc.

**7d Proportion Survived Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 | 0.6 | 1 | 1 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| 19798-001 | 0.8 | 0.8 | 1 | 1 | 0.8 | 0.8 | 1 | 0.6 |
| 19798-002 | 1 | 1 | 1 | 0.8 | 0.8 | 1 | 1 | 0.6 |
| 19798-003 | 1 | 1 | 0.6 | 1 | 1 | 1 | 0.8 | 0.8 |
| 19798-004 | 1 | 1 | 1 | 0.8 | 0.8 | 1 | 0.8 | 0.8 |

**Mean Dry Biomass-mg Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 | 0.23 | 0.404 | 0.416 | 0.328 | 0.366 | 0.354 | 0.292 | 0.328 |
| 19798-001 | 0.41 | 0.48 | 0.564 | 0.498 | 0.646 | 0.394 | 0.602 | 0.23 |
| 19798-002 | 0.426 | 0.428 | 0.522 | 0.514 | 0.408 | 0.37 | 0.618 | 0.278 |
| 19798-003 | 0.334 | 0.574 | 0.47 | 0.496 | 0.648 | 0.44 | 0.336 | 0.58 |
| 19798-004 | 0.508 | 0.512 | 0.472 | 0.408 | 0.468 | 0.44 | 0.404 | 0.436 |

**Mean Dry Weight-mg Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 | 0.383 | 0.404 | 0.416 | 0.41 | 0.458 | 0.443 | 0.365 | 0.41 |
| 19798-001 | 0.513 | 0.6 | 0.564 | 0.498 | 0.807 | 0.493 | 0.602 | 0.383 |
| 19798-002 | 0.426 | 0.428 | 0.522 | 0.642 | 0.51 | 0.37 | 0.618 | 0.463 |
| 19798-003 | 0.334 | 0.574 | 0.783 | 0.496 | 0.648 | 0.44 | 0.42 | 0.725 |
| 19798-004 | 0.508 | 0.512 | 0.472 | 0.51 | 0.585 | 0.44 | 0.505 | 0.545 |

**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 18-1208-8396 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:16 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 14.0% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-001 | -0.381 | 1.76 | 0.138 | 0.6454 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.003544244 | 0.003544244 | 1 | 0.145 | 0.7093 | Non-Significant Effect |
| Error | 0.3427222 | 0.02448016 | 14 | | | |
| Total | 0.3462664 | 0.0280244 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.22 | 8.89 | 0.7971 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.857 | | 0.0175 | Normal Distribution |

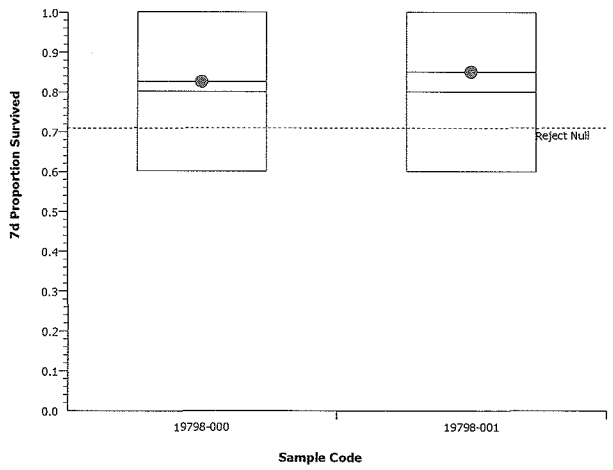
**7d Proportion Survived Summary**

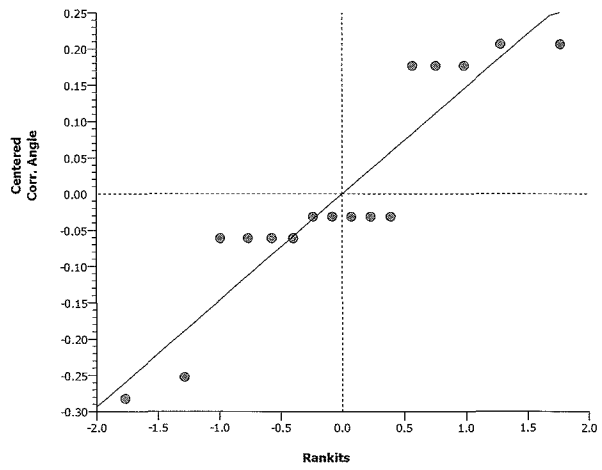
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.825 | 0.776 | 0.874 | 0.6 | 1 | 0.0238 | 0.128 | 15.5% | 0.0% |
| 19798-001 | 8 | 0.85 | 0.796 | 0.904 | 0.6 | 1 | 0.0263 | 0.141 | 16.6% | -3.03% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 1.14 | 1.08 | 1.2 | 0.886 | 1.35 | 0.0276 | 0.148 | 13.0% | 0.0% |
| 19798-001 | 8 | 1.17 | 1.11 | 1.23 | 0.886 | 1.35 | 0.0305 | 0.164 | 14.0% | -2.61% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 21-1429-3148 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:16 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 14.6% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-002 | -1.1 | 1.76 | 0.143 | 0.8551 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.03189819 | 0.03189819 | 1 | 1.21 | 0.2899 | Non-Significant Effect |
| Error | 0.3690445 | 0.02636032 | 14 | | | |
| Total | 0.4009427 | 0.05825852 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.39 | 8.89 | 0.6721 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.912 | | 0.1237 | Normal Distribution |

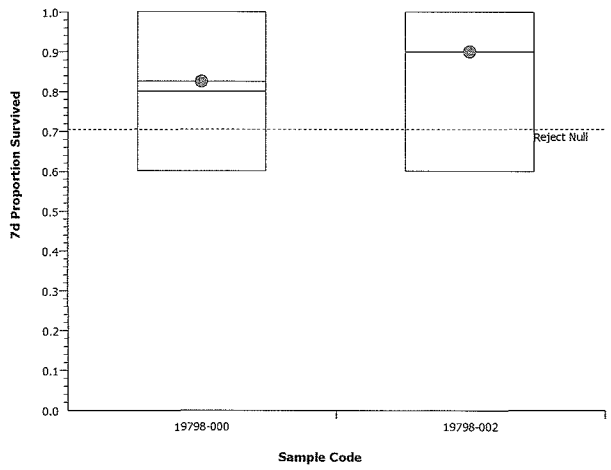
**7d Proportion Survived Summary**

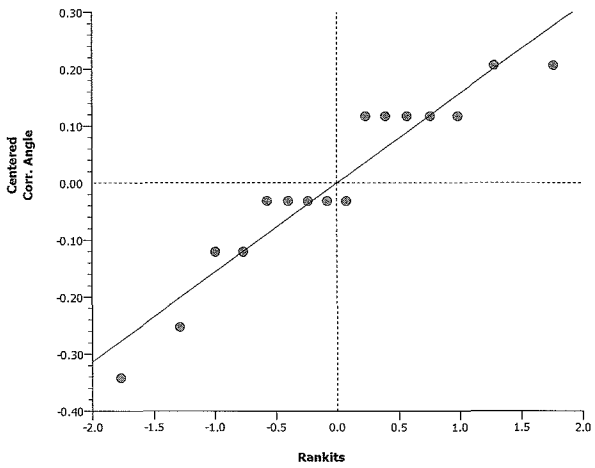
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.825 | 0.776 | 0.874 | 0.6 | 1 | 0.0238 | 0.128 | 15.5% | 0.0% |
| 19798-002 | 8 | 0.9 | 0.842 | 0.958 | 0.6 | 1 | 0.0281 | 0.151 | 16.8% | -9.09% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 1.14 | 1.08 | 1.2 | 0.886 | 1.35 | 0.0276 | 0.148 | 13.0% | 0.0% |
| 19798-002 | 8 | 1.23 | 1.16 | 1.29 | 0.886 | 1.35 | 0.0325 | 0.175 | 14.3% | -7.84% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 07-1633-7891 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:16 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 14.6% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-003 | -1.1 | 1.76 | 0.143 | 0.8551 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.03189819 | 0.03189819 | 1 | 1.21 | 0.2899 | Non-Significant Effect |
| Error | 0.3690445 | 0.02636032 | 14 | | | |
| Total | 0.4009427 | 0.05825852 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.39 | 8.89 | 0.6721 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.912 | | 0.1237 | Normal Distribution |

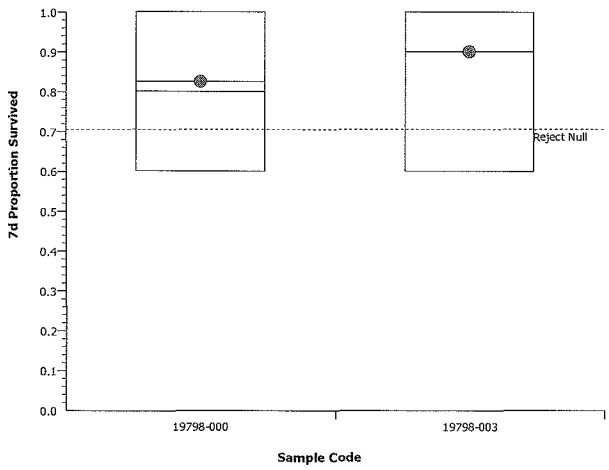
**7d Proportion Survived Summary**

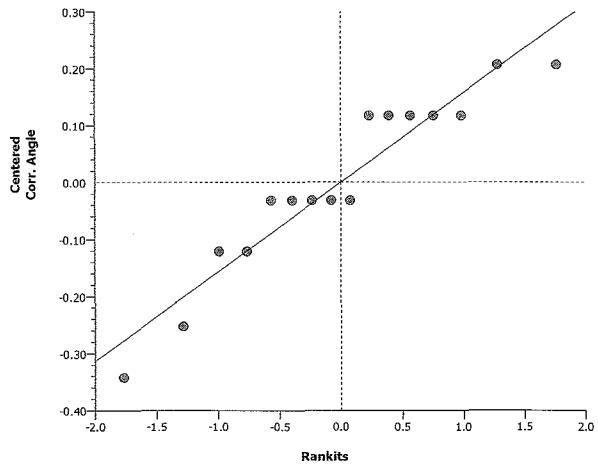
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.825 | 0.776 | 0.874 | 0.6 | 1 | 0.0238 | 0.128 | 15.5% | 0.0% |
| 19798-003 | 8 | 0.9 | 0.842 | 0.958 | 0.6 | 1 | 0.0281 | 0.151 | 16.8% | -9.09% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 1.14 | 1.08 | 1.2 | 0.886 | 1.35 | 0.0276 | 0.148 | 13.0% | 0.0% |
| 19798-003 | 8 | 1.23 | 1.16 | 1.29 | 0.886 | 1.35 | 0.0325 | 0.175 | 14.3% | -7.84% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 10-1483-8429 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:16 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 12.3% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-004 | -1.26 | 1.76 | 0.122 | 0.8861 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.03039269 | 0.03039269 | 1 | 1.59 | 0.2279 | Non-Significant Effect |
| Error | 0.2675636 | 0.01911168 | 14 | | | |
| Total | 0.2979563 | 0.04950438 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.36 | 8.89 | 0.6958 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.916 | | 0.1457 | Normal Distribution |

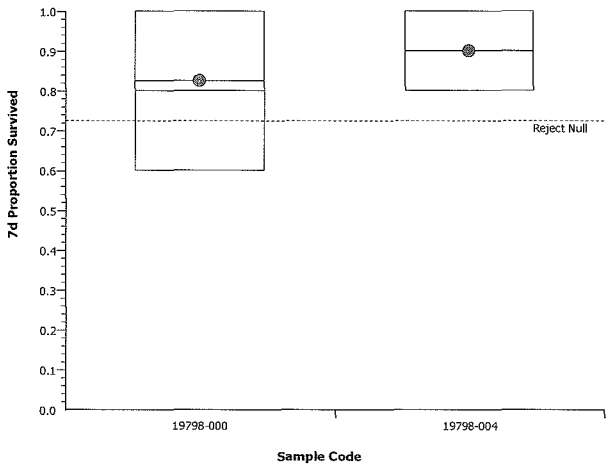
**7d Proportion Survived Summary**

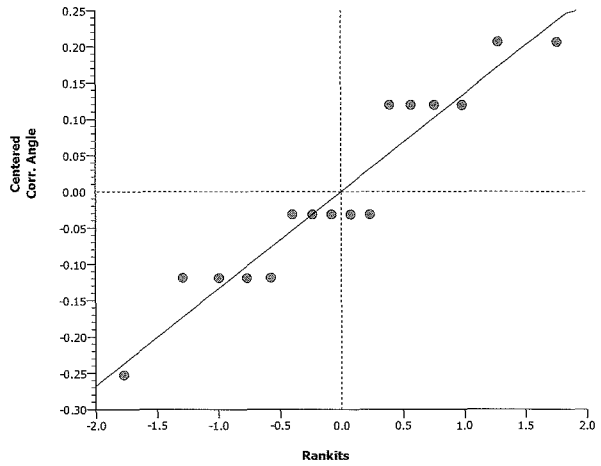
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.825 | 0.776 | 0.874 | 0.6 | 1 | 0.0238 | 0.128 | 15.5% | 0.0% |
| 19798-004 | 8 | 0.9 | 0.859 | 0.941 | 0.8 | 1 | 0.0199 | 0.107 | 11.9% | -9.09% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 1.14 | 1.08 | 1.2 | 0.886 | 1.35 | 0.0276 | 0.148 | 13.0% | 0.0% |
| 19798-004 | 8 | 1.23 | 1.18 | 1.27 | 1.11 | 1.35 | 0.0236 | 0.127 | 10.4% | -7.65% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 06-0909-1160 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:17 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 26.8% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-001 | -2.67 | 1.76 | 0.0912 | 0.9909 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.07645179 | 0.07645179 | 1 | 7.13 | 0.0183 | Significant Effect |
| Error | 0.1500194 | 0.01071567 | 14 | | | |
| Total | 0.2264712 | 0.08716746 | 15 | | | |

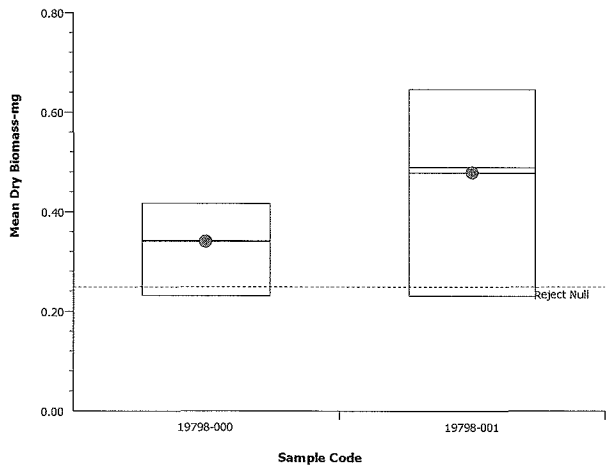
**ANOVA Assumptions**

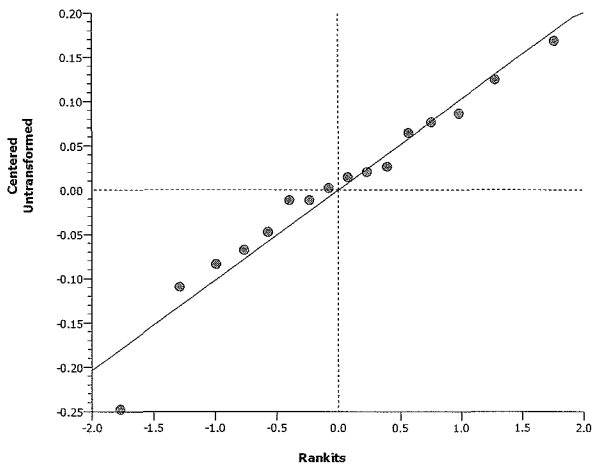
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 4.9 | 8.89 | 0.0526 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.964 | | 0.7283 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.34 | 0.317 | 0.363 | 0.23 | 0.416 | 0.0112 | 0.0603 | 17.7% | 0.0% |
| 19798-001 | 8 | 0.478 | 0.427 | 0.529 | 0.23 | 0.646 | 0.0248 | 0.133 | 27.9% | -40.7% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 09-1295-3086 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:17 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 22.1% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-002 | -2.48 | 1.76 | 0.075 | 0.9868 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.04473118 | 0.04473118 | 1 | 6.16 | 0.0263 | Significant Effect |
| Error | 0.101585 | 0.007256072 | 14 | | | |
| Total | 0.1463162 | 0.05198726 | 15 | | | |

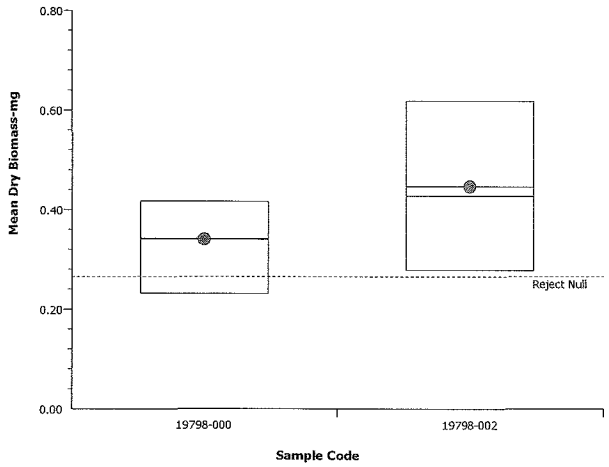
**ANOVA Assumptions**

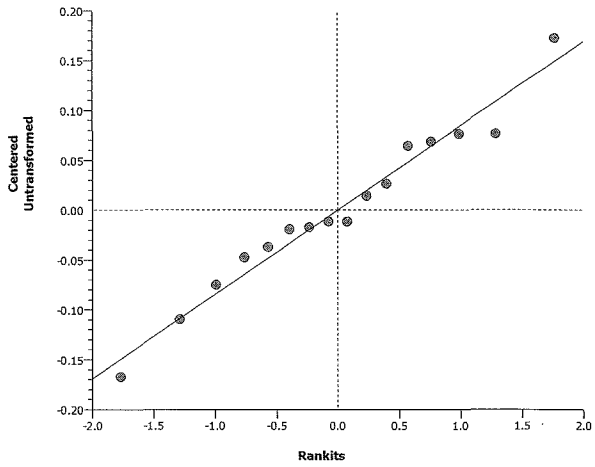
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 2.99 | 8.89 | 0.1712 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.978 | | 0.9448 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.34 | 0.317 | 0.363 | 0.23 | 0.416 | 0.0112 | 0.0603 | 17.7% | 0.0% |
| 19798-002 | 8 | 0.445 | 0.406 | 0.485 | 0.278 | 0.618 | 0.0194 | 0.104 | 23.4% | -31.1% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 08-6442-2960 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:17 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 23.6% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-003 | -3.18 | 1.76 | 0.0803 | 0.9967 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.08409876 | 0.08409876 | 1 | 10.1 | 0.0067 | Significant Effect |
| Error | 0.1163219 | 0.008308708 | 14 | | | |
| Total | 0.2004207 | 0.09240747 | 15 | | | |

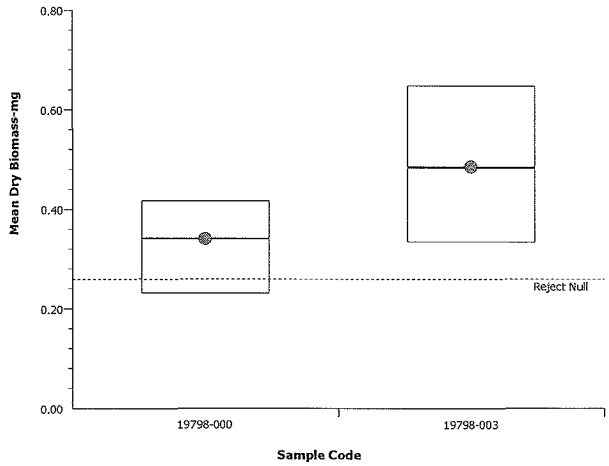
**ANOVA Assumptions**

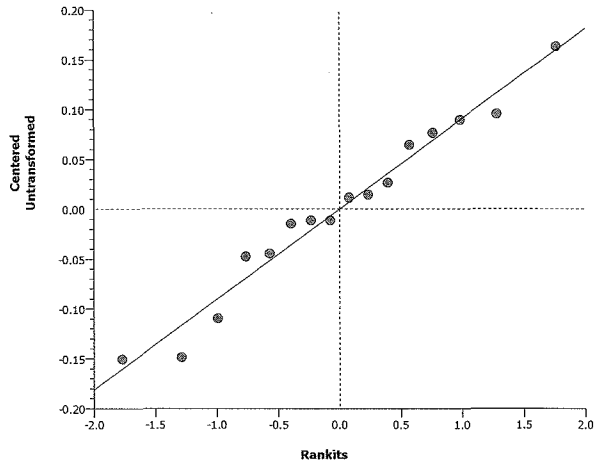
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 3.57 | 8.89 | 0.1147 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.966 | | 0.7619 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.34 | 0.317 | 0.363 | 0.23 | 0.416 | 0.0112 | 0.0603 | 17.7% | 0.0% |
| 19798-003 | 8 | 0.485 | 0.441 | 0.528 | 0.334 | 0.648 | 0.0212 | 0.114 | 23.5% | -42.7% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 19-9996-5116 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:17 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 02-9038-2180 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 15 Jun-10 15:00 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 22 Jun-10 12:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 21h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 13.4% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-004 | -4.5 | 1.76 | 0.0455 | 0.9998 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.05405575 | 0.05405575 | 1 | 20.3 | 0.0005 | Significant Effect |
| Error | 0.0373395 | 0.002667107 | 14 | | | |
| Total | 0.09139524 | 0.05672285 | 15 | | | |

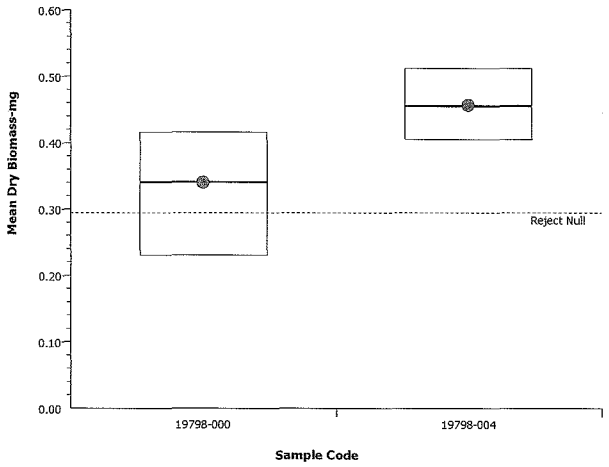
**ANOVA Assumptions**

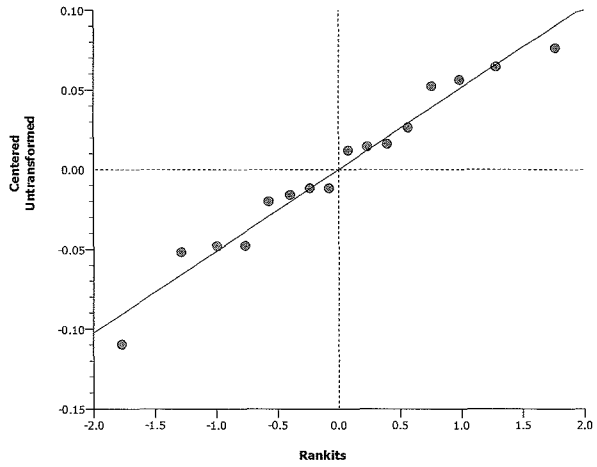
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 2.14 | 8.89 | 0.3379 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.964 | | 0.7409 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 8 | 0.34 | 0.317 | 0.363 | 0.23 | 0.416 | 0.0112 | 0.0603 | 17.7% | 0.0% |
| 19798-004 | 8 | 0.456 | 0.44 | 0.472 | 0.404 | 0.512 | 0.00766 | 0.0412 | 9.04% | -34.2% |

**Graphics**



Larval Fish Dry Weight Summary Sheet

| | | |
|---|---|---|
| Study: | 19798 S1 | |
| Client: | WHG AB7DCR | |
| Date/Time/Init: | 06/24/10 1050 JQ | 06/22/10 1005 JQ |
| Conc | Fish and Foil (mg) | Tare Wt (mg) |
| Lab A | 206.94 | 205.79 |
| Lab B | 211.41 | 209.39 |
| Lab C | 208.64 | 206.56 |
| Lab D | 210.35 | 208.71 |
| Lab E | 207.75 | 205.92 |
| Lab F | 210.3 | 208.53 |
| Lab G | 208.25 | 206.79 |
| Lab H | 209.13 | 207.49 |
| 001A | 209.22 | 207.17 |
| 001B | 211.52 | 209.12 |
| 001C | 211.07 | 208.25 |
| 001D | 210.11 | 207.62 |
| 001E | 212.44 | 209.21 |
| 001F | 211.53 | 209.56 |
| 001G | 209.78 | 206.77 |
| 001H | 209.68 | 208.53 |
| 002A | 210.2 | 208.07 |
| 002B | 211.15 | 209.01 |
| 002C | 210.12 | 207.51 |
| 002D | 211.14 | 208.57 |
| 002E | 210.21 | 208.17 |
| 002F | 210.2 | 208.35 |
| 002G | 211.36 | 208.27 |
| 002H | 207.95 | 206.56 |
| 003A | 209.69 | 208.02 |
| 003B | 211.26 | 208.39 |
| 003C | 208.27 | 205.92 |
| 003D | 210.54 | 208.06 |
| 003E | 211.48 | 208.24 |
| 003F | 211.24 | 209.04 |
| 003G | 208.65 | 206.97 |
| 003H | 208.76 | 205.86 |
| 004A | 210.19 | 207.65 |
| 004B | 209.72 | 207.16 |
| 004C | 211.32 | 208.96 |
| 004D | 210.98 | 208.94 |
| 004E | 211.55 | 209.21 |
| 004F | 210.46 | 208.26 |
| 004G | 211.48 | 209.46 |
| 004H | 207.63 | 205.45 |

# Aquatic Research Organisms

## DATA SHEET

Rec 6/15/10

### I. Organism History

Species: AMERICAMYSIS BAHIA

Source: Lab reared ✓ Hatchery reared ____ Field collected ____

Hatch date: 6-8-10 Receipt date: ____

Lot number: 060810MS Strain: ____

Brood origination: FLORIDA

### II. Water Quality

Temperature: 25 °C Salinity: ≈30 ppt D.O.: — ppm

pH: 7.8 su Hardness: — ppm Alkalinity: — ppm

### III. Culture Conditions

Freshwater ____ Saltwater ✓ Other ____

Recirculating ✓ Flow through ____ Static ____

**DIET:** Flake food ✓ Phytoplankton ____ Trout chow ✓

Artemia ✓ Rotifers ____ YCT ____ Other Encap. Shrimp Diet

Prophylactic treatments: ____

Comments: ____

### IV. Shipping Information

Client: EST # of Organisms: 240+

Carrier: ____ Date shipped: 6-15-10

Biologist: [signature]

PO BOX 1271 HAMPTON NH 03843-1271 (603) 926-1650 AROFISH@AOL.COM

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## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SURVIVAL & OLD WATER QUALITIES

| STUDY: 19798 | 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 | 5 | 5 | 5 | 5.0 | 6.3 | 5.7 | 7.4 | 7.5 | 7.3 | 7.3 |
| | B | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4.6 | 6.2 | 5.7 | 7.3 | 7.5 | 7.2 | 7.1 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.6 | 6.2 | 5.7 | 7.3 | 7.5 | 7.2 | 7.2 |
| | D | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4.9 | 6.3 | 4.9 | 7.1 | 7.5 | 7.2 | 7.1 |
| | E | 5 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 4.9 | 6.2 | 6.0 | 7.1 | 7.5 | 7.3 | 7.1 |
| | F | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4.8 | 6.1 | 6.0 | 7.2 | 7.5 | 7.3 | 7.2 |
| | G | 5 | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 5.0 | 6.2 | 6.0 | 7.3 | 7.5 | 7.3 | 7.1 |
| | H | 5 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 5.0 | 6.4 | 6.0 | 7.2 | 7.5 | 7.3 | 7.2 |
| 009 ~~001~~ | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.6 | 4.0 | 4.3 | 7.3 | 7.5 | 7.3 | 7.1 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.7 | 4.7 | 4.4 | 7.2 | 7.5 | 7.2 | 7.1 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 | 4.7 | 4.3 | 7.3 | 7.5 | 7.3 | 7.1 |
| | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4.9 | 4.8 | 4.2 | 7.3 | 7.5 | 7.3 | 7.1 |
| | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.6 | 4.7 | 4.6 | 7.3 | 7.4 | 7.3 | 7.1 |
| | F | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5.0 | 4.4 | 3.7* | 7.2 | 7.5 | 5.3 | 7.1 |
| | G | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5.0 | 4.6 | 3.6 | 7.2 | 7.5 | 7.1 | 7.2 |
| | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4.7 | 4.8 | 3.9 | 7.2 | 7.5 | 7.2 | 7.1 |
| 010 ~~002~~ | A | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 5.0 | 6.1 | 5.3 | 7.2 | 7.4 | 7.2 | 7.1 |
| | B | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5.3 | 5.9 | 5.2 | 7.2 | 7.4 | 7.2 | 7.0 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5.2 | 6.1 | 5.8 | 7.2 | 7.4 | 7.2 | 7.0 |
| | D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.3 | 6.2 | 5.4 | 7.2 | 7.4 | 7.2 | 7.0 |
| | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.6 | 6.3 | 5.6 | 7.2 | 7.4 | 7.2 | 7.1 |
| | F | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5.4 | 6.2 | 5.7 | 7.2 | 7.4 | 7.2 | 7.1 |
| | G | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.2 | 6.0 | 5.8 | 7.2 | 7.4 | 7.2 | 7.0 |
| | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.4 | 6.6 | 5.8 | 7.2 | 7.3 | 7.2 | 7.1 |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | 6/23 | | | | | | | |
| TIME: | | 1545 | 1120 | 1430 | 1335 | 1225 | 1145 | 1010 | 0945 | | | | | | | |
| INITIALS: | | JJ | JJ | LB | LB | LB | JQ | LB | DM | | | | | | | |

*on air day 3

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# *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SURVIVAL & OLD WATER QUALITIES

| STUDY: 19798 | 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 |
| 011 ~~003~~ | A | 5 | 5 | 5 | 5 | ~~5~~ 4 | 4 | 2 | 1 | 4.7 | 5.2 | 4.6 | 7.2 | 7.3 | 7.2 | 7.1 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.6 | 5.0 | 4.8 | 7.2 | 7.4 | 7.2 | 7.0 |
| | C | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.5 | 5.1 | 4.9 | 7.2 | 7.4 | 7.2 | 7.1 |
| | D | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4.6 | 5.0 | 4.7 | 7.2 | 7.4 | 7.2 | 7.2 |
| | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 | 4.9 | 4.4 | 7.2 | 7.4 | 7.2 | 7.1 |
| | F | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 | 4.9 | 4.4 | 7.2 | 7.4 | 7.2 | 7.2 |
| | G | 5 | 5 | 5 | 5 | 5 | 4 | ~~5~~ 4 | 4 | 4.5 | 4.9 | 4.9 | 7.1 | 7.5 | 7.2 | 7.2 |
| | H | 5 | 5 | 5 | 5 | 5 | 5 | ~~5~~ 5 | 5 | 4.5 | 4.4 | 4.9 | 7.1 | 7.4 | 7.3 | 7.1 |
| 012 ~~004~~ | A | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5.1 | 4.8 | 5.5 | 7.2 | 7.4 | 7.3 | 7.1 |
| | B | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.2 | 5.3 | 5.5 | 7.3 | 7.4 | 7.3 | 7.1 |
| | C | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 4.8 | 5.4 | 5.6 | 7.3 | 7.4 | 7.3 | 7.1 |
| | D | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4.8 | 5.5 | 5.5 | 7.2 | 7.4 | 7.3 | 7.1 |
| | E | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.2 | 5.4 | 5.4 | 7.2 | 7.4 | 7.3 | 7.1 |
| | F | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5.3 | 5.6 | 5.4 | 7.2 | 7.4 | 7.2 | 7.0 |
| | G | 5 | 5 | 5 | ~~4~~ 5 | 4 | 3 | 3 | 3 | 5.1 | 5.6 | 5.5 | 7.2 | 7.4 | 7.3 | 7.0 |
| | H | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.1 | 5.6 | 5.4 | 7.2 | 7.4 | 7.2 | 7.0 |
| (B) SS 6/16/10 | | | | | | | | | | | | | | | | |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | 6-23 | | | | | | | |
| TIME: | | 1545 | 1120 | 1430 | 1335 | 1225 | 1145 | 1010 | 0945 | | | | | | | |
| INITIALS: | | SJ | SJ | LB | LB | JQ | JQ | LB | DM | | | | | | | |

# CETIS Summary Report

Report Date: 15 Jul-10 12:39 (p 1 of 2)
Test Code: 01-9824-0908/19798AbR2

**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Sample Code | Sample ID | Sample Date | Receive Date | Sample Age | Client Name | Project |
|---|---|---|---|---|---|---|
| 19798-000 R2 | 16-4709-6567 | 16 Jun-10 11:00 | 16 Jun-10 11:00 | 5h | Woods Hole Group | Ecological Risk Assessme |
| 19798-009 | 10-5403-7534 | 15 Jun-10 09:15 | 15 Jun-10 18:53 | 31h | | |
| 19798-010 | 01-7208-1383 | 15 Jun-10 10:00 | 15 Jun-10 18:53 | 30h | | |
| 19798-011 | 13-9066-0337 | 15 Jun-10 14:45 | 15 Jun-10 18:53 | 25h | | |
| 19798-012 | 11-7416-3137 | 15 Jun-10 13:15 | 15 Jun-10 18:53 | 26h | | |

| Sample Code | Material Type | Sample Source | Station Location | Latitude | Longitude |
|---|---|---|---|---|---|
| 19798-000 R2 | Surface Water | New Bedford Harbor Dredge Moni | Lab Control | | |
| 19798-009 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-001 | | |
| 19798-010 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-002 | | |
| 19798-011 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-003 | | |
| 19798-012 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-004 | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 05-9507-1706 | 7d Proportion Survived | Control Resp | 0.75 | 0.8 - NL | Yes | Result Below Limit |
| 11-7958-9081 | 7d Proportion Survived | Control Resp | 0.75 | 0.8 - NL | Yes | Result Below Limit |
| 13-3867-8813 | 7d Proportion Survived | Control Resp | 0.75 | 0.8 - NL | Yes | Result Below Limit |
| 16-3761-3670 | 7d Proportion Survived | Control Resp | 0.75 | 0.8 - NL | Yes | Result Below Limit |
| 00-1180-0754 | Mean Dry Biomass-mg | Control Resp | 0.233 | 0.2 - NL | Yes | Result Within Limits |
| 12-6977-9898 | Mean Dry Biomass-mg | Control Resp | 0.233 | 0.2 - NL | Yes | Result Within Limits |
| 12-8393-5998 | Mean Dry Biomass-mg | Control Resp | 0.233 | 0.2 - NL | Yes | Result Within Limits |
| 15-7056-2833 | Mean Dry Biomass-mg | Control Resp | 0.233 | 0.2 - NL | Yes | Result Within Limits |
| 00-1180-0754 | Mean Dry Biomass-mg | PMSD | 0.213 | 0.11 - 0.37 | Yes | Result Within Limits |
| 12-6977-9898 | Mean Dry Biomass-mg | PMSD | 0.211 | 0.11 - 0.37 | Yes | Result Within Limits |
| 12-8393-5998 | Mean Dry Biomass-mg | PMSD | 0.334 | 0.11 - 0.37 | Yes | Result Within Limits |
| 15-7056-2833 | Mean Dry Biomass-mg | PMSD | 0.264 | 0.11 - 0.37 | Yes | Result Within Limits |

**7d Proportion Survived Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.75 | 0.673 | 0.827 | 0.4 | 1 | 0.0378 | 0.207 | 27.6% | 0.0% |
| 19798-009 | 8 | 0.9 | 0.86 | 0.94 | 0.8 | 1 | 0.0195 | 0.107 | 11.9% | -20.0% |
| 19798-010 | 8 | 0.875 | 0.819 | 0.931 | 0.6 | 1 | 0.0272 | 0.149 | 17.0% | -16.7% |
| 19798-011 | 8 | 0.85 | 0.746 | 0.954 | 0.2 | 1 | 0.0507 | 0.278 | 32.7% | -13.3% |
| 19798-012 | 8 | 0.825 | 0.763 | 0.887 | 0.6 | 1 | 0.0305 | 0.167 | 20.2% | -10.0% |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.233 | 0.209 | 0.256 | 0.152 | 0.36 | 0.0116 | 0.0636 | 27.3% | 0.0% |
| 19798-009 | 8 | 0.341 | 0.324 | 0.358 | 0.282 | 0.41 | 0.00848 | 0.0465 | 13.6% | -46.5% |
| 19798-010 | 8 | 0.32 | 0.302 | 0.338 | 0.258 | 0.394 | 0.00877 | 0.048 | 15.0% | -37.6% |
| 19798-011 | 8 | 0.335 | 0.295 | 0.375 | 0.092 | 0.438 | 0.0196 | 0.107 | 32.1% | -44.0% |
| 19798-012 | 8 | 0.332 | 0.304 | 0.361 | 0.246 | 0.452 | 0.0137 | 0.0753 | 22.6% | -42.9% |

**Mean Dry Weight-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.32 | 0.29 | 0.35 | 0.253 | 0.505 | 0.0149 | 0.0814 | 25.4% | 0.0% |
| 19798-009 | 8 | 0.381 | 0.361 | 0.402 | 0.338 | 0.502 | 0.01 | 0.055 | 14.4% | -19.2% |
| 19798-010 | 8 | 0.369 | 0.356 | 0.382 | 0.31 | 0.43 | 0.00645 | 0.0354 | 9.58% | -15.3% |
| 19798-011 | 8 | 0.404 | 0.38 | 0.428 | 0.298 | 0.475 | 0.0118 | 0.0645 | 16.0% | -26.4% |
| 19798-012 | 8 | 0.412 | 0.377 | 0.447 | 0.254 | 0.512 | 0.017 | 0.0928 | 22.5% | -28.8% |

**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

**7d Proportion Survived Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 1 | 0.8 | 1 | 0.8 | 0.6 | 0.8 | 0.6 | 0.4 |
| 19798-009 | 1 | 1 | 1 | 0.8 | 1 | 0.8 | 0.8 | 0.8 |
| 19798-010 | 0.6 | 0.8 | 0.8 | 1 | 1 | 0.8 | 1 | 1 |
| 19798-011 | 0.2 | 1 | 1 | 0.8 | 1 | 1 | 0.8 | 1 |
| 19798-012 | 0.8 | 1 | 0.6 | 0.8 | 1 | 0.8 | 0.6 | 1 |

**Mean Dry Biomass-mg Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 0.266 | 0.24 | 0.36 | 0.222 | 0.176 | 0.244 | 0.152 | 0.202 |
| 19798-009 | 0.35 | 0.41 | 0.34 | 0.312 | 0.338 | 0.294 | 0.402 | 0.282 |
| 19798-010 | 0.258 | 0.306 | 0.29 | 0.31 | 0.372 | 0.278 | 0.394 | 0.354 |
| 19798-011 | 0.092 | 0.366 | 0.438 | 0.38 | 0.334 | 0.298 | 0.36 | 0.414 |
| 19798-012 | 0.246 | 0.254 | 0.282 | 0.41 | 0.38 | 0.334 | 0.302 | 0.452 |

**Mean Dry Weight-mg Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 |
|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 0.266 | 0.3 | 0.36 | 0.278 | 0.293 | 0.305 | 0.253 | 0.505 |
| 19798-009 | 0.35 | 0.41 | 0.34 | 0.39 | 0.338 | 0.368 | 0.502 | 0.352 |
| 19798-010 | 0.43 | 0.382 | 0.362 | 0.31 | 0.372 | 0.347 | 0.394 | 0.354 |
| 19798-011 | 0.46 | 0.366 | 0.438 | 0.475 | 0.334 | 0.298 | 0.45 | 0.414 |
| 19798-012 | 0.307 | 0.254 | 0.47 | 0.512 | 0.38 | 0.417 | 0.503 | 0.452 |

**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 13-3867-8813 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 18.9% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-009 | -1.8 | 1.76 | 0.164 | 0.9535 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.1123659 | 0.1123659 | 1 | 3.25 | 0.0930 | Non-Significant Effect |
| Error | 0.4841761 | 0.034584 | 14 | | | |
| Total | 0.596542 | 0.1469499 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 3.27 | 8.89 | 0.1408 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.936 | | 0.3023 | Normal Distribution |

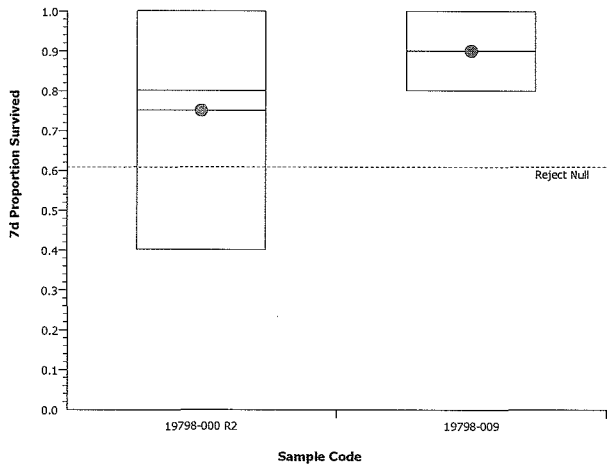
**7d Proportion Survived Summary**

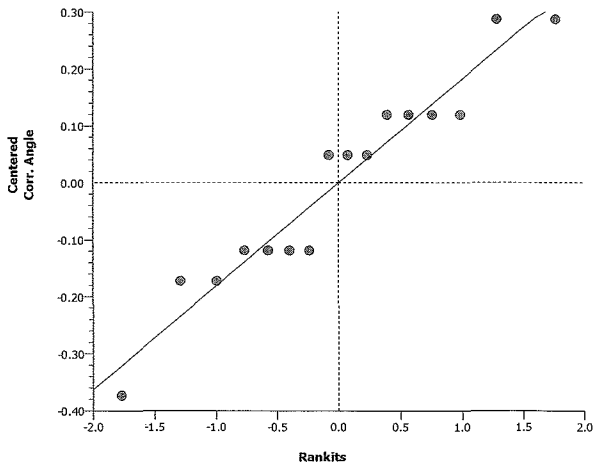
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.75 | 0.671 | 0.829 | 0.4 | 1 | 0.0384 | 0.207 | 27.6% | 0.0% |
| 19798-009 | 8 | 0.9 | 0.859 | 0.941 | 0.8 | 1 | 0.0199 | 0.107 | 11.9% | -20.0% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 1.06 | 0.971 | 1.15 | 0.685 | 1.35 | 0.0427 | 0.23 | 21.7% | 0.0% |
| 19798-009 | 8 | 1.23 | 1.18 | 1.27 | 1.11 | 1.35 | 0.0236 | 0.127 | 10.4% | -15.8% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 16-3761-3670 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 20.9% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-010 | -1.38 | 1.76 | 0.179 | 0.9048 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.07836773 | 0.07836773 | 1 | 1.89 | 0.1905 | Non-Significant Effect |
| Error | 0.5795844 | 0.04139888 | 14 | | | |
| Total | 0.6579521 | 0.1197666 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.78 | 8.89 | 0.4665 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.946 | | 0.4238 | Normal Distribution |

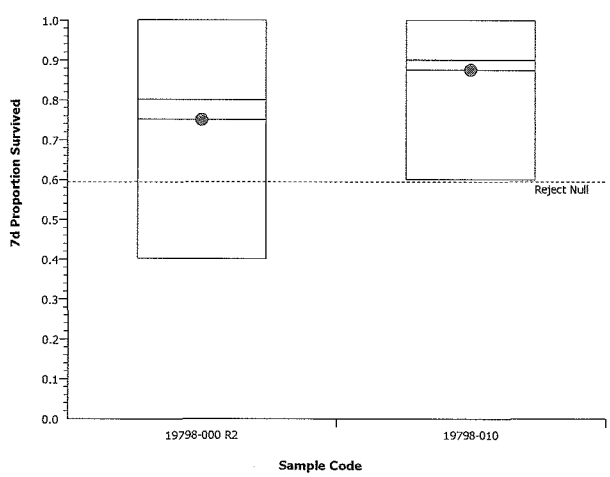
**7d Proportion Survived Summary**

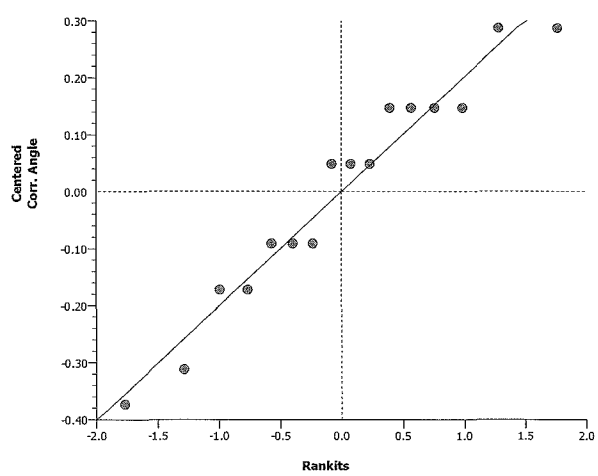
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.75 | 0.671 | 0.829 | 0.4 | 1 | 0.0384 | 0.207 | 27.6% | 0.0% |
| 19798-010 | 8 | 0.875 | 0.818 | 0.932 | 0.6 | 1 | 0.0276 | 0.149 | 17.0% | -16.7% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 1.06 | 0.971 | 1.15 | 0.685 | 1.35 | 0.0427 | 0.23 | 21.7% | 0.0% |
| 19798-010 | 8 | 1.2 | 1.13 | 1.26 | 0.886 | 1.35 | 0.0321 | 0.173 | 14.4% | -13.2% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 11-7958-9081 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 28.8% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-011 | -0.862 | 1.76 | 0.239 | 0.7983 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.0546945 | 0.0546945 | 1 | 0.743 | 0.4033 | Non-Significant Effect |
| Error | 1.030969 | 0.07364064 | 14 | | | |
| Total | 1.085664 | 0.1283351 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.78 | 8.89 | 0.4643 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.858 | | 0.0180 | Normal Distribution |

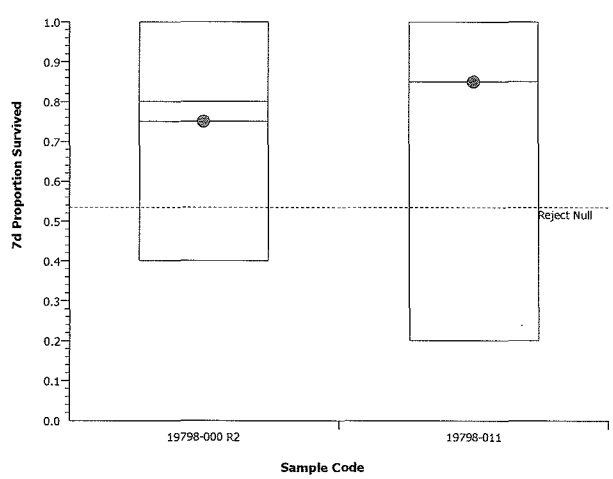
**7d Proportion Survived Summary**

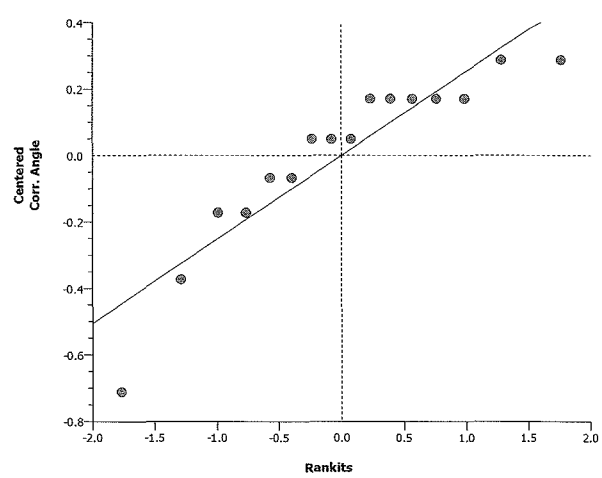
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.75 | 0.671 | 0.829 | 0.4 | 1 | 0.0384 | 0.207 | 27.6% | 0.0% |
| 19798-011 | 8 | 0.85 | 0.744 | 0.956 | 0.2 | 1 | 0.0516 | 0.278 | 32.7% | -13.3% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 1.06 | 0.971 | 1.15 | 0.685 | 1.35 | 0.0427 | 0.23 | 21.7% | 0.0% |
| 19798-011 | 8 | 1.18 | 1.06 | 1.29 | 0.464 | 1.35 | 0.057 | 0.307 | 26.1% | -11.0% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 05-9507-1706 | **Endpoint:** | 7d Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 21.9% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-012 | -0.779 | 1.76 | 0.187 | 0.7755 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.02727153 | 0.02727153 | 1 | 0.607 | 0.4490 | Non-Significant Effect |
| Error | 0.6293636 | 0.04495454 | 14 | | | |
| Total | 0.6566351 | 0.07222607 | 15 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.43 | 8.89 | 0.6464 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.943 | | 0.3859 | Normal Distribution |

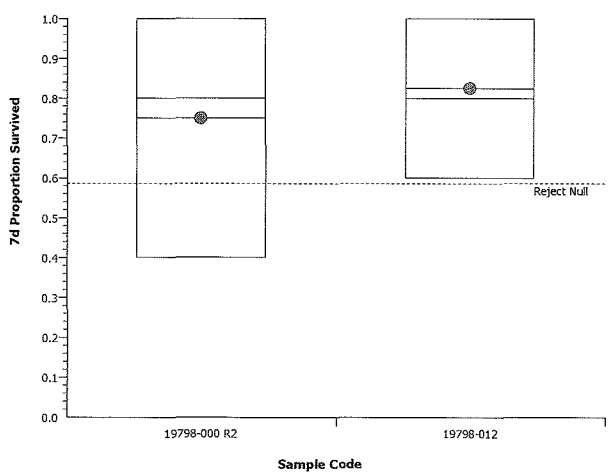
**7d Proportion Survived Summary**

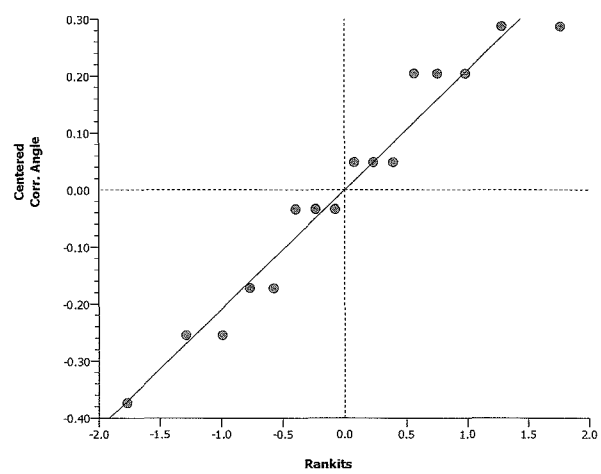
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.75 | 0.671 | 0.829 | 0.4 | 1 | 0.0384 | 0.207 | 27.6% | 0.0% |
| 19798-012 | 8 | 0.825 | 0.762 | 0.888 | 0.6 | 1 | 0.031 | 0.167 | 20.2% | -10.0% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 1.06 | 0.971 | 1.15 | 0.685 | 1.35 | 0.0427 | 0.23 | 21.7% | 0.0% |
| 19798-012 | 8 | 1.14 | 1.07 | 1.21 | 0.886 | 1.35 | 0.0357 | 0.192 | 16.8% | -7.8% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 12-6977-9898 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 21.1% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-009 | -3.89 | 1.76 | 0.049 | 0.9992 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.04687229 | 0.04687229 | 1 | 15.1 | 0.0016 | Significant Effect |
| Error | 0.04338395 | 0.003098854 | 14 | | | |
| Total | 0.09025624 | 0.04997114 | 15 | | | |

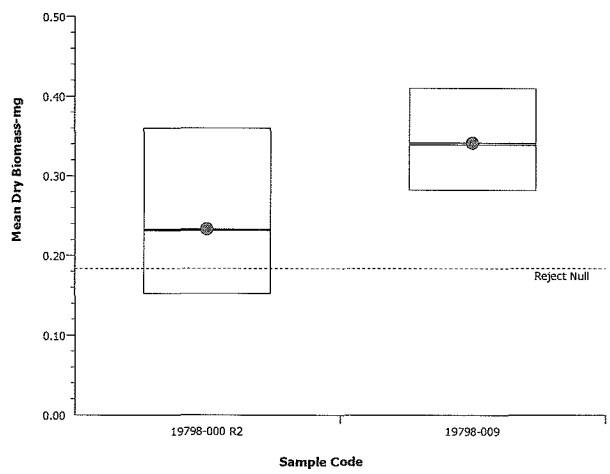
**ANOVA Assumptions**

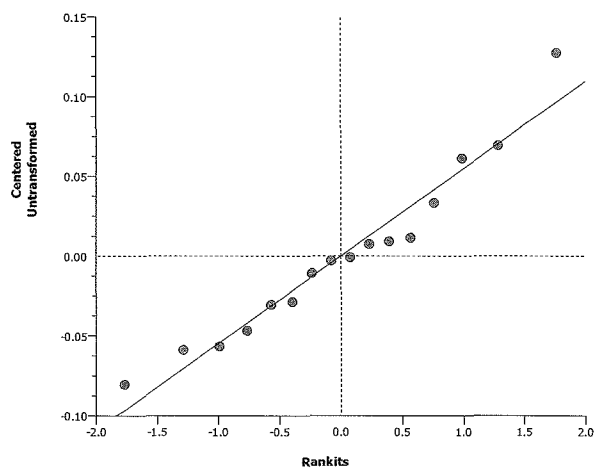
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.87 | 8.89 | 0.4269 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.955 | | 0.5678 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.233 | 0.209 | 0.257 | 0.152 | 0.36 | 0.0118 | 0.0636 | 27.3% | 0.0% |
| 19798-009 | 8 | 0.341 | 0.323 | 0.359 | 0.282 | 0.41 | 0.00863 | 0.0465 | 13.6% | -46.5% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 00-1180-0754 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 21.3% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-010 | -3.11 | 1.76 | 0.0496 | 0.9961 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.03062527 | 0.03062527 | 1 | 9.65 | 0.0077 | Significant Effect |
| Error | 0.04441938 | 0.003172813 | 14 | | | |
| Total | 0.07504465 | 0.03379808 | 15 | | | |

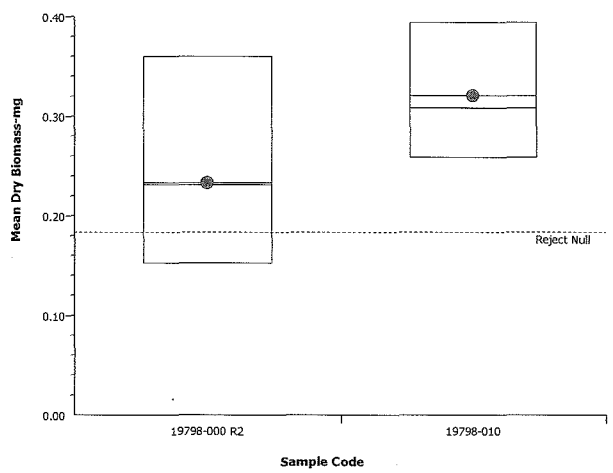
**ANOVA Assumptions**

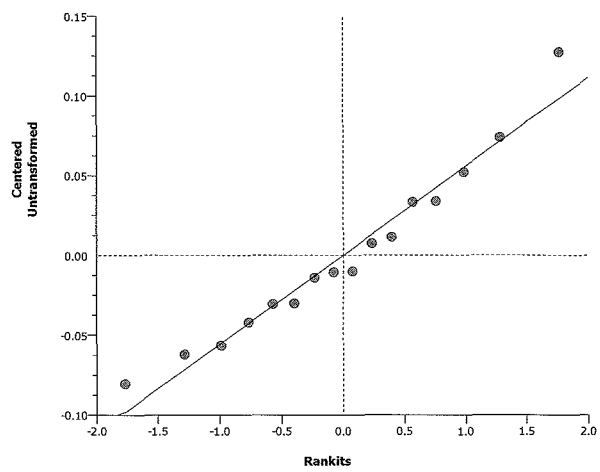
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.75 | 8.89 | 0.4767 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.962 | | 0.6989 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.233 | 0.209 | 0.257 | 0.152 | 0.36 | 0.0118 | 0.0636 | 27.3% | 0.0% |
| 19798-010 | 8 | 0.32 | 0.302 | 0.339 | 0.258 | 0.394 | 0.00892 | 0.048 | 15.0% | -37.6% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 12-8393-5998 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 33.4% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-011 | -2.32 | 1.76 | 0.0778 | 0.9821 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.04202544 | 0.04202544 | 1 | 5.39 | 0.0358 | Significant Effect |
| Error | 0.1091605 | 0.007797176 | 14 | | | |
| Total | 0.1511859 | 0.04982262 | 15 | | | |

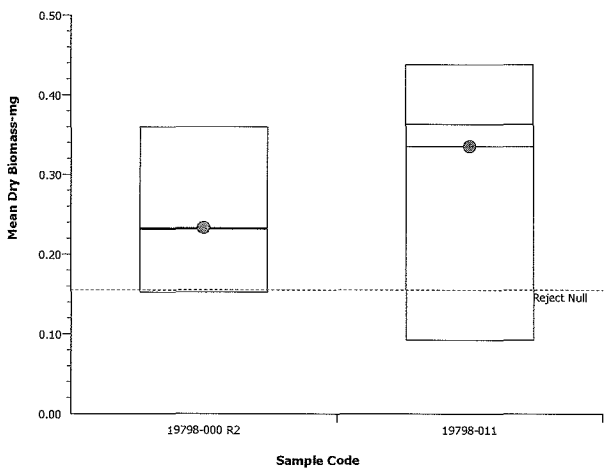
**ANOVA Assumptions**

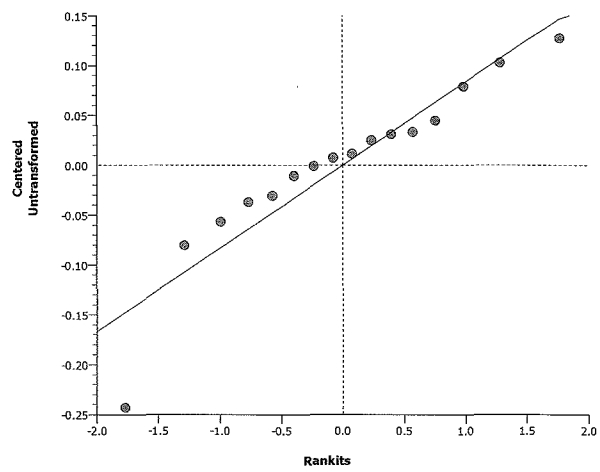
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 2.86 | 8.89 | 0.1890 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.896 | | 0.0705 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.233 | 0.209 | 0.257 | 0.152 | 0.36 | 0.0118 | 0.0636 | 27.3% | 0.0% |
| 19798-011 | 8 | 0.335 | 0.294 | 0.376 | 0.092 | 0.438 | 0.02 | 0.107 | 32.1% | -44.0% |

**Graphics**



**Americamysis 7-d Survival, Growth and Fecundity Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 15-7056-2833 | **Endpoint:** | Mean Dry Biomass-mg | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jul-10 12:38 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 16-8086-3440 | **Test Type:** | Growth-Survival-Fec (7d) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 15:45 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 23 Jun-10 09:45 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 6d 18h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | 7 d |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Untransformed | 0 | C > T | Not Run | | | | | 26.4% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-012 | -2.86 | 1.76 | 0.0614 | 0.9937 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.03980035 | 0.03980035 | 1 | 8.2 | 0.0125 | Significant Effect |
| Error | 0.06794921 | 0.004853515 | 14 | | | |
| Total | 0.1077496 | 0.04465387 | 15 | | | |

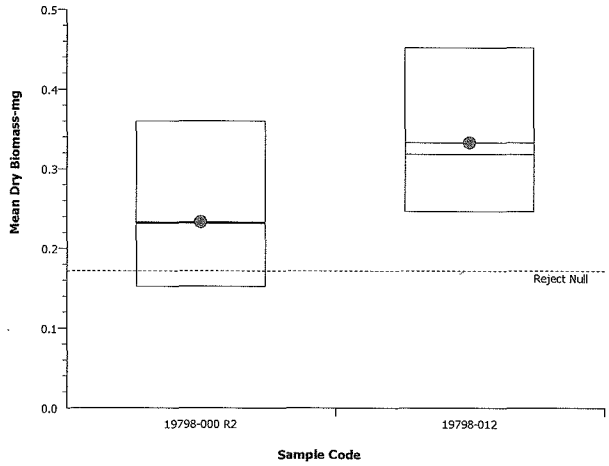
**ANOVA Assumptions**

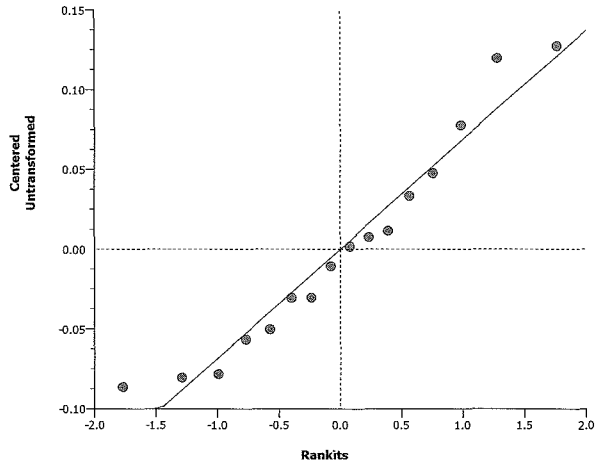
| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 1.4 | 8.89 | 0.6664 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.937 | | 0.3135 | Normal Distribution |

**Mean Dry Biomass-mg Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 8 | 0.233 | 0.209 | 0.257 | 0.152 | 0.36 | 0.0118 | 0.0636 | 27.3% | 0.0% |
| 19798-012 | 8 | 0.332 | 0.304 | 0.361 | 0.246 | 0.452 | 0.014 | 0.0753 | 22.6% | -42.9% |

**Graphics**



Larval Fish Dry Weight Summary Sheet

| | | |
|---|---|---|
| Study: | 19798 S2 | |
| Client: | WHG AB7DCR | |
| Date/Time/Init: | 06/24/10 1125 JQ | 06/22/10 1030 JQ |
| Conc | Fish and Foil (mg) | Tare Wt (mg) |
| Lab A | 206.69 | 205.36 |
| Lab B | 209.7 | 208.5 |
| Lab C | 209.63 | 207.83 |
| Lab D | 206.94 | 205.83 |
| Lab E | 207.18 | 206.3 |
| Lab F | 210.05 | 208.83 |
| Lab G | 207.42 | 206.66 |
| Lab H | 210.89 | 209.88 |
| 009A | 210.89 | 209.14 |
| 009B | 210.37 | 208.32 |
| 009C | 209.6 | 207.9 |
| 009D | 211.05 | 209.49 |
| 009E | 209.95 | 208.26 |
| 009F | 210.05 | 208.58 |
| 009G | 210.23 | 208.22 |
| 009H | 209.87 | 208.46 |
| 010A | 208.69 | 207.4 |
| 010B | 209.19 | 207.66 |
| 010C | 208.59 | 207.14 |
| 010D | 211.59 | 210.04 |
| 010E | 209.8 | 207.94 |
| 010F | 208.39 | 207 |
| 010G | 210.37 | 208.4 |
| 010H | 209.59 | 207.82 |
| 011A | 209.2 | 208.74 |
| 011B | 209.73 | 207.9 |
| 011C | 211.84 | 209.65 |
| 011D | 208.74 | 206.84 |
| 011E | 209.76 | 208.09 |
| 011F | 209.67 | 208.18 |
| 011G | 208.88 | 207.08 |
| 011H | 210.01 | 207.94 |
| 012A | 209.25 | 208.02 |
| 012B | 209.72 | 208.45 |
| 012C | 207.17 | 205.76 |
| 012D | 211.15 | 209.1 |
| 012E | 210 | 208.1 |
| 012F | 210.25 | 208.58 |
| 012G | 207.44 | 205.93 |
| 012H | 208.89 | 206.63 |

# Aquatic Research Organisms

## DATA SHEET

Rec 6/16/10

### I. Organism History

Species AMERICAMYSIS bahia

Source: Lab reared ✓ Hatchery reared ____ Field collected ____

Hatch date 6-9-10 Receipt date ____

Lot number 060910MS Strain ____

Brood origination FLORIDA

### II. Water Quality

Temperature 25 °C Salinity ≈30 ppt D.O. — ppm

pH 7.8 su Hardness — ppm Alkalinity — ppm

### III. Culture Conditions

Freshwater ____ Saltwater ✓ Other ____

Recirculating ✓ Flow through ____ Static ____

**DIET:** Flake food ✓ Phytoplankton ____ Trout chow ✓

Artemia ✓ Rotifers ____ YCT ____ Other Ewos Shrimp Diet

Prophylactic treatments: ____

Comments: ____

### IV. Shipping Information

Client: ESI # of Organisms 240+

Carrier: ____ Date shipped 6-16-10

Biologist: Mark Dominguez

PO BOX 1271 HAMPTON NH 03843-1271 (603) 926-1650 AROFISH@AOL.COM

S1

## *Arbacia punctulata* Chronic Fertilization Assay
## Water Quality and Gamete Preparation Data

| STUDY: 19798 | CLIENT: Woods Hole Group | LOCATION: New Bedford | DATE: 6/15/10 INITIALS: SJ |
|---|---|---|---|

SALINITY ADJUSTMENT RECORD: 500 mL -001 + 10 g SALT (A-2606)

SALINITY ADJUSTMENT RECORD: 500 mL -002 + 0 g SALT (A-2606)

SALINITY ADJUSTMENT RECORD: 500 mL -003 + 6 g SALT (A-2606)

SALINITY ADJUSTMENT RECORD: 500 mL -004 + 8 g SALT (A-2606)

| SALINITY ADJUSTED SAMPLE | D.O. (mg/L) | pH (SU) | SPEC COND (µmhos) | TEMP (°C) | SALINITY (ppt) |
|---|---|---|---|---|---|
| Lab Control | 7.8 | 8.06 | 44660 | 20 | 29 |
| -001 | 8.6 | 7.58 | 44900 | 20 | 29.1 |
| -002 | 9.2 | 7.71 | 43640 | 20 | 29 |
| -003 | 9.4 | 7.57 | 44780 | 20 | 29 |
| -004 | 8.1 | 7.59 | 45710 | 20 | 30 |

METERS USED

DO meter # 24 DO probe # 89 pH meter # 1097 pH probe # 90 S/C meter # YS130D S/C probe # YS130D

SALINITY meter # YS130D

DATE & INITIALS FOR GAMETE PREPARATION: 6/15/10 LB

**SPERM DILUTIONS:**

HEMACYTOMETER COUNT, E: 118 X $10^4$ = SPM SOLUTION E = $1.18 \times 10^6$

SPERM CONCENTRATIONS:
SOLUTION E X 40 = SOLUTION A = $4.72 \times 10^7$ SPM
SOLUTION E X 20 = SOLUTION B = $2.36 \times 10^7$ SPM
SOLUTION E X 5 = SOLUTION C = $5.90 \times 10^6$ SPM

**FINAL COUNTS:**

FINAL SPERM COUNT: $4.72 \times 10^7$
FINAL EGG COUNT: 2500

**TEST TIMES:**

SPERM COLLECTED: 1105
EGGS COLLECTED: 1105
SPERM ADDED: 1140
EGGS ADDED: 1240
FIXATIVE ADDED: 1300

See ESI SOP #1412 for additional information

S1

## *Arbacia punctulata* Chronic Fertilization Assay

### SAMPLE USE RECORD

| STUDY: 19798 | CLIENT: Woods Hole Group New Bedford | |
|---|---|---|
| SPECIES: *A. punctulata* | | |
| | Day: 0 | |
| SAMPLE | Volume Used (mL) | ESI Cube ID |
| Lab Control | 500 | ~~0~~ |
| -001 | ↓ | 001 |
| -002 | ↓ | 002 |
| -003 | ↓ | 003 |
| -004 | ↓ | 004 |
| INITIALS: | JJ | |
| TIME: | 1000 | |
| DATE: | 6/15/10 | |

### FERTILIZATION COUNTS

| STUDY | CLIENT | LOCATION | DATE 6/15/10 |
|---|---|---|---|
| | Woods Hole Group | New Bedford | INITIALS JB |

| | REPLICATE VIAL | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| SAMPLE | FERT/TOTAL | FERT/TOTAL | FERT/TOTAL | FERT/TOTAL |
| Lab Control | 99/101 | 100/101 | 100/102 | 101/103 |
| -001 | 100/101 | 100/100 | 100/104 | 99/104 |
| -002 | 111/113 | 100/101 | 100/103 | 100/105 |
| -003 | 100/101 | 100/104 | 135/137 | 99/102 |
| -004 | 100/102 | 100/102 | 99/101 | 100/105 |

# CETIS Summary Report

| | |
|---|---|
| **Report Date:** | 15 Jun-10 15:49 (p 1 of 1) |
| **Test Code:** | 04-6443-4279/19798Ap |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 21-0824-6027 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 15 Jun-10 11:40 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 15 Jun-10 13:00 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Sample Code | Sample ID | Sample Date | Receive Date | Sample Age | Client Name | Project |
|---|---|---|---|---|---|---|
| 19798-000 | 17-0812-3739 | 15 Jun-10 11:00 | 15 Jun-10 11:00 | 40m | Woods Hole Group | Ecological Risk Assessme |
| 19798-001 | 02-8950-1966 | 14 Jun-10 09:20 | 14 Jun-10 18:45 | 26h | | |
| 19798-002 | 15-5773-3828 | 14 Jun-10 09:50 | 14 Jun-10 18:45 | 26h | | |
| 19798-003 | 11-7486-5003 | 14 Jun-10 12:12 | 14 Jun-10 18:45 | 23h | | |
| 19798-004 | 13-7764-6453 | 14 Jun-10 13:10 | 14 Jun-10 18:45 | 22h | | |

| Sample Code | Material Type | Sample Source | Station Location | Latitude | Longitude |
|---|---|---|---|---|---|
| 19798-000 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-Lab Control | | |
| 19798-001 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-001 | | |
| 19798-002 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-002 | | |
| 19798-003 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-003 | | |
| 19798-004 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-004 | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 09-5382-1410 | Proportion Fertilized | Control Resp | 0.9828 | 0.7 - 1 | Yes | Result Within Limits |
| 11-3009-1247 | Proportion Fertilized | Control Resp | 0.9828 | 0.7 - 1 | Yes | Result Within Limits |
| 15-6758-5484 | Proportion Fertilized | Control Resp | 0.9828 | 0.7 - 1 | Yes | Result Within Limits |
| 20-6604-5460 | Proportion Fertilized | Control Resp | 0.9828 | 0.7 - 1 | Yes | Result Within Limits |
| 09-5382-1410 | Proportion Fertilized | PMSD | 0.01288 | NL - 0.25 | No | Result Within Limits |
| 11-3009-1247 | Proportion Fertilized | PMSD | 0.01454 | NL - 0.25 | No | Result Within Limits |
| 15-6758-5484 | Proportion Fertilized | PMSD | 0.01668 | NL - 0.25 | No | Result Within Limits |
| 20-6604-5460 | Proportion Fertilized | PMSD | 0.02725 | NL - 0.25 | No | Result Within Limits |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 0.9828 | 0.981 | 0.9846 | 0.9802 | 0.9901 | 0.000887 | 0.004858 | 0.49% | 0.0% |
| 19798-001 | 4 | 0.9759 | 0.9674 | 0.9844 | 0.9519 | 1 | 0.004168 | 0.02283 | 2.34% | 0.7% |
| 19798-002 | 4 | 0.9739 | 0.9678 | 0.98 | 0.9524 | 0.9901 | 0.002991 | 0.01638 | 1.68% | 0.91% |
| 19798-003 | 4 | 0.9769 | 0.972 | 0.9818 | 0.9615 | 0.9901 | 0.002409 | 0.01319 | 1.35% | 0.6% |
| 19798-004 | 4 | 0.9733 | 0.9681 | 0.9786 | 0.9524 | 0.9804 | 0.002551 | 0.01397 | 1.44% | 0.96% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 | 0.9802 | 0.9901 | 0.9804 | 0.9806 |
| 19798-001 | 0.9901 | 1 | 0.9615 | 0.9519 |
| 19798-002 | 0.9823 | 0.9901 | 0.9709 | 0.9524 |
| 19798-003 | 0.9901 | 0.9615 | 0.9854 | 0.9706 |
| 19798-004 | 0.9804 | 0.9804 | 0.9802 | 0.9524 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 20-6604-5460 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jun-10 15:46 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 21-0824-6027 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 15 Jun-10 11:40 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 15 Jun-10 13:00 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 2.73% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-001 | 0.2821 | 1.943 | 0.08094 | 0.3937 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.687 | 2.127 | 0.5008 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.0002760987 | 0.0002760987 | 1 | 0.07956 | 0.7874 | Non-Significant Effect |
| Error | 0.02082229 | 0.003470382 | 6 | | | |
| Total | 0.02109839 | 0.003746481 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 15.65 | 47.47 | 0.0491 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.9644 | | 0.8511 | Normal Distribution |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 0.9828 | 0.981 | 0.9847 | 0.9802 | 0.9901 | 0.0009021 | 0.004858 | 0.49% | 0.0% |
| 19798-001 | 4 | 0.9759 | 0.9672 | 0.9846 | 0.9519 | 1 | 0.004239 | 0.02283 | 2.34% | 0.7% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 1.441 | 1.433 | 1.448 | 1.43 | 1.471 | 0.003792 | 0.02042 | 1.42% | 0.0% |
| 19798-001 | 4 | 1.429 | 1.398 | 1.459 | 1.35 | 1.521 | 0.015 | 0.08077 | 5.65% | 0.82% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 | 0.9802 | 0.9901 | 0.9804 | 0.9806 |
| 19798-001 | 0.9901 | 1 | 0.9615 | 0.9519 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 15-6758-5484 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jun-10 15:46 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 21-0824-6027 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 15 Jun-10 11:40 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 15 Jun-10 13:00 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 1.67% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-002 | 0.9306 | 1.943 | 0.054 | 0.1940 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.754 | 2.127 | 0.3919 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.001337632 | 0.001337632 | 1 | 0.866 | 0.3880 | Non-Significant Effect |
| Error | 0.009268135 | 0.001544689 | 6 | | | |
| Total | 0.01060577 | 0.002882321 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 6.409 | 47.47 | 0.1614 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.9386 | | 0.5971 | Normal Distribution |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 0.9828 | 0.981 | 0.9847 | 0.9802 | 0.9901 | 0.0009021 | 0.004858 | 0.49% | 0.0% |
| 19798-002 | 4 | 0.9739 | 0.9677 | 0.9801 | 0.9524 | 0.9901 | 0.003042 | 0.01638 | 1.68% | 0.91% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 1.441 | 1.433 | 1.448 | 1.43 | 1.471 | 0.003792 | 0.02042 | 1.42% | 0.0% |
| 19798-002 | 4 | 1.415 | 1.395 | 1.434 | 1.351 | 1.471 | 0.0096 | 0.0517 | 3.65% | 1.8% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 | 0.9802 | 0.9901 | 0.9804 | 0.9806 |
| 19798-002 | 0.9823 | 0.9901 | 0.9709 | 0.9524 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 11-3009-1247 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jun-10 15:46 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 21-0824-6027 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 15 Jun-10 11:40 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 15 Jun-10 13:00 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 1.45% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-003 | 0.7013 | 1.943 | 0.04806 | 0.2547 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.537 | 2.127 | 0.8036 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.0006018261 | 0.0006018261 | 1 | 0.4918 | 0.5094 | Non-Significant Effect |
| Error | 0.007341721 | 0.00122362 | 6 | | | |
| Total | 0.007943547 | 0.001825446 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 4.869 | 47.47 | 0.2262 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.9434 | | 0.6449 | Normal Distribution |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 0.9828 | 0.981 | 0.9847 | 0.9802 | 0.9901 | 0.0009021 | 0.004858 | 0.49% | 0.0% |
| 19798-003 | 4 | 0.9769 | 0.9719 | 0.9819 | 0.9615 | 0.9901 | 0.00245 | 0.01319 | 1.35% | 0.6% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 1.441 | 1.433 | 1.448 | 1.43 | 1.471 | 0.003792 | 0.02042 | 1.42% | 0.0% |
| 19798-003 | 4 | 1.423 | 1.406 | 1.44 | 1.373 | 1.471 | 0.008367 | 0.04506 | 3.17% | 1.2% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 | 0.9802 | 0.9901 | 0.9804 | 0.9806 |
| 19798-003 | 0.9901 | 0.9615 | 0.9854 | 0.9706 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 09-5382-1410 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 15 Jun-10 15:46 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 21-0824-6027 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 15 Jun-10 11:40 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 15 Jun-10 13:00 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 1.29% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 | | 19798-004 | 1.357 | 1.943 | 0.04332 | 0.1118 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 2.037 | 2.127 | 0.0967 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.001830352 | 0.001830352 | 1 | 1.842 | 0.2236 | Non-Significant Effect |
| Error | 0.005963526 | 0.000993921 | 6 | | | |
| Total | 0.007793878 | 0.002824273 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 3.767 | 47.47 | 0.3048 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.8504 | | 0.0962 | Normal Distribution |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 0.9828 | 0.981 | 0.9847 | 0.9802 | 0.9901 | 0.0009021 | 0.004858 | 0.49% | 0.0% |
| 19798-004 | 4 | 0.9733 | 0.968 | 0.9787 | 0.9524 | 0.9804 | 0.002595 | 0.01397 | 1.44% | 0.96% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 | 4 | 1.441 | 1.433 | 1.448 | 1.43 | 1.471 | 0.003792 | 0.02042 | 1.42% | 0.0% |
| 19798-004 | 4 | 1.41 | 1.395 | 1.425 | 1.351 | 1.43 | 0.00736 | 0.03963 | 2.81% | 2.1% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 | 0.9802 | 0.9901 | 0.9804 | 0.9806 |
| 19798-004 | 0.9804 | 0.9804 | 0.9802 | 0.9524 |

S2

## *Arbacia punctulata* Chronic Fertilization Assay
## Water Quality and Gamete Preparation Data

| STUDY: 19798 | CLIENT: Woods Hole Group | LOCATION: New Bedford | DATE: 6/16/10 INITIALS: LB |
|---|---|---|---|

SALINITY ADJUSTMENT RECORD: 200 mL -001 + 1 g SALT A-2606

SALINITY ADJUSTMENT RECORD: 200 mL -002 + 0 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -003 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -004 + 1 g SALT

| SALINITY ADJUSTED SAMPLE | D.O. (mg/L) | pH (SU) | SPEC COND (µmhos) | TEMP (°C) | SALINITY (ppt) |
|---|---|---|---|---|---|
| Lab Control | 7.2 | 7.67 | 43830 | 21 | 28 |
| -001 | 7.4 | 7.58 ~~7.35~~ | 45770 | 21 | 30 ~~25.8~~ |
| -002 | 7.5 | 7.73 | 43760 | 21 | 28 |
| -003 | 7.7 | 7.89 | 45770 | 21 | 30 |
| -004 | 6.0 | 7.47 | 45040 | 21 | 30 |

### METERS USED

DO meter # 23 DO probe # 90 pH meter # 470 pH probe # 92 S/C meter # 15130D S/C probe # 15130D

SALINITY meter # 15130D

DATE & INITIALS FOR GAMETE PREPARATION: 6/16/10 LB

**SPERM DILUTIONS**:

HEMACYTOMETER COUNT, E: 120 X $10^4$ = SPM SOLUTION E = $1.20 \times 10^6$

SPERM CONCENTRATIONS:
SOLUTION E X 40 = SOLUTION A = $4.80 \times 10^7$ SPM
SOLUTION E X 20 = SOLUTION B = $2.40 \times 10^7$ SPM
SOLUTION E X 5 = SOLUTION C = $6.00 \times 10^6$ SPM

**FINAL COUNTS**:

FINAL SPERM COUNT: $4.80 \times 10^7$
FINAL EGG COUNT: 2400

**TEST TIMES**:

SPERM COLLECTED: 1135
EGGS COLLECTED: 1135
SPERM ADDED: 1214
EGGS ADDED: 1214
FIXATIVE ADDED: 1334

See ESI SOP #1412 for additional information

## *Arbacia punctulata* Chronic Fertilization Assay

### SAMPLE USE RECORD

| STUDY: 19798 | CLIENT: Woods Hole Group New Bedford | |
|---|---|---|
| SPECIES: *A. punctulata* | | |
| | Day: 0 | |
| SAMPLE | Volume Used (mL) | ESI Cube ID |
| Lab Control | 200 | Lab |
| -001 | ↓ | 009 |
| -002 | | 010 |
| -003 | | 011 |
| -004 | | 012 |
| INITIALS: | UB | |
| TIME: | 0930 | |
| DATE: | 6/16/10 | |

### FERTILIZATION COUNTS

| STUDY S2 | CLIENT Woods Hole Group | LOCATION New Bedford | DATE 6/16/10 INITIALS UB |
|---|---|---|---|

| | REPLICATE VIAL | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| SAMPLE | FERT/TOTAL | FERT/TOTAL | FERT/TOTAL | FERT/TOTAL |
| Lab Control | 100/108 | 103/111 | 100/104 | 101/108 |
| 009 ~~-001~~ | 99/102 | 100/104 | 92/100 | 100/107 |
| 010 ~~-002~~ | 31/112 | 44/125 | 81/118 | 49/100 |
| 011 ~~-003~~ | 100/109 | 101/110 | 110/112 | 100/101 |
| 012 ~~-004~~ | 95/110 | 100/120 | 97/110 | 100/107 |

UB 6/16/10

# CETIS Summary Report

| | |
|---|---|
| **Report Date:** | 16 Jun-10 14:43 (p 1 of 1) |
| **Test Code:** | 14-0113-1111/19798ApR2 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 03-1328-2550 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:14 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:34 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Sample Code | Sample ID | Sample Date | Receive Date | Sample Age | Client Name | Project |
|---|---|---|---|---|---|---|
| 19798-000 R2 | 16-4709-6567 | 16 Jun-10 11:00 | 16 Jun-10 11:00 | 74m | Woods Hole Group | Ecological Risk Assessme |
| 19798-009 | 10-5403-7534 | 15 Jun-10 09:15 | 15 Jun-10 18:53 | 27h | | |
| 19798-010 | 01-7208-1383 | 15 Jun-10 10:00 | 15 Jun-10 18:53 | 26h | | |
| 19798-011 | 13-9066-0337 | 15 Jun-10 14:45 | 15 Jun-10 18:53 | 21h | | |
| 19798-012 | 11-7416-3137 | 15 Jun-10 13:15 | 15 Jun-10 18:53 | 23h | | |

| Sample Code | Material Type | Sample Source | Station Location | Latitude | Longitude |
|---|---|---|---|---|---|
| 19798-000 R2 | Surface Water | New Bedford Harbor Dredge Moni | Lab Control | | |
| 19798-009 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-001 | | |
| 19798-010 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-002 | | |
| 19798-011 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-003 | | |
| 19798-012 | Surface Water | New Bedford Harbor Dredge Moni | WQ-TOX-004 | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 01-8053-7000 | Proportion Fertilized | Control Resp | 0.9376 | 0.7 - 1 | Yes | Result Within Limits |
| 03-3699-3338 | Proportion Fertilized | Control Resp | 0.9376 | 0.7 - 1 | Yes | Result Within Limits |
| 11-6145-3590 | Proportion Fertilized | Control Resp | 0.9376 | 0.7 - 1 | Yes | Result Within Limits |
| 16-1043-9752 | Proportion Fertilized | Control Resp | 0.9376 | 0.7 - 1 | Yes | Result Within Limits |
| 01-8053-7000 | Proportion Fertilized | PMSD | 0.06249 | NL - 0.25 | No | Result Within Limits |
| 03-3699-3338 | Proportion Fertilized | PMSD | 0.04284 | NL - 0.25 | No | Result Within Limits |
| 11-6145-3590 | Proportion Fertilized | PMSD | 0.03459 | NL - 0.25 | No | Result Within Limits |
| 16-1043-9752 | Proportion Fertilized | PMSD | 0.1219 | NL - 0.25 | No | Result Within Limits |

**Proportion Fertilized Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 0.9376 | 0.9315 | 0.9438 | 0.9259 | 0.9615 | 0.002997 | 0.01642 | 1.75% | 0.0% |
| 19798-009 | 4 | 0.9467 | 0.9379 | 0.9554 | 0.92 | 0.9706 | 0.004282 | 0.02346 | 2.48% | -0.96% |
| 19798-010 | 4 | 0.4513 | 0.3841 | 0.5185 | 0.2768 | 0.6864 | 0.03285 | 0.1799 | 39.86% | 51.87% |
| 19798-011 | 4 | 0.952 | 0.9372 | 0.9667 | 0.9174 | 0.9901 | 0.007226 | 0.03958 | 4.16% | -1.53% |
| 19798-012 | 4 | 0.8783 | 0.8625 | 0.8942 | 0.8333 | 0.9346 | 0.007758 | 0.04249 | 4.84% | 6.33% |

**Proportion Fertilized Detail**

| Sample Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|
| 19798-000 R2 | 0.9259 | 0.9279 | 0.9615 | 0.9352 |
| 19798-009 | 0.9706 | 0.9615 | 0.92 | 0.9346 |
| 19798-010 | 0.2768 | 0.352 | 0.6864 | 0.49 |
| 19798-011 | 0.9174 | 0.9182 | 0.9821 | 0.9901 |
| 19798-012 | 0.8636 | 0.8333 | 0.8818 | 0.9346 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 11-6145-3590 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 16 Jun-10 14:41 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 03-1328-2550 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:14 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:34 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 3.46% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-009 | -0.678 | 1.94 | 0.0624 | 0.7385 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.38 | 2.13 | 1.0000 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.0009484015 | 0.0009484015 | 1 | 0.46 | 0.5230 | Non-Significant Effect |
| Error | 0.01237633 | 0.002062721 | 6 | | | |
| Total | 0.01332473 | 0.003011123 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 2.13 | 47.5 | 0.5504 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.911 | | 0.3615 | Normal Distribution |

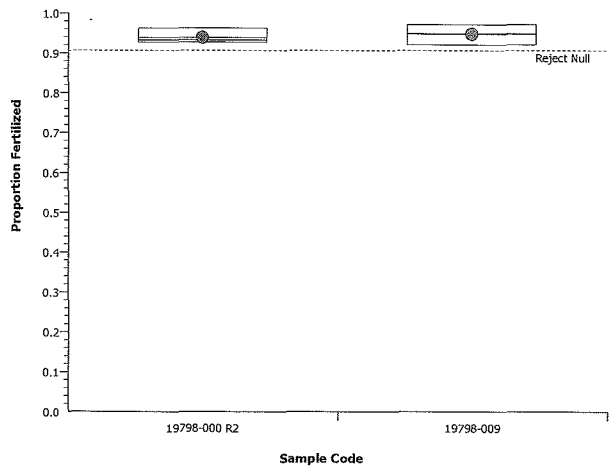
**Proportion Fertilized Summary**

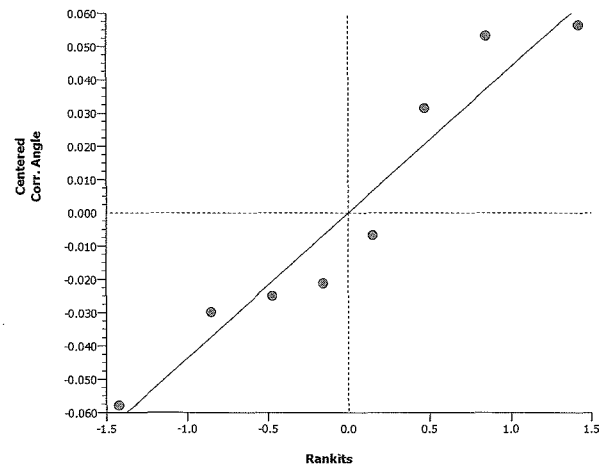
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 0.938 | 0.931 | 0.944 | 0.926 | 0.962 | 0.00305 | 0.0164 | 1.75% | 0.0% |
| 19798-009 | 4 | 0.947 | 0.938 | 0.956 | 0.92 | 0.971 | 0.00436 | 0.0235 | 2.48% | -0.96% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 1.32 | 1.31 | 1.33 | 1.3 | 1.37 | 0.00674 | 0.0363 | 2.75% | 0.0% |
| 19798-009 | 4 | 1.34 | 1.32 | 1.36 | 1.28 | 1.4 | 0.00984 | 0.053 | 3.95% | -1.65% |

**Graphics**



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 16-1043-9752 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 16 Jun-10 14:41 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 03-1328-2550 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:14 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:34 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 12.2% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-010 | 6.21 | 1.94 | 0.183 | 0.0004 | Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.95 | 2.13 | 0.1579 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.6844015 | 0.6844015 | 1 | 38.5 | 0.0008 | Significant Effect |
| Error | 0.1066125 | 0.01776874 | 6 | | | |
| Total | 0.791014 | 0.7021703 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 26 | 47.5 | 0.0240 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.939 | | 0.5964 | Normal Distribution |

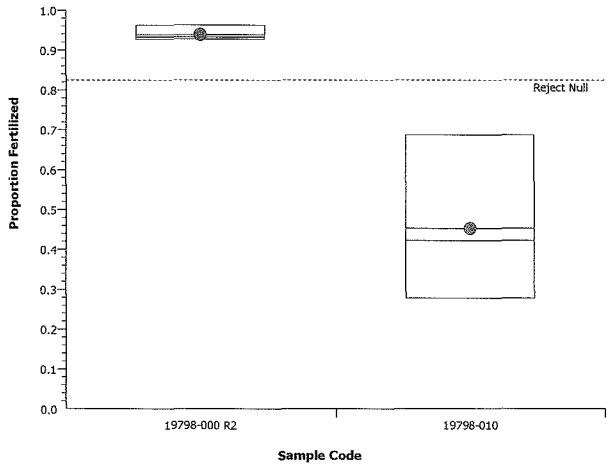
**Proportion Fertilized Summary**

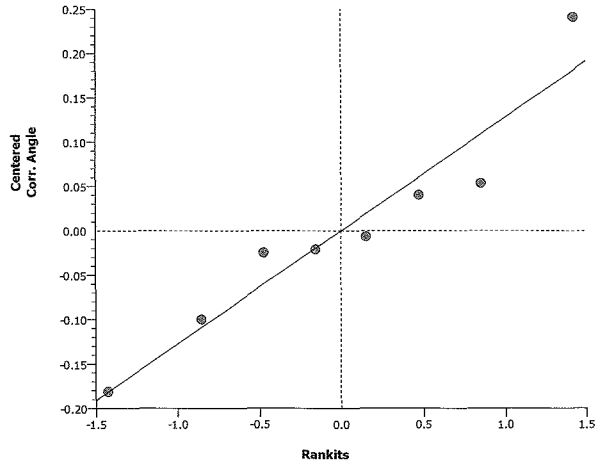
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 0.938 | 0.931 | 0.944 | 0.926 | 0.962 | 0.00305 | 0.0164 | 1.75% | 0.0% |
| 19798-010 | 4 | 0.451 | 0.383 | 0.52 | 0.277 | 0.686 | 0.0334 | 0.18 | 39.9% | 51.9% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 1.32 | 1.31 | 1.33 | 1.3 | 1.37 | 0.00674 | 0.0363 | 2.75% | 0.0% |
| 19798-010 | 4 | 0.735 | 0.665 | 0.806 | 0.554 | 0.976 | 0.0344 | 0.185 | 25.2% | 44.3% |

**Graphics**



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 01-8053-7000 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 16 Jun-10 14:41 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 03-1328-2550 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:14 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:34 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 6.25% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-011 | -0.868 | 1.94 | 0.105 | 0.7907 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.48 | 2.13 | 0.9461 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.004371539 | 0.004371539 | 1 | 0.754 | 0.4186 | Non-Significant Effect |
| Error | 0.03479438 | 0.005799063 | 6 | | | |
| Total | 0.03916591 | 0.0101706 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 7.8 | 47.5 | 0.1255 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.93 | | 0.5193 | Normal Distribution |

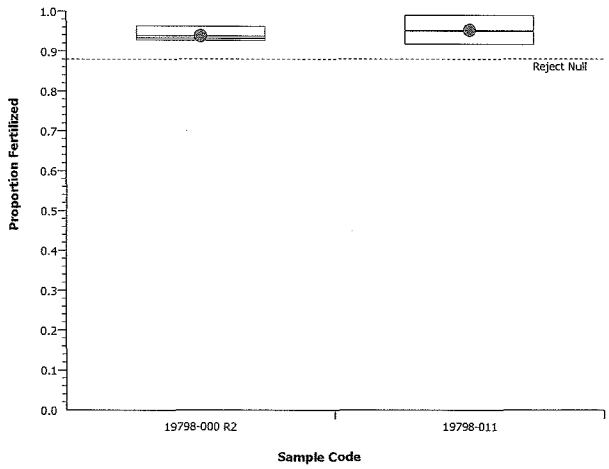
**Proportion Fertilized Summary**

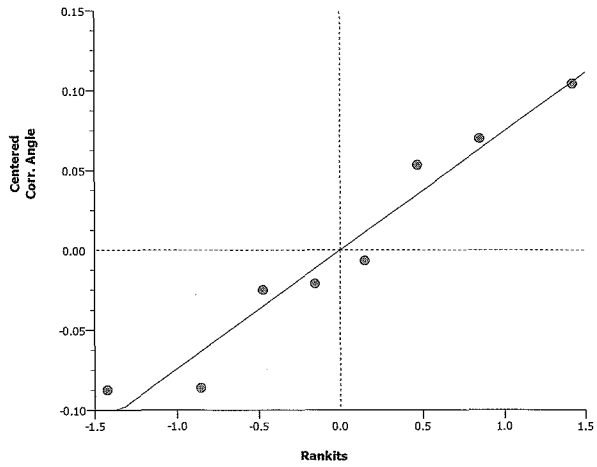
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 0.938 | 0.931 | 0.944 | 0.926 | 0.962 | 0.00305 | 0.0164 | 1.75% | 0.0% |
| 19798-011 | 4 | 0.952 | 0.937 | 0.967 | 0.917 | 0.99 | 0.00735 | 0.0396 | 4.16% | -1.53% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 1.32 | 1.31 | 1.33 | 1.3 | 1.37 | 0.00674 | 0.0363 | 2.75% | 0.0% |
| 19798-011 | 4 | 1.37 | 1.33 | 1.41 | 1.28 | 1.47 | 0.0188 | 0.101 | 7.42% | -3.54% |

**Graphics**



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 03-3699-3338 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 16 Jun-10 14:41 | **Analysis:** | Parametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 03-1328-2550 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:14 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:34 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | | | | | 4.28% |

**Equal Variance t Two-Sample Test**

| Sample Code | vs | Sample Code | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 19798-000 R2 | | 19798-012 | 2.62 | 1.94 | 0.0754 | 0.0199 | Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.84 | 2.13 | 0.2762 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.02061363 | 0.02061363 | 1 | 6.85 | 0.0397 | Significant Effect |
| Error | 0.01805411 | 0.003009018 | 6 | | | |
| Total | 0.03866774 | 0.02362265 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Variance Ratio F | 3.57 | 47.5 | 0.3241 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.914 | | 0.3814 | Normal Distribution |

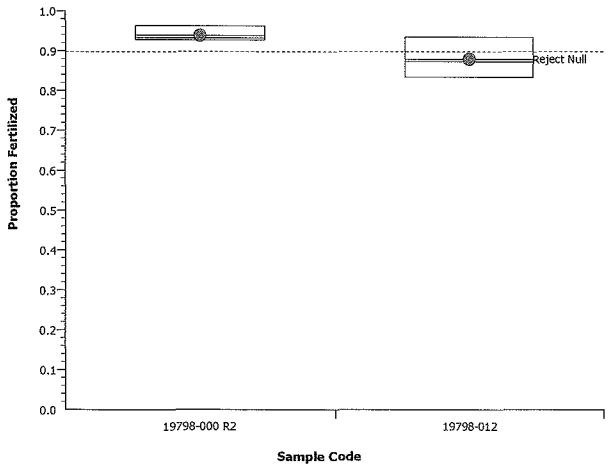
**Proportion Fertilized Summary**

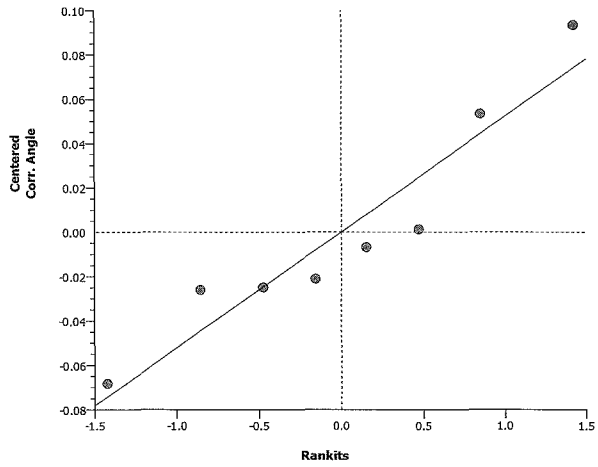
| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 0.938 | 0.931 | 0.944 | 0.926 | 0.962 | 0.00305 | 0.0164 | 1.75% | 0.0% |
| 19798-012 | 4 | 0.878 | 0.862 | 0.895 | 0.833 | 0.935 | 0.00789 | 0.0425 | 4.84% | 6.32% |

**Angular (Corrected) Transformed Summary**

| Sample Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|
| 19798-000 R2 | 4 | 1.32 | 1.31 | 1.33 | 1.3 | 1.37 | 0.00674 | 0.0363 | 2.75% | 0.0% |
| 19798-012 | 4 | 1.22 | 1.19 | 1.24 | 1.15 | 1.31 | 0.0127 | 0.0686 | 5.63% | 7.69% |

**Graphics**



## SALTWATER ASSAYS

*A. bahia, A. punctulata*

| STUDY: 19798 S1 | LOCATION: New Bedford Harbor | | | | |
|---|---|---|---|---|---|
| CHEMISTRY | Lab Salt Control | -001 | -002 | -003 | -004 |
| AMMONIA | 19797-006 | 005 | 006 | 007 | 008 |
| AS RECEIVED WATER QUALITIES | Lab Salt Control | -001 | -002 | -003 | -004 |
| SALINITY (ppt) | 24 | 21.4 | 27.8 | 25.2 | 22.6 |
| pH (SU) | 7.72 | 7.34 | 7.64 | 7.46 | 7.26 |
| TRC (mg/L) | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| DO (mg/L) | 8.2 | 7.1 | 8.1 | 6.4 | 5.8 |
| S/C (µmhos/cm) | 38740 | 34180 | 43160 | 39500 | 35800 |
| WQ STATION USED | 2 | 2 | 2 | 2 | 2 |
| INITIALS | SJ | SJ | SJ | SJ | SJ |
| *A. bahia* SALINITY ADJUSTMENT RECORD | Lab Salt Control | -001 | -002 | -003 | -004 |
| SAMPLE (mLs) | 1600 | 19,500 | 19,500 | 19,500 | 19,500 |
| SEA SALT (g) (A-2000) | ~~0~~ | 81 | 3500 mL DI | ~~0~~ | ~~0~~ |
| DATE: | 6/15/10 | 6/15/10 | 6/15/10 | 6/15/10 | 6/15/10 |
| TIME: | 1130 | 0920 | 0900 | 0910 | 0855 |
| INITIALS: | SJ | SJ | SJ | SJ | SJ |

| Sample ID | ESI Cube ID |
|---|---|
| -001 | -001 |
| -002 | -002 |
| -003 | -003 |
| -004 | -004 |
| | |

S2

## SALTWATER ASSAYS

*A. bahia, A. punctulata*

| STUDY: 19798 | LOCATION: New Bedford Harbor | | | | |
|---|---|---|---|---|---|
| CHEMISTRY | Lab Salt Control | 009 ~~-001~~ SJ 6/16/10 | 010 ~~-002~~ | 011 ~~-003~~ | 012 ~~-004~~ |
| AMMONIA | 19797-008 | -013 | -014 | -015 | -016 |
| AS RECEIVED WATER QUALITIES | Lab Salt Control | 009 ~~-001~~ | 010 ~~-002~~ | 011 ~~-003~~ | 012 ~~-004~~ |
| SALINITY (ppt) | 25 | 25.8 | 28.0 | 25.1 | 26.4 |
| pH (SU) | 7.90 | 7.35 | 7.61 | 7.68 | 7.27 |
| TRC (mg/L) | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| DO (mg/L) | 7.5 | 8.7 | 9.0 | LB 6/16/10 ~~8.4~~ 9.0 | 7.1 |
| S/C (µmhos/cm) | 39640 | 40490 | 43540 | 39660 | 41280 |
| WQ STATION USED | 1 | 1 | 1 | 1 | 1 |
| INITIALS | SJ | LB | LB | LB | LB |
| *A. bahia* SALINITY ADJUSTMENT RECORD | Lab Salt Control | 009 ~~-001~~ | 010 ~~-002~~ | 011 ~~-003~~ | 012 ~~-004~~ |
| SAMPLE (mLs) | | 19,500 | 19,500 | 19,500 | 19,500 |
| SEA SALT (g) | SJ 6/16/10 | ~~0~~ | 4000 mL DI | ~~0~~ | ~~0~~ |
| DATE: | | 6/16 | 6/16/10 | 6/16 | 6/16 |
| TIME: | | 0910 | 0930 | 0940 | 0945 |
| INITIALS: | | SJ | SJ | SJ | SJ |

| Sample ID | ESI Cube ID |
|---|---|
| -001 | ~~-001~~ 009 |
| -002 | ~~-002~~ 010 |
| -003 | ~~-003~~ 011 |
| -004 | ~~-004~~ 012 |
| | |

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## NEW WATER QUALITIES

| STUDY: | CLIENT: | LOCATION: | LAB CONTROL: |
|---|---|---|---|
| 19798 | Woods Hole Group | NEW BEDFORD | 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 | 8.2 | 7.4 | 9.3 | 6.8 | 7.0 | 7.1 | 6.8 | 25 | 25 | 24 | 25 | 24 | 25 | ~~24~~ 25 (E3) kc 6/21 |
| -001 | A | 8.1 | 6.1 | 9.8 | 6.3 | 6.2 | 6.4 | 6.5 | 24 | 24 | 24 | 24 | 24 | 24 | ~~25~~ 24 |
| -002 | A | 8.1 | 7.2 | 9.6 | 7.2 | 8.1 | ~~6.8~~ 6.9 | 7.5 | 24 | 24 | 24 | 25 | 24 | 24 | 25 |
| -003 | A | 7.5 | 6.5 | 9.2 | 6.7 | 6.6 | 7.0 | 7.6 | 25 | 26 | 26 | 25 | 26 | 26 | 26 |
| -004 | A | 6.7 | 6.8 | 8.2 | 6.7 | 6.9 | 6.9 | 6.9 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |

| | | NEW pH (SU) | | | | | | | NEW TEMPERATURE (°C) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONC | REP | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| LAB | A | 7.72 | 7.91 | 7.92 | 8.00 | 8.03 | 8.03 | 7.99 | 24 25 | 25 | 25 | 26 | 25 | 25 | 25 |
| -001 | A | 7.53 | 7.30 | 7.40 | 7.39 | 7.32 | 7.27 | 7.27 | ~~24~~ 25 | 26 | 25 | 24 | 25 | 25 | 25 |
| -002 | A | 7.57 | 7.58 | 7.61 | 7.54 | 7.58 | 7.55 | 7.61 | ~~24~~ 25 | 25 | 25 | 24 | 25 | 25 | 25 |
| -003 | A | 7.21 | 7.22 | 7.44 | 7.33 | 7.38 | 7.24 | 7.33 | (E3) ~~24~~ 25 | 25 | 25 | 24 | 25 | 25 | 25 |
| -004 | A | 7.29 | 7.25 | 7.28 | 7.26 | 7.33 | 7.30 | 7.28 | ~~24~~ 25 | 25 | 25 | 26 | 25 | 25 | 25 |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | SJ 6/15/10 | | | | | | |
| DATE: | | 6/15/10 | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21 | | | | | | | |
| TIME: | | 1135 | 1205 | 1245 | 1410 | 1245 | 1415 | 1050 | | | | | | | |
| INIT: | | SJ | kc | JQ | SJ | LP | JQ | kc | | | | | | | |

| WATER QUALITY METERS USED NEW WATER QUALITIES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Water Quality Station # | | 1 | 1 | 1 | 2 | 2 | 2 | |
| Initials | | kc | JQ | SJ | LP | JQ | kc | |
| Date | 6/15/10 | 6/16/10 | 6/17/10 | 6/18 | 6/19 | 6/20/10 | 6/21/10 | |

S2

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## NEW WATER QUALITIES

| STUDY: 19798 | 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 | 7.5 | 7.1 | 7.4 | 7.0 | 7.2 | 7.2 | 7.5 | 25 | 24 | 24 | 25 | 24 | 24 | 24 |
| ~~001~~ 009 | A | 7.3 | 6.1 | 5.3 | 5.0 | 5.7 | 6.4 | 5.4 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| ~~002~~ 010 | A | 7.4 | 7.0 | 7.6 | 7.1 | 7.6 | 7.8 | 8.0 | 25 | 25 | 25 | 24 | 24 | 24 | 24 |
| ~~003~~ 011 | A | 7.6 | 6.8 | 6.3 | 6.7 | 7.1 | 7.0 | 6.7 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| ~~004~~ 012 | A | 7.3 | 7.1 | 6.1 | 6.2 | 7.1 | 6.6 | 6.6 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |

(15) ST 6/6/10

| | | NEW pH (SU) | | | | | | | NEW TEMPERATURE (°C) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONC | REP | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| LAB | A | 7.90 | 7.83 | 7.96 | 8.00 | 8.05 | 7.97 | 7.98 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| ~~001~~ 009 | A | 7.39 | 7.35 | 7.23 | 7.16 | 7.27 | 7.11 | 7.15 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| ~~002~~ 010 | A | 7.57 | 7.67 | 7.67 | 7.62 | 7.66 | 7.57 | 7.62 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| ~~003~~ 011 | A | 7.62 | 7.60 | 7.54 | 7.42 | 7.40 | 7.37 | 7.35 | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| ~~004~~ 012 | A | 7.34 | 7.33 | 7.28 | 7.30 | 7.34 | 7.20 | 7.21 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | | | | | | | |
| TIME: | | 1150 | 1155 | 1500 | 1405 | 1310 | 1220 | 1040 | | | | | | | |
| INIT: | | SJ | SJ | WM | UB | JQ | JQ | UB | | | | | | | |

| WATER QUALITY METERS USED NEW WATER QUALITIES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Water Quality Station # | | 2 | 1 | 2 | 2 | 1 | 2 | |
| Initials | | SJ | WM | UB | JQ | JQ | UB | |
| Date | 6/16/10 | 6/17 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | |

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## OLD WATER QUALITIES

| STUDY: | CLIENT: | LOCATION: | LAB CONTROL: |
|---|---|---|---|
| 19798 | Woods Hole Group | NEW BEDFORD | 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 | 24 | 24 | 24 | 24 | 25 | 24 | 7.73 | 7.67 | 7.79 | 7.86 | 7.85 | 7.69 | 7.68 |
| -001 | A | 25 | 24 | 24 | 24 | 25 | 25 | 25 | 7.57 | 7.52 | 7.69 | 7.67 | 7.72 | 7.66 | 7.58 |
| -002 | A | 25 | 25 | 25 | 25 | 25 | 25 | 26 | 7.48 | 7.60 | 7.77 | 7.72 | 7.77 | 7.77 | 7.68 |
| -003 | A | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 7.61 | 7.49 | 7.67 | 7.66 | 7.72 | 7.66 | 7.66 |
| -004 | A | 24 | 24 | 23 | 23 | 23 | 23 | 24 | 7.64 | 7.53 | 7.69 | 7.65 | 7.70 | 7.62 | 7.65 |

| OLD TEMPERATURE (°C) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc | Rep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | |
| Control | A | 26 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| -001 | A | 26 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| -002 | A | 26 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| -003 | A | 26 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| -004 | A | 26 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| Out 11/2/10 | | ~~26~~ | ~~25~~ | ~~25~~ | ~~25~~ | ~~25~~ | ~~25~~ | ~~25~~ | | | | | | | |
| INC TEMP: | | 25 | 25 | 25 | | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/16/10 | 6/17/10 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | | | | | | | |
| TIME: | | 1100 | 1145 | 1315 | 1210 | 1335 | 0925 | 1200 | | | | | | | |
| INITIALS: | | KE | JQ | SJ | LB | JQ | KE | LB | | | | | | | |

**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 | 2 | 1 | 2 | 2 | 2 | 2 |
| Initials | | KE | JQ | LB | JQ | JQ | KE | LB |
| Date | 6/15/10 | 6/16/10 | 6/17/10 | 6/18 | 6/20 | 6/20/10 | 6/21/10 | 6/22 |

(E3) JQ 6/20/10

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## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## OLD WATER QUALITIES

| STUDY: 19798 | 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 | 24 | 25 | 25 | 25 | 7.59 | 7.91 | 7.75 | 8.05 | 7.91 | 7.99 | 7.90 |
| ~~001~~ 009 | A | 26 | 26 | 26 | 26 | 27 | 27 | 27 | 7.49 | 7.51 | 7.49 | 8.03 | 7.98 | 7.99 | 7.98 |
| ~~002~~ 010 | A | 25 | 25 | 25 | 25 | 25 | 25 | 26 | 7.64 | 7.78 | 7.64 | 8.03 | 7.96 | 7.99 | 8.00 |
| ~~003~~ 011 | A | 26 | 25 | 25 | 26 | 25 | 26 | 26 | 7.48 | 7.68 | 7.55 | 8.02 | 7.94 | 7.99 | 7.96 |
| ~~004~~ 012 | A | 27 | 26 | 26 | 27 | 26 | 27 | 27 | 7.57 | 7.63 | 7.64 | 8.07 | 7.93 | 8.02 | 8.01 |

| OLD TEMPERATURE (°C) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc | Rep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | |
| Control | A | 25 | ~~24~~ 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| ~~001~~ 009 | A | 25 | ~~24~~ 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| ~~002~~ 010 | A | 25 | ~~24~~ 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| ~~003~~ 011 | A | 25 | ~~24~~ 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| ~~004~~ 012 | A | 25 | ~~24~~ 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| | | | | | | | | | | | | | | | |
| INC TEMP: | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | |
| DATE: | | 6/17/10 | 6/18 | 6/19 | 6/20 | 6/21 | 6/22 | 6/23 | | | | | | | |
| TIME: | | 1100 | 1140 | 1250 | 1200 | 1130 | 0945 | 0945 | | | | | | | |
| INITIALS: | | SJ | LB | LB | JQ | JQ | LB | DM | | | | | | | |

**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 # | | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| Initials | | SJ | LB | LB | JQ | JQ | LB | DM |
| Date | ~~6/16/10~~ | 6/17/10 | 6/18 | 6/19 | 6/20 | 6/21/10 | 6/22 | 6/23 |

## *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SAMPLE USE RECORD

STUDY: 19798 | CLIENT: Woods HoleGroup

SPECIES: *A. bahia* | TEST: chronic renewal

| Sample | Day: 0 Volume Used (mL) | Day: 0 ESI Cube ID | Day: 1 Volume Used (mL) | Day: 1 ESI Cube ID | Day: 2 Volume Used (mL) | Day: 2 ESI Cube ID | Day | Date | Time | Init |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab Control | 1600 | n/a | 1200 | n/a | 1200 | n/a | 0 | 6/15/10 | 1130 | SJ |
| -001 | ↓ | -001 | ↓ | -001 | ↓ | -001 | 1 | 6/16/10 | 1140 | ne |
| -002 | ↓ | -002 | ↓ | -002 | ↓ | -002 | 2 | 6/17/10 | 1246 | JQ |
| -003 | ↓ | -003 | ↓ | -003 | ↓ | -003 | 3 | 6/18 | 1355 | SJ |
| -004 | ↓ | -004 | ↓ | -004 | ↓ | -002 | 4 | 6/19 | ~~1405~~ 1230 | ~~SJ~~ |
| | | | | | | | 5 | 6/20 | 1410 | JQ |
| | | | | | | | 6 | 6/21/10 | 1035 | ne |

| Sample | Day: 3 Volume Used (mL) | Day: 3 ESI Cube ID | Day: 4 Volume Used (mL) | Day: 4 ESI Cube ID | Day: 5 Volume Used (mL) | Day: 5 ESI Cube ID |
|---|---|---|---|---|---|---|
| Lab Control | 1200 | n/a | 1200 | n/a | 1200 | n/a |
| -001 | ↓ | -001 | ↓ | 001 | ↓ | 001 |
| -002 | ↓ | -002 | ↓ | 002 | ↓ | 002 |
| -003 | ↓ | -003 | ↓ | 003 | ↓ | 003 |
| -004 | ↓ | -004 | ↓ | 004 | ↓ | 004 |

| Sample | Day: 6 Volume Used (mL) | Day: 6 ESI Cube ID |
|---|---|---|
| Lab Control | 1200 | n/a |
| -001 | ↓ | 001 |
| -002 | ↓ | 002 |
| -003 | ↓ | 003 |
| -004 | ↓ | 004 |

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# *Americamysis bahia* 7 DAY CHRONIC ASSAY
## SAMPLE USE RECORD

STUDY: 19798 | CLIENT: Woods HoleGroup

SPECIES: *A. bahia* | TEST: chronic renewal

| Sample | Day: 0 Volume Used (mL) | Day: 0 ESI Cube ID | Day: 1 Volume Used (mL) | Day: 1 ESI Cube ID | Day: 2 Volume Used (mL) | Day: 2 ESI Cube ID | Day | Date | Time | Init |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab Control | 1600 | n/a | 1200 | n/a | 1200 | n/a | 0 | 6/16/10 | 1130 | SJ |
| ~~001~~ 009 | ↓ | -009 | ↓ | 009 | ↓ | 009 | 1 | 6/17 | 1140 | SJ |
| ~~002~~ 010 | ↓ | -010 | ↓ | 010 | ↓ | 010 | 2 | 6/18 | 1450 | LB |
| ~~003~~ 011 | ↓ | -011 | ↓ | 011 | ↓ | 011 | 3 | 6/19 | 1355 | LB |
| ~~004~~ 012 | ↓ | -012 | ↓ | 012 | ↓ | 012 | 4 | 6/20 | 1305 | JQ |
| | | | | | | | 5 | 6/21 | 1210 | JQ |
| | | | | | | | 6 | 6/22 | 1030 | LB |

LB SJ 6/16/10

| Sample | Day: 3 Volume Used (mL) | Day: 3 ESI Cube ID | Day: 4 Volume Used (mL) | Day: 4 ESI Cube ID | Day: 5 Volume Used (mL) | Day: 5 ESI Cube ID |
|---|---|---|---|---|---|---|
| Lab Control | 1200 | n/a | 1200 | n/a | 1200 | n/a |
| ~~001~~ 009 | ↓ | 009 | ↓ | 009 | ↓ | 009 |
| ~~002~~ 010 | ↓ | 010 | ↓ | 010 | ↓ | 010 |
| ~~003~~ 011 | ↓ | 011 | ↓ | 011 | ↓ | 011 |
| ~~004~~ 012 | ↓ | 012 | ↓ | 012 | ↓ | 012 |

| Sample | Day: 6 Volume Used (mL) | Day: 6 ESI Cube ID |
|---|---|---|
| Lab Control | 1200 | n/a |
| ~~001~~ 009 | ↓ | 009 |
| ~~002~~ 010 | ↓ | 010 |
| ~~003~~ 011 | ↓ | 011 |
| ~~004~~ 012 | ↓ | 012 |

Report No: 19798 SDG:
Project: New Bedford Harbor - Level I Study

Parameter: Ammonia-N
Matrix: Water
Sampled: 06/15/10 0800

| Sample ID: | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| WQ-TOX-001-061410 | 19798-005 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-002-061410 | 19798-006 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-003-061410 | 19798-007 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-004-061410 | 19798-008 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |

Notes:

ND = Not Detected

Report No: 19798 SDG:
Project: New Bedford Harbor - Level I Study

Parameter: Ammonia-N
Matrix: Water
Sampled: 06/15/10 0815

| Sample ID: | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| WQ-TOX-001-061510 | 19798-013 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-002-061510 | 19798-014 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-003-061510 | 19798-015 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| WQ-TOX-004-061510 | 19798-016 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |

Notes:

ND = Not Detected

Report No: 19797 SDG:
Project: Laboratory Seawater

Sample ID: ESIN1 LAB SALT 06/15/10
Matrix: Water
Sampled: 06/15/10 1000

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|---|
| Ammonia-N | 19797-006 | ND | Se | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |

Notes:

ND = Not Detected

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 19798 | | |
| SDG No: | | | |
| Project: | Woods Hole Group - NB Env. Monitoring Level I Samples | | |
| Delivered via: | Client | | |
| Date and Time Received: | 06/14/10 1845 | Date and TIme Logged into Lab: | 06/15/10 0755 |
| Recieved By: | RAM | Logged into Lab by: | SJ AJ |
| 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: | 4 | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | 3764 | | |
| 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-001-061410 | 19798-001 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-002-061410 | 19798-002 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-003-061410 | 19798-003 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-004-061410 | 19798-004 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-001-061410 | 19798-005 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-002-061410 | 19798-006 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-003-061410 | 19798-007 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-004-061410 | 19798-008 | W | NH3; | 60mL P | H2SO4 | |

Notes and qualifications:

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 19798 | | |
| SDG No: | | | |
| Project: | WHG-NB Env. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 06/15/10 1853 | Date and TIme Logged into Lab: | 06/16/10 0800 |
| Recieved By: | DM | Logged into Lab by: | SJ |
| 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: | 4 | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | 3766 | | |
| 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-001-061510 | 19798-009 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-002-061510 | 19798-010 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-003-061510 | 19798-011 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-004-061510 | 19798-012 | W | AB7DCR, AB48AD, AP01CR; | 20L | 4C | |
| WQ-TOX-001-061510 | 19798-013 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-002-061510 | 19798-014 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-003-061510 | 19798-015 | W | NH3; | 60mL P | H2SO4 | |
| WQ-TOX-004-061510 | 19798-016 | W | NH3; | 60mL P | H2SO4 | |

Notes and qualifications:

Subsampled $NH_3$ bottles from corresponding cubitainers upon receipt at the laboratory.

ESI
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Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 19798 S1

# CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: WOODS HOLE GROUP | Contact: DAVE WALSH | Project Name: NB ENV. Monitor | Page ~~of~~ Page 1 OF 1 |
| Report to: DAVE WALSH | Address: 81 TECHNOLOGY PARK DR | Project Number: TO-0010-03 | |
| Invoice to: CATHY MOREY | Address: E. FALMOUTH, MA 02536 | Project Manager: DAVE WALSH | |
| Voice: 508-540-8080 | Fax: | email: DWALSH@WHGRP.COM | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 004 | WQ-TOX-004-061410 | 6/14/10 | 13:10 | DRW | G | 20 L | P | NA | W | | LEVEL I SAMPLES: PLEASE INCLUDE THESE SAMPLES IN DATA REPORT WITH OTHER LEVEL I SAMPLES TO BE SUBMITTED FOR ANALYSIS TOMORROW (6/15). |
| 003 | WQ-TOX-003-061410 | 6/14/10 | 12:15 | DRW | G | 20L | P | NA | W | | |
| 002 | WQ-TOX-002-061410 | 6/14/10 | 0950 | DRW | G | 20L | P | NA | W | | |
| 001 | WQ-TOX-001-061410 | 6/14/10 | 0920 | DRW | G | 20L | P | NA | W | | |
| 005 | WQ-TOX-001-061410 | 06/15/10 | 0800 | SJ | G | 60mL | P | $H_2SO_4$ ~~NA~~ | W | N | $NH_3$ |
| 006 | WQ-TOX-002-061410 | ↓ | ↓ | ↓ | G | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 007 | WQ-TOX-003-0614-10 | | | | G | | | | | | |
| 008 | WQ-TOX-004-061410 | | | | G | | | | | | |
| | | | | | | | | | | | |
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|---|---|---|---|
| Relinquished By: [signature] | Date: 6/14/10 | Time: 1845 | Received By: Date: Time: |
| Relinquished By: | Date: | Time: | Received at Lab By: [signature] Date: 06/14/10 Time: 1845 |

Comments:

Sample Delivery Group No: Page of

COC Doc No: 3766

Water Quality Monitoring Summary Report
W912WJ-09-D-0001
Delivery Order: 0010-03
December 2010

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Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 19798 S2

# CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NB Env. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: | email: Dwalsh@WHGRP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 009 | WQ-TOX-001-061510 | 6/15/10 | 09:15 | DRW | G | 20L | P | NA | W | | Level I Samples: Please include these samples with other level 1 samples that were submitted for analysis on June 14, 2010 |
| 010 | WQ-TOX-002-061510 | 6/15/10 | 10:00 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | | |
| 011 | WQ-TOX-003-061510 | 6/15/10 | 14:45 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | | |
| 012 | WQ-TOX-004-061510 | 6/15/10 | 13:15 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | | |
| 013 | WQ-TOX-001-061510 | 6/16/10 | 0815 | SJ | G | 60mL | P | $H_2SO_4$ | W | N | $NH_3$ |
| 014 | WQ-TOX-002-061510 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 015 | WQ-TOX-003-061510 | | | | | | | | | | |
| 016 | WQ-TOX-004-061510 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| | | | | | | | | | | | |
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| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 6/15/10 Time: 1720 | Received By: [signature] | Date: 6/15/10 Time: 1720 |
| Relinquished By: [signature] | Date: 6/15/10 Time: 1853 | Received at Lab By: [signature] | Date: 6-15-10 Time: 1853 |

Comments:

Sample Delivery Group No: Page of

COC Doc No: 3766

# Biomonitoring of Surface Water Samples
# New Bedford Harbor
# New Bedford, Massachusetts

## June 15, 2010 Level II Dilution Study Sampling Event

**NED ACOE Job Number: TO-0010-03**

**Task Order No.: ESI0002**

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 15, 2010
Reference Number: Woods Hole Group, Inc. 19812-10-06

# Biomonitoring of Surface Water Samples
# New Bedford Harbor, New Bedford, Massachusetts

## June 15, 2010 Level II Dilution Study Sampling Event
### NED ACOE Job Number: TO-0010-03

## 1.0 INTRODUCTION

This report provides a summary of data generated from acute and chronic exposure screening assays evaluating surface water samples collected from New Bedford Harbor in New Bedford, Massachusetts. Toxicity tests were conducted on ten surface water samples representing two grab samples collected from the specified areas in the harbor that had been diluted to five target concentrations each (0% or reference, 25%, 50%, 75% and 100% undiluted) representing five measured turbidity levels (7.1, 41, 160, 190 and 230 NTUs, respectively). 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 assay 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.

### 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 for up to 6 days. Holding tanks were maintained in a flow-through culture mode at a temperature of 25±2°C. At the start of the assays the mysids were 3 days old. Juveniles were fed ≤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

Two grab surface water samples were collected in New Bedford Harbor and diluted in the field to nominal 7.1, 41, 160, 190 and 230 NTUs by Woods Hole Group, Inc. staff on June 15, 2010. Actual turbidity levels were documented by Alpha Analytical Labs after the start of the assays. Samples were placed in polyethylene cubitainers for shipment to the laboratory. One 20 L cubitainer was received for each sample. 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* assay were adjusted to 25±2‰ while samples used for the *A. punctulata*

assays were adjusted to 30±2‰ using commercial sea salts. Samples with "as received" salinity above these levels were not adjusted. A summary of "As Received" water quality data are summarized 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

For this round of sample analysis there were two reference site samples (DS-TOX-001-061510 and DS-TOX-006-061510) representing the samples with the lowest measured turbidity level.

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

One *A. bahia* assay was run with the laboratory control and all site samples together. The endpoint for the *A. bahia* bioassay was survival (acute). The 48 hour static acute toxicity tests were conducted at 25±1°C with a photoperiod of 16:8 hours light:dark. Test chambers for the acute assays 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 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. Specific conductivity was measured in one replicate of each sample at the start of the assay. Mysids were not fed during the assay.

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

Two separate *A. punctulata* assays were run with the reference samples being paired with their parent sample and sister diluents. 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 $\propto < 0.05$. For the *A. bahia* assay, the two reference samples were used to determine whether there were significant reductions in survival as compared to the ten site samples. For the *A. punctulata* assay, the reference samples were used for statistical comparisons against the four other paired samples in each of the two groups of assays.

### 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

Table 4 provides summaries of survival and fertilization endpoints and associated statistical analyses for *A. bahia* and *A. punctulata*. Support data, including copies of laboratory bench sheets, are provided in Appendix A.

Appendix A.

3.1 *Americamysis bahia* Acute Exposure Bioassay

Minimum test acceptability criteria for the acute exposure bioassay require ≥90% survival in the control concentrations. Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

3.2 *Arbacia punctulata* Chronic Fertilization Bioassay

Protocol specifies a 70% to 90% fertilization rate for *Arbacia punculata* (EPA 2002). Achievement of these results indicate that healthy test organisms were used. See Table 4 for test acceptability and data summary.

## 4.0 REFERENCES

APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20th 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 Surface Water Quality Monitoring June 15, 2010 Level II Dilution Study Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Field ID | ESI Code | Type of Sample | Matrix | Collection | | Receipt | |
|---|---|---|---|---|---|---|---|
| | | | | Date | Time | Date | Time |
| DS-TOX-001-061510 | 19812-001 | Grab | Water | 06/15/10 | 1225 | 06/15/10 | 1853 |
| DS-TOX-002-061510 | 19812-002 | Comp | Water | 06/15/10 | 1225 | 06/15/10 | 1853 |
| DS-TOX-003-061510 | 19812-003 | Comp | Water | 06/15/10 | 1225 | 06/15/10 | 1853 |
| DS-TOX-004-061510 | 19812-004 | Comp | Water | 06/15/10 | 1225 | 06/15/10 | 1853 |
| DS-TOX-005-061510 | 19812-005 | Grab | Water | 06/15/10 | 1225 | 06/15/10 | 1853 |
| DS-TOX-006-061510 | 19812-006 | Grab | Water | 06/15/10 | 1400 | 06/15/10 | 1853 |
| DS-TOX-007-061510 | 19812-007 | Comp | Water | 06/15/10 | 1400 | 06/15/10 | 1853 |
| DS-TOX-008-061510 | 19812-008 | Comp | Water | 06/15/10 | 1400 | 06/15/10 | 1853 |
| DS-TOX-009-061510 | 19812-009 | Comp | Water | 06/15/10 | 1400 | 06/15/10 | 1853 |
| DS-TOX-010-061510 | 19812-010 | Grab | Water | 06/15/10 | 1400 | 06/15/10 | 1853 |

**Table 2 Summary of "As Received" Sample Physical and Chemical Characteristics. New Bedford Harbor Surface Water Quality Monitoring June 15, 2010 Level II Dilution Study Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Field ID | ESI Code | Target Dilution / Reference | Measured Turbidity (NTUs)* | Ammonia** (mg/L) | pH (SU) | Salinity (‰) | Total Residual Chlorine (mg/L) |
|---|---|---|---|---|---|---|---|
| DS-TOX-001-061510 | 19812-001 | Reference | 7.1 | 0.16 | 7.40 | 25 | <0.02 |
| DS-TOX-002-061510 | 19812-002 | 25% | 41 | 0.14 | 7.35 | 26 | <0.02 |
| DS-TOX-003-061510 | 19812-003 | 50% | 160 | <0.1 | 7.34 | 26 | <0.02 |
| DS-TOX-004-061510 | 19812-004 | 75% | 190 | <0.1 | 7.33 | 26 | <0.02 |
| DS-TOX-005-061510 | 19812-005 | 100% | 230 | <0.1 | 7.30 | 26 | <0.02 |
| DS-TOX-006-061510 | 19812-006 | Reference | 7.1 | <0.1 | 7.69 | 25 | <0.02 |
| DS-TOX-007-061510 | 19812-007 | 25% | 41 | <0.1 | 7.65 | 25 | <0.02 |
| DS-TOX-008-061510 | 19812-008 | 50% | 160 | <0.1 | 7.56 | 26 | <0.02 |
| DS-TOX-009-061510 | 19812-009 | 75% | 190 | <0.1 | 7.39 | 26 | <0.02 |
| DS-TOX-010-061510 | 19812-010 | 100% | 230 | <0.1 | 7.34 | 26 | <0.02 |

**COMMENTS:**
* Turbidity was measured by Alpha Analytical and provided via email communication.
** Ammonia samples were subsampled at ESI on June 16, 2010.

**Table 3 Reference Toxicant Summary. New Bedford Harbor Surface Water Quality Monitoring June 15, 2010 Level II Dilution Study Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Date | Endpoint | | Value | Historic Mean/ Central Tendency | Acceptable Range | Reference Toxicant |
|---|---|---|---|---|---|---|
| *A. bahia* | | | | | | |
| 06/23/10 | Survival | LC-50 - 48 Hr | 22.5 | 21.9 | 17.9 - 25.9 | SDS (mg/L) |
| *A. punctulata* | | | | | | |
| 06/10/10 | Fertilization | C-NOEC | 1.0 | 10.0 | 5.0 - 20.0 | Copper (µg/L) |
| 06/10/10 | Fertilization | IC-25 | 8.9 | 17.6 | 0.0 - 50.4 | Copper (µg/L) |

Mean and Acceptable Ranges based on most recent 20 reference toxicant assays (NELAP standard)

**Table 4. Endpoint Summary Table. New Bedford Harbor Surface Water Quality Monitoring June 15, 2010 Level II Dilution Study Sampling Event. New Bedford Harbor Dredge Plume Monitoring Program.**

| Sample ID | Reps | Mean | Min | Max | CV | Significant Difference vs | | Endpoint Summary (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | p Value | Reference | EC-50 | IC-10 | NOEC |
| Series 1 Samples; 001 - 005 | | | | | | | | | | |
| *Arbacia punctulata* | | | Portion Fertilized | | | | | | | |
| Lab Control | | 93.8% | 92.6% | 96.2% | 1.75% | - | - | - | - | - |
| Ref. / 7.1 NTUs (-001) | | 88.7% | 84.0% | 93.5% | 4.36% | - | - | >100% | >100% | 100% |
| 25% / 41 NTUs (-002) | 4 | 91.9% | 87.7% | 96.2% | 3.79% | 0.9861 | NO | | | |
| 50% / 160 NTUs (-003) | | 90.4% | 83.8% | 93.5% | 5.00% | 0.9402 | NO | | | |
| 75% / 190 NTUs (-004) | | 85.5% | 79.0% | 90.0% | 5.44% | 0.3499 | NO | | | |
| 100% / 230 NTUs (-005) | | 91.1% | 89.0% | 95.0% | 2.95% | 0.9657 | NO | | | |
| *Americamysis bahia* | | | 48-Hour Survival | | | | | | | |
| Lab Control | | 97.5% | 90.0% | 100.0% | 5.13% | - | - | - | - | - |
| Ref. / 7.1 NTUs (-001) | | 100.0% | 100.0% | 100.0% | 0.00% | - | - | >100% | >100% | 100% |
| 25% / 41 NTUs (-002) | 4 | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 50% / 160 NTUs (-003) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 75% / 190 NTUs (-004) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 100% / 230 NTUs (-005) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| Series 2 Samples; 006 - 010 | | | | | | | | | | |
| *Arbacia punctulata* | | | Portion Fertilized | | | | | | | |
| Lab Control | | 93.8% | 92.6% | 96.2% | 1.75% | - | - | - | - | - |
| Ref. / 7.1 NTUs (-006) | | 91.6% | 86.7% | 94.4% | 3.90% | - | - | >100% | 52.3% | 41% |
| 25% / 41 NTUs (-007) | 4 | 85.1% | 80.4% | 93.5% | 7.02% | 0.0596 | NO | | | |
| 50% / 160 NTUs (-008) | | 66.1% | 57.8% | 71.6% | 8.84% | <0.0001 | YES | | | |
| 75% / 190 NTUs (-009) | | 39.3% | 38.1% | 40.0% | 2.15% | <0.0001 | YES | | | |
| 100% / 230 NTUs (-010) | | 54.1% | 50.0% | 62.3% | 10.20% | <0.0001 | YES | | | |
| *Americamysis bahia* | | | 48-Hour Survival | | | | | | | |
| Lab Control | | 97.5% | 90.0% | 100.0% | 5.13% | - | - | - | - | - |
| Ref. / 7.1 NTUs (-006) | | 100.0% | 100.0% | 100.0% | 0.00% | - | - | >100% | >100% | 100% |
| 25% / 41 NTUs (-007) | 4 | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 50% / 160 NTUs (-008) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 75% / 190 NTUs (-009) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |
| 100% / 230 NTUs (-010) | | 100.0% | 100.0% | 100.0% | 0.00% | 0.4429 | NO | | | |

# APPENDIX A

# SUPPORT DATA


| Contents | # Pages |
|---|---|
| Methods Summary | 1 |
| | |
| Study 19812: Sample Date June 15, 2010 | |
| *A. bahia* Bench Sheets & Statistical Analysis Report | 16 |
| *A. punctulata* Bench Sheets and Statistical Analysis Report | 19 |
| Water Quality Bench Sheets, Dilution Prep Sheets and Meter Use Sheets | 5 |
| Analytical Chemistry Report | 2 |
| Sample Receipt Records | 1 |
| Chain of Custody and Organism Shipping Information | 1 |
| | |
| Total Appendix Pages | 45 |

## METHODS USED IN NPDES PERMIT BIOMONITORING TESTING

| Parameter | Method |
|---|---|
| **Acute Exposure Bioassays:** | |
| *Ceriodaphnia dubia, Daphnia pulex* | EPA-821-R-02-012 |
| *Pimephales promelas* | EPA-821-R-02-012 |
| *Americamysis bahia* | EPA-821-R-02-012 |
| *Menidia beryllina, Cyprinodon variegatus* | EPA-821-R-02-012 |
| **Chronic Exposure Bioassays:** | |
| *Ceriodaphnia dubia* | EPA-821-R-02-013 1002.0 |
| *Pimephales promelas* | EPA-821-R-02-013 1000.0 |
| *Cyprinodon variegatus* | EPA-821-R-02-014 1004.0 |
| *Menidia beryllina* | EPA-821-R-02-014 1006.0 |
| *Arbacia punctulata* | EPA-821-R-02-014 1008.0 |
| *Champia parvula* | EPA-821-R-02-014 1009.0 |
| **Trace Metals:** | |
| Trace Metals | EPA 200.7/SW 6010 and EPA 200.8/SW 6020 |
| Hardness | Standard Methods 20th Edition - Method 2340 B |
| **Wet Chemistries:** | |
| Alkalinity | EPA 310.2 |
| Chlorine, Residual | Standard Methods 20th Edition - Method 4500CLD |
| Total Organic Carbon | Standard Methods 20th Edition - Method 5310C |
| Specific Conductance | Standard Methods 20th Edition - Method 2510B |
| Nitrogen - Ammonia | Standard Methods 20th Edition - Method 4500NH3G |
| pH | Standard Methods 20th Edition - Method 4500H+B |
| Solids, Total (TS) | Standard Methods 20th Edition - Method 2540 B |
| Solids, Total Suspended (TSS) | Standard Methods 20th Edition - Method 2540 D |
| Solids, Total Dissolved (TDS) | Standard Methods 20th Edition - Method 2540 C |
| Dissolved Oxygen | Standard Methods 20th Edition - Method 4500-O G |

25±2ppt

# ACUTE BIOASSAY DATA SUMMARY

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| STUDY: 19812 | | "AS RECEIVED" EFFLUENT AND DILUENT CHEMISTRIES | | | | | | | | |
| CLIENT: Woods Hole Group | TEST ORGANISM: *A. bahia* | | 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, A. punctulata Salt Water Assays Sheet | | | | | | | |
| | | DIL | | | | | | | | |

| CONC | REP | SURVIVAL 0 | SURVIVAL 24 | SURVIVAL 48 | DO (mg/L) 0 | DO (mg/L) 24 | DO (mg/L) 48 | pH (SU) 0 | pH (SU) 24 | pH (SU) 48 | TEMP (°C) 0 | TEMP (°C) 24 | TEMP (°C) 48 | SALINITY (ppt) 0 | SALINITY (ppt) 24 | SALINITY (ppt) 48 | S/C (µmhos/cm) 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAB | A | 10 | 10 | 10 | 7.6 | 5.6 | 5.7 | 7.86 | 7.59 | 7.71 | 25 | 25 | 24 | 25 | 24 | 24 | 38850 |
| | B | 10 | 10 | 10 | 7.6 | 5.5 | 5.8 | | | | | | | | | | |
| | C | 10 | 9 | 9 | 7.6 | 5.4 | 5.7 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 7.6 | 5.4 | 5.7 | | | | | | | | | | |
| (B) 556 6/10/10 ~~Reference Site~~ -001 | A | 10 | 10 ~~8~~ 6/11 | 10 | 6.9 | 4.3 | 5.1 | 7.20 | 7.37 | 7.50 | 25 | 25 | 24 | 24 | 25 | 25 | 38260 |
| | B | 10 | 10 | 10 | 6.9 | 4.2 | 4.7 | | | | | | | | | | |
| | C | 10 | ~~9~~ 10 | 10 | 6.9 | 4.5 | 4.8 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.9 | 4.8 | 6.5 | | | | | | | | | | |
| ~~NTU~~ -002 | A | 10 | 10 | 10 | 6.7 | 4.5 | 5.4 | 7.16 | 7.41 | 7.57 | 25 | 25 | 24 | 25 | 26 | 26 | 39420 |
| | B | 10 | 10 | 10 | 6.7 | 4.2 | 4.8 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.7 | 5.1 | 5.2 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.7 | 5.4 | 5.3 | | | | | | | | | | |
| ~~NTU~~ -003 | A | 10 | 10 | 10 | 6.5 | 5.1 | 5.4 | 7.16 | 7.49 | 7.65 | 25 | 25 | 24 | 26 | 26 | 26 | 40140 |
| | B | 10 | 10 | 10 | 6.5 | 5.2 | 5.4 | | | | | | | | | | |
| | C | 10 | ~~9~~ 10 6/18 | 10 | 6.5 | 5.2 | 5.3 | | | | | | | | | | |
| | D | 10 | ~~8~~ | 10 | 6.5 | 5.5 | 5.4 | | | | | | | | | | |
| DATE | | 6/16/10 | 6/17/10 | 6/18/10 | 6/16/10 | 6/17/10 | 6/18/10 | | | | | | | | | | |
| TIME | | 1610 | 1545 | 1515 | 1220 | 1520 | 1555 | | | | | | | | | | |
| INITIALS | | JQ | LL | LL | SJ | JQ | LL | | | | | | | | | | |

# ACUTE BIOASSAY DATA SUMMARY

STUDY: 19812 | SAMPLE: New Bedford Harbor

CLIENT: Woods Hole Group | TEST ORGANISM: *A. bahia*

| CONC | REP | SURVIVAL 0 | SURVIVAL 24 | SURVIVAL 48 | DO (mg/L) 0 | DO (mg/L) 24 | DO (mg/L) 48 | pH (SU) 0 | pH (SU) 24 | pH (SU) 48 | TEMP (°C) 0 | TEMP (°C) 24 | TEMP (°C) 48 | SALINITY (ppt) 0 | SALINITY (ppt) 24 | SALINITY (ppt) 48 | S/C (µmhos/cm) 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~NTU~~ 004 | A | 10 | 10 | 10 | 6.2 | 5.2 | 5.3 | 7.16 | 7.54 | 7.69 | 25 | 25 | 24 | 26 | 26 | 27 | 40840 |
| | B | 10 | 10 | 10 | 6.2 | 5.0 | 5.2 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.2 | 5.0 | 5.2 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.2 | 5.2 | 5.4 | | | | | | | | | | |
| ~~NTU~~ 005 | A | 10 | 10 | 10 | 6.4 | 4.8 | 5.0 | 7.15 | 7.50 | 7.66 | 25 | 25 | 24 | 26 | 27 | 27 | 41070 |
| | B | 10 | 10 | 10 | 6.4 | 5.1 | 5.2 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.4 | 5.3 | 5.5 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.4 | 5.5 | 5.8 | | | | | | | | | | |
| ~~NTU~~ 006 | A | 10 | 10 | 10 | 6.6 | 4.7 | 5.3 | 7.47 | 7.45 | 7.60 | 25 | 25 | 24 | 25 | 26 | 26 | 39010 |
| | B | 10 | 10 | 10 | 6.6 | 4.6 | 5.2 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.6 | 4.6 | 5.2 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.6 | 4.7 | 5.2 | | | | | | | | | | |
| ~~NTU~~ 007 | A | 10 | 10 | 10 | 6.9 | 5.1 | 5.4 | 7.42 | 7.52 | 7.60 | 25 | 25 | 24 | 25 | 26 | 26 | 39750 |
| | B | 10 | 10 | 10 | 6.9 | 5.3 | 5.3 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.9 | 5.5 | 5.4 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.9 | 5.3 | 5.4 | | | | | | | | | | |
| DATE | | 6/16/10 | 6/17/10 | 6/18/10 | 6/16/10 | 6/17/10 | 6/18/10 | | | | | | | | | | |
| TIME | | 1610 | 1545 | 1515 | 1220 | 1520 | 1558 | | | | | | | | | | |
| INITIALS | | JT/JG | JQ | KL | JJ | JQ | KL | | | | | | | | | | |

# ACUTE BIOASSAY DATA SUMMARY

STUDY: 19812

SAMPLE: New Bedford Harbor

CLIENT: Woods Hole Group

TEST ORGANISM: *A. bahia*

| CONC | REP | SURVIVAL 0 | SURVIVAL 24 | SURVIVAL 48 | DO (mg/L) 0 | DO (mg/L) 24 | DO (mg/L) 48 | pH (SU) 0 | pH (SU) 24 | pH (SU) 48 | TEMP (°C) 0 | TEMP (°C) 24 | TEMP (°C) 48 | SALINITY (ppt) 0 | SALINITY (ppt) 24 | SALINITY (ppt) 48 | S/C 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~NTU~~ -008 | A | 10 | 10 | 10 | 6.9 | 5.3 | 5.0 | 7.36 | 7.56 | 7.63 | 25 | 25 | 24 | 26 | 26 | 27 | 40670 |
| | B | 10 | 10 | 10 | 6.9 | 5.3 | 5.1 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 6.9 | 4.5 | 5.1 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 6.9 | 4.6 | 5.0 | | | | | | | | | | |
| D-79 ~~NTU~~ -009 | A | 10 | 10 | 10 | 7.2 | 4.5 | 4.8 | 7.21 | 7.49 | 7.58 | 25 | 25 | 24 | 26 | 27 | 27 | 40790 |
| | B | 10 | 10 | 10 | 7.2 | 5.0 | 4.7 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 7.2 | 4.9 | 4.9 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 7.2 | 5.0 | 5.0 | | | | | | | | | | |
| ~~NTU~~ -010 | A | 10 | 10 | 10 | 7.0 | 5.5 | 5.4 | 7.17 | 7.59 | 7.73 | 25 | 25 | 24 | 26 | ~~27~~ 26 | 27 | 40650 |
| | B | 10 | 10 | 10 | 7.0 | 5.2 | 5.5 | | | | | | | | | | |
| | C | 10 | 10 | 10 | 7.0 | 5.2 | 5.3 | | | | | | | | | | |
| | D | 10 | 10 | 10 | 7.0 | 5.2 | 5.3 | | | | | | | | | | |
| | A | | | | | | | | | | | | | | | | |
| | B | | | | | | | | | | | | | | | | |
| | C | | | | | | | | | | | | | | | | |
| | D | | | | | | | | | | | | | | | | |
| DATE | | 6/16/10 | 6/17/10 | 6/18/10 | 6/16 | 6/17/10 | 6/18/10 | | | | | | | | | | |
| TIME | | 1610 | 1545 | 1515 | 1220 | 1520 | 1515 | | | | | | | | | | |
| INITIALS | | SJ/JQ | JQ | KC | SJ | JQ | KC | | | | | | | | | | |

(E) 20 6/17/10

# CETIS Summary Report

Report Date: 14 Jul-10 12:03 (p 1 of 1)
Test Code: 09-4080-8417/19812AbDSG1

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| | | | | | |
|---|---|---|---|---|---|
| **Sample ID:** | 18-5187-9415 | **Code:** | 19812-005 Set | **Client:** | Woods Hole Group |
| **Sample Date:** | 15 Jun-10 12:25 | **Material:** | Surface Water | **Project:** | Ecological Risk Assessment |
| **Receive Date:** | 15 Jun-10 18:53 | **Source:** | New Bedford Harbor Dredge Monitoring | | |
| **Sample Age:** | 28h | **Station:** | DS Group 001 - 005 | | |

**Comparison Summary**

| Analysis ID | Endpoint | NOEL | LOEL | TOEL | PMSD | TU | Method |
|---|---|---|---|---|---|---|---|
| 18-0953-4875 | 48h Proportion Survived | 100 | >100 | N/A | 2.5% | | Steel Many-One Rank Test |

**Point Estimate Summary**

| Analysis ID | Endpoint | Level | NA | 95% LCL | 95% UCL | TU | Method |
|---|---|---|---|---|---|---|---|
| 12-4054-6700 | 48h Proportion Survived | EC5 | >100 | N/A | N/A | | Linear Interpolation (ICPIN) |
| | | EC10 | >100 | N/A | N/A | | |
| | | EC15 | >100 | N/A | N/A | | |
| | | EC20 | >100 | N/A | N/A | | |
| | | EC25 | >100 | N/A | N/A | | |
| | | EC40 | >100 | N/A | N/A | | |
| | | EC50 | >100 | N/A | N/A | | |

**48h Proportion Survived Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 0 | Lab Water | 4 | 0.975 | 0.956 | 0.994 | 0.9 | 1 | 0.00913 | 0.05 | 5.13% | 2.5% |
| 25 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**48h Proportion Survived Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1 | 1 | 1 | 1 |
| 0 | Lab Water | 1 | 1 | 0.9 | 1 |
| 25 | | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 |
| 75 | | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 |

# CETIS Summary Report

| | |
|---|---|
| **Report Date:** | 14 Jul-10 12:03 (p 1 of 1) |
| **Test Code:** | 11-7183-3115/19812AbDSG2 |

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| | | | | | |
|---|---|---|---|---|---|
| **Sample ID:** | 01-6900-7167 | **Code:** | 19812-010 Set | **Client:** | Woods Hole Group |
| **Sample Date:** | 15 Jun-10 14:00 | **Material:** | Surface Water | **Project:** | Ecological Risk Assessment |
| **Receive Date:** | 15 Jun-10 18:53 | **Source:** | New Bedford Harbor Dredge Monitoring | | |
| **Sample Age:** | 26h | **Station:** | DS Group 006 - 010 | | |

**Comparison Summary**

| Analysis ID | Endpoint | NOEL | LOEL | TOEL | PMSD | TU | Method |
|---|---|---|---|---|---|---|---|
| 06-0559-9772 | 48h Proportion Survived | 100 | >100 | N/A | 2.5% | | Steel Many-One Rank Test |
| 01-4446-6346 | | 25 | >25 | N/A | 2.5% | | Wilcoxon Rank Sum Two-Sample Test |
| 03-8527-2876 | | 100 | >100 | N/A | 2.5% | | Wilcoxon Rank Sum Two-Sample Test |
| 04-0083-5322 | | 50 | >50 | N/A | 2.5% | | Wilcoxon Rank Sum Two-Sample Test |
| 16-8967-9295 | | 75 | >75 | N/A | 2.5% | | Wilcoxon Rank Sum Two-Sample Test |

**Point Estimate Summary**

| Analysis ID | Endpoint | Level | NA | 95% LCL | 95% UCL | TU | Method |
|---|---|---|---|---|---|---|---|
| 15-8696-3179 | 48h Proportion Survived | EC5 | >100 | N/A | N/A | | Linear Interpolation (ICPIN) |
| | | EC10 | >100 | N/A | N/A | | |
| | | EC15 | >100 | N/A | N/A | | |
| | | EC20 | >100 | N/A | N/A | | |
| | | EC25 | >100 | N/A | N/A | | |
| | | EC40 | >100 | N/A | N/A | | |
| | | EC50 | >100 | N/A | N/A | | |

**48h Proportion Survived Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 0 | Lab Water | 4 | 0.975 | 0.956 | 0.994 | 0.9 | 1 | 0.00913 | 0.05 | 5.13% | 2.5% |
| 25 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**48h Proportion Survived Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1 | 1 | 1 | 1 |
| 0 | Lab Water | 1 | 1 | 0.9 | 1 |
| 25 | | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 |
| 75 | | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 |

# CETIS Analytical Report

Report Date: 14 Jul-10 12:04 (p 1 of 6)
Test Code: 11-7183-3115/19812AbDSG2

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 03-8527-2876 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:20 | **Analysis:** | Nonparametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 100 | >100 | N/A | | 2.5% |

**Wilcoxon Rank Sum Two-Sample Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 100 | 18 | | 1 | 0.4429 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 1 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 6 | | | |
| Total | 0 | 0 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 13.7 | <0.0001 | Unequal Variances |

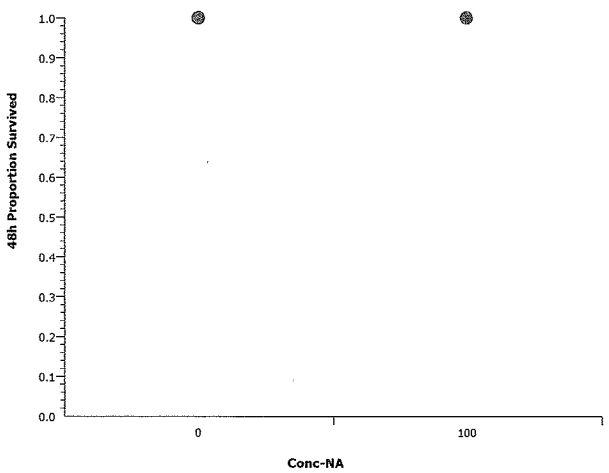
**48h Proportion Survived Summary**

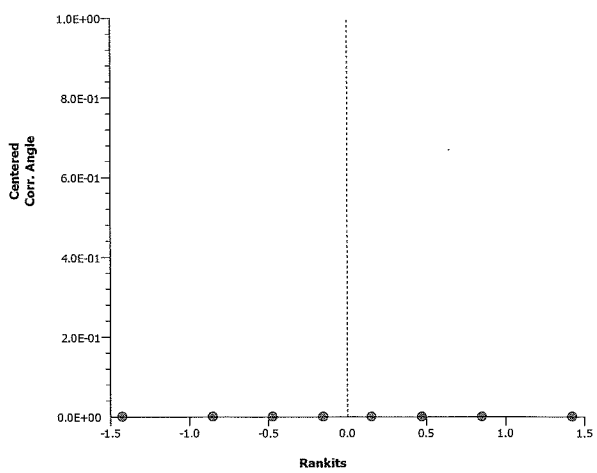
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

**Graphics**



**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 16-8967-9295 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:20 | **Analysis:** | Nonparametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 75 | >75 | N/A | | 2.5% |

**Wilcoxon Rank Sum Two-Sample Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 75 | 18 | | 1 | 0.4429 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 1 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 6 | | | |
| Total | 0 | 0 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 13.7 | <0.0001 | Unequal Variances |

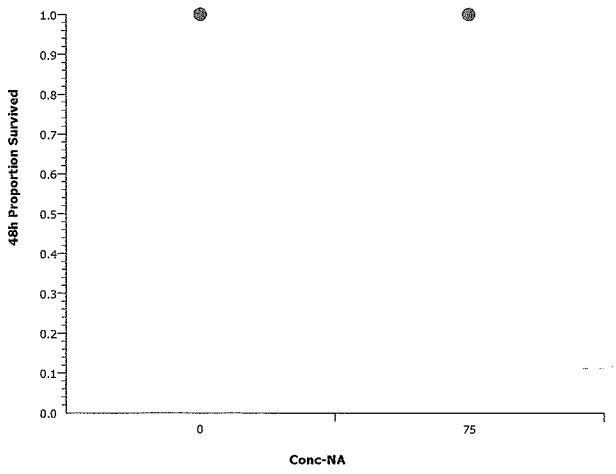
**48h Proportion Survived Summary**

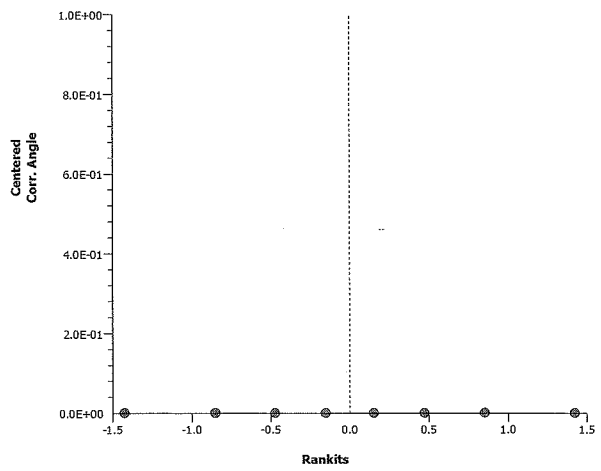
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

**Graphics**



**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 04-0083-5322 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:20 | **Analysis:** | Nonparametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 50 | >50 | N/A | | 2.5% |

**Wilcoxon Rank Sum Two-Sample Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 50 | 18 | | 1 | 0.4429 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 1 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 6 | | | |
| Total | 0 | 0 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 13.7 | <0.0001 | Unequal Variances |

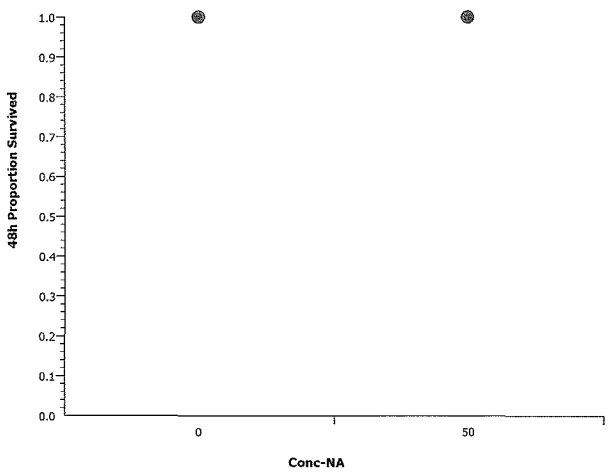
**48h Proportion Survived Summary**

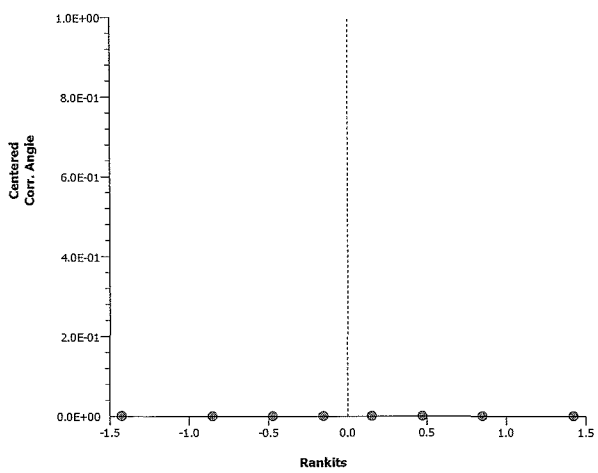
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

**Graphics**



**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 01-4446-6346 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:20 | **Analysis:** | Nonparametric-Two Sample | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 25 | >25 | N/A | | 2.5% |

**Wilcoxon Rank Sum Two-Sample Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 25 | 18 | | 1 | 0.4429 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 1 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 6 | | | |
| Total | 0 | 0 | 7 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 13.7 | <0.0001 | Unequal Variances |

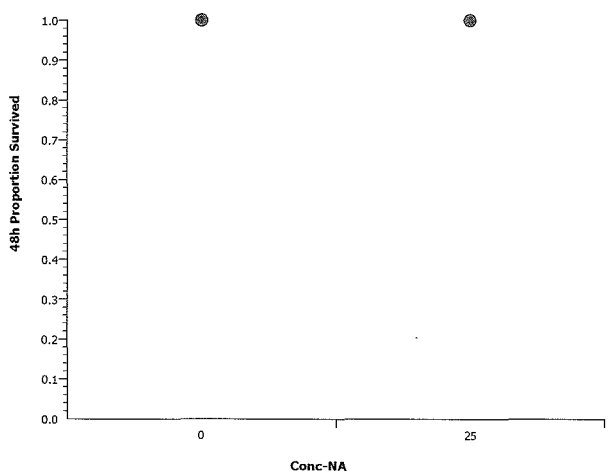
**48h Proportion Survived Summary**

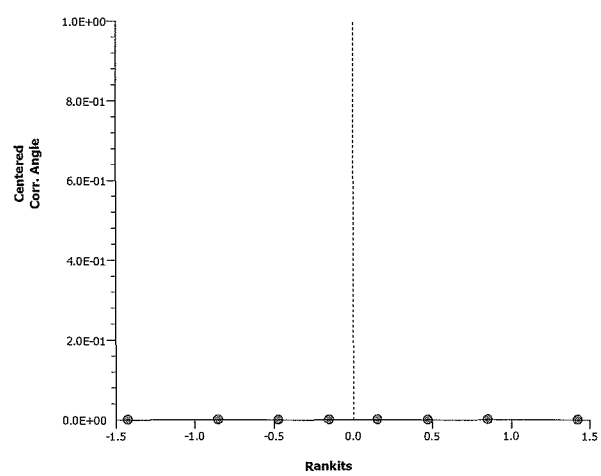
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

**Graphics**



**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 06-0559-9772 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:17 | **Analysis:** | Nonparametric-Control vs Treatments | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 100 | >100 | N/A | | 2.5% |

**Steel Many-One Rank Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 25 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 50 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 75 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 100 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 4 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 15 | | | |
| Total | 0 | 0 | 19 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 4.89 | <0.0001 | Unequal Variances |

**48h Proportion Survived Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

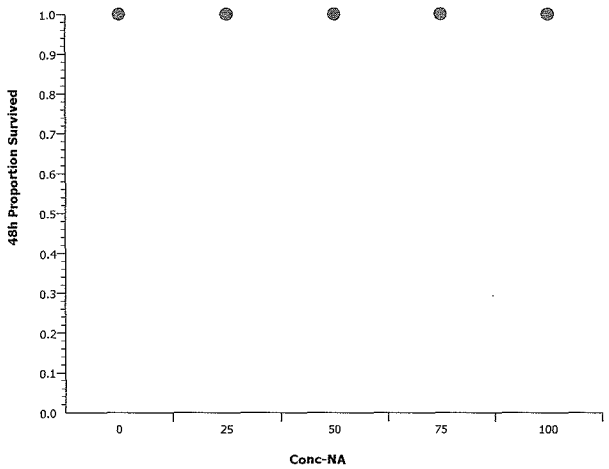
**Angular (Corrected) Transformed Summary**

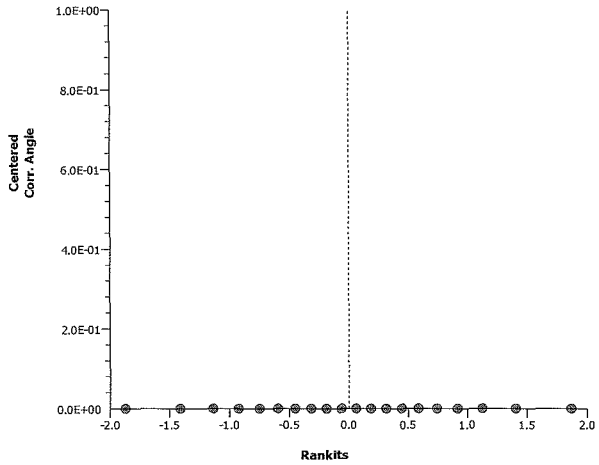
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 06-0559-9772 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:17 | **Analysis:** | Nonparametric-Control vs Treatments | **Official Results:** | Yes |

## Graphics



# CETIS Analytical Report

| | |
|---|---|
| **Report Date:** | 14 Jul-10 12:04 (p 1 of 1) |
| **Test Code:** | 11-7183-3115/19812AbDSG2 |

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 15-8696-3179 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 11:18 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Log(X+1) | Linear | 57951 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC5 | >100 | N/A | N/A |
| EC10 | >100 | N/A | N/A |
| EC15 | >100 | N/A | N/A |
| EC20 | >100 | N/A | N/A |
| EC25 | >100 | N/A | N/A |
| EC40 | >100 | N/A | N/A |
| EC50 | >100 | N/A | N/A |

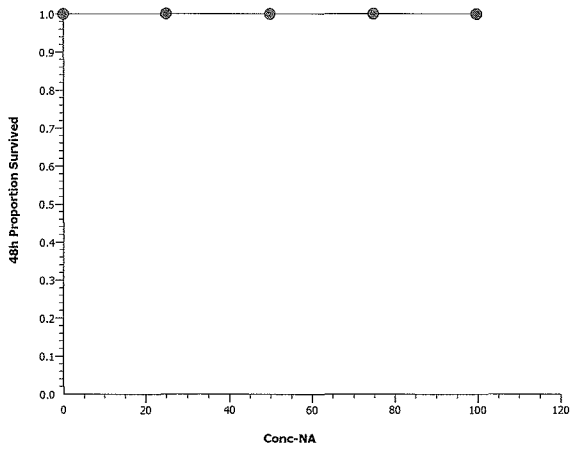
**48h Proportion Survived Summary**

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conc-NA** | **Control Type** | **Count** | **Mean** | **Min** | **Max** | **Std Err** | **Std Dev** | **CV%** | **Diff%** | **A** | **B** |
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 25 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 50 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 75 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 100 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |

**48h Proportion Survived Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 |
| 75 | | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 |

**Graphics**



# CETIS Analytical Report

| | |
|---|---|
| **Report Date:** | 14 Jul-10 12:03 (p 1 of 2) |
| **Test Code:** | 09-4080-8417/19812AbDSG1 |

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 18-0953-4875 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 10:45 | **Analysis:** | Nonparametric-Control vs Treatments | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 100 | >100 | N/A | | 2.5% |

**Steel Many-One Rank Test**

| Control | vs | Conc-NA | Test Stat | Critical | Ties | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 25 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 50 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 75 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |
| | | 100 | 18 | 10 | 1 | 0.8000 | Non-Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0 | 0 | 4 | 65500 | <0.0001 | Significant Effect |
| Error | 0 | 0 | 15 | | | |
| Total | 0 | 0 | 19 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Mod Levene Equality of Variance | 65500 | 4.89 | <0.0001 | Unequal Variances |

**48h Proportion Survived Summary**

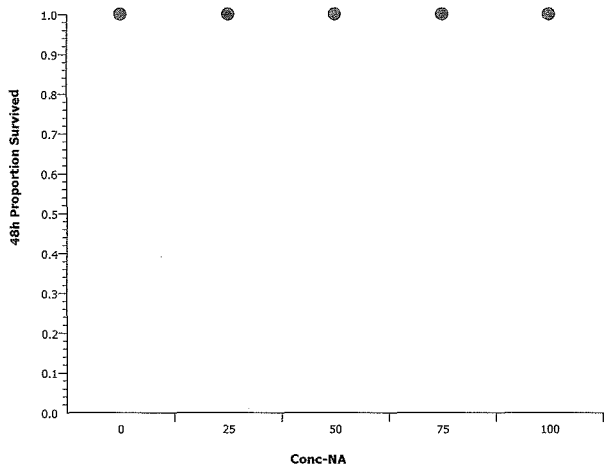
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |

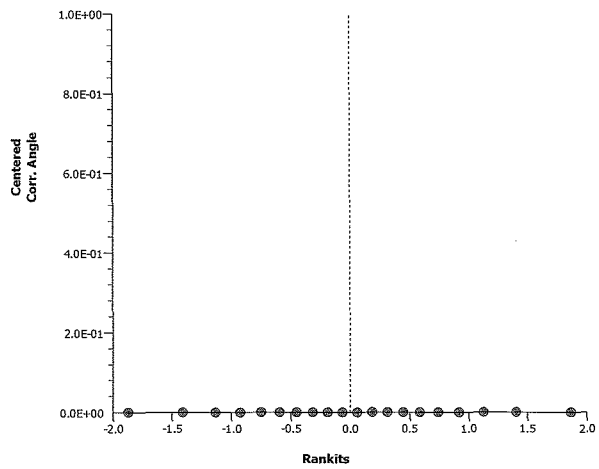
**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 75 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 4 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 0 | 0 | 0.0% | 0.0% |

| Americamysis 48-Hr Survival Test | | | | | EnviroSystems, Inc. |
|---|---|---|---|---|---|
| **Analysis ID:** | 18-0953-4875 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 10:45 | **Analysis:** | Nonparametric-Control vs Treatments | **Official Results:** | Yes |

## Graphics



# CETIS Analytical Report

| | |
|---|---|
| **Report Date:** | 14 Jul-10 12:04 (p 1 of 1) |
| **Test Code:** | 09-4080-8417/19812AbDSG1 |

**Americamysis 48-Hr Survival Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 12-4054-6700 | **Endpoint:** | 48h Proportion Survived | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 21 Jun-10 10:45 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 11-3144-5901 | **Test Type:** | Survival (48h) | **Analyst:** | |
| **Start Date:** | 16 Jun-10 16:10 | **Protocol:** | EPA/821/R-02-012 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 18 Jun-10 15:15 | **Species:** | Americamysis bahia | **Brine:** | Not Applicable |
| **Duration:** | 47h | **Source:** | ARO - Aquatic Research Organisms, NH | **Age:** | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Log(X+1) | Linear | 57951 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC5 | >100 | N/A | N/A |
| EC10 | >100 | N/A | N/A |
| EC15 | >100 | N/A | N/A |
| EC20 | >100 | N/A | N/A |
| EC25 | >100 | N/A | N/A |
| EC40 | >100 | N/A | N/A |
| EC50 | >100 | N/A | N/A |

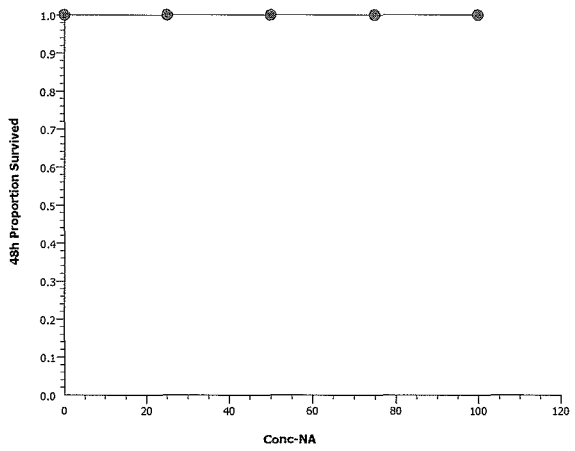
**48h Proportion Survived Summary**

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conc-NA** | **Control Type** | **Count** | **Mean** | **Min** | **Max** | **Std Err** | **Std Dev** | **CV%** | **Diff%** | **A** | **B** |
| 0 | Dilution Water | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 25 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 50 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 75 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |
| 100 | | 4 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | 40 | 40 |

**48h Proportion Survived Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 |
| 75 | | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 |

**Graphics**



# Aquatic Research Organisms

## DATA SHEET

Rec 6/16/10

### I. Organism History

Species: AMERICAMYSIS bahia

Source: Lab reared ✓ Hatchery reared ____ Field collected ____

Hatch date: 6-13-10 Receipt date: ____

Lot number: 061310MS Strain: ____

Brood origination: FLORIDA

### II. Water Quality

Temperature: 25 °C Salinity: ≈30 ppt D.O.: — ppm

pH: 7.8 su Hardness: — ppm Alkalinity: — ppm

### III. Culture Conditions

Freshwater ____ Saltwater ✓ Other ____

Recirculating ✓ Flow through ____ Static ____

**DIET:** Flake food ✓ Phytoplankton ____ Trout chow ✓

Artemia ✓ Rotifers ____ YCT ____ Other Ewcap. Shrimp Diet

Prophylactic treatments: ____

Comments: ____

### IV. Shipping Information

Client: EST # of Organisms: 500+

Carrier: ____ Date shipped: 6-16-10

Biologist: Mark Dorangosz

PO BOX 1271 HAMPTON NH 03843-1271 (603) 926-1650 AROFISH@AOL.COM

DS1

## *Arbacia punctulata* Chronic Fertilization Assay
## Water Quality and Gamete Preparation Data

| STUDY: 19812 | CLIENT: Woods Hole Group | LOCATION: New Bedford | DATE: 6/16/10<br>INITIALS: LB |
|---|---|---|---|

SALINITY ADJUSTMENT RECORD: 200 mL -001 + 1 g SALT A-2606

SALINITY ADJUSTMENT RECORD: 200 mL -002 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -003 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -004 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -005 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -006 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -007 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -008 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -009 + 1 g SALT

SALINITY ADJUSTMENT RECORD: 200 mL -010 + 1 g SALT

| SALINITY ADJUSTED SAMPLE | D.O. (mg/L) | pH (SU) | SPEC COND (µmhos) | TEMP (°C) | SALINITY (ppt) |
|---|---|---|---|---|---|
| Lab Control | 7.3 | 7.67 | 44360 | 20 | 29 |
| -001 | 7.4 | 7.56 | 45680 | 19 | 30 |
| -002 | 6.4 | 7.51 | 46090 | 19 | 30 |
| -003 | 6.5 | 7.51 | 47180 | 19 | 31 |
| -004 | 6.93 | 7.49 | 46230 | 19 | 30 |
| -005 | 6.6 | 7.53 | 46860 | 19 | 31 |
| -006 | 7.0 | 7.83 | 46780 | 19 | 30 |
| -007 | 7.0 | 7.84 | 47770 | 19 | 31 |
| -008 | 7.0 | 7.74 | 46680 | 19 | 30 |
| -009 | 6.8 | 7.58 | 46000 | 20 | 30 |
| -010 | 6.5 | 7.49 | 45930 | 20 | 30 |

1481C
DS1

METERS USED

DO meter # 23 DO probe # 90 pH meter # 470 pH probe # 92 S/C meter # YSI30D S/C probe # YSI30D

SALINITY meter # YSI30D

---

DATE & INITIALS FOR GAMETE PREPARATION: 10/16/10 LB

**SPERM DILUTIONS**:

HEMACYTOMETER COUNT, E: 120 X $10^4$ = SPM SOLUTION E = $1.20 \times 10^6$

SPERM CONCENTRATIONS:

SOLUTION E X 40 = SOLUTION A = $4.80 \times 10^7$ SPM

SOLUTION E X 20 = SOLUTION B = $2.40 \times 10^7$ SPM

SOLUTION E X 5 = SOLUTION C = $6.00 \times 10^6$ SPM

**FINAL COUNTS**:

FINAL SPERM COUNT: $4.80 \times 10^7$

FINAL EGG COUNT: 2400

**TEST TIMES**:

SPERM COLLECTED: 1135

EGGS COLLECTED: 1135

SPERM ADDED: 1213

EGGS ADDED: 1313

FIXATIVE ADDED: 1333

See ESI SOP #1412 for additional information

DS1

## FERTILIZATION COUNTS

| STUDY | CLIENT | LOCATION | DATE 6/16/10 |
|---|---|---|---|
| 19812 | Woods Hole Group | New Bedford | INITIALS LG |

| SAMPLE | REPLICATE VIAL 1 FERT/TOTAL | 2 FERT/TOTAL | 3 FERT/TOTAL | 4 FERT/TOTAL |
|---|---|---|---|---|
| Lab Control | 100/108 | 103/111 | 100/104 | 101/108 |
| -001 | 168/185 | 96/107 | 95/100 | 89/100 |
| -002 | 86/100 | 79/100 | 87/100 | 90/100 |
| -003 | 100/110 | 88/105 | 100/107 | 97/104 |
| -004 | 100/114 | 95/104 | 101/105 | 97/105 |
| -005 | 100/107 | 99/111 | 100/119 | 90/102 |
| -006 | LG 6/16/10 ~~87/117~~ 71/114 | 52/100 | 59/113 | 56/112 |
| -007 | 46/100 | 40/105 | LG 6/16/10 ~~112~~ 2/106 | 42/106 |
| -008 | 67/100 | 73/102 | 59/102 | 70/103 |
| -009 | 83/102 | 87/102 | 86/107 | 101/108 |
| -010 | 94/103 | 95/101 | 101/107 | 104/120 |

# CETIS Summary Report

| | |
|---|---|
| **Report Date:** | 14 Jul-10 12:31 (p 1 of 1) |
| **Test Code:** | 03-5535-6829/19812ApDSG1 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| | | | | | |
|---|---|---|---|---|---|
| **Sample ID:** | 18-5187-9415 | **Code:** | 19812-005 Set | **Client:** | Woods Hole Group |
| **Sample Date:** | 15 Jun-10 12:25 | **Material:** | Surface Water | **Project:** | Ecological Risk Assessment |
| **Receive Date:** | 15 Jun-10 18:53 | **Source:** | New Bedford Harbor Dredge Monitoring | | |
| **Sample Age:** | 24h | **Station:** | DS Group 001 - 005 | | |

**Comparison Summary**

| Analysis ID | Endpoint | NOEL | LOEL | TOEL | PMSD | TU | Method |
|---|---|---|---|---|---|---|---|
| 11-9269-7283 | Proportion Fertilized | 100 | >100 | N/A | 8.19% | | Dunnett's Multiple Comparison Test |

**Point Estimate Summary**

| Analysis ID | Endpoint | Level | NA | 95% LCL | 95% UCL | TU | Method |
|---|---|---|---|---|---|---|---|
| 14-1219-8582 | Proportion Fertilized | EC10 | 848 | N/A | N/A | | Nonlinear Regression |
| | | EC15 | 1230 | N/A | N/A | | |
| | | EC20 | 1620 | N/A | N/A | | |
| | | EC25 | 2040 | N/A | N/A | | |
| | | EC40 | 3540 | N/A | N/A | | |
| | | EC50 | 4900 | N/A | N/A | | |
| 06-0526-3004 | Proportion Fertilized | EC5 | >100 | N/A | N/A | | Linear Interpolation (ICPIN) |
| | | EC10 | >100 | N/A | N/A | | |
| | | EC15 | >100 | N/A | N/A | | |
| | | EC20 | >100 | N/A | N/A | | |
| | | EC25 | >100 | N/A | N/A | | |
| | | EC40 | >100 | N/A | N/A | | |
| | | EC50 | >100 | N/A | N/A | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 06-0526-3004 | Proportion Fertilized | Control Resp | 0.887 | 0.7 - 1 | Yes | Result Within Limits |
| 11-9269-7283 | Proportion Fertilized | Control Resp | 0.887 | 0.7 - 1 | Yes | Result Within Limits |
| 14-1219-8582 | Proportion Fertilized | Control Resp | 0.887 | 0.7 - 1 | Yes | Result Within Limits |
| 11-9269-7283 | Proportion Fertilized | PMSD | 0.0819 | NL - 0.25 | No | Result Within Limits |

**Proportion Fertilized Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 0.887 | 0.873 | 0.902 | 0.84 | 0.935 | 0.00706 | 0.0387 | 4.36% | 0.0% |
| 0 | Lab Water | 4 | 0.938 | 0.932 | 0.944 | 0.926 | 0.962 | 0.003 | 0.0164 | 1.75% | -5.68% |
| 25 | | 4 | 0.919 | 0.906 | 0.932 | 0.877 | 0.962 | 0.00636 | 0.0348 | 3.79% | -3.58% |
| 50 | | 4 | 0.904 | 0.887 | 0.92 | 0.838 | 0.935 | 0.00825 | 0.0452 | 5.0% | -1.84% |
| 75 | | 4 | 0.855 | 0.838 | 0.872 | 0.79 | 0.9 | 0.0085 | 0.0465 | 5.44% | 3.64% |
| 100 | | 4 | 0.911 | 0.901 | 0.921 | 0.89 | 0.95 | 0.0049 | 0.0268 | 2.94% | -2.71% |

**Proportion Fertilized Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 0.935 | 0.892 | 0.84 | 0.882 |
| 0 | Lab Water | 0.926 | 0.928 | 0.962 | 0.935 |
| 25 | | 0.877 | 0.913 | 0.962 | 0.924 |
| 50 | | 0.909 | 0.838 | 0.935 | 0.933 |
| 75 | | 0.86 | 0.79 | 0.87 | 0.9 |
| 100 | | 0.908 | 0.897 | 0.95 | 0.89 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 11-9269-7283 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 17 Jun-10 12:19 | **Analysis:** | Parametric-Control vs Treatments | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 100 | >100 | N/A | | 8.19% |

**Dunnett's Multiple Comparison Test**

| Control | vs | Conc-NA | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Dilution Water | | 25 | -1.23 | 2.36 | 0.106 | 0.9861 | Non-Significant Effect |
| | | 50 | -0.628 | 2.36 | 0.106 | 0.9402 | Non-Significant Effect |
| | | 75 | 1.08 | 2.36 | 0.106 | 0.3499 | Non-Significant Effect |
| | | 100 | -0.868 | 2.36 | 0.106 | 0.9657 | Non-Significant Effect |

**Auxiliary Tests**

| Attribute | Test | Test Stat | Critical | P-Value | Decision |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Single Outlier | 1.83 | 2.71 | 1.0000 | No Outliers Detected |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.02682337 | 0.006705842 | 4 | 1.64 | 0.2151 | Non-Significant Effect |
| Error | 0.06119692 | 0.004079795 | 15 | | | |
| Total | 0.08802029 | 0.01078564 | 19 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Bartlett Equality of Variance | 0.343 | 13.3 | 0.9869 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.953 | | 0.4212 | Normal Distribution |

**Proportion Fertilized Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 0.887 | 0.873 | 0.902 | 0.84 | 0.935 | 0.00718 | 0.0387 | 4.36% | 0.0% |
| 25 | | 4 | 0.919 | 0.906 | 0.932 | 0.877 | 0.962 | 0.00647 | 0.0348 | 3.79% | -3.58% |
| 50 | | 4 | 0.904 | 0.886 | 0.921 | 0.838 | 0.935 | 0.00839 | 0.0452 | 5.0% | -1.84% |
| 75 | | 4 | 0.855 | 0.837 | 0.873 | 0.79 | 0.9 | 0.00864 | 0.0465 | 5.44% | 3.64% |
| 100 | | 4 | 0.911 | 0.901 | 0.922 | 0.89 | 0.95 | 0.00498 | 0.0268 | 2.94% | -2.71% |

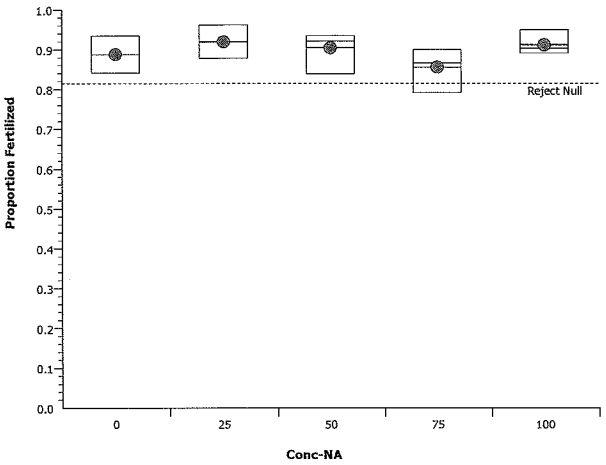
**Angular (Corrected) Transformed Summary**

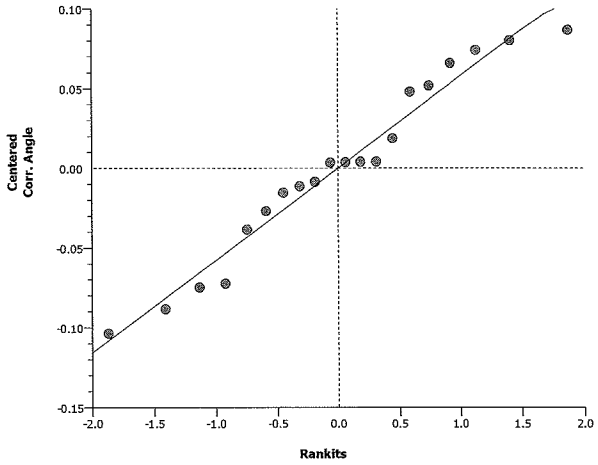
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Dilution Water | 4 | 1.23 | 1.21 | 1.26 | 1.16 | 1.31 | 0.0116 | 0.0627 | 5.09% | 0.0% |
| 25 | | 4 | 1.29 | 1.26 | 1.31 | 1.21 | 1.37 | 0.0124 | 0.0668 | 5.19% | -4.51% |
| 50 | | 4 | 1.26 | 1.23 | 1.29 | 1.16 | 1.31 | 0.0135 | 0.0725 | 5.75% | -2.3% |
| 75 | | 4 | 1.18 | 1.16 | 1.21 | 1.09 | 1.25 | 0.012 | 0.0646 | 5.46% | 3.96% |
| 100 | | 4 | 1.27 | 1.25 | 1.29 | 1.23 | 1.35 | 0.00944 | 0.0508 | 4.0% | -3.18% |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 11-9269-7283 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 17 Jun-10 12:19 | **Analysis:** | Parametric-Control vs Treatments | **Official Results:** | Yes |

## Graphics



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 14-1219-8582 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 14 Jul-10 12:31 | **Analysis:** | Nonlinear Regression | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

**Non-Linear Regression Options**

| Model Function | X Transform | Y Transform | Weighting Function | PTBS Function |
|---|---|---|---|---|
| 3P Log-Logistic EV [Y=A/(1+(X/D)^C)] | None | None | Normal [W=1] | Off [Y*=Y] |

**Regression Summary**

| Iters | Log LL | AICc | Adj R2 | Optimize | F Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|---|
| 28 | 54 | -100 | | Yes | 3.34 | 3.68 | 0.0632 | Non-Significant Lack of Fit |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC10 | 848 | N/A | N/A |
| EC15 | 1230 | N/A | N/A |
| EC20 | 1620 | N/A | N/A |
| EC25 | 2040 | N/A | N/A |
| EC40 | 3540 | N/A | N/A |
| EC50 | 4900 | N/A | N/A |

**Regression Parameters**

| Parameter | Estimate | Std Error | 95% LCL | 95% UCL | t Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| A | 0.898 | 0.0211 | 0.854 | 0.943 | 42.5 | <0.0001 | Significant Parameter |
| C | 1.25 | 11.9 | -23.8 | 26.3 | 0.106 | 0.9171 | Non-Significant Parameter |
| D | 4900 | 179000 | -372000 | 382000 | 0.0274 | 0.9785 | Non-Significant Parameter |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Model | 0.0001175 | 5.874E-05 | 2 | 0.0302 | 0.9704 | Non-Significant |
| Lack of Fit | 0.0102036 | 0.0051018 | 2 | 3.34 | 0.0632 | Non-Significant |
| Pure Error | 0.0229165 | 0.0015278 | 15 | | | |
| Residual | 0.0331201 | 0.0019482 | 17 | | | |

**Residual Analysis**

| Attribute | Method | Test Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|
| Variances | Bartlett Equality of Variance | 0.962 | 9.49 | 0.9155 | Equal Variances |
| | Mod Levene Equality of Variance | 0.137 | 3.06 | 0.9659 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.962 | | 0.5800 | Normal Distribution |

**Proportion Fertilized Summary**

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc-NA | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | Diff% | A | B |
| 0 | Dilution Water | 4 | 0.887 | 0.84 | 0.935 | 0.00706 | 0.0387 | 4.36% | 0.0% | 389 | 439 |
| 25 | | 4 | 0.919 | 0.877 | 0.962 | 0.00636 | 0.0348 | 3.79% | -3.58% | 393 | 428 |
| 50 | | 4 | 0.904 | 0.838 | 0.935 | 0.00825 | 0.0452 | 5.0% | -1.84% | 385 | 426 |
| 75 | | 4 | 0.855 | 0.79 | 0.9 | 0.0085 | 0.0465 | 5.44% | 3.64% | 342 | 400 |
| 100 | | 4 | 0.911 | 0.89 | 0.95 | 0.0049 | 0.0268 | 2.94% | -2.71% | 448 | 492 |

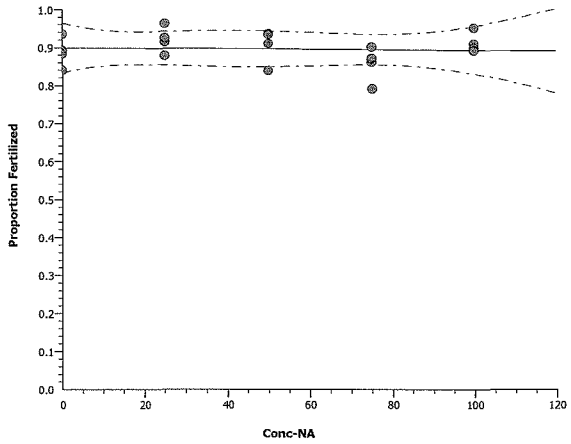
**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

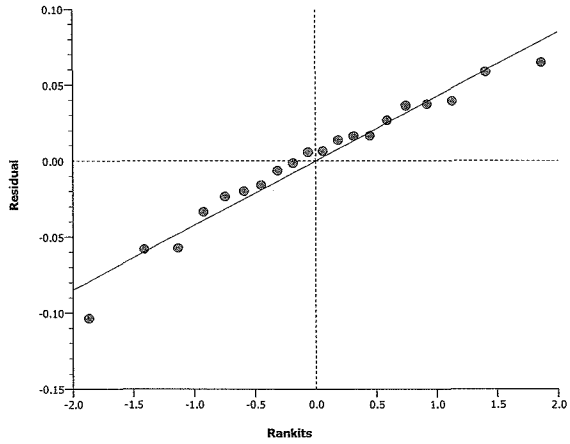
| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 14-1219-8582 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 14 Jul-10 12:31 | **Analysis:** | Nonlinear Regression | **Official Results:** | Yes |

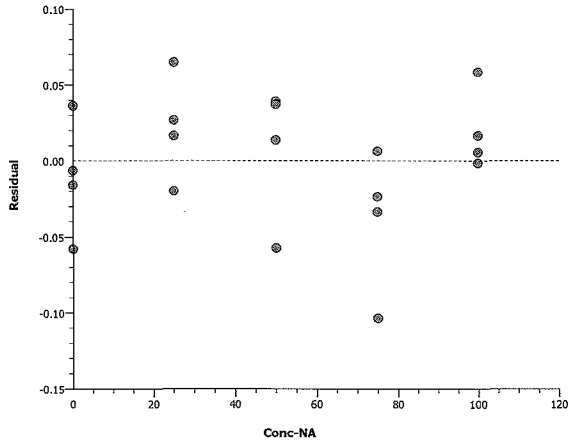
## Proportion Fertilized Detail

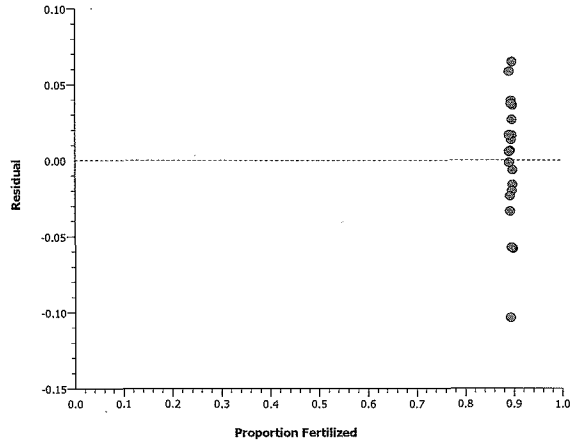
| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 0.935 | 0.892 | 0.84 | 0.882 |
| 25 | | 0.877 | 0.913 | 0.962 | 0.924 |
| 50 | | 0.909 | 0.838 | 0.935 | 0.933 |
| 75 | | 0.86 | 0.79 | 0.87 | 0.9 |
| 100 | | 0.908 | 0.897 | 0.95 | 0.89 |

## Graphics



# CETIS Analytical Report

Report Date: 14 Jul-10 12:31 (p 1 of 2)
Test Code: 03-5535-6829/19812ApDSG1

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 06-0526-3004 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 17 Jun-10 12:19 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Log(X+1) | Linear | 57951 | 200 | Yes | Two-Point Interpolation |

**Residual Analysis**

| Attribute | Method | Test Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|
| Extreme Value | Grubbs Extreme Value | 1.83 | 2.71 | 1.0000 | No Outliers Detected |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC5 | >100 | N/A | N/A |
| EC10 | >100 | N/A | N/A |
| EC15 | >100 | N/A | N/A |
| EC20 | >100 | N/A | N/A |
| EC25 | >100 | N/A | N/A |
| EC40 | >100 | N/A | N/A |
| EC50 | >100 | N/A | N/A |

**Proportion Fertilized Summary**

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conc-NA** | **Control Type** | **Count** | **Mean** | **Min** | **Max** | **Std Err** | **Std Dev** | **CV%** | **Diff%** | **A** | **B** |
| 0 | Dilution Water | 4 | 0.887 | 0.84 | 0.935 | 0.00706 | 0.0387 | 4.36% | 0.0% | 389 | 439 |
| 25 | | 4 | 0.919 | 0.877 | 0.962 | 0.00636 | 0.0348 | 3.79% | -3.58% | 393 | 428 |
| 50 | | 4 | 0.904 | 0.838 | 0.935 | 0.00825 | 0.0452 | 5.0% | -1.84% | 385 | 426 |
| 75 | | 4 | 0.855 | 0.79 | 0.9 | 0.0085 | 0.0465 | 5.44% | 3.64% | 342 | 400 |
| 100 | | 4 | 0.911 | 0.89 | 0.95 | 0.0049 | 0.0268 | 2.94% | -2.71% | 448 | 492 |

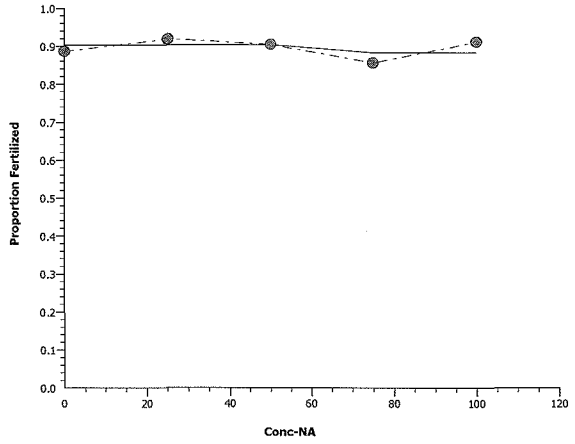
**Proportion Fertilized Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Dilution Water | 0.935 | 0.892 | 0.84 | 0.882 |
| 25 | | 0.877 | 0.913 | 0.962 | 0.924 |
| 50 | | 0.909 | 0.838 | 0.935 | 0.933 |
| 75 | | 0.86 | 0.79 | 0.87 | 0.9 |
| 100 | | 0.908 | 0.897 | 0.95 | 0.89 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 06-0526-3004 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 17 Jun-10 12:19 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |

## Graphics



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| | | | | | |
|---|---|---|---|---|---|
| **Sample ID:** | 01-6900-7167 | **Code:** | 19812-010 Set 2 | **Client:** | Woods Hole Group |
| **Sample Date:** | 15 Jun-10 14:00 | **Material:** | Surface Water | **Project:** | Ecological Risk Assessment |
| **Receive Date:** | 15 Jun-10 18:53 | **Source:** | New Bedford Harbor Dredge Monitoring | | |
| **Sample Age:** | 22h | **Station:** | DS Group 006 - 010 | | |

**Comparison Summary**

| Analysis ID | Endpoint | NOEL | LOEL | TOEL | PMSD | TU | Method |
|---|---|---|---|---|---|---|---|
| 07-7635-2558 | Proportion Fertilized | 41 | 160 | 81 | 6.86% | | Dunnett's Multiple Comparison Test |

**Point Estimate Summary**

| Analysis ID | Endpoint | Level | NA | 95% LCL | 95% UCL | TU | Method |
|---|---|---|---|---|---|---|---|
| 12-1514-3368 | Proportion Fertilized | EC5 | 33.7 | 3.08 | 66.1 | | Linear Regression (MLE) |
| | | EC10 | 52.3 | 8.52 | 88.3 | | |
| | | EC15 | 70.4 | 16.9 | 108 | | |
| | | EC20 | 89 | 28.8 | 127 | | |
| | | EC25 | 109 | 45.3 | 147 | | |
| | | EC40 | 181 | 127 | 239 | | |
| | | EC50 | 246 | 191 | 396 | | |
| 02-3348-9521 | Proportion Fertilized | EC10 | 50.3 | 2.96 | 91 | | Nonlinear Regression |
| | | EC15 | 69.4 | 22.8 | 117 | | |
| | | EC20 | 88.7 | 43.2 | 139 | | |
| | | EC25 | 109 | 66.2 | 158 | | |
| | | EC40 | 180 | 148 | 216 | | |
| | | EC50 | 241 | 184 | 316 | | |
| 18-8577-9625 | Proportion Fertilized | EC5 | 26.2 | 7.57 | 67.6 | | Linear Interpolation (ICPIN) |
| | | EC10 | 50.6 | 15.8 | 79.9 | | |
| | | EC15 | 70.2 | 37 | 107 | | |
| | | EC20 | 97.1 | 58.6 | 153 | | |
| | | EC25 | 134 | 80.4 | 179 | | |
| | | EC40 | 177 | 168 | 184 | | |
| | | EC50 | >230 | N/A | N/A | | |

**Test Acceptability**

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | Overlap | Decision |
|---|---|---|---|---|---|---|
| 02-3348-9521 | Proportion Fertilized | Control Resp | 0.916 | 0.7 - 1 | Yes | Result Within Limits |
| 07-7635-2558 | Proportion Fertilized | Control Resp | 0.916 | 0.7 - 1 | Yes | Result Within Limits |
| 12-1514-3368 | Proportion Fertilized | Control Resp | 0.916 | 0.7 - 1 | Yes | Result Within Limits |
| 18-8577-9625 | Proportion Fertilized | Control Resp | 0.916 | 0.7 - 1 | Yes | Result Within Limits |
| 07-7635-2558 | Proportion Fertilized | PMSD | 0.0686 | NL - 0.25 | No | Result Within Limits |

**Proportion Fertilized Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Lab Water | 4 | 0.938 | 0.932 | 0.944 | 0.926 | 0.962 | 0.003 | 0.0164 | 1.75% | 0.0% |
| 7.1 | Dilution Water | 4 | 0.916 | 0.903 | 0.929 | 0.867 | 0.944 | 0.00652 | 0.0357 | 3.9% | 2.31% |
| 41 | | 4 | 0.851 | 0.829 | 0.874 | 0.804 | 0.935 | 0.0109 | 0.0598 | 7.02% | 9.2% |
| 160 | | 4 | 0.661 | 0.639 | 0.683 | 0.578 | 0.716 | 0.0107 | 0.0584 | 8.84% | 29.5% |
| 190 | | 4 | 0.393 | 0.39 | 0.397 | 0.381 | 0.4 | 0.00154 | 0.00846 | 2.15% | 58.0% |
| 230 | | 4 | 0.541 | 0.521 | 0.562 | 0.5 | 0.623 | 0.0101 | 0.0553 | 10.2% | 42.3% |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

**Proportion Fertilized Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 0 | Lab Water | 0.926 | 0.928 | 0.962 | 0.935 |
| 7.1 | Dilution Water | 0.913 | 0.941 | 0.944 | 0.867 |
| 41 | | 0.814 | 0.853 | 0.804 | 0.935 |
| 160 | | 0.67 | 0.716 | 0.578 | 0.68 |
| 190 | | 0.4 | 0.381 | 0.396 | 0.396 |
| 230 | | 0.623 | 0.52 | 0.522 | 0.5 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 07-7635-2558 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:37 | **Analysis:** | Parametric-Control vs Treatments | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

| Data Transform | Zeta | Alt Hyp | Monte Carlo | NOEL | LOEL | TOEL | TU | PMSD |
|---|---|---|---|---|---|---|---|---|
| Angular (Corrected) | 0 | C > T | Not Run | 41 | 160 | 81 | | 6.86% |

**Dunnett's Multiple Comparison Test**

| Control | vs | Conc-NA | Test Stat | Critical | MSD | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| 7.1 | | 41 | 2.26 | 2.36 | 0.104 | 0.0596 | Non-Significant Effect |
| 7.1 | | 160* | 7.53 | 2.36 | 0.104 | <0.0001 | Significant Effect |
| 7.1 | | 190* | 13.7 | 2.36 | 0.104 | <0.0001 | Significant Effect |
| 7.1 | | 230* | 10.3 | 2.36 | 0.104 | <0.0001 | Significant Effect |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Between | 0.9872664 | 0.2468166 | 4 | 63.9 | <0.0001 | Significant Effect |
| Error | 0.05796837 | 0.003864558 | 15 | | | |
| Total | 1.045235 | 0.2506812 | 19 | | | |

**ANOVA Assumptions**

| Attribute | Test | Test Stat | Critical | P-Value | Decision(1%) |
|---|---|---|---|---|---|
| Variances | Bartlett Equality of Variance | 8.98 | 13.3 | 0.0616 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.965 | | 0.6491 | Normal Distribution |

**Proportion Fertilized Summary**

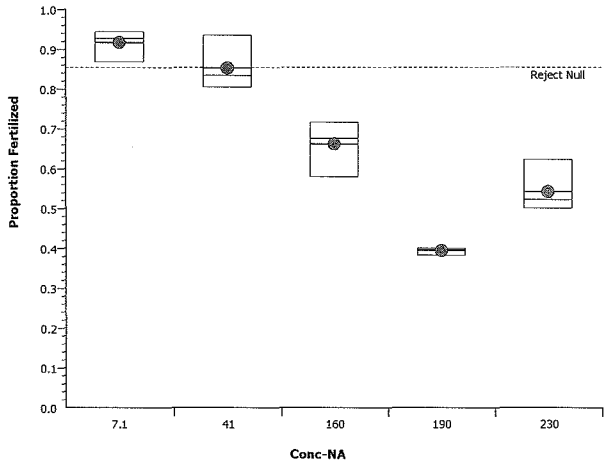
| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.1 | Dilution Water | 4 | 0.916 | 0.902 | 0.93 | 0.867 | 0.944 | 0.00663 | 0.0357 | 3.9% | 0.0% |
| 41 | | 4 | 0.851 | 0.829 | 0.874 | 0.804 | 0.935 | 0.0111 | 0.0598 | 7.02% | 7.05% |
| 160 | | 4 | 0.661 | 0.639 | 0.683 | 0.578 | 0.716 | 0.0108 | 0.0584 | 8.84% | 27.8% |
| 190 | | 4 | 0.393 | 0.39 | 0.397 | 0.381 | 0.4 | 0.00157 | 0.00846 | 2.15% | 57.1% |
| 230 | | 4 | 0.541 | 0.52 | 0.562 | 0.5 | 0.623 | 0.0103 | 0.0553 | 10.2% | 40.9% |

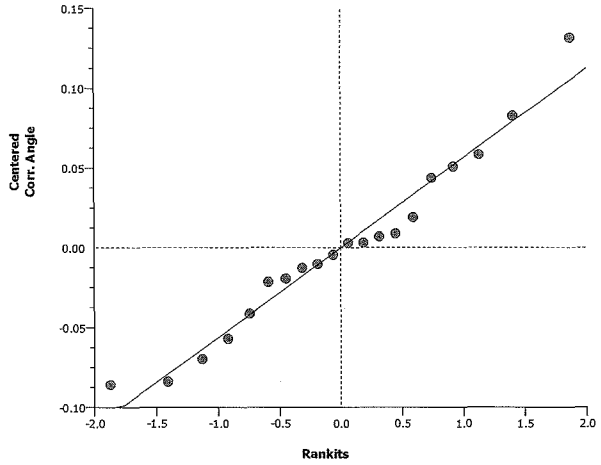
**Angular (Corrected) Transformed Summary**

| Conc-NA | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | Diff% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.1 | Dilution Water | 4 | 1.28 | 1.26 | 1.3 | 1.2 | 1.33 | 0.0116 | 0.0623 | 4.86% | 0.0% |
| 41 | | 4 | 1.18 | 1.15 | 1.22 | 1.11 | 1.31 | 0.0171 | 0.0922 | 7.8% | 7.75% |
| 160 | | 4 | 0.95 | 0.927 | 0.973 | 0.864 | 1.01 | 0.0114 | 0.0612 | 6.44% | 25.8% |
| 190 | | 4 | 0.678 | 0.675 | 0.681 | 0.665 | 0.685 | 0.00161 | 0.00867 | 1.28% | 47.1% |
| 230 | | 4 | 0.827 | 0.806 | 0.848 | 0.785 | 0.909 | 0.0104 | 0.0559 | 6.76% | 35.4% |

| **Arbacia Sperm Cell Fertilization Test** | | | | | **EnviroSystems, Inc.** |
|---|---|---|---|---|---|
| **Analysis ID:** | 07-7635-2558 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:37 | **Analysis:** | Parametric-Control vs Treatments | **Official Results:** | Yes |

## Graphics



# CETIS Analytical Report

| | |
|---|---|
| **Report Date:** | 13 Jul-10 14:46 (p 1 of 2) |
| **Test Code:** | 04-0243-2429/19812ApDSG2 |

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 12-1514-3368 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:40 | **Analysis:** | Linear Regression (MLE) | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

## Linear Regression Options

| Model Function | Threshold Option | Threshold | Optimized | Pooled | Het Corr | Weighted |
|---|---|---|---|---|---|---|
| Log-Normal [NED=A+B*log(X)] | Control Threshold | 0.0858469 | Yes | No | Yes | Yes |

## Regression Summary

| Iters | LL | QAICc | Mu | Sigma | G Stat | Chi-Sq | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|---|---|
| 5 | -958 | 413 | 0.235 | 0.525 | 0.328 | 65.7 | 23.7 | 0.0000 | Significant Heterogeneity |

## Point Estimates

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC5 | 33.7 | 3.08 | 66.1 |
| EC10 | 52.3 | 8.52 | 88.3 |
| EC15 | 70.4 | 16.9 | 108 |
| EC20 | 89 | 28.8 | 127 |
| EC25 | 109 | 45.3 | 147 |
| EC40 | 181 | 127 | 239 |
| EC50 | 246 | 191 | 396 |

## Regression Parameters

| Parameter | Estimate | Std Error | 95% LCL | 95% UCL | t Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| Threshold | 0.0853 | 0.0289 | 0.0233 | 0.147 | 2.95 | 0.0105 | Significant Parameter |
| Slope | 1.9 | 0.508 | 0.814 | 2.99 | 3.75 | 0.0022 | Significant Parameter |
| Intercept | 0.447 | 1.14 | -2 | 2.9 | 0.392 | 0.7011 | Non-Significant Parameter |

## Residual Analysis

| Attribute | Method | Test Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|
| Variances | Bartlett Equality of Variance | 8.04 | 7.81 | 0.0452 | Unequal Variances |
| | Mod Levene Equality of Variance | 1.06 | 3.49 | 0.4027 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.927 | | 0.2161 | Normal Distribution |

## Proportion Fertilized Summary

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc-NA | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | Diff% | A | B |
| 7.1 | Dilution Water | 4 | 0.916 | 0.867 | 0.944 | 0.00652 | 0.0357 | 3.9% | 0.0% | 394 | 431 |
| 41 | | 4 | 0.851 | 0.804 | 0.935 | 0.0109 | 0.0598 | 7.02% | 7.05% | 357 | 419 |
| 160 | | 4 | 0.661 | 0.578 | 0.716 | 0.0107 | 0.0584 | 8.84% | 27.8% | 269 | 407 |
| 190 | | 4 | 0.393 | 0.381 | 0.4 | 0.00154 | 0.00846 | 2.15% | 57.1% | 164 | 417 |
| 230 | | 4 | 0.541 | 0.5 | 0.623 | 0.0101 | 0.0553 | 10.2% | 40.9% | 237 | 439 |

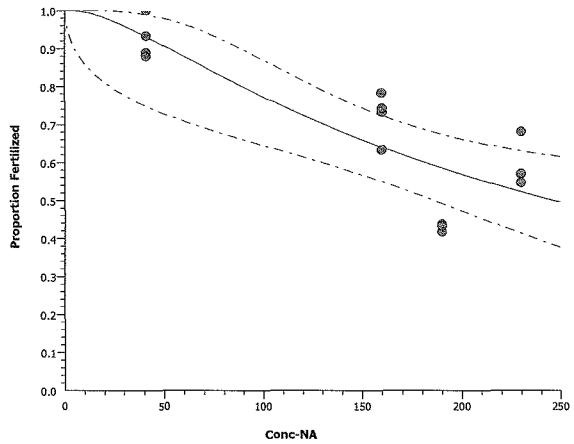
## Proportion Fertilized Detail

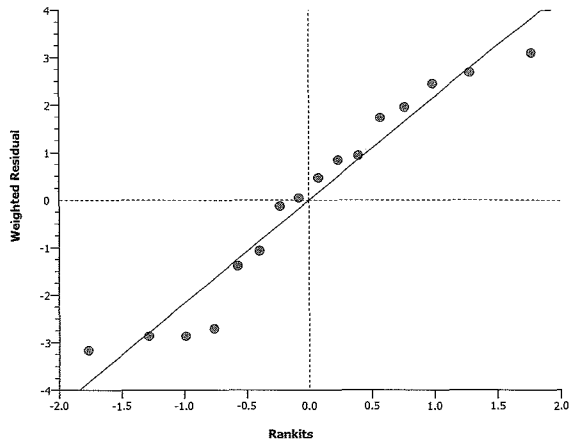
| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 7.1 | Dilution Water | 0.913 | 0.941 | 0.944 | 0.867 |
| 41 | | 0.814 | 0.853 | 0.804 | 0.935 |
| 160 | | 0.67 | 0.716 | 0.578 | 0.68 |
| 190 | | 0.4 | 0.381 | 0.396 | 0.396 |
| 230 | | 0.623 | 0.52 | 0.522 | 0.5 |

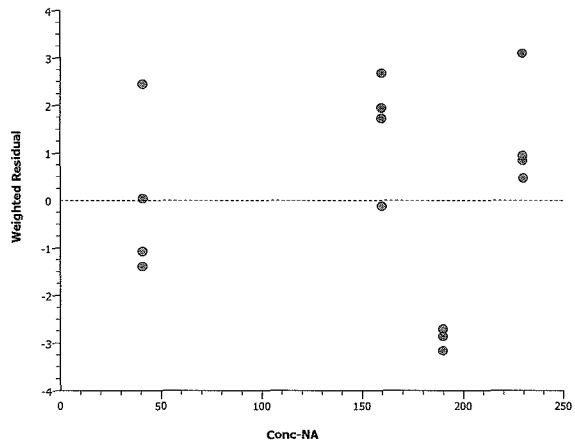
**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

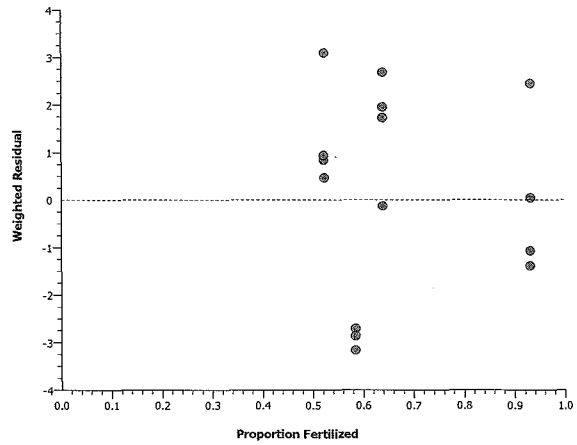
| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 12-1514-3368 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:40 | **Analysis:** | Linear Regression (MLE) | **Official Results:** | Yes |

## Graphics



**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 02-3348-9521 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:40 | **Analysis:** | Nonlinear Regression | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

**Non-Linear Regression Options**

| Model Function | X Transform | Y Transform | Weighting Function | PTBS Function |
|---|---|---|---|---|
| 3P Log-Logistic EV [Y=A/(1+(X/D)^C)] | None | None | Normal [W=1] | Off [Y*=Y] |

**Regression Summary**

| Iters | Log LL | AICc | Adj R2 | Optimize | F Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|---|
| 5 | 38.7 | -69.7 | 0.7797 | Yes | 26.3 | 3.68 | 0.0000 | Significant Lack of Fit |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC10 | 50.3 | 2.96 | 91 |
| EC15 | 69.4 | 22.8 | 117 |
| EC20 | 88.7 | 43.2 | 139 |
| EC25 | 109 | 66.2 | 158 |
| EC40 | 180 | 148 | 216 |
| EC50 | 241 | 184 | 316 |

**Regression Parameters**

| Parameter | Estimate | Std Error | 95% LCL | 95% UCL | t Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|---|
| A | 0.926 | 0.0562 | 0.808 | 1.04 | 16.5 | <0.0001 | Significant Parameter |
| C | 1.36 | 0.547 | 0.208 | 2.52 | 2.49 | 0.0235 | Significant Parameter |
| D | 238 | 29.4 | 176 | 300 | 8.1 | <0.0001 | Significant Parameter |

**ANOVA Table**

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(5%) |
|---|---|---|---|---|---|---|
| Lack of Fit | 0.1196965 | 0.0598483 | 2 | 26.3 | <0.0001 | Significant |
| Model | 0.6265515 | 0.3132758 | 2 | 34.6 | <0.0001 | Significant |
| Pure Error | 0.0341637 | 0.0022776 | 15 | | | |
| Residual | 0.1538602 | 0.0090506 | 17 | | | |

**Residual Analysis**

| Attribute | Method | Test Stat | Critical | P-Value | Decision(5%) |
|---|---|---|---|---|---|
| Variances | Bartlett Equality of Variance | 7.66 | 9.49 | 0.1050 | Equal Variances |
| | Mod Levene Equality of Variance | 0.669 | 3.06 | 0.6234 | Equal Variances |
| Distribution | Shapiro-Wilk Normality | 0.946 | | 0.3114 | Normal Distribution |

**Proportion Fertilized Summary**

| | | | Calculated Variate(A/B) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc-NA | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | Diff% | A | B |
| 7.1 | Dilution Water | 4 | 0.916 | 0.867 | 0.944 | 0.00652 | 0.0357 | 3.9% | 0.0% | 394 | 431 |
| 41 | | 4 | 0.851 | 0.804 | 0.935 | 0.0109 | 0.0598 | 7.02% | 7.05% | 357 | 419 |
| 160 | | 4 | 0.661 | 0.578 | 0.716 | 0.0107 | 0.0584 | 8.84% | 27.8% | 269 | 407 |
| 190 | | 4 | 0.393 | 0.381 | 0.4 | 0.00154 | 0.00846 | 2.15% | 57.1% | 164 | 417 |
| 230 | | 4 | 0.541 | 0.5 | 0.623 | 0.0101 | 0.0553 | 10.2% | 40.9% | 237 | 439 |

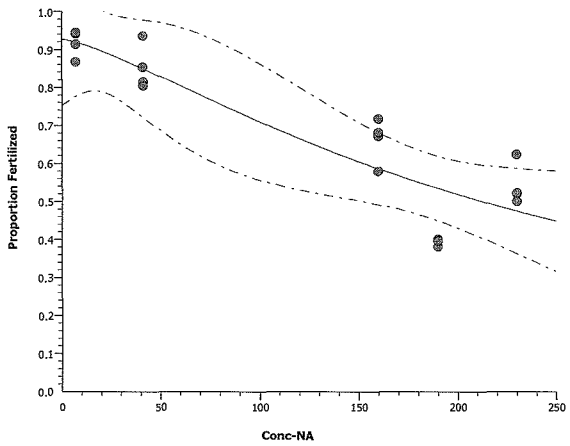
**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

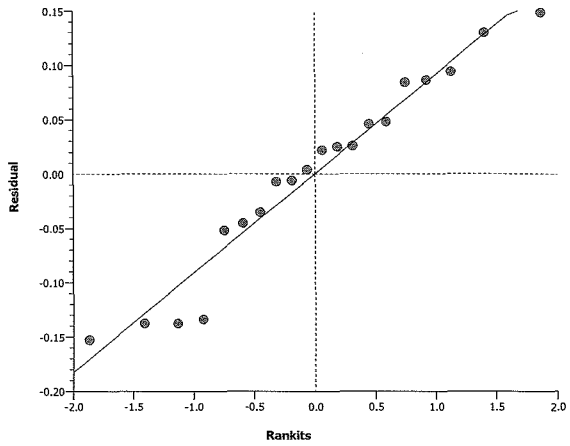
| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 02-3348-9521 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:40 | **Analysis:** | Nonlinear Regression | **Official Results:** | Yes |

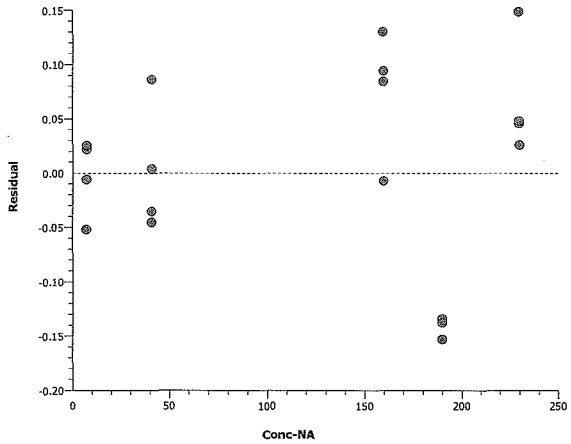
## Proportion Fertilized Detail

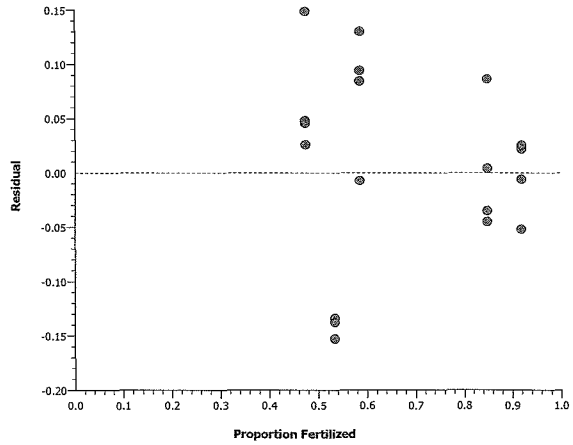
| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 7.1 | Dilution Water | 0.913 | 0.941 | 0.944 | 0.867 |
| 41 | | 0.814 | 0.853 | 0.804 | 0.935 |
| 160 | | 0.67 | 0.716 | 0.578 | 0.68 |
| 190 | | 0.4 | 0.381 | 0.396 | 0.396 |
| 230 | | 0.623 | 0.52 | 0.522 | 0.5 |

## Graphics



# CETIS Analytical Report

Report Date: 13 Jul-10 14:46 (p 1 of 1)
Test Code: 04-0243-2429/19812ApDSG2

**Arbacia Sperm Cell Fertilization Test** — **EnviroSystems, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| **Analysis ID:** | 18-8577-9625 | **Endpoint:** | Proportion Fertilized | **CETIS Version:** | CETISv1.7.0 |
| **Analyzed:** | 13 Jul-10 14:40 | **Analysis:** | Linear Interpolation (ICPIN) | **Official Results:** | Yes |

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | 05-2047-0565 | **Test Type:** | Fertilization | **Analyst:** | |
| **Start Date:** | 16 Jun-10 12:13 | **Protocol:** | EPA/821/R-02-014 (2002) | **Diluent:** | Not Applicable |
| **Ending Date:** | 16 Jun-10 13:33 | **Species:** | Arbacia punctulata | **Brine:** | Generic commercial salts |
| **Duration:** | 80m | **Source:** | In-House Culture | **Age:** | |

**Linear Interpolation Options**

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|---|---|---|---|---|---|
| Log(X+1) | Linear | 57951 | 200 | Yes | Two-Point Interpolation |

**Point Estimates**

| Level | NA | 95% LCL | 95% UCL |
|---|---|---|---|
| EC5 | 26.2 | 7.57 | 67.6 |
| EC10 | 50.6 | 15.8 | 79.9 |
| EC15 | 70.2 | 37 | 107 |
| EC20 | 97.1 | 58.6 | 153 |
| EC25 | 134 | 80.4 | 179 |
| EC40 | 177 | 168 | 184 |
| EC50 | >230 | N/A | N/A |

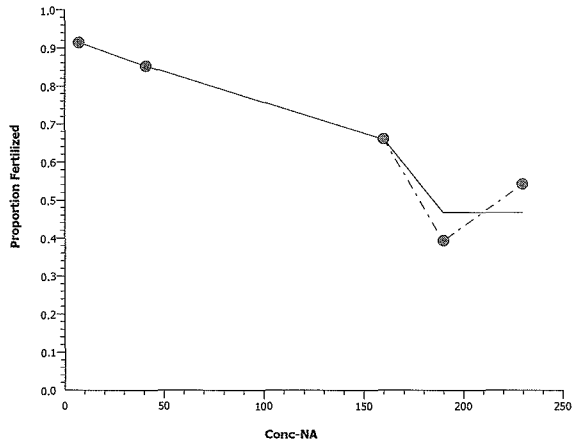
**Proportion Fertilized Summary**

| | | | | | | | | | | Calculated Variate(A/B) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conc-NA** | **Control Type** | **Count** | **Mean** | **Min** | **Max** | **Std Err** | **Std Dev** | **CV%** | **Diff%** | **A** | **B** |
| 7.1 | Dilution Water | 4 | 0.916 | 0.867 | 0.944 | 0.00652 | 0.0357 | 3.9% | 0.0% | 394 | 431 |
| 41 | | 4 | 0.851 | 0.804 | 0.935 | 0.0109 | 0.0598 | 7.02% | 7.05% | 357 | 419 |
| 160 | | 4 | 0.661 | 0.578 | 0.716 | 0.0107 | 0.0584 | 8.84% | 27.8% | 269 | 407 |
| 190 | | 4 | 0.393 | 0.381 | 0.4 | 0.00154 | 0.00846 | 2.15% | 57.1% | 164 | 417 |
| 230 | | 4 | 0.541 | 0.5 | 0.623 | 0.0101 | 0.0553 | 10.2% | 40.9% | 237 | 439 |

**Proportion Fertilized Detail**

| Conc-NA | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|---|---|---|---|---|---|
| 7.1 | Dilution Water | 0.913 | 0.941 | 0.944 | 0.867 |
| 41 | | 0.814 | 0.853 | 0.804 | 0.935 |
| 160 | | 0.67 | 0.716 | 0.578 | 0.68 |
| 190 | | 0.4 | 0.381 | 0.396 | 0.396 |
| 230 | | 0.623 | 0.52 | 0.522 | 0.5 |

**Graphics**



## SALTWATER ASSAYS

*A. bahia, A. punctulata*

| STUDY: 19812 | LOCATION: New Bedford Harbor | | | | |
|---|---|---|---|---|---|
| CHEMISTRY | Lab Salt Control | -001 | -002 | -003 | -004 |
| AMMONIA | 19797-008 | -011 | -012 | -013 | -014 |
| AS RECEIVED WATER QUALITIES | Lab Salt Control | -001 | -002 | -003 | -004 |
| SALINITY (ppt) | 25 | 24.5 | 25.5 | 25.9 | 26.0 |
| pH (SU) | 7.86 | 7.40 | 7.35 | 7.34 | 7.33 |
| TRC (mg/L) | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| DO (mg/L) | 7.6 | 8.4 | 7.3 | 7.3 | 7.1 |
| S/C (µmhos/cm) | 38850 | 38780 | 40240 | 40500 | 40950 |
| WQ STATION USED | 1 | 1 | 1 | 1 | 1 |
| INITIALS | SJ | LB | LB | LB | LB |
| *A. bahia* SALINITY ADJUSTMENT RECORD | Lab Salt Control | -001 | -002 | -003 | -004 |
| SAMPLE (mLs) | | 19,500 | 19,500 | 19,500 | 19,500 |
| SEA SALT (g) | | 0 | 0 | 0 | 0 |
| DATE: | 6/16/10 | | | | |
| TIME: | 1100 | | | | |
| INITIALS: | SJ | | | | |

| Sample ID | ESI Cube ID |
|---|---|
| -001 | -001 |
| -002 | -002 |
| -003 | -003 |
| -004 | -004 |
| | |

LB SJ 6/16/10

## SALTWATER ASSAYS

*A. bahia, A. punctulata*

| STUDY: 19812 | LOCATION: New Bedford Harbor | | | | | |
|---|---|---|---|---|---|---|
| CHEMISTRY | -005 | -006 | -007 | -008 | -009 | -010 |
| AMMONIA | -015 | -016 | -017 | -018 | -019 | -020 |
| AS RECEIVED WATER QUALITIES | -005 | -006 | -007 | -008 | –009 | -010 |
| SALINITY (ppt) | 26.4 | 24.9 | 25.4 | 26.1 | 26.3 | 26.3 |
| pH (SU) | 7.30 | 7.69 | 7.65 | 7.56 | 7.39 | 7.34 |
| TRC (mg/L) | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| DO (mg/L) | 7.2 | 7.9 | 7.8 | 7.9 | 7.8 | 7.4 |
| S/C (µmhos/cm) | 41440 | 39280 | 40110 | 40940 | 41240 | 41460 |
| WQ STATION USED | 1 | 1 | 1 | 1 | 1 | 1 |
| INITIALS | LB | LB | LB | LB | LB | LB |
| *A. bahia* SALINITY ADJUSTMENT RECORD | -005 | -006 | –007 | -008 | -009 | -010 |
| SAMPLE (mLs) | | | | | | |
| SEA SALT (g) | | | | | | |
| DATE: | | | | | | |
| TIME: | | | | | | |
| INITIALS: | | | | | | |

ST 4/10/10

| Sample ID | ESI Cube ID |
|---|---|
| -001 | -001 |
| -002 | -002 |
| -003 | -003 |
| -004 | -004 |
| -005 | -005 |
| -006 | -006 |
| -007 | -007 |
| -008 | -008 |
| -009 | -009 |
| -010 | -010 |
| | |

# DILUTIONS

| STUDY: 19812 | CLIENT: Woods Hole Group | |
|---|---|---|
| SPECIES: *A. bahia* | | |
| | Sample: New Bedford Harbor | |
| Concentration % | Vol. Eff.(mls) | Final Vol.(mls) |
| Lab | ~~0~~ | 800 |
| Reference Water | ~~0~~ | ↓ |
| NTU 001 | 800 | ↓ |
| NTU 002 | ↓ | ↓ |
| NTU 003 | ↓ | ↓ |
| NTU 004 | ↓ | ↓ |
| NTU 005 | ↓ | ↓ |
| NTU 006 | ↓ | ↓ |
| NTU 007 | ↓ | ↓ |
| NTU 008 | ↓ | ↓ |
| NTU 009 | ↓ | ↓ |
| INITIALS: | SJ | |
| TIME: | 1200 | |
| DATE: | 6/16/10 | |

## *Arbacia punctulata* Chronic Fertilization Assay

### SAMPLE USE RECORD

| STUDY: 19812 | CLIENT: Woods Hole Group New Bedford | |
|---|---|---|
| SPECIES: *A. punctulata* | | |
| | Day: 0 | |
| SAMPLE | Volume Used (mL) | ESI Cube ID |
| Lab Control | 200 | Lab |
| -001 | | 001 |
| -002 | | 002 |
| -003 | | 003 |
| -004 | | 004 |
| -005 | | 005 |
| -006 | | 006 |
| -007 | | 007 |
| -008 | | 008 |
| -009 | | 009 |
| -010 | | 010 |
| INITIALS: | LB | |
| TIME: | 0930 | |
| DATE: | 6/16/10 | |

# RECORD OF METERS USED

| STUDY: 19812 | | CLIENT: Woods Hole Group | |
|---|---|---|---|
| A.bahia | | | |
| Exposure (Hours) | | | |
| | 0 | 24 | 48 |
| Water Quality Station # | 1 | 1 | 1 |
| Initials / Date | SJ 6/16/10 | JQ 6/17/10 | VC 6/18/10 |

| 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 # | 90 | pH probe # | | |
| S/C meter # | YSI30D | S/C meter # | | |
| S/C probe # | ↓ | S/C probe # | | |
| Salinity meter # | | Salinity meter # | | |

Report No: 19812 SDG:
Project: New Bedford Harbor - Level II Dilution Study

Parameter: Ammonia-N
Matrix: Water
Sampled: 06/16/10 0830

| Sample ID: | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| DS-TOX-001-061510 | 19812-011 | 0.16 | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-002-061510 | 19812-012 | 0.14 | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-003-061510 | 19812-013 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-004-061510 | 19812-014 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-005-061510 | 19812-015 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-006-061510 | 19812-016 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-007-061510 | 19812-017 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-008-061510 | 19812-018 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-009-061510 | 19812-019 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |
| DS-TOX-010-061510 | 19812-020 | ND | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |

Notes:

ND = Not Detected

Report No: 19797 SDG:
Project: Laboratory Seawater

Sample ID: ESIN1 LAB SALT 06/16/10
Matrix: Water
Sampled: 06/16/10 1030

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|---|
| Ammonia-N | 19797-008 | ND | Se | 0.1 | mg/L as N | 06/17/10 | 06/17/10 | JLH/SM 4500-NH3 G |

Notes:

ND = Not Detected

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 19812 | | |
| SDG No: | | | |
| Project: | WHG-NB Env. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 06/15/10 1853 | Date and TIme Logged into Lab: | 06/16/10 0845 |
| Recieved By: | DM | Logged into Lab by: | SJ |
| 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: | 4 | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | 3762 | | |
| 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 |
|---|---|---|---|---|---|---|
| DS-TOX-001-061510 | 19812-001 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-002-061510 | 19812-002 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-003-061510 | 19812-003 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-004-061510 | 19812-004 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-005-061510 | 19812-005 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-006-061510 | 19812-006 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-007-061510 | 19812-007 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-008-061510 | 19812-008 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-009-061510 | 19812-009 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-010-061510 | 19812-010 | W | AB48AD, AP01CR; | 20L | 4C | |
| DS-TOX-001-061510 | 19812-011 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-002-061510 | 19812-012 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-003-061510 | 19812-013 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-004-061510 | 19812-014 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-005-061510 | 19812-015 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-006-061510 | 19812-016 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-007-061510 | 19812-017 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-008-061510 | 19812-018 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-009-061510 | 19812-019 | W | NH3; | 60mL p | H2SO4 | |
| DS-TOX-010-061510 | 19812-020 | W | NH3; | 60mL p | H2SO4 | |

Notes and qualifications:

Subsampled NH3 Bottles from corresponding cubitainers upon receipt at the laboratory

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 19812

DS1

# CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NB Env. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: dwalsh@whgrp.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 001 | DS-TOX-ØØ1-Ø615lØ | 6/15/10 | 12:25 | DRW | G | 20L | P | NA | W | | Level II dilution study - Tox |
| 002 | DS-TOX-ØØ2-Ø615lØ | ↓ | 12:25 | ↓ | C | ↓ | ↓ | ↓ | ↓ | | ↓ AB48AD, APOICR |
| 003 | DS-TOX-ØØ3-Ø615lØ | | 12:25 | | C | | | | | | |
| 004 | DS-TOX-ØØ4-Ø615lØ | | 12:25 | | C | | | | | | |
| 005 | DS-TOX-ØØ5-Ø615lØ | | 12:25 | | G | | | | | | |
| 006 | DS-TOX-ØØ6-Ø615lØ | | 1400 | | G | | | | | | |
| 007 | DS-TOX-ØØ7-Ø615lØ | | 1400 | | C | | | | | | |
| 008 | DS-TOX-ØØ8-Ø615lØ | | 1400 | | C | | | | | | |
| 009 | DS-TOX-ØØ9-Ø615lØ | | 1400 | | C | | | | | | |
| 010 | DS-TOX-Ø1Ø-Ø615lØ | ↓ | 1400 | ↓ | G | ↓ | ↓ | ↓ | ↓ | | ↓ |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished By: [signature] | Date: 6/15/11 | Time: 1720 | Received By: [signature] | Date: 6/15/10 | Time: 1720 |
| Relinquished By: [signature] | Date: 6/15/11 | Time: 1853 | Received at Lab By: [signature] | Date: 6-15-10 | Time: 1853 |

Comments:

Sample Delivery Group No: Page of

# FINAL
# SEDIMENT MONITORING SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE, OU #1

## Contract No. W912WJ-09-D-0001-0010-03

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

Prepared By:
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth, MA 02536


April 2011

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# FINAL

# SEDIMENT MONITORING SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE, OPERATIONAL UNIT #1
# NEW BEDFORD, MASSACHUSETTS

## Contract No. W912WJ-09-D-0001-0010-03

**April 2011**

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

**Prepared by:**
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth MA 02536
(508) 540-8080

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# EXECUTIVE SUMMARY

Sediment sampling was conducted to monitor the progress and final results of the remediation dredging operation at the New Bedford Harbor Superfund Site during the 2010 field season. As part of this effort, two hundred thirty-four sediment core samples were collected at the Site to characterize the extent of the polychlorinated biphenyl (PCB) contamination in harbor sediments. Sediment sampling occurred in three phases: 1) pre-dredge, 2) post-dredge, and 3) boathouse. Sediment was conducted between April and November, 2010. All analytical sediment data were validated and posted to the New Bedford Harbor Database.

Pre-dredge cores were collected in April 2010 at 68 locations. The objective of the pre-dredge sediment sampling was to characterize the sediments at each location with respect to the presence and thickness of the highly contaminated organic sediment layer (OL). Pre-dredge cores were externally described and archived for potential analysis. These data are used by the USACE and its contractors to confirm the target remediation dredge elevation estimates and to assist with the development of the 2010 remediation dredge plan.

Post-dredge sediment sampling was performed with two objectives: 1) to assess the sediment condition during and following dredging operations, relative to the target dredge elevation set for the area of interest; and 2) to confirm whether remediation dredging completed removal of PCB contaminated sediments to concentrations at or below the 10 ppm remediation criterion. Post-dredge sampling occurred during two sampling events (August and October), recovering cores from 115 locations within remedial Dredge Areas M, G, J, and K. Sediment cores were split open for internal sediment characterization and analytical sub-sample collection. The internal sediment characterization was performed to confirm the presence of the OL layer, and to determine the elevation of the transition between the OL and underlying sediment strata. The thickness of the OL layer varied by location due to natural geologic features and influence of remediation dredging. The underlying sediments were generally comprised of clayey silt (ML/CL) or silty clay (CL/ML) with small amounts of fine sand. Analytical results reveal that the OL surface layer contained total PCB concentrations up to 619.6 mg/kg.

Boathouse sediment cores were collected outside of the 2010 remediation areas. These cores were collected at a site along the southwest shoreline of the Acushnet River that may be developed for recreational rowing, including the construction of a boathouse, by the City of New Bedford and other partners. The objective of the Boathouse sampling was to confirm the presence of PCBs in subaqueous sediments and shoreline soils within the potentially developed area. Sampling occurred in late October and early November 2010. A total of 51 cores were collected, described, and sub-sampled at one-foot intervals. Analysis was performed on the top two intervals with results indicating that PCB contamination was primarily within the top one-foot interval, on average.

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# 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.

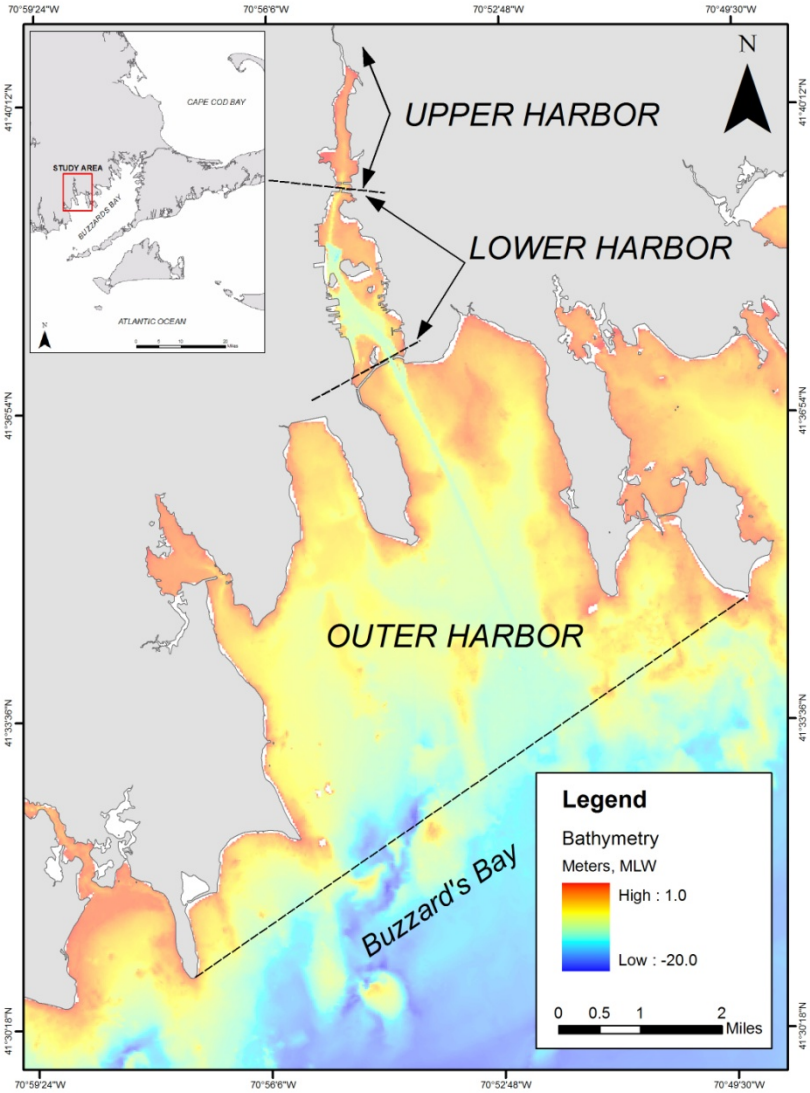


**Figure 1. Basemap of New Bedford Harbor Superfund Site in Southeastern, MA**

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 sources of the contamination have 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, consistent with geographic features, basin morphology (Figure 1) and gradients of contamination. 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 current 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 current 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 AND SCOPE

The remediation of the Site involves the excavation and dredging of approximately 900,000 cubic yards of PCB-contaminated sediment. The majority of the contaminated material is being 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 is then pumped to the Area D Dewatering Facility, located on Herman Melville Boulevard, where it is mechanically dewatered and transported off-site for disposal.

The Site is divided into a series of Dredge Management Units (DMU) based primarily on contamination levels, contamination sources, and topography. In 2010, remediation activities at the Site included hydraulic dredging and excavation in six areas: G, J, K, L, and M (Figure 2). Five of the six areas (Areas G, J, K, and M) dredged during the 2010 season were in the vicinity of the Aerovox facility. These five areas comprise the majority of the estuary between the Wood Street Bridge and the Aerovox facility. The sixth area, Area L, is located south of the submerged cable crossing.

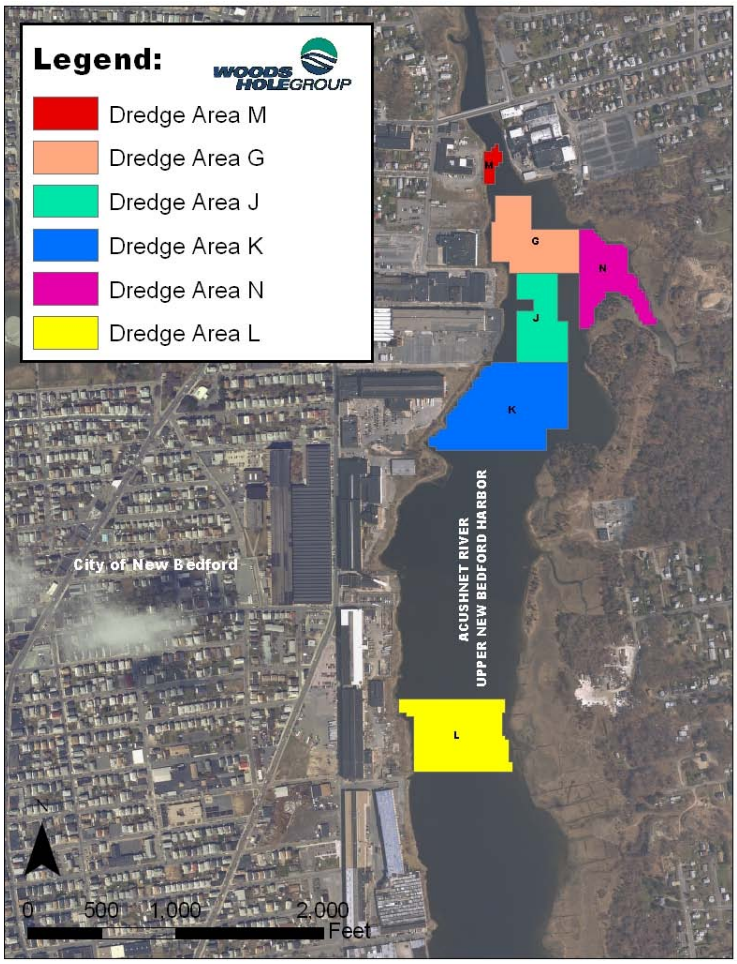


**Figure 2. Basemap of 2010 Active Remediation Dredging Areas**

The objectives of the 2010 sediment monitoring program were to collect sediment samples and perform sediment characterizations and analytical testing for PCBs in support of the remedial dredging activities in Operational Unit #1 (OU1). Sediment monitoring of the OU1 area in 2010 required visual characterization of both split and unsplit whole sediment cores to determine the thickness of the surficial "OL" sediment layer, as well as the elevation, relative to a vertical datum control, of the transition between the OL layer and the underlying strata. The OL layer is defined as 'organic silt, organic clay.' Historical analytical data confirms that the OL layer contains the highest concentrations of PCB contaminants. Therefore, identification of the spatial extent of the OL layer is important in developing a dredge plan, monitoring dredging performance and assessing the overall performance of the dredging operation. Analysis of PCB contaminants in sediment samples within the OL layer, and in others layers, further strengthens the correlation between PCB concentrations and the OL sediments. The entire upper harbor, including the DMUs and 2010 Dredge Areas, has been parceled into discrete 25-foot by 25 foot 'z-blocks'. During remedial design, a geostatistical model was used to predict a target elevation for dredging each z-block, termed the z* elevation. This target dredge elevation represents the elevation below which PCB concentrations are predicted to be less than the 10 mg/kg (ppm) remediation criterion. Using target dredge elevations in combination with bathymetric data, a preliminary dredge plan was developed, estimating the required depth of dredging and the thickness of the overlying sediment to be removed.

The successful completion of this sediment monitoring plan by the Woods Hole Group required close coordination and cooperation with the USACE and the dredging contractor Jacobs Engineering (JE).

### *1.2.1 Pre-dredge Sediment Sampling*

In 2010, Pre-Dredge sampling was performed in preparation for pending remedial dredging events and to confirm the target dredge elevation estimates from the z-blocks, and to adjust elevations as needed. Coring locations were placed onto the z-block map to achieve sufficient spatial coverage for the evaluation of the target dredge elevations. Visual characterization from the pre-dredge cores was used by the USACE and JE to prepare the final dredge plan for 2010 and subsequent dredging seasons.

### *1.2.2 Post-dredge Sediment Sampling*

Post-dredge sediment sampling was conducted to assess the sediment condition following dredging operations, confirming whether the remedial dredging completed the removal of contaminated sediments to concentrations at or below 10 ppm. Post-Dredge cores were visually characterized to determine the thickness and elevation of "OL" material remaining. Cores also were subsampled for analytical testing of PCB concentrations in the sediment. If PCB concentrations exceeded 10 ppm, the location was identified by the USACE for further dredging.

### *1.2.3 Boat House Sediment Sampling*

Boathouse sediment sampling was conducted during the 2010 post-dredge season to assess PCB concentration in sediments along the shoreline where the city of New

Bedford has proposed to develop and construct a recreational rowing center and boathouse. The intent of Boathouse sampling was to identify areas with PCB contaminated sediments at concentrations above 10 ppm. Boathouse sediment samples were visually characterized to determine the thickness and elevation of "OL" material present, and subsampled in one-foot increments for analytical testing.

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# 2.0 METHODS

Methods used to collect and analyze sediment samples are summarized below and described in detail in the project Field Sampling Plan (Woods Hole Group 2010a) and Quality Assurance Project Plan (Woods Hole Group 2010b).

## 2.1 CORE, SOIL, AND GRAB LOCATIONS

All locations for the collection of sediment samples were approved by the USACE and USEPA, and provided electronically to Woods Hole Group by JE. Locations were provided in Massachusetts State Plane Mainland coordinates, and were converted into latitude and longitude using the program Corpscon 6. The Woods Hole Group navigation system required all waypoints to be entered in geographic coordinates.

## 2.2 CORE COLLECTION

Sediment cores were collected with a push-core sampling device equipped with a 2 5/8 inch inner diameter clear polycarbonate core barrel. The length of core needed for collection was determined either directly by Jacobs or by the target dredge elevation relative to the bottom elevation at each core location. To ensure that the target elevation was sampled, a core barrel was pushed into the sediment past the target elevation horizon. A piston assembly inside the core barrel was used to create suction, thereby preventing excessive compaction during core barrel penetration, and loss of sediment from the bottom of the barrel during recovery.

Before core collection at each sampling location, a water depth measurement was recorded and the water surface elevation was surveyed. Water surface elevation was surveyed relative to the vertical datum NGVD29 using gauged tide boards previously secured to a steel sheet pile with elevation markings. After the push-core device was assembled, the total length of the device was measured, and the piston was positioned just inside the lower edge of the core barrel. The coring assembly was lowered in the water until the leading edge of the barrel was at the sediment-water interface. At this point the piston attachment line was secured to the boat, fixing the elevation of the piston, creating a suction point at the sediment-water interface. The push-core was then driven into the sediment to the predetermined depth, and the distance between the top of the push-core assembly and the water surface was measured. During core barrel retrieval the piston line was held tight to maintain suction in the barrel and to overcome the suction holding the penetrated core barrel in place. Upon recovery of the core onto the survey vessel, the bottom end of the barrel was capped, the barrel was removed from the push-core device, and the core was stored in a vertical position.

## 2.3 CORE CALCULATIONS

Quality Assurance and Quality Control (QA/QC) calculations were performed following core recovery. These calculations used the measurements of certain parameters recorded during the coring process to determine whether the core was acceptable. A core was deemed acceptable if the barrel penetrated and recovered sediment from the target elevation. The required measurements and calculations are described in detail below and illustrated in Figure 3. All measurements were recorded in units of ±0.1 feet.

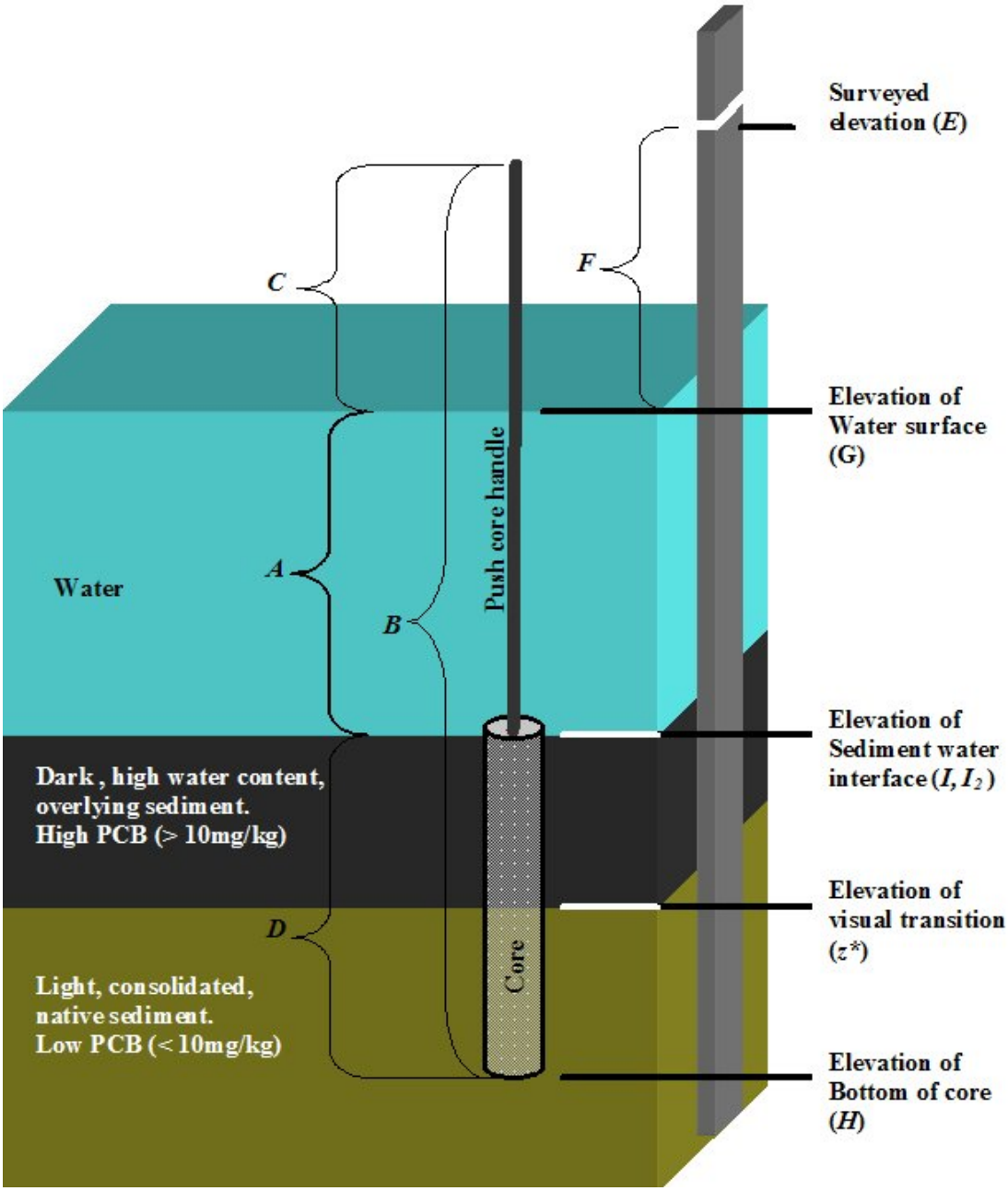


**Figure 3. Graphical Representation of Sediment Core Measurements**

Descriptions of coring parameters described in Figure 3:

*A* = **Water depth**. The water depth was recorded using a stadia rod.

*B* = **Length of push-core assembly**. Prior to deployment, the full length of the push-core assembly from the top of the handle to the bottom edge of the core liner was recorded.

*C* = **Water surface to top of core assembly handle**. Once the core assembly was fully penetrated, the length of the assembly remaining above the water surface was recorded.

*D* = **Core Length**. The core length retained in the core barrel, from bottom to top, was measured and recorded.

*E* = **Surveyed elevation**. Prior to operations, the dredge contractor installed a gauged tide board fixed to the sheet pile with markings indicating a survey elevation (NGVD 29). This elevation was recorded and served as the reference point for elevation calculations.

*F* = **Water surface from surveyed elevation**. After sample collection, the survey vessel navigated to the fixed gauged tide board and the distance from the water surface to the surveyed elevation was recorded.

From these measurements a number of calculations were made to determine true elevations:

*E* - *F* = Elevation of water surface (G).

*G* - *(B* - *C)* = Elevation of bottom of core (*H*).

The H elevation (bottom of core) was used to determine the elevation of all visual transitions, including apparent target dredge elevation, i.e.:

*H* + *(distance to visual transition)* = **Elevation of visual transition** (target dredge elevation)

*H* + D = Elevation of sediment-water interface (I).

The elevation of the sediment-water interface was also calculated from:

*G* - *A* = Elevation of sediment-water interface ($I_2$).

If I and $I_2$ varied by more than 1.0 foot, the core was discarded and a new sample collected. The difference between I and $I_2$ could have been caused by 1) too much water at the top of the core, 2) compaction of the core sediment, 3) sediment loss from the bottom of the core, 4) erroneous measurements. Any one, or combination, of these factors can result in an unacceptable core sample.

### 2.4 SOIL SAMPLE COLLECTION

Shoreline soil samples were collected in a 2 5/8 inch inner diameter clear polycarbonate core barrel inserted into a soil auger. When sampling with the soil auger, the auger head was pushed and rotated into the sediment until the depth of auger barrel was reached, approximately 6 inches. The collected sediment was removed from the auger by placing a core liner at the top of the auger barrel. The auger was then inverted, placing the sediment into the capped core liner. If necessary, a cleaned spoon was used to push the soil into the liner. This process was repeated until the required depth was reached or if the auger reached refusal. Both ends of the core barrel were capped and the sample was

stored vertically for transport to the lab. In one instance a surficial sediment sample was collected using a stainless steel spoon.

## 2.5 EXTERNAL SEDIMENT CORE EXAMINATION

All acceptable Pre-Dredge cores were brought back to the field laboratory at the Sawyer Street facility for external inspection. The external inspection process included: 1) archival photography; and 2) a geological description through the polycarbonate core barrel, where the visual transitions between each type of sediment were recorded on a log sheet.

Although it is an efficient procedure, the external examination of the sediments through the transparent core barrel has proven difficult to provide: 1) an accurate physical description; and 2) the thicknesses of *in-situ* sediment strata. For example, during penetration, the core barrel can push overlaying sediment downward along the sides of the core barrel, obscuring the sediments that actually comprise that section of the core. This is common in the New Bedford Harbor sediments where the upper unconsolidated black silt is dragged downward in the core barrel, and causes a "streaking" effect when observed externally. It is often difficult to determine whether the streaking is an actual stratigraphic feature (e.g., mixing), or a remnant of the coring process.

## 2.6 INTERNAL SEDIMENT CORE EXAMINATION

All Post-Dredge and Boathouse sediment cores were split open, described and subsampled for PCB congeners. A split core enables the scientist to provide an accurate physical description and measurement of thickness of the in-situ sediment strata, and allows for the collection of discrete sediment subsamples for laboratory analysis.

Each core barrel was placed into a clean 4-inch gutter and split by cutting along the entire length of the polycarbonate barrel using power shears. Cuts were made on opposite sides of the core barrel, 180 degrees apart. A clean piece of stainless steel wire (18 gauge) was used to slice through the middle of the barrel, using the two cuts in the barrel as guidelines. Care was used to prevent the wire from pulling obstructions (shells, rocks) down the core barrel and potentially mixing sediment layers. After splitting, the cores were rolled 90 degrees and separated. Following separation, the core was geologically described and photographed by a trained sedimentologist. Textural descriptions were performed according to ASTM standards. Color descriptions followed the Munsell color classification standards.

Sediment from predetermined sections of each split core was composited and sampled into 8 ounce glass jars for PCB analysis. Typically, subsamples were collected in 0.5 or 1.0 foot increments. However, variations in core compositions required unique sampling schemes to best characterize the sediment in a given core. If the core had a clear transition from the "OL" to another sediment layer, a one-half foot (0.5 foot) interval of sediment below the transition line was also sampled and composited for PCB analysis. Additional samples were collected for laboratory-based quality control analysis. All core samples were sent to Alpha Analytical Laboratories (AAL) for PCB congener (NOAA-18) analysis.

## 2.7 POLYCHLORINATED BIPHENYL ANALYSIS (NOAA 18 CONGENERS)

The methods used by the laboratory summarized below are detailed in Alpha Analytical Laboratories SOP O-012 and the USEPA's SOP EIA-FLDPCB2 in the Quality Assurance Project Plan (Woods Hole Group, 2010b).

Upon sample preparation, an aliquot of a well-mixed, homogeneous sediment sample is accurately measured for sample preparation. Generally, 50 grams of sediment is extracted. The New Bedford Harbor QAPP requires 30 g of sediment for extraction by Method 3540C Soxhlet Extraction, which is air dried to a minimum of >50% solids and generally >90% solids. The sample is spiked with surrogate compounds and then extracted using methylene chloride or a methylene chloride/acetone mixture. The extract is dried and exchanged to hexane during sample concentration. After extraction, clean-up techniques are applied as necessary. The extract may be treated with Aminopropyl, Carbon Column, Florisil (3620B) or GPC (3640A) for hydrocarbon and lipid removal, and copper (3660B) for sulfur removal. The extract is 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 1-5mL.

After clean-up and re-concentration, the extracts are analyzed on a gas chromatograph (GC) fitted with two capillary columns of differing polarities each employing separate detectors. This process follows a modified USEPA Method 8082 (Woods Hole Group 2010b). 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 kilogram (µg/kg) for the individual 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.

### *2.7.1 Calculation of Total PCBs from NOAA-18 Congener Results*

Although this sediment monitoring program analyzed and reported PCB concentrations for the NOAA-18 congeners, this report also provides a value for the total concentration of PCBs. The value for "Total PCBs" presented in this report is calculated (not quantitatively analyzed) and is meant to provide a representative value for the total of all 209 PCB congeners or PCB homologs. In this report, Total PCBs is defined as the product of the sum the NOAA-18 congeners and the site-specific factor of 2.6 and divided by 1000 to convert to mg/kg (Equation 1).

$$\text{Total PCBs} = (\sum \text{NOAA-18 Congeners}) \times 2.6/1000$$

**Equation 1. Calculation for Total PCBs from NOAA-18 Congeners**

Detected and estimated (J) values were used during the summation of the NOAA-18 congeners; a value of zero was used for a non-detect (U) and a non-detect estimate (UJ).

# 3.0 RESULTS

Results from the 2010 sediment monitoring activities are described below. Complete field data collection, core description logs, and digital photographs of the split and whole sediment cores are provided in Appendix A. Digital photographs of the split Post-Dredge and Boat House cores have also been uploaded to the New Bedford Harbor project database. In the database, the core photographs are linked to the field collection information and associated analytical results.

A typical sediment core in the upper harbor consisted of a surficial OL layer with varied underlying strata. The OL layer consists of unconsolidated to loosely consolidated fine-grained black organic sediment. The underlying strata are generally composed of moderate- to well-consolidated fine-grained grey sediments, varying in texture between silt and clay or a combination of both (e.g., clayey silt - ML/CL or silty clay - CL/ML). In certain locations, the underlying strata also contained low percentages of sand. Previous years of monitoring data have shown the OL layer contains the highest concentrations of PCB contaminants. For this reason, and for the purpose of remediation, it is important to determine the thickness of the OL layer and the transition from the OL layer to the underlying strata.

## 3.1 PRE-DREDGE CORE SAMPLING

Pre-Dredge cores were collected on April 12–15, 2010. Cores were collected from 68 locations within 8 proposed Dredge Areas: G, J, K, L, M, N, O, and P (Figures 4 through 11). After collection, sediment cores were externally examined and frozen in case analytical subsampling was subsequently requested by the project team. No analytical samples from the 2010 Pre-Dredge have been collected as of the publication date of this document. Results are summarized in Tables 1 and 2.

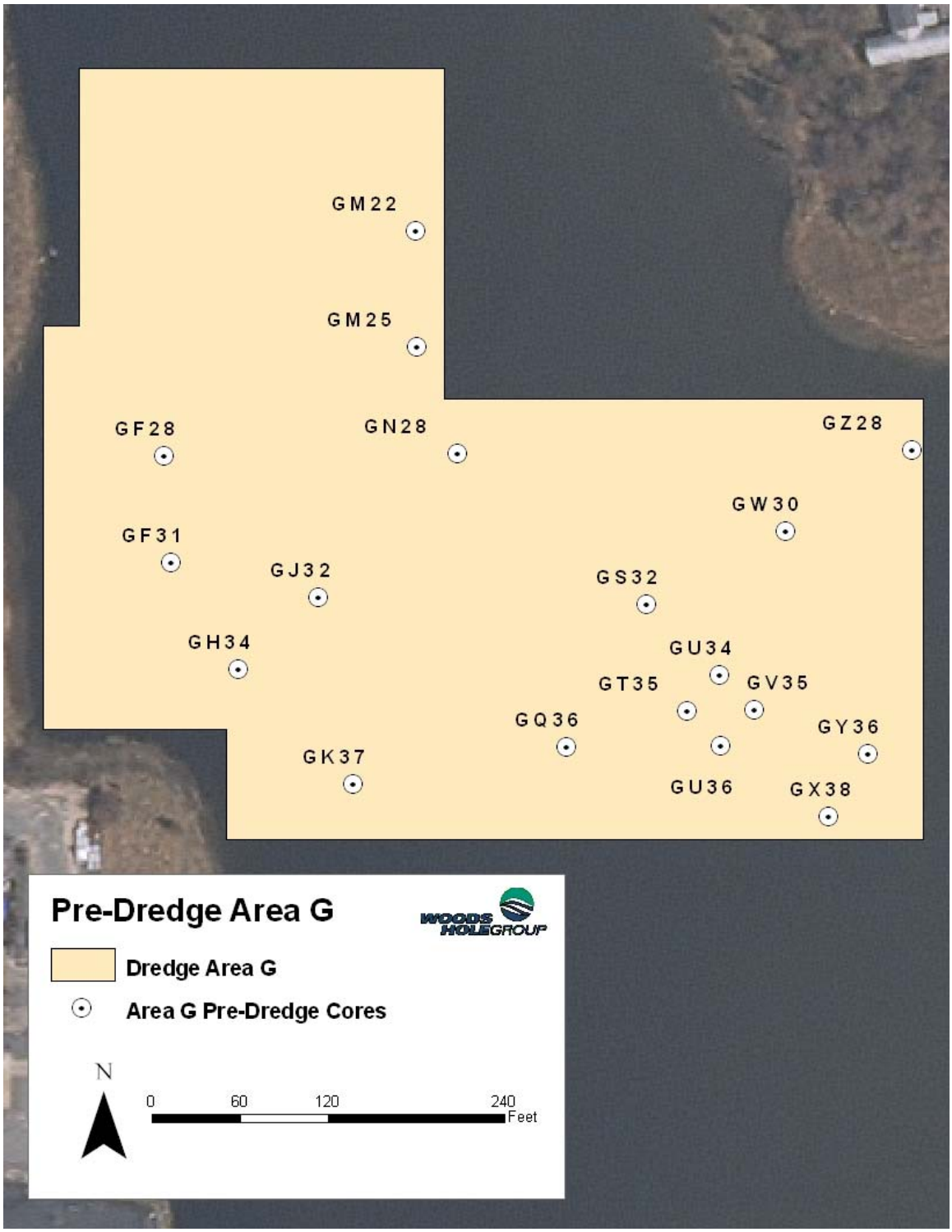


**Figure 4. Basemap of Area G Pre-Dredge Core Locations Collected in 2010**

**Figure 5. Basemap of Area J Pre-Dredge Core Locations Collected in 2010**

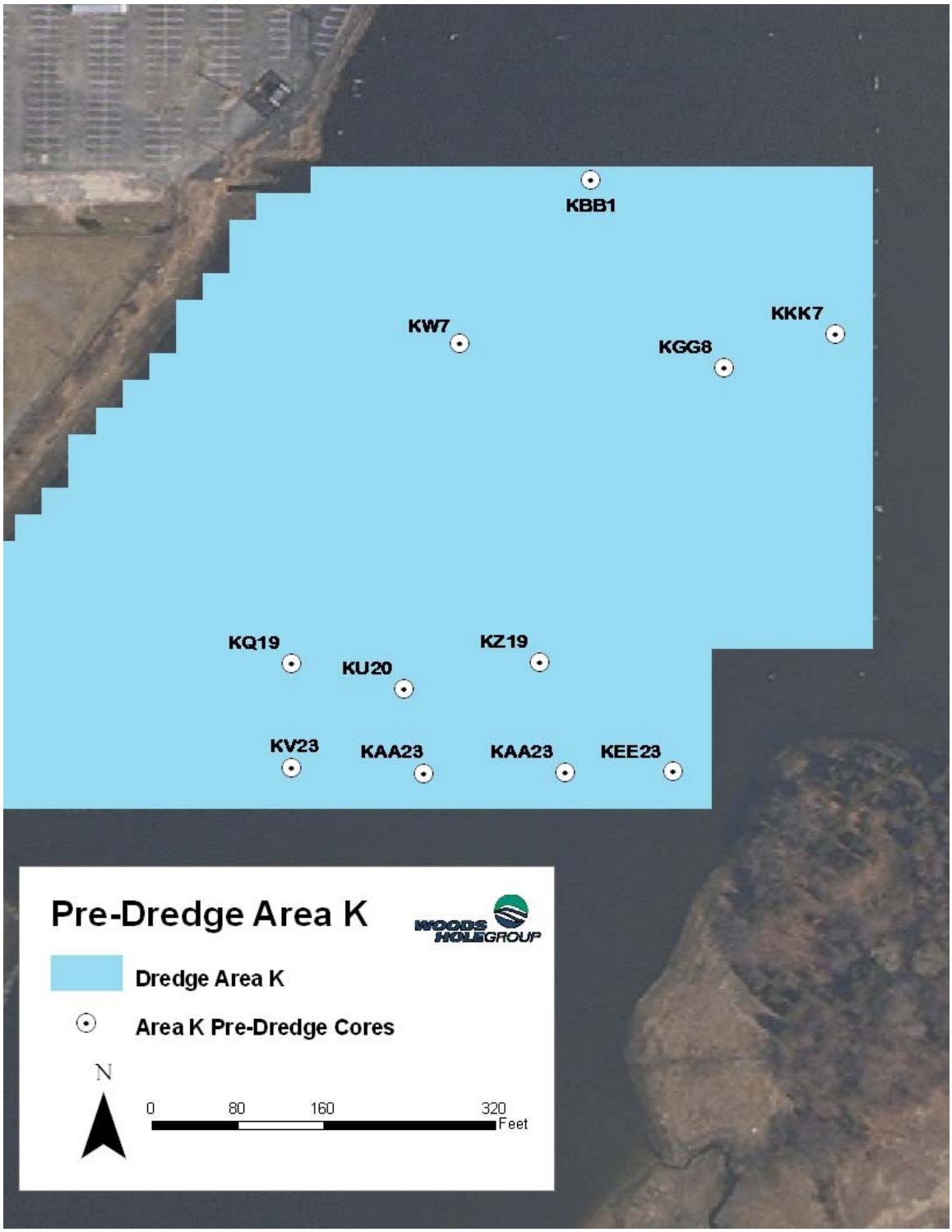


**Figure 6. Basemap of Area K Pre-Dredge Core Locations Collected in 2010**

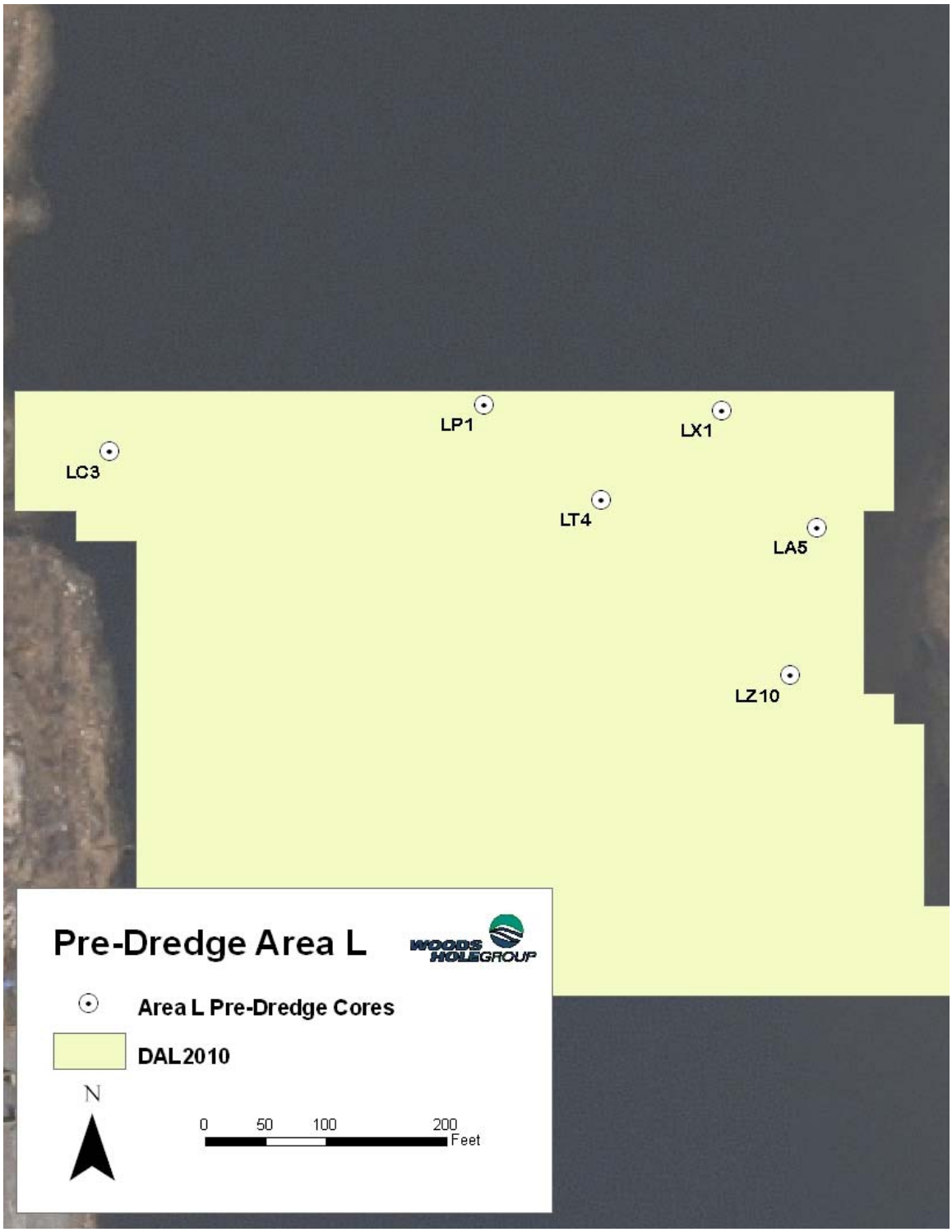


**Figure 7. Basemap of Area L Pre-Dredge Core Locations Collected in 2010**

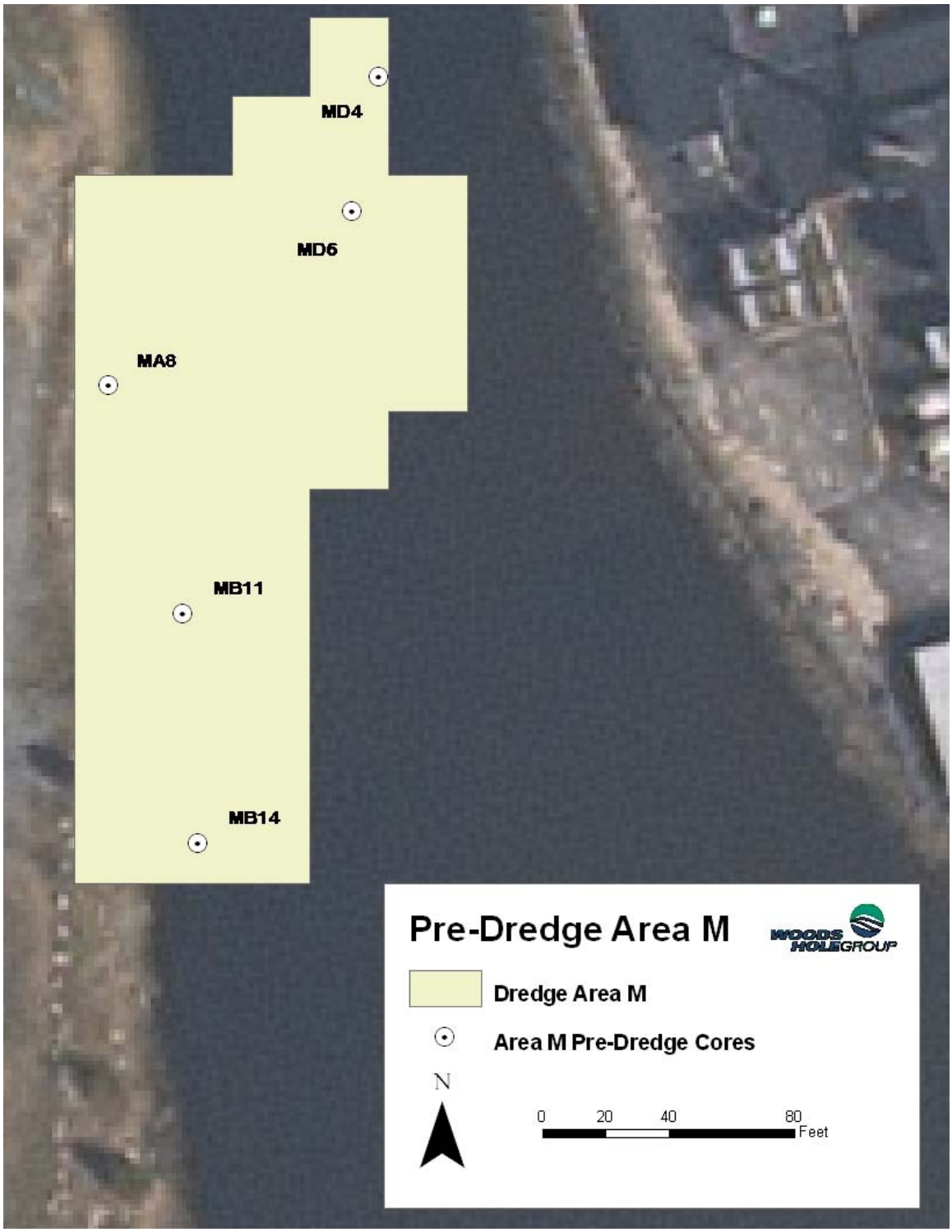


**Figure 8. Basemap of Area M Pre-Dredge Core Locations Collected in 2010**

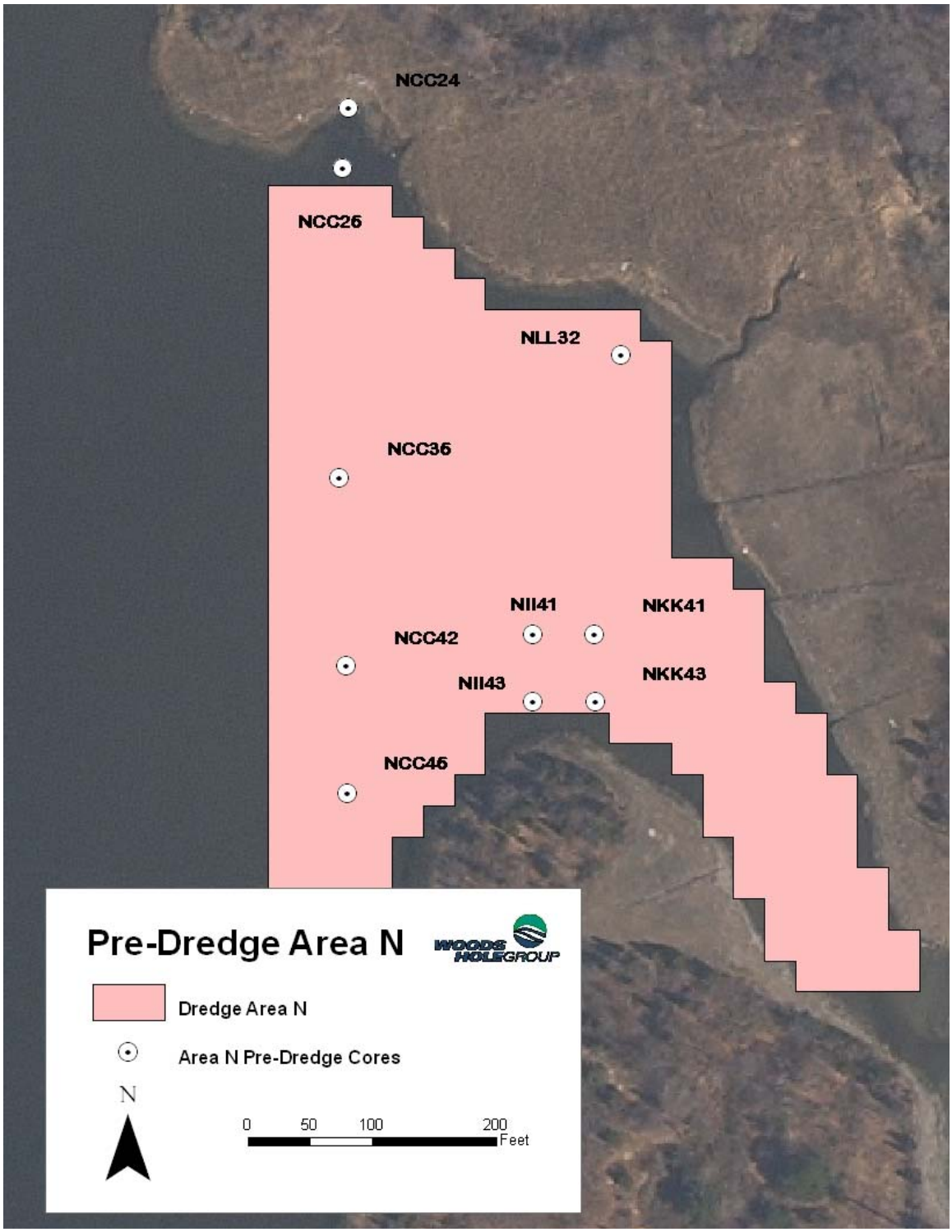


**Figure 9. Basemap of Area N Pre-Dredge Core Locations Collected in 2010**

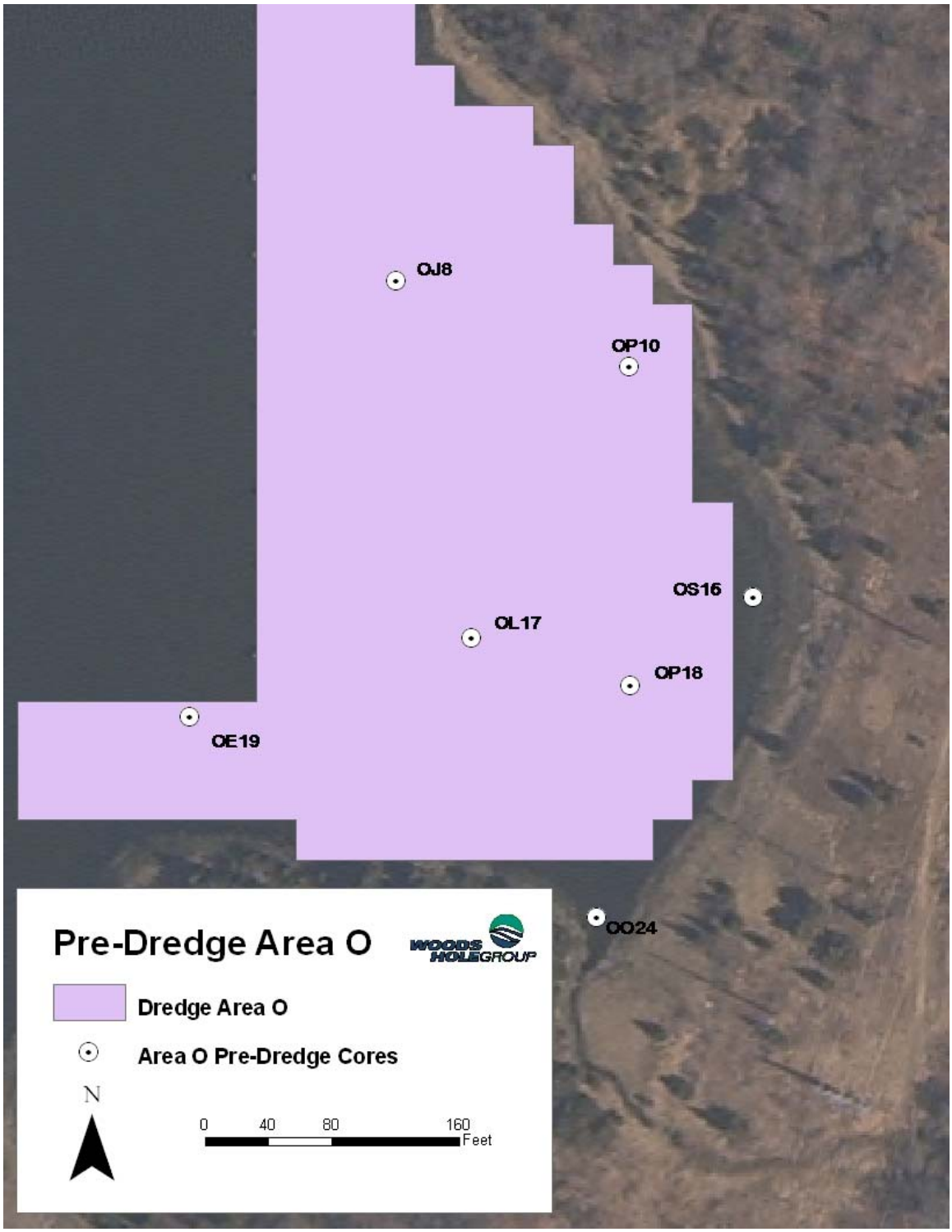


**Figure 10. Basemap of Area O Pre-Dredge Core Locations Collected in 2010**

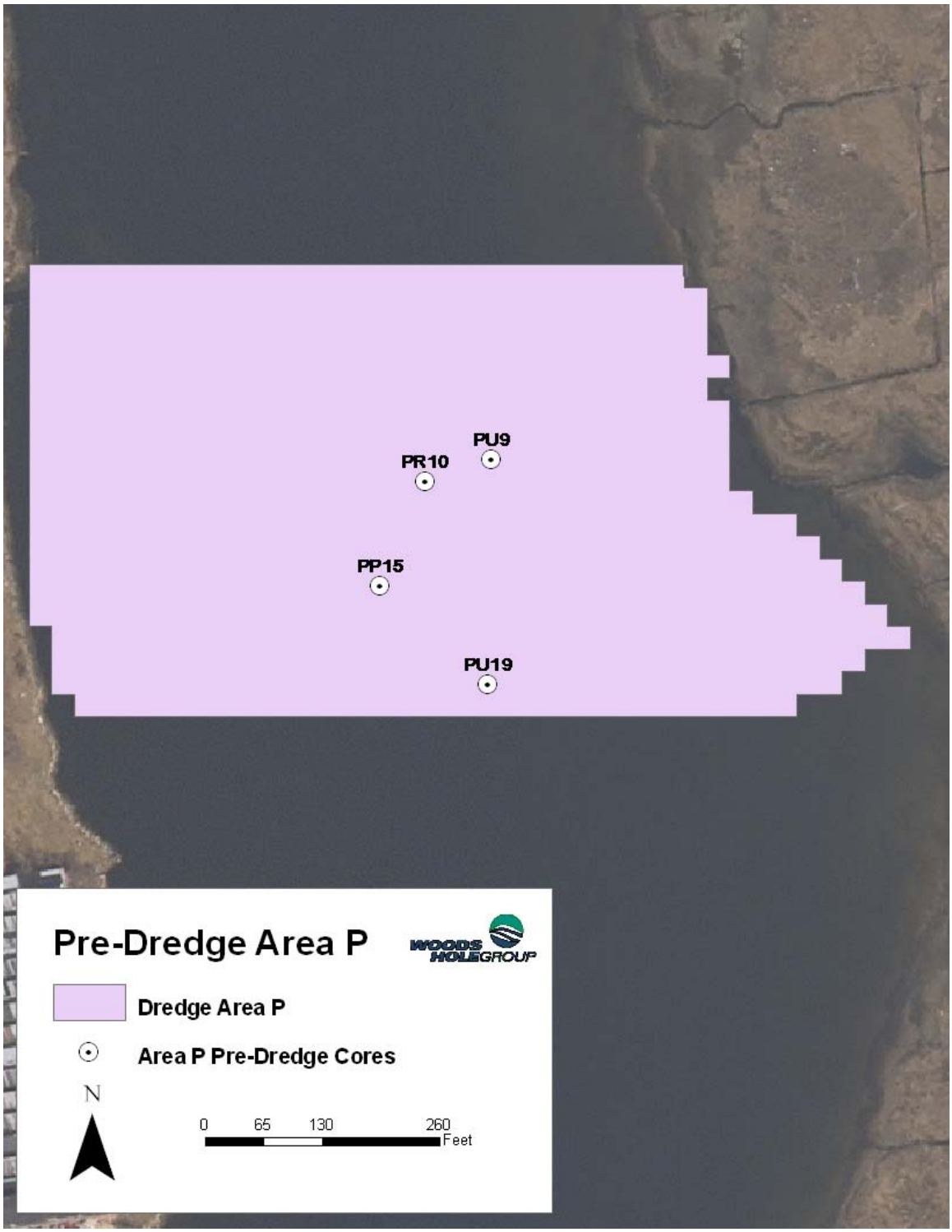


**Figure 11. Basemap of Area P Pre-Dredge Core Locations Collected in 2010**

**Table 1. Summary of External Descriptions by Dredge Area from 2010 Pre-dredge Sampling Event, April 12-15, 2010**

| Dredge Area | OL Thickness Range (ft) | Underlying Strata Composition |
|---|---|---|
| Area G | 0.0-1.6 | CL/ML, ML/CL |
| Area J | 0.3-0.8 | CL/ML, ML/CL, CL |
| Area K | 0.5-1.3 | CL/ML, ML/CL, PT, ML |
| Area L | 0.0-4.3 | CL/ML w/fine sand |
| Area M | 1.3-2.3 | CL/ML |
| Area N | 0.5-1.3 | CL/ML, ML/CL, PT, CL |
| Area O | 0.45-1.1 | CL/ML, ML/CL, CL |
| Area P | 1.10-3.05 | CL/ML |

**Table 2. Elevation Data from 2010 Pre-dredge Sampling Event, April 12–15, 2010**

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | Measured Sediment Thickness of 'OL' Layer Remaining (ft) |
|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transition ('OL' to Underlying Strata) | |
| GF28 | 2707523.816 | 815620.544 | -3.1 | -3.1 | 0 |
| GF31 | 2707450.97 | 815625.596 | -3.15 | -3.15 | 0 |
| GH34 | 2707378.405 | 815671.627 | -3.55 | -4.05 | 0.5 |
| GJ32 | 2707427.363 | 815725.932 | -2 | -3.3 | 1.3 |
| GK37 | 2707299.984 | 815749.571 | -3.95 | -5.05 | 1.1 |
| GM22 | 2707676.828 | 815792.524 | -3.05 | -3.55 | 0.5 |
| GM25 | 2707597.878 | 815793.065 | -3.85 | -4.65 | 0.8 |
| GN28 | 2707525.188 | 815820.883 | -2.7 | -4 | 1.3 |
| GQ36 | 2707325.275 | 815895.107 | -2.05 | -3.65 | 1.6 |
| GS32 | 2707422.819 | 815949.079 | -1.55 | -2.65 | 1.1 |
| GT35 | 2707350.129 | 815976.898 | -3 | -3.4 | 0.4 |
| GU34 | 2707374.578 | 815999.497 | -2.65 | -3.15 | 0.5 |
| GU36 | 2707325.993 | 815999.831 | -2 | -3.2 | 1.2 |
| GV35 | 2707350.442 | 816022.43 | -2.45 | -2.95 | 0.5 |
| GW30 | 2707472.06 | 816044.362 | -1.7 | -2.3 | 0.6 |
| GX38 | 2707277.908 | 816073.015 | -2.75 | -4.1 | 1.35 |
| GY36 | 2707320.607 | 816100.042 | -1.55 | -2.95 | 1.4 |
| GZ28 | 2707527.311 | 816130.497 | -1.15 | -1.45 | 0.3 |
| JB6 | 2707123.864 | 815750.778 | -7.2 | -7.6 | 0.4 |
| JC24 | 2706674.611 | 815776.622 | -7.6 | -8.1 | 0.5 |
| JF23 | 2706699.402 | 815849.308 | -7.3 | -7.6 | 0.3 |
| JH5 | 2707143.113 | 815900.909 | -5.9 | -6.7 | 0.8 |
| JI24 | 2706675.641 | 815926.881 | -8.3 | -8.6 | 0.3 |
| JK15 | 2706900.533 | 815952.66 | -6.5 | -7.3 | 0.8 |
| JM23 | 2706700.401 | 815995.015 | -6.8 | -7.2 | 0.4 |
| KAA23 | 2706097.635 | 815776.02 | -4 | -4.95 | 0.95 |
| KBB1 | 2706650.474 | 815799.555 | -5.2 | -6.5 | 1.3 |
| KEE23 | 2706098.322 | 815876.196 | -3.6 | -4.65 | 1.05 |
| KGG8 | 2706475.197 | 815923.702 | -4.9 | -5.4 | 0.5 |
| KKK7 | 2706506.281 | 816028.221 | -4.75 | -5.25 | 0.5 |
| KQ19 | 2706199.133 | 815520.322 | -5.3 | -6.8 | 1.5 |
| KQ23 | 2706101.963 | 815520.986 | -6.2 | -6.8 | 0.6 |
| KU20 | 2706175.557 | 815625.217 | -5.8 | -7.1 | 1.3 |
| KV23 | 2706096.731 | 815643.971 | -5.15 | -5.75 | 0.6 |
| KW7 | 2706497.805 | 815677.654 | -3.75 | -5.05 | 1.3 |
| KZ19 | 2706200.722 | 815752.546 | -5.1 | -6.3 | 1.2 |
| LA5 | 2704274.24 | 815574.471 | -2.6 | -2.6 | 0 |
| LC3 | 2704337.065 | 814991.131 | -3.8 | -7.1 | 3.3 |
| LP1 | 2704375.616 | 815300.539 | -6.6 | -6.6 | 0 |
| LT4 | 2704297.319 | 815396.707 | -6.35 | -6.65 | 0.3 |
| LX1 | 2704370.881 | 815496.392 | -5.45 | -6.05 | 0.6 |
| LZ10 | 2704152.623 | 815552.533 | -2.2 | -2.2 | 0 |
| MA8 | 2708021.001 | 815498.757 | -1.35 | -1.8 | 0.45 |
| MB11 | 2707948.279 | 815522.021 | -1.45 | -3.05 | 1.6 |
| MB14 | 2707875.433 | 815527.072 | -3.2 | -4 | 0.8 |
| MD4 | 2708118.762 | 815584.6 | -3 | -3 | 0 |
| MD6 | 2708076.188 | 815575.785 | -5.85 | -5.85 | 0 |
| NCC24 | 2707624.981 | 816202.68 | 0.35 | -0.65 | 1 |
| NCC26 | 2707576.365 | 816198.461 | -1.2 | -2.1 | 0.9 |
| NCC36 | 2707327.337 | 816195.618 | -1.85 | -2.35 | 0.5 |
| NCC42 | 2707175.541 | 816201.214 | -1.95 | -2.75 | 0.8 |
| NCC46 | 2707072.298 | 816201.923 | -1.75 | -3.05 | 1.3 |
| NII41 | 2707200.865 | 816351.303 | -1.35 | -2.15 | 0.8 |
| NII43 | 2707146.207 | 816351.679 | -0.75 | -2.1 | 1.35 |
| NKK41 | 2707201.21 | 816401.388 | -1.05 | -2.5 | 1.45 |
| NKK43 | 2707146.552 | 816401.764 | -1 | -1.65 | 0.65 |
| NLL32 | 2707426.071 | 816422.609 | -0.9 | -1.8 | 0.9 |
| OE19 | 2706202.563 | 816021.197 | -2.1 | -3.1 | 1 |
| OJ8 | 2706476.759 | 816151.37 | -2.1 | -3 | 0.9 |
| OL17 | 2706252.367 | 816198.447 | -1.6 | -2.05 | 0.45 |
| OO24 | 2706076.779 | 816277.064 | -0.5 | -1.8 | 1.3 |
| OP10 | 2706423.102 | 816297.453 | -1.45 | -2.55 | 1.1 |
| OP18 | 2706222.69 | 816298.83 | -1.3 | -2.4 | 1.1 |
| OS16 | 2706277.88 | 816375.862 | -0.95 | -1.95 | 1 |
| PP15 | 2703532.108 | 815401.935 | -8.1 | -11.15 | 3.05 |
| PR10 | 2703647.839 | 815451.24 | -5.65 | -7.05 | 1.4 |
| PU19 | 2703423.602 | 815521.085 | -6 | -7.6 | 1.6 |
| PU9 | 2703672.63 | 815523.937 | -4.75 | -5.85 | 1.1 |

## 3.2 POST-DREDGE CORE SAMPLING

Post-Dredge cores were collected in August and October 2010. Cores were collected at 115 locations in Dredge Areas G, J, K, and M (Figures 12 through 15). Figures 12–15 were provided by JE, which include the core locations, PCB concentrations, and "OL" thicknesses, plotted over the post-dredge surveyed bathymetry. During the August and October collection events, sediment cores were split open for internal sediment characterization and analytical sample collection. The internal sediment characterization was performed to confirm the presence of the OL layer and to determine the elevation of the transition between the OL and underlying strata. Two samples were collected from each core: one from 0.0–0.5 feet; and the other from 0.5–1.0 feet. The 0.0–0.5 foot samples were analyzed while the 0.5–1.0 foot samples were archived at Alpha Analytical in dedicated freezers. Results from sediment characterizations and PCB congener analysis are summarized by Dredge Area below, and presented in Tables 3 through 10 and Figures 16 through 19.

### *3.2.1 Area G*

The thickness of the OL layer in Dredge Area G ranged from 0.1–0.7 feet. The underlying strata generally consisted of ML/CL or CL/ML. The total PCB concentration (mg/kg) from the 0.0–0.5 foot samples ranged from 15.69 to 270.21, with a mean of 70.88.

### *3.2.2 Area J*

The OL layer in Dredge Area J had a light to heavy sheen, and ranged in thickness from 0.0–0.8 feet. The underlying strata consisted of ML/CL sediment that transitioned to CL/ML at depth. The total PCB concentration (mg/kg) of the 0.0–0.5 foot sample ranged from 8.62 to 368.63, with a mean of 114.18.

### *3.2.3 Area K*

The thickness of the OL layer in Dredge Area K ranged from 0.0–1.1 feet. The underlying strata consisted of ML/CL sediment that transitioned to CL/ML at depth. The total PCB concentration (mg/kg) of the 0.0–0.5 foot sample ranged from 5.81 to 619.60, with a mean of 211.60.

### *3.2.4 Area M*

The thickness of the OL layer in Dredge Area M ranged from 0.0–0.2 feet and had a slight petroleum odor. The underlying strata generally consisted of ML/CL or CL/ML sediment. The total PCB concentration (mg/kg) of the 0.0–0.5 foot sample ranged from 13.19 to 580.64, with a mean of 117.16

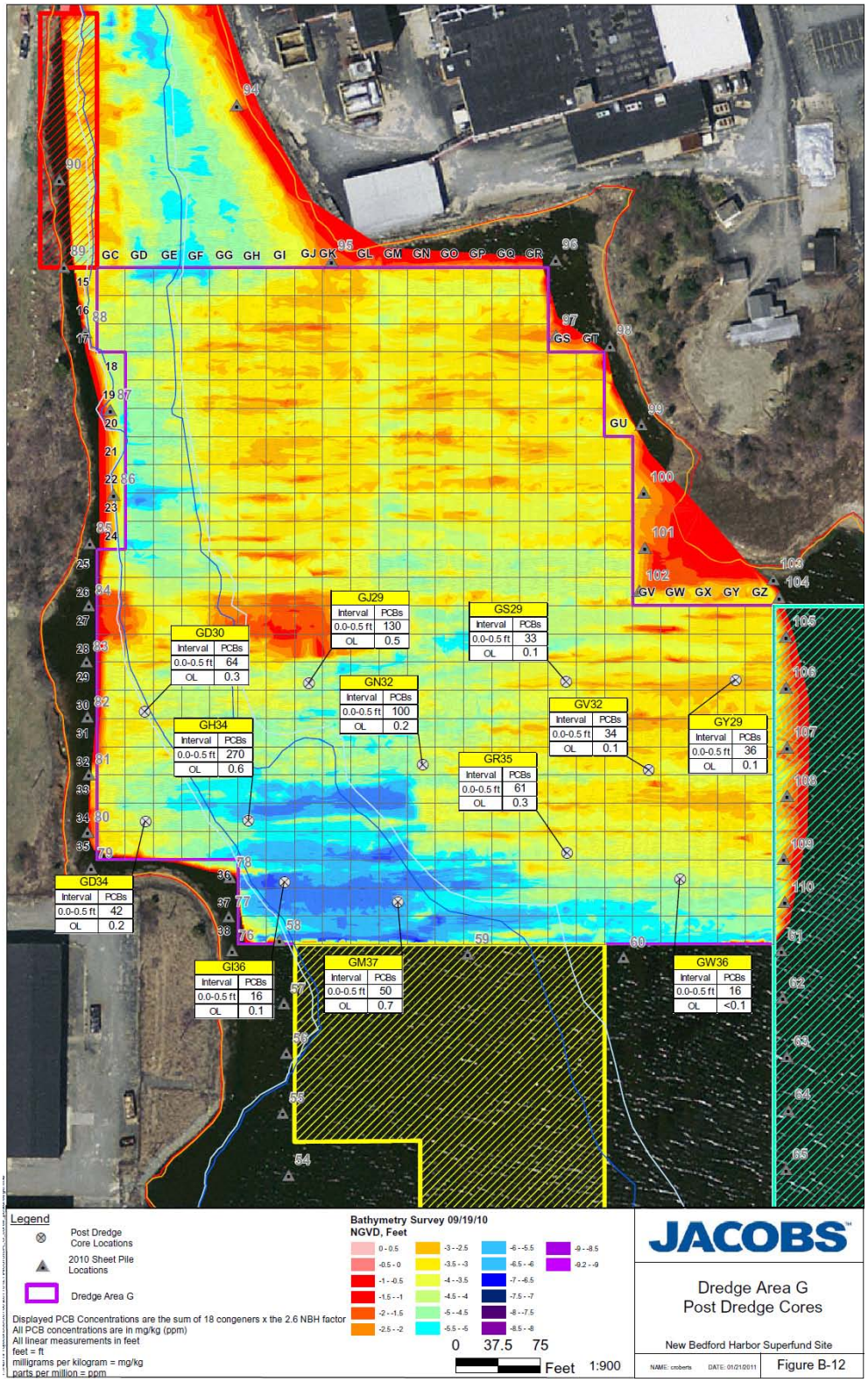


**Figure 12. Area G Total PCB Concentrations and OL Thickness for 2010 Post-Dredge Cores**

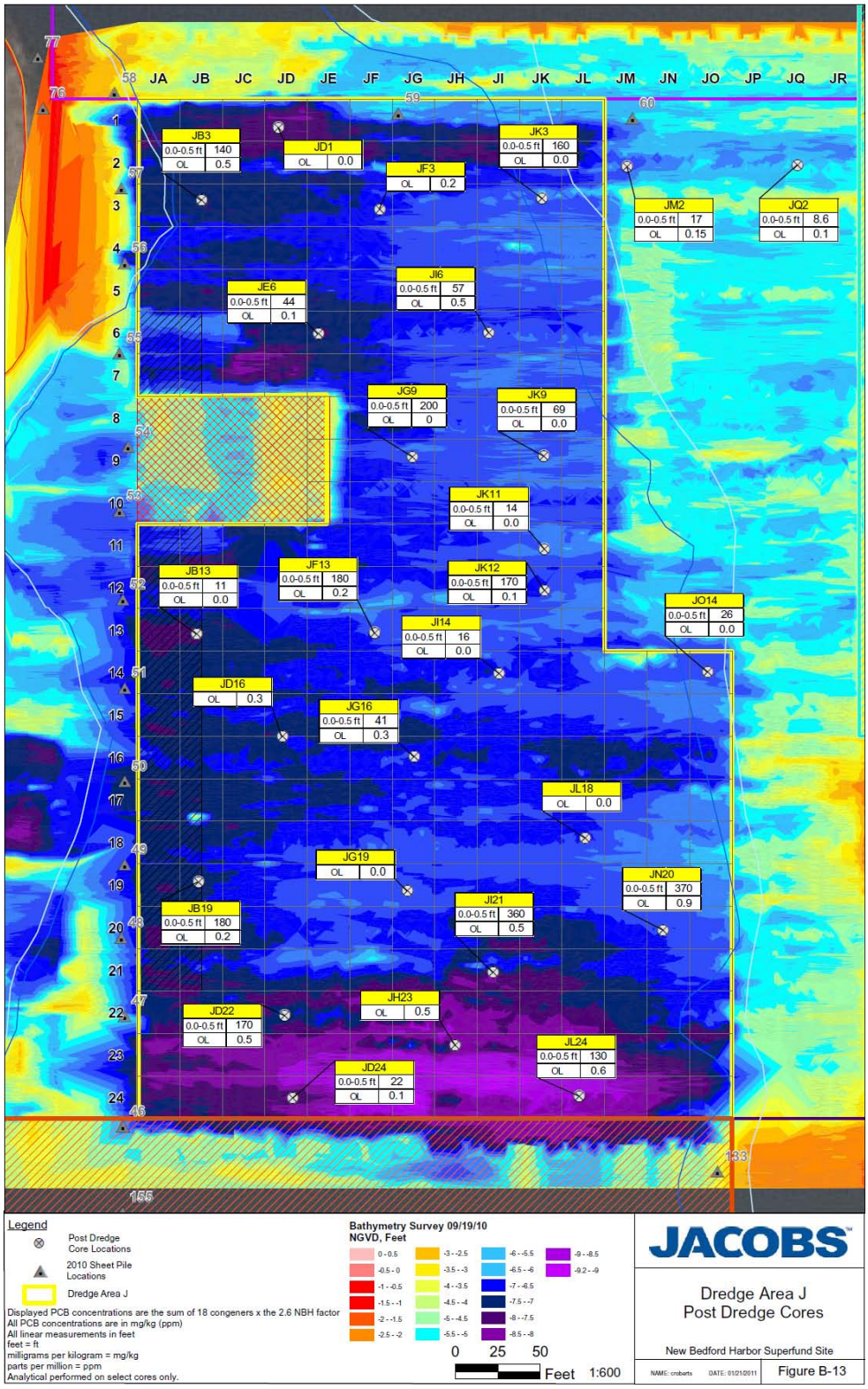


**Figure 13. Area J Total PCB Concentrations and OL Thickness for 2010 Post-Dredge Cores**

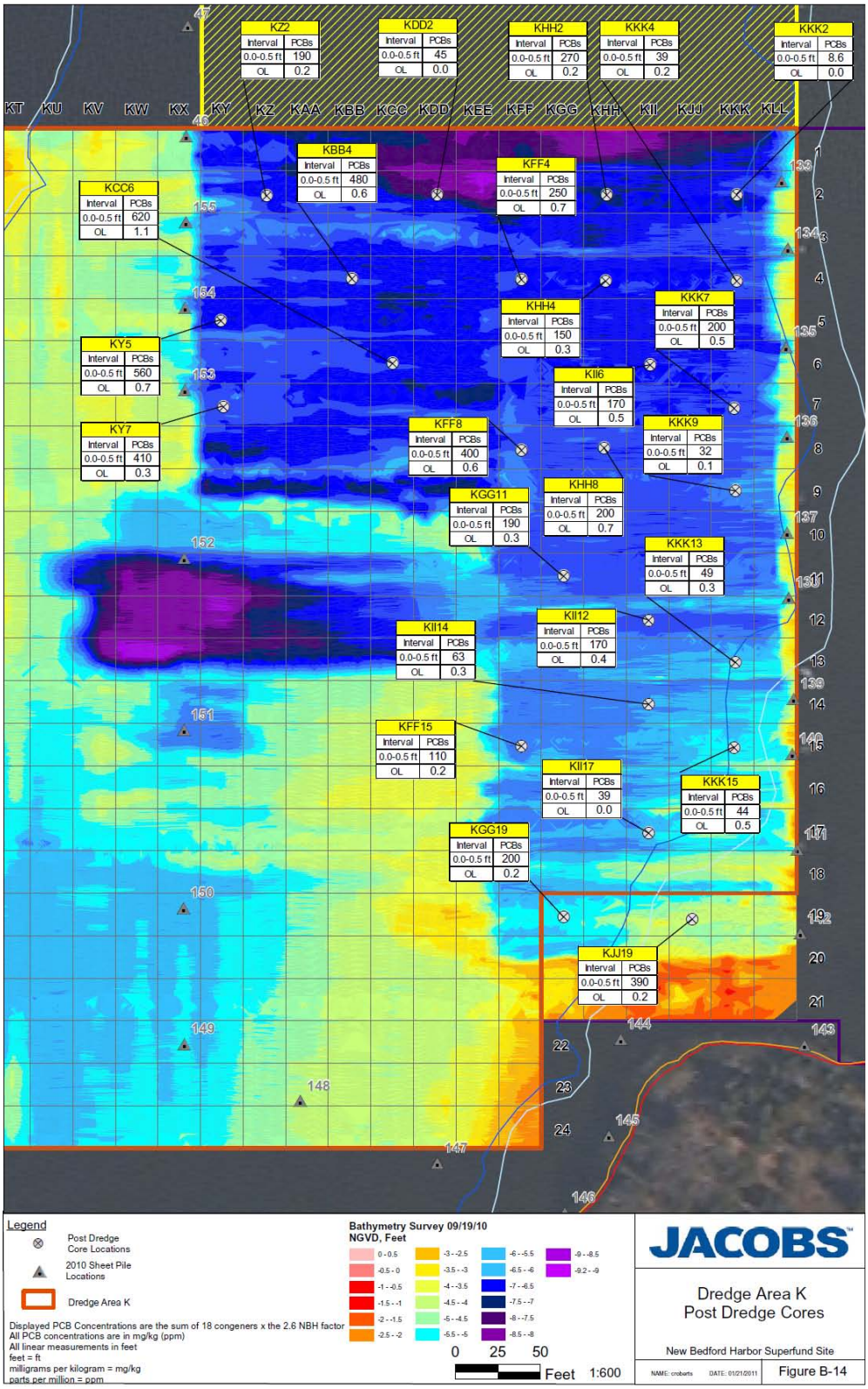


**Figure 14. Area K Total PCB Concentrations and OL Thickness for 2010 Post-Dredge Cores**

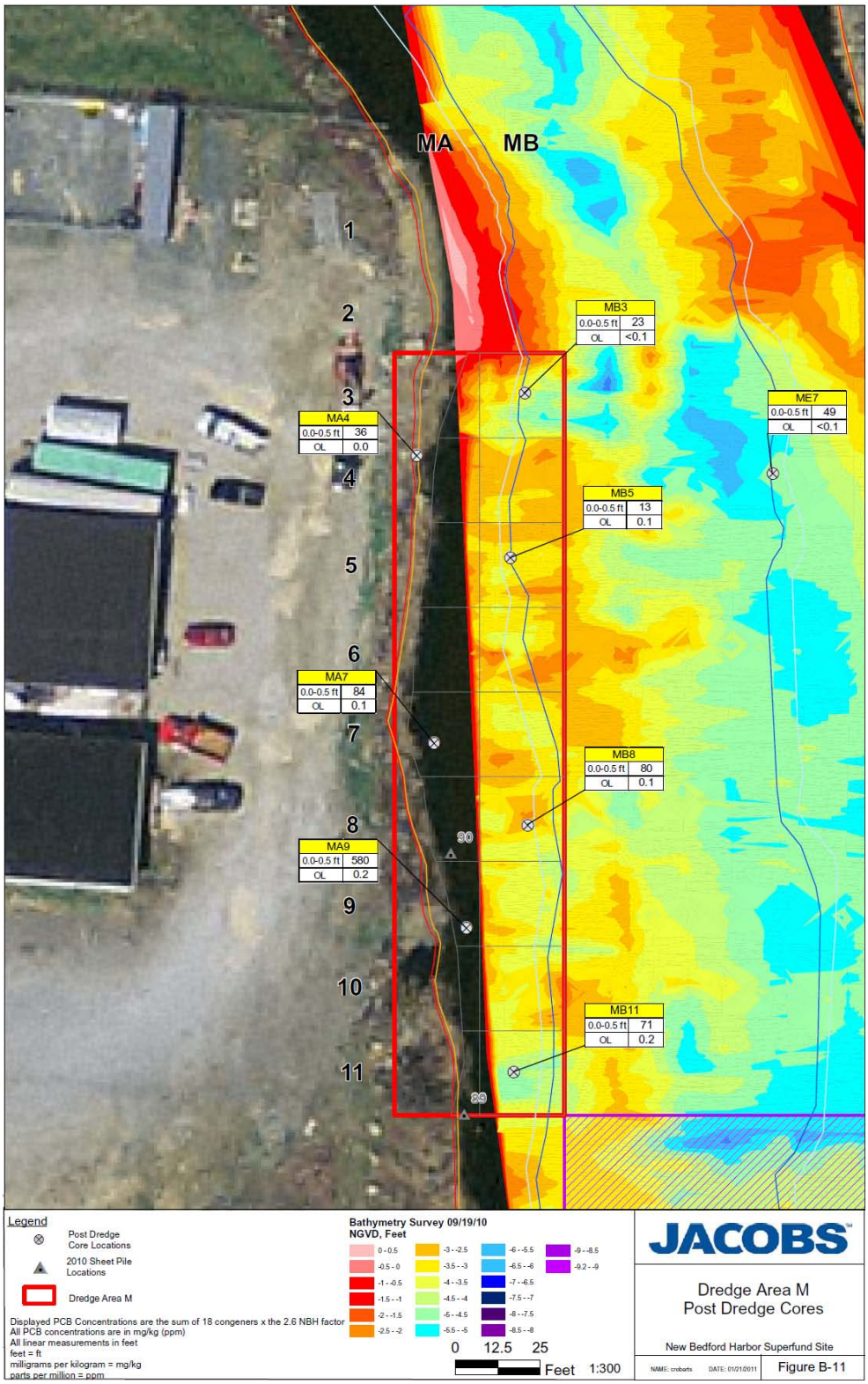


**Figure 15. Area M Total PCB Concentrations and OL Thickness for 2010**

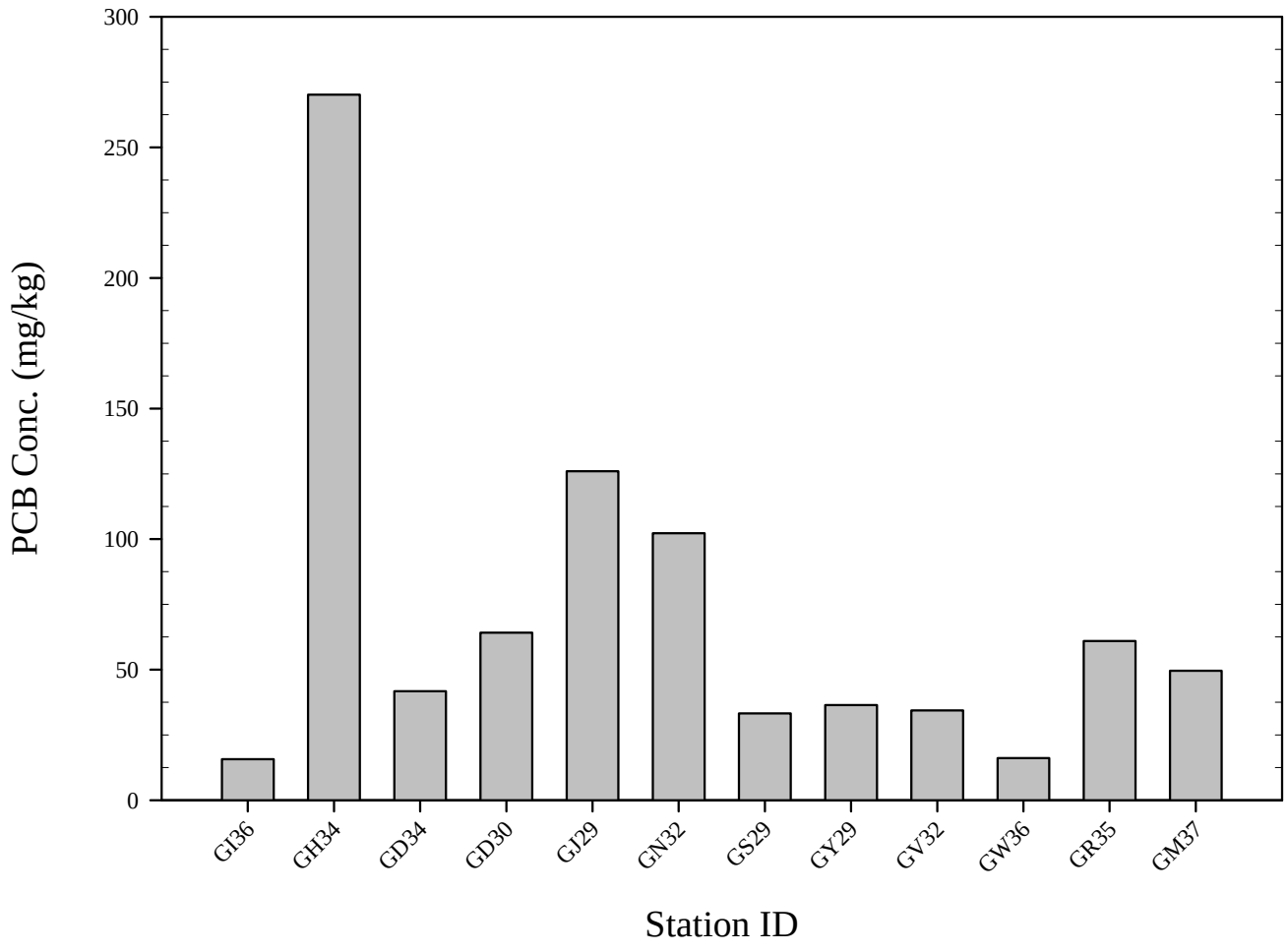


**Figure 16. Total PCB Concentration in Area G Post Dredge Cores**

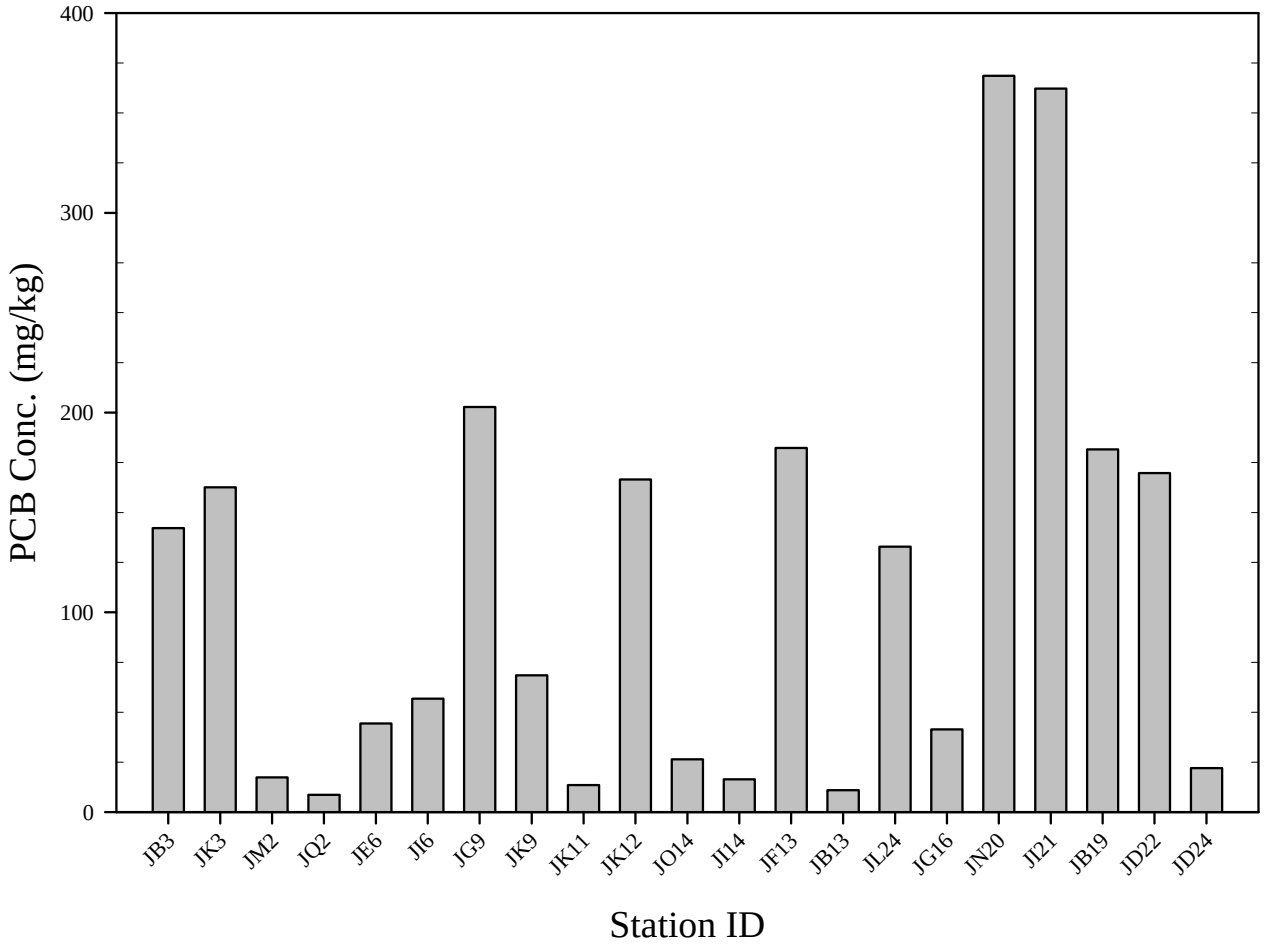


**Figure 17. Total PCB Concentration in Area J Post Dredge Cores**

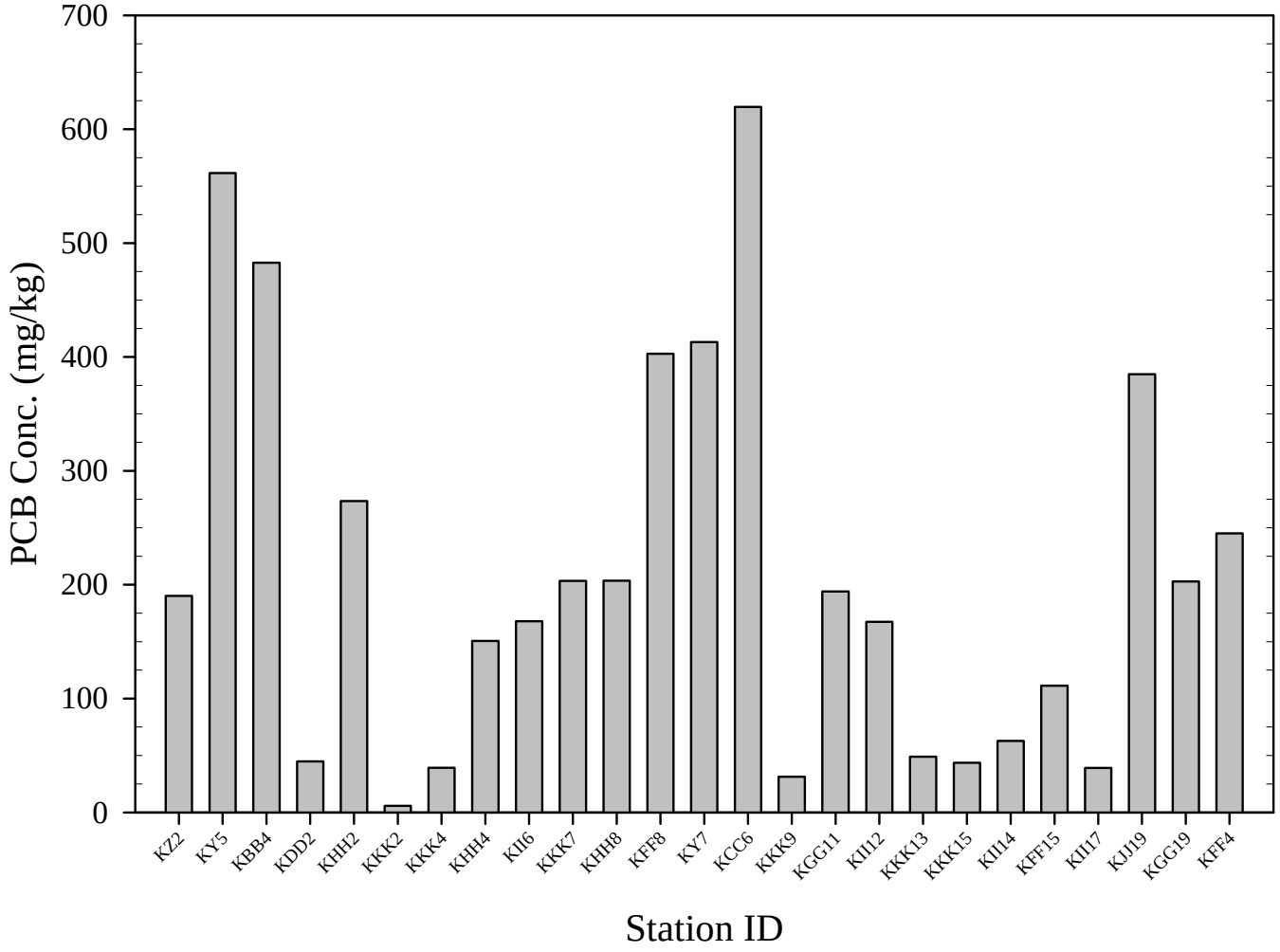


**Figure 18. Total PCB Concentration in Area K Post Dredge Cores**

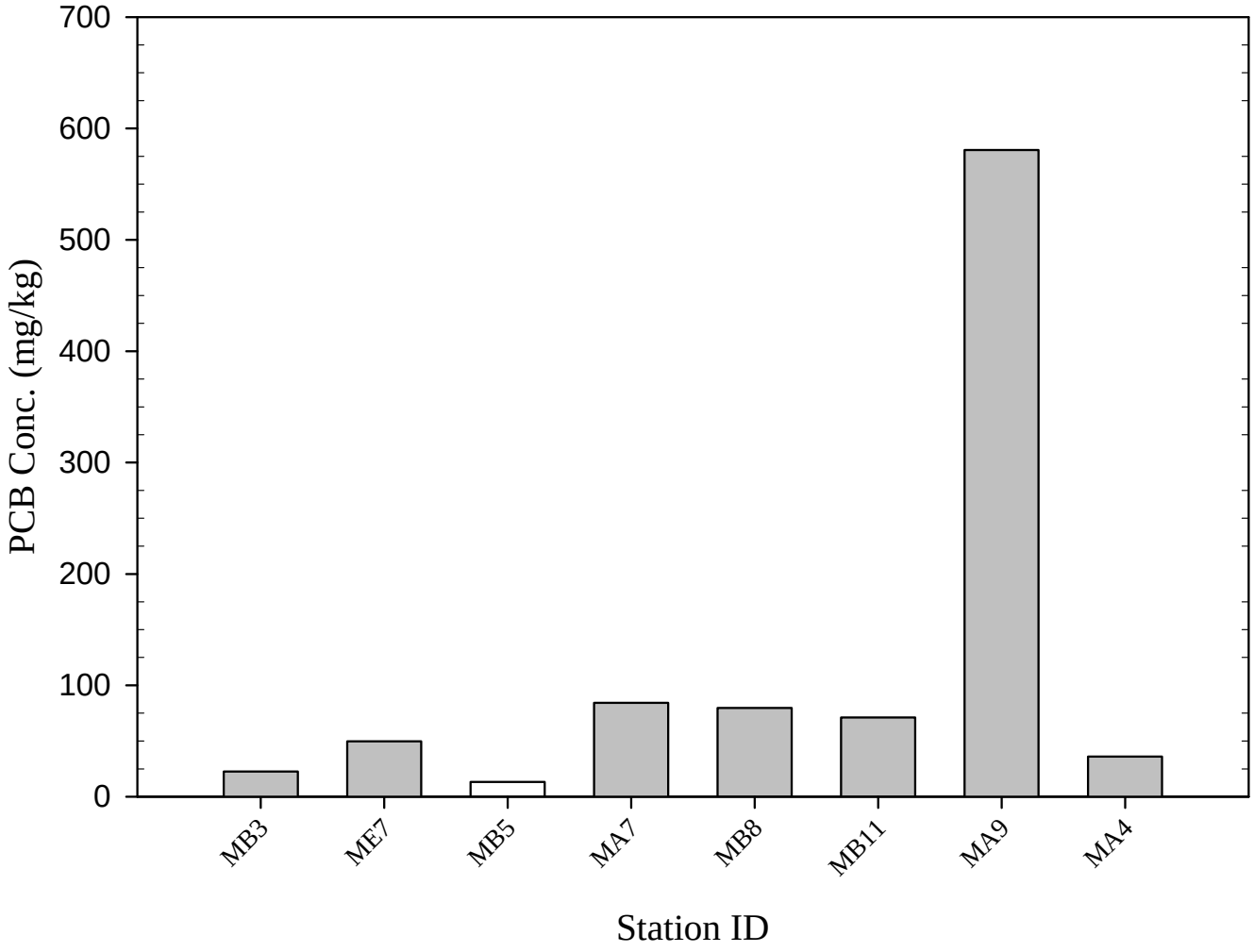


**Figure 19. Total PCB Concentration in Area M Post Dredge Cores**

## Table 3. Elevation Data from Area G Post-Dredge Cores

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | | Measured Sedimnet Thickness of 'OL' Layer Remaining (ft) | Actual vs. Predicted Transition Elevation (ft) |
|---|---|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transition ('OL' to Underlying Strata) | Target Dredge Elevation | | |
| GD30 | 2707468.878 | 815579.94 | -3.05 | -3.35 | -2.8 | 0.3 | -0.55 |
| GD34 | 2707371.708 | 815580.605 | -4.3 | -4.5 | -3.1 | 0.2 | -1.4 |
| GH34 | 2707372.332 | 815671.668 | -4.65 | -5.25 | -4.1 | 0.6 | -1.15 |
| GI36 | 2707317.892 | 815703.915 | -7.35 | -7.45 | -4.8 | 0.1 | -2.65 |
| GJ29 | 2707494.168 | 815725.475 | -4.4 | -4.9 | -3.5 | 0.5 | -1.4 |
| GM37 | 2707300.359 | 815804.21 | -5.25 | -5.95 | -4.7 | 0.7 | -1.25 |
| GN32 | 2707421.977 | 815826.143 | -3.9 | -4.1 | -3.8 | 0.2 | -0.3 |
| GR35 | 2707343.9 | 815954.174 | -3.7 | -4 | -3.4 | 0.3 | -0.6 |
| GS29 | 2707495.728 | 815953.133 | -3.25 | -3.75 | -3.2 | 0.5 | -0.55 |
| GV32 | 2707417.277 | 816026.525 | -3.2 | -3.8 | -2.7 | 0.6 | -1.1 |
| GW36 | 2707320.295 | 816054.51 | -4.05 | -4.65 | -3.3 | 0.6 | -1.35 |
| GY29 | 2707496.758 | 816103.387 | -2.7 | -3.1 | -2.1 | 0.4 | -1 |

[a] Source: Jacobs 2010 Dredge Plan
[b] Actual vs. Predicted = Measured Elevation of Visual Transition (ft) – Target Dredge Elevation (ft).

## Table 4. Elevation Data from Area J Post-Dredge Cores

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | | Measured Sedimnet Thickness of 'OL' Layer Remaining (ft) | Actual vs. Predicted Transition Elevation (ft) |
|---|---|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transition ('OL' to Underlying Strata) | Target Dredge Elevation | | |
| JB13 | 2706947.713 | 815747.43 | -7.45 | -7.45 | -8 | 0 | 0.55 |
| JB19 | 2706801.959 | 815748.429 | -7.75 | -8.1 | -7.8 | 0.35 | -0.3 |
| JB3 | 2707202.815 | 815750.237 | -7.65 | -7.95 | -6.7 | 0.3 | -1.25 |
| JB3 | 2707202.815 | 815750.237 | -7.65 | -7.95 | -6.7 | 0.3 | -1.25 |
| JD1 | 2707245.638 | 815795.478 | -7.9 | -7.9 | -7.6 | 0 | -0.3 |
| JD16 | 2706887.325 | 815797.932 | -7.7 | -8 | -6.3 | 0.3 | -1.7 |
| JD22 | 2706723.352 | 815799.056 | -7.35 | -7.35 | -6.8 | 0 | -0.55 |
| JD24 | 2706674.798 | 815803.942 | -8.4 | -8.5 | -7.5 | 0.1 | -1 |
| JE6 | 2707124.332 | 815819.076 | -7.85 | -8 | -7.4 | 0.15 | -0.6 |
| JF13 | 2706948.431 | 815852.156 | -6.65 | -7.05 | -6.1 | 0.4 | -0.95 |
| JF3 | 2707197.459 | 815855.002 | -6.9 | -7.1 | -6.4 | 0.2 | -0.7 |
| JG16 | 2706875.71 | 815875.421 | -7.05 | -7.45 | -6.3 | 0.4 | -1.15 |
| JG19 | 2706796.728 | 815871.409 | -6.8 | -7.05 | -6.1 | 0.25 | -0.95 |
| JG9 | 2707051.829 | 815874.214 | -6.9 | -7.15 | -6 | 0.25 | -1.15 |
| JH23 | 2706705.819 | 815899.353 | -9.45 | -9.65 | -7.6 | 0.2 | -2.05 |
| JI14 | 2706924.638 | 815925.174 | -6.55 | -6.9 | -5.8 | 0.35 | -1.1 |
| JI21 | 2706748.518 | 815926.382 | -8.05 | -8.75 | -7.8 | 0.7 | -0.95 |
| JI6 | 2707125.019 | 815919.247 | -6.6 | -7.25 | -5.4 | 0.65 | -1.85 |
| JK11 | 2706997.702 | 815951.994 | -6.55 | -6.75 | -5.9 | 0.2 | -0.85 |
| JK12 | 2706973.41 | 815952.161 | -6.9 | -7.3 | -6 | 0.4 | -1.3 |
| JK3 | 2707204.188 | 815950.578 | -6.6 | -6.6 | -5.8 | 0 | -0.8 |
| JK9 | 2707052.36 | 815951.619 | -6.7 | -6.7 | -5.7 | 0 | -1 |
| JL18 | 2706827.811 | 815975.927 | -6.3 | -6.3 | -6.5 | 0 | 0.2 |
| JL24 | 2706675.953 | 815972.415 | -9 | -9.45 | -8 | 0.45 | -1.45 |
| JM2 | 2707222.75 | 816000.539 | -6.5 | -6.85 | N/A | 0.35 | N/A |
| JN20 | 2706773.466 | 816021.834 | -6.85 | -7.65 | -6.3 | 0.8 | -1.35 |
| JO14 | 2706925.481 | 816048.113 | -6.7 | -6.95 | -5.1 | 0.25 | -1.85 |
| JQ2 | 2707223.438 | 816100.709 | -5.5 | -5.75 | N/A | 0.25 | N/A |

[a] Source: Jacobs 2010 Dredge Plan
[b] Actual vs. Predicted = Measured Elevation of Visual Transition (ft) – Target Dredge Elevation (ft).
* Note: Target Dredge Elevation Not Established

## Table 5. Elevation Data from Area K Post-Dredge Cores

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | | Measured Sedimnet Thickness of 'OL' Layer Remaining (ft) | Actual vs. Predicted Transition Elevation (ft) |
|---|---|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transition ('OL' to Underlying Strata) | Target Dredge Elevation | | |
| KBB4 | 2706571.524 | 815800.096 | -6.85 | -7.95 | -6.3 | 1.1 | -1.65 |
| KCC6 | 2706523.064 | 815818.642 | -7.1 | -8.2 | -5.6 | 1.1 | -2.6 |
| KDD2 | 2706620.452 | 815849.85 | -6.7 | -6.7 | -6.8 | 0 | 0.1 |
| KFF15 | 2706298.921 | 815902.142 | -5.45 | -5.65 | -5.2 | 0.2 | -0.45 |
| KFF4 | 2706572.211 | 815900.269 | -6.9 | -7.6 | -6.6 | 0.7 | -1 |
| KFF8 | 2706475.01 | 815896.382 | -6.15 | -6.75 | -5.4 | 0.6 | -1.35 |
| KGG11 | 2706396.278 | 815928.797 | -6 | -6.3 | -5.2 | 0.3 | -1.1 |
| KGG19 | 2706195.803 | 815921.064 | -5.1 | -6.1 | -4.4 | 1 | -1.7 |
| KHH2 | 2706621.108 | 815945.469 | -7.35 | -7.55 | -7.7 | 0.2 | 0.15 |
| KHH4 | 2706572.554 | 815950.356 | -7.05 | -7.35 | -6.9 | 0.3 | -0.45 |
| KHH8 | 2706475.384 | 815951.022 | -6.8 | -7.5 | -5.6 | 0.7 | -1.9 |
| KII12 | 2706372.298 | 815974.497 | -5.8 | -6.2 | -5.5 | 0.4 | -0.7 |
| KII14 | 2706323.713 | 815974.83 | -5.25 | -5.55 | -5 | 0.3 | -0.55 |
| KII17 | 2706244.763 | 815975.372 | -5.4 | -5.4 | -4 | 0 | -1.4 |
| KII6 | 2706524.157 | 815978.009 | -6.7 | -7.2 | -6.1 | 0.5 | -1.1 |
| KJJ19 | 2706196.365 | 816003.025 | -4.55 | -4.75 | -3.4 | 0.2 | -1.35 |
| KKK13 | 2706348.349 | 816024.751 | -5.4 | -5.7 | -4.3 | 0.3 | -1.4 |
| KKK15 | 2706299.764 | 816025.084 | -4.85 | -5.35 | -3.9 | 0.5 | -1.45 |
| KKK2 | 2706621.67 | 816027.429 | -7.15 | -7.95 | -6.3 | 0.8 | -1.65 |
| KKK4 | 2706573.085 | 816027.763 | -7.1 | -7.3 | -6 | 0.2 | -1.3 |
| KKK7 | 2706500.176 | 816023.709 | -6.55 | -7.05 | -5.6 | 0.5 | -1.45 |
| KKK9 | 2706445.519 | 816024.084 | -5.75 | -5.85 | -5.2 | 0.1 | -0.65 |
| KY5 | 2706546.702 | 815722.855 | -6.1 | -6.8 | -5.6 | 0.7 | -1.2 |
| KY7 | 2706498.117 | 815723.188 | -6.3 | -6.6 | -6.3 | 0.3 | -0.3 |
| KZ2 | 2706619.766 | 815749.676 | -7.15 | -7.35 | -7.2 | 0.2 | -0.15 |

[a] Source: Jacobs 2010 Dredge Plan
[b] Actual vs. Predicted = Measured Elevation of Visual Transition (ft) – Target Dredge Elevation (ft).

## Table 6. Elevation Data from Area M Post-Dredge Cores

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | | Measured Sedimnet Thickness of 'OL' Layer Remaining (ft) | Actual vs. Predicted Transition Elevation (ft) |
|---|---|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transition ('OL' to Underlying Strata) | Target Dredge Elevation | | |
| MA4 | 2708057.408 | 815493.955 | 1.30 | 1.30 | -2.00 | 0.00 | 0.00 |
| MA7 | 2707972.416 | 815499.089 | -1.90 | -2.00 | -2.00 | 0.10 | 0.00 |
| MA9 | 2707917.82 | 815508.569 | -1.75 | -1.95 | -2.00 | 0.20 | 0.05 |
| MB11 | 2707875.402 | 815522.519 | -3.85 | -4.05 | -3.70 | 0.20 | -0.35 |
| MB3 | 2708075.845 | 815525.702 | -4.40 | -4.40 | -4.00 | 0.00 | -0.40 |
| MB5 | 2708027.23 | 815521.481 | -3.05 | -3.15 | -3.20 | 0.10 | 0.05 |
| MB8 | 2707948.31 | 815526.574 | -3.25 | -3.35 | -3.20 | 0.10 | -0.15 |
| ME7 | 2708052.051 | 815598.717 | -4.60 | -4.60 | N/A | 0.00 | N/A |

[a] Source: Jacobs 2010 Dredge Plan
[b] Actual vs. Predicted = Measured Elevation of Visual Transition (ft) – Target Dredge Elevation (ft).
* Note: Target Dredge Elevation Not Established

## Table 7. Total PCB Concentrations of Area G Post-Dredge Cores

| Station ID | Core ID | Sample Interval (ft) | Sum of 18 NOAA Congeners (mg/kg) | Total PCB (mg/kg) |
|---|---|---|---|---|
| GI36 | S-10O-C030-0-0.5 | 0.0-0.5 | 6.036 | 15.6936 |
| GH34 | S-10O-C029-0-0.5 | 0.0-0.5 | 103.927 | 270.2102 |
| GD34 | S-10O-C027-0-0.5 | 0.0-0.5 | 16.055 | 41.743 |
| GD30 | S-10O-C026-0-0.5 | 0.0-0.5 | 24.683 | 64.1758 |
| GJ29 | S-10O-C028-0-0.5 | 0.0-0.5 | 48.459 | 125.9934 |
| GN32 | S-10O-C031-0-0.5 | 0.0-0.5 | 39.322 | 102.2372 |
| GS29 | S-10O-C033-0-0.5 | 0.0-0.5 | 12.762 | 33.1812 |
| GY29 | S-10O-C036-0-0.5 | 0.0-0.5 | 14.001 | 36.4026 |
| GV32 | S-10O-C035-0-0.5 | 0.0-0.5 | 13.229 | 34.3954 |
| GW36 | S-10O-C037-0-0.5 | 0.0-0.5 | 6.197 | 16.1122 |
| GR35 | S-10O-C034-0-0.5 | 0.0-0.5 | 23.43 | 60.918 |
| GM37 | S-10O-C032-0-0.5 | 0.0-0.5 | 19.054 | 49.5404 |

[a] Total PCB = Sum NOAA 18 congeners * 2.6

## Table 8. Total PCB Concentrations of Area J Post-Dredge Cores

| Station ID | Core ID | Sample Interval (ft) | Sum of 18 NOAA Congeners (mg/kg) | Total PCB (mg/kg) |
|---|---|---|---|---|
| JB3 | S-10S-C003-0-0.5 | 0.0-0.5 | 54.67 | 142.14 |
| JK3 | S-10S-C004-0-0.5 | 0.0-0.5 | 62.54 | 162.60 |
| JM2 | S-10S-C001-0-0.5 | 0.0-0.5 | 6.71 | 17.43 |
| JQ2 | S-10S-C002-0-0.5 | 0.0-0.5 | 3.32 | 8.62 |
| JE6 | S-10S-C005-0-0.5 | 0.0-0.5 | 17.08 | 44.40 |
| JI6 | S-10S-C006-0-0.5 | 0.0-0.5 | 21.84 | 56.77 |
| JG9 | S-10S-C008-0-0.5 | 0.0-0.5 | 77.98 | 202.74 |
| JK9 | S-10S-C007-0-0.5 | 0.0-0.5 | 26.35 | 68.52 |
| JK11 | S-10S-C009-0-0.5 | 0.0-0.5 | 5.23 | 13.59 |
| JK12 | S-10S-C010-0-0.5 | 0.0-0.5 | 64.04 | 166.51 |
| JO14 | S-10S-C014-0-0.5 | 0.0-0.5 | 10.16 | 26.43 |
| JI14 | S-10S-C013-0-0.5 | 0.0-0.5 | 6.30 | 16.39 |
| JF13 | S-10S-C011-0-0.5 | 0.0-0.5 | 70.12 | 182.30 |
| JB13 | S-10S-C012-0-0.5 | 0.0-0.5 | 4.22 | 10.97 |
| JL24 | S-10O-C046-0-0.5 | 0.0-0.5 | 51.11 | 132.89 |
| JG16 | S-10S-C015-0-0.5 | 0.0-0.5 | 15.92 | 41.39 |
| JN20 | S-10S-C017-0-0.5 | 0.0-0.5 | 141.78 | 368.63 |
| JI21 | S-10S-C018-0-0.5 | 0.0-0.5 | 139.29 | 362.15 |
| JB19 | S-10S-C016-0-0.5 | 0.0-0.5 | 69.86 | 181.63 |
| JD22 | S-10S-C019-0-0.5 | 0.0-0.5 | 65.28 | 169.73 |
| JD24 | S-10S-C020-0-0.5 | 0.0-0.5 | 8.48 | 22.04 |

[a] Total PCB = Sum NOAA 18 congeners * 2.6

## Table 9. Total PCB Concentrations of Area K Post-Dredge Cores

| Station ID | Core ID | Sample Interval (ft) | Sum of 18 NOAA Congeners (mg/kg) | Total PCB (mg/kg) |
|---|---|---|---|---|
| KZ2 | S-10O-C001-0-0.5 | 0.0-0.5 | 73.18 | 190.268 |
| KY5 | S-10O-C002-0-0.5 | 0.0-0.5 | 216.005 | 561.613 |
| KBB4 | S-10O-C003-0-0.5 | 0.0-0.5 | 185.647 | 482.6822 |
| KDD2 | S-10O-C004-0-0.5 | 0.0-0.5 | 17.227 | 44.7902 |
| KHH2 | S-10O-C005-0-0.5 | 0.0-0.5 | 105.18 | 273.468 |
| KKK2 | S-10O-C006-0-0.5 | 0.0-0.5 | 2.235 | 5.811 |
| KKK4 | S-10O-C007-0-0.5 | 0.0-0.5 | 15.056 | 39.1456 |
| KHH4 | S-10O-C008-0-0.5 | 0.0-0.5 | 57.962 | 150.7012 |
| KII6 | S-10O-C011-0-0.5 | 0.0-0.5 | 64.597 | 167.9522 |
| KKK7 | S-10O-C013-0-0.5 | 0.0-0.5 | 78.229 | 203.3954 |
| KHH8 | S-10O-C012-0-0.5 | 0.0-0.5 | 78.259 | 203.4734 |
| KFF8 | S-10O-C010-0-0.5 | 0.0-0.5 | 154.943 | 402.8518 |
| KY7 | S-10O-C024-0-0.5 | 0.0-0.5 | 158.897 | 413.1322 |
| KCC6 | S-10O-C023-0-0.5 | 0.0-0.5 | 238.308 | 619.6008 |
| KKK9 | S-10O-C014-0-0.5 | 0.0-0.5 | 12.097 | 31.4522 |
| KGG11 | S-10O-C015-0-0.5 | 0.0-0.5 | 74.637 | 194.0562 |
| KII12 | S-10O-C016-0-0.5 | 0.0-0.5 | 64.414 | 167.4764 |
| KKK13 | S-10O-C025-0-0.5 | 0.0-0.5 | 18.806 | 48.8956 |
| KKK15 | S-10O-C019-0-0.5 | 0.0-0.5 | 16.793 | 43.6618 |
| KII14 | S-10O-C017-0-0.5 | 0.0-0.5 | 24.128 | 62.7328 |
| KFF15 | S-10O-C018-0-0.5 | 0.0-0.5 | 42.812 | 111.3112 |
| KII17 | S-10O-C020-0-0.5 | 0.0-0.5 | 15.015 | 39.039 |
| KJJ19 | S-10O-C022-0-0.5 | 0.0-0.5 | 147.978 | 384.7428 |
| KGG19 | S-10O-C021-0-0.5 | 0.0-0.5 | 77.987 | 202.7662 |
| KFF4 | S-10O-C009-0-0.5 | 0.0-0.5 | 94.247 | 245.0422 |

[a] Total PCB = Sum NOAA 18 congeners * 2.6

## Table 10. Total PCB Concentrations of Area M Post-Dredge Cores

| Station ID | Core ID | Sample Interval (ft) | Sum of 18 NOAA Congeners (mg/kg) | Total PCB (mg/kg) |
|---|---|---|---|---|
| MB3 | S-10O-C038-0-0.5 | 0.0-0.5 | 8.7 | 22.62 |
| ME7 | S-10O-C045-0-0.5 | 0.0-0.5 | 19.147 | 49.7822 |
| MB5 | S-10O-C040-0-0.5 | 0.0-0.5 | 5.073 | 13.1898 |
| MA7 | S-10O-C041-0-0.5 | 0.0-0.5 | 32.432 | 84.3232 |
| MB8 | S-10O-C042-0-0.5 | 0.0-0.5 | 30.637 | 79.6562 |
| MB11 | S-10O-C044-0-0.5 | 0.0-0.5 | 27.322 | 71.0372 |
| MA9 | S-10O-C043-0-0.5 | 0.0-0.5 | 223.323 | 580.6398 |
| MA4 | S-10O-C039-0-0.5 | 0.0-0.5 | 13.86 | 36.036 |

[a] Total PCB = Sum NOAA 18 congeners * 2.6

## 3.3 BOATHOUSE SEDIMENT SAMPLING

Boathouse sediment samples were collected on October 25, 27, 28, and November 3, 2010. Samples were collected at 51 locations in vicinity of the proposed Boathouse location along the southwest shoreline of OU1 (Figure 20). Forty-five cores were collected using the push coring method, five shoreline soil samples were collected using a hand auger, and one grab sample was collected from the combined sewer outfall (CSO) using a spoon. All sediment cores and shoreline soil samples were split open for internal sediment characterization and analytical sample collection. The CSO grab sample was not characterized, the sediment was immediately containerized for analytical analysis. Internal sediment characterization was performed to confirm the presence of the OL layer, and to determine the elevation of the transition between the OL and underlying strata. Ideally, four subsamples were taken from each core or soil sample at intervals of 0.0–1.0ft, 1.0–2.0ft, 2.0–3.0ft, and 3.0–4.0ft. However, the number of subsamples taken was governed by the length of the core. The 0.0–1.0ft and 1.0–2.0ft samples were analyzed immediately, while the 2.0–3.0ft and 3.0–4.0ft samples were archived at AAL. Results from sediment characterizations and PCB congener analysis are summarized below, and presented in Tables 11 through 12 and Figures 20 through 22. Figure 20 was provided by JE.

### *3.3.1 Push Core Samples*

Push core samples from the northern and southern edge of the Boathouse area had an OL layer with a light to heavy sheen and a strong petroleum/$H_2S$ odor present. No sheen or petroleum/$H_2S$ odor was present on the cores from the middle of the Boat House area. The OL thickness throughout the Boat House area ranged from 0.0–3.0 feet, with no discernable distribution pattern. The underlying strata varied greatly throughout the area, ranging from a CL/ML to a SM. The total PCB concentration (mg/kg) of the 0.0–1.0ft samples ranged from 0.12 to 413.89, with a mean of 53.30. The 1.0–2.0ft samples had total PCB concentrations (mg/kg) that ranged from 0.0 to 241.30, with a mean of 20.07.

### *3.3.2 Shoreline Soil Samples and CSO Grab Sample*

Soils samples consisted of a top ML layer with fine sand and gravel transitioning into either a more clayey or sandy underlying layer. The total PCB concentration (mg/kg) of the 0.0–1.0ft samples ranged from 0.38 to 5.69, with a mean of 3.20. The 1.0–2.0ft samples had total PCB concentrations that ranged from 0.0 to 5.53, with a mean of 2.81. The grab sample taken from the CSO consisted of a silty sand, with a PCB concentration (mg/L) of 2.80.

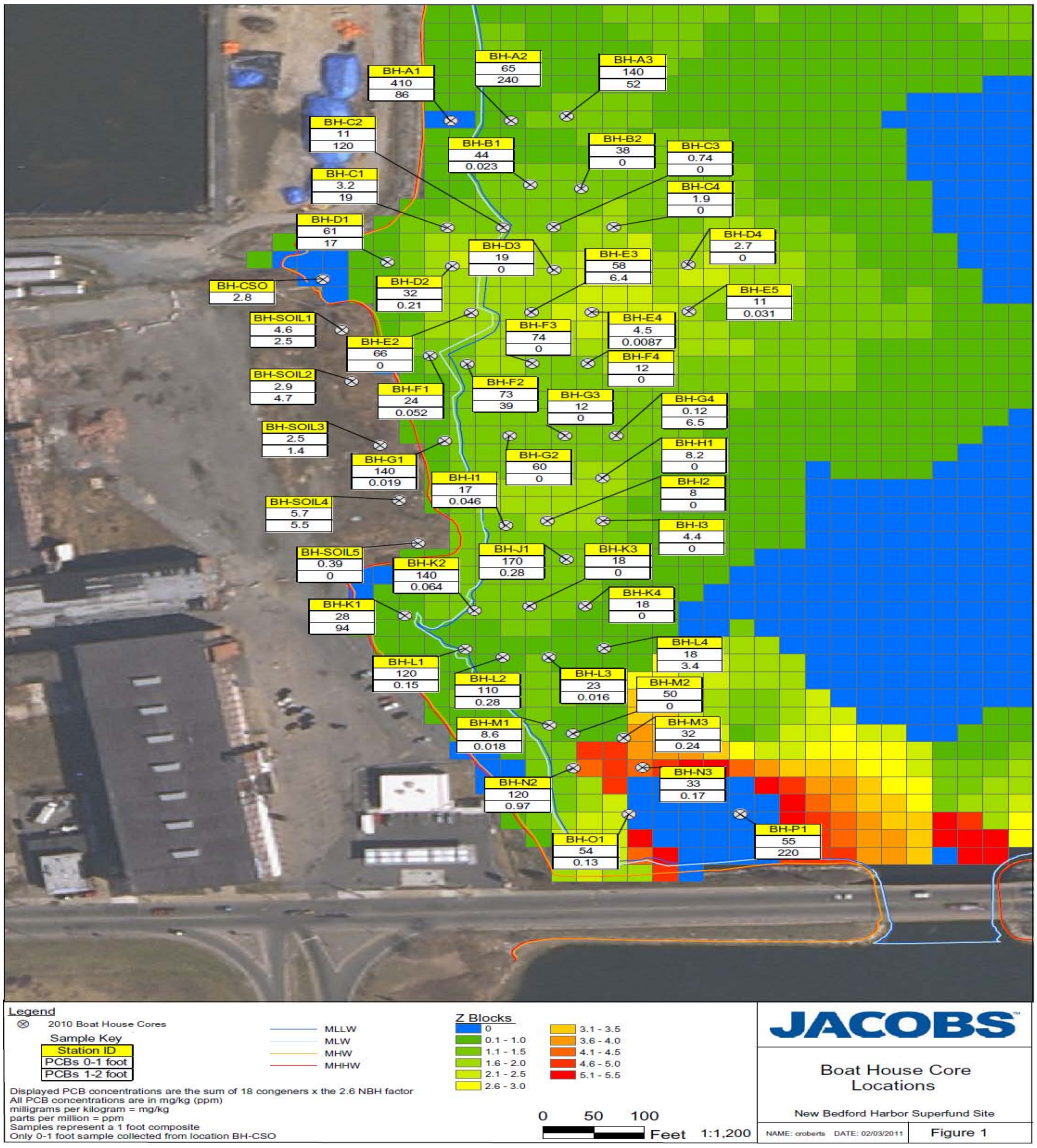


**Figure 20. Boat House Total PCB Concentrations for 2010**

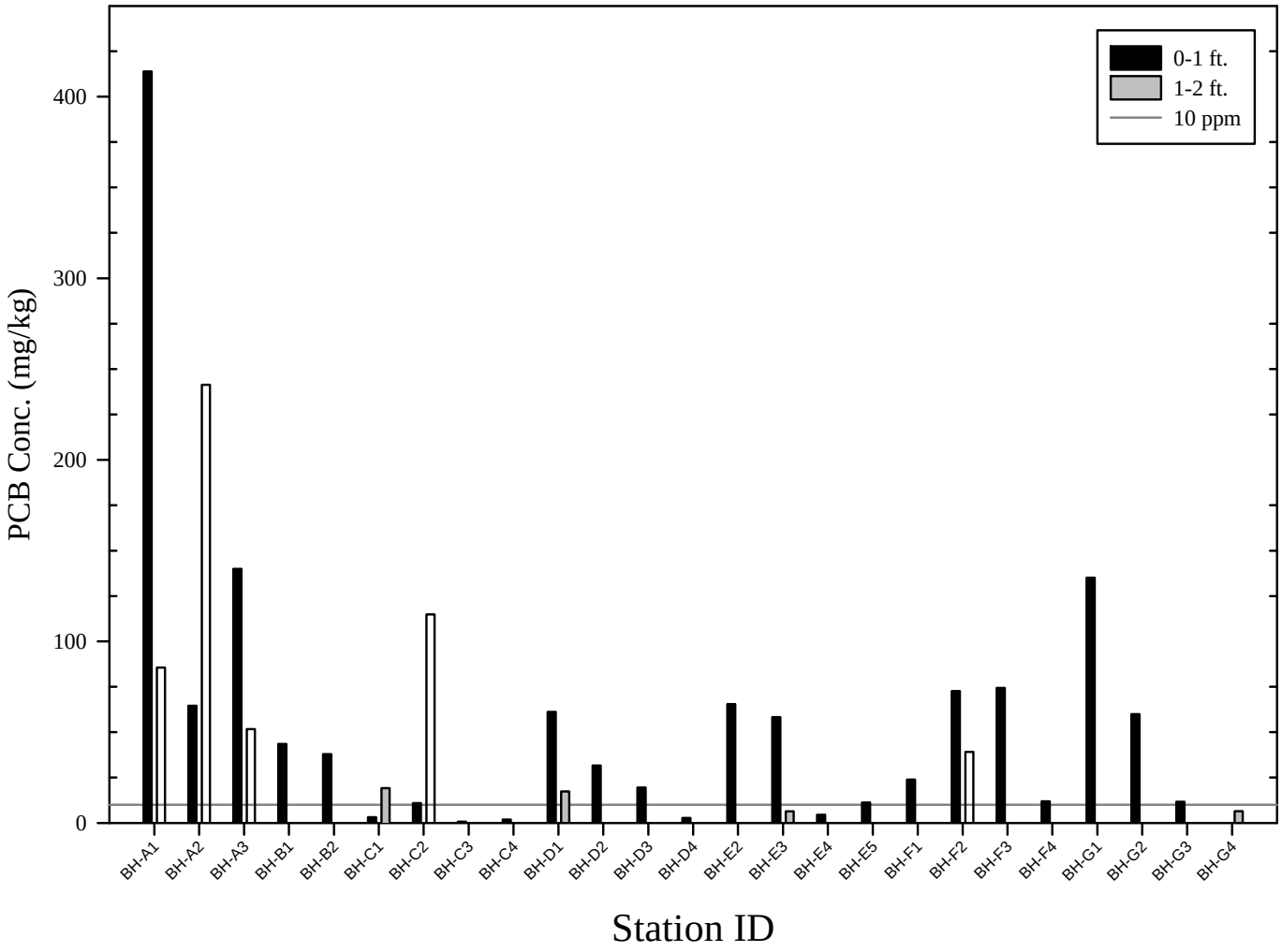


**Figure 21. Total PCB Concentration of Northern Boat House Sediment Samples**

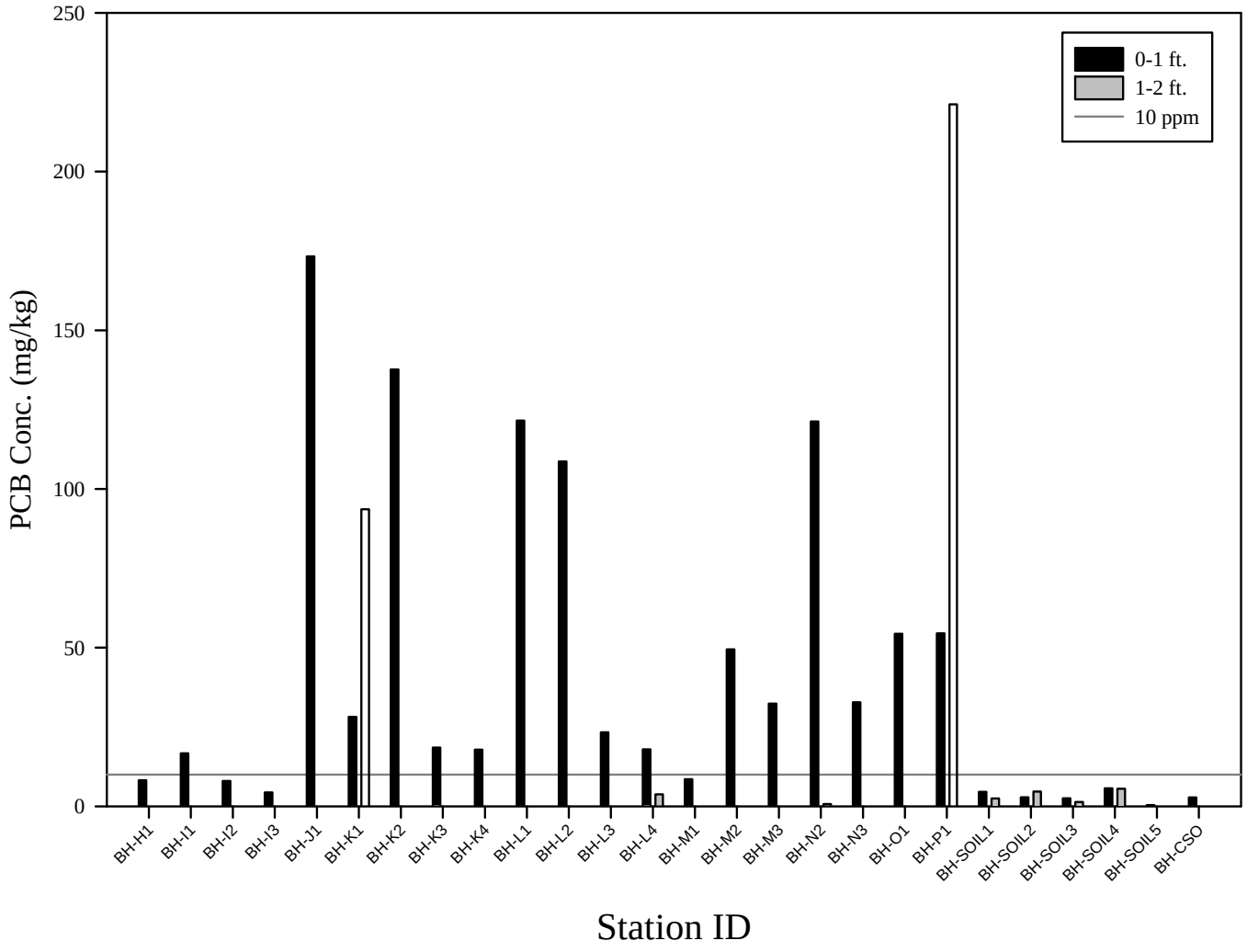


**Figure 22. Total PCB Concentration of Southern Boat House Sediment Samples**

## Table 11. Elevation Data from Boat House Sediment Samples

| Station ID | Northing NAD 83 MA, ft | Easting NAD 83 MA, ft | Elevation Measurements (NGVD 29 ft) | | Measured Sediment Thickness of 'OL' Layer Remaining (ft) |
|---|---|---|---|---|---|
| | | | Measured Elevation of Sediment Surface | Measured Elevation of Transistion ('OL' to Underlying Strata) | |
| BH-A1 | 2701372.895 | 814938.459 | -2.25 | -2.25 | 0 |
| BH-A2 | 2701373.177 | 814997.57 | -4.15 | -4.4 | 0.25 |
| BH-A3 | 2701379.744 | 815052.276 | -4.45 | -4.65 | 0.2 |
| BH-B1 | 2701282.326 | 815016.503 | -3.4 | -3.65 | 0.25 |
| BH-B2 | 2701276.595 | 815066.643 | -4.6 | -4.6 | 0 |
| BH-C1 | 2701221.037 | 814934.938 | -1.2 | -4.2 | 3 |
| BH-C2 | 2701221.409 | 814989.591 | -2.6 | -4 | 1.4 |
| BH-C3 | 2701221.75 | 815039.689 | -8.1 | -8.5 | 0.4 |
| BH-C4 | 2701222.154 | 815098.896 | -8.45 | -8.65 | 0.2 |
| BH-CSO | 2701147.322 | 814812.466 | N/A | N/A | N/A |
| BH-D1 | 2701172.049 | 814876.062 | -2.45 | -3.45 | 1 |
| BH-D2 | 2701166.41 | 814939.865 | -4.1 | -4.7 | 0.6 |
| BH-D3 | 2701161.019 | 815040.103 | -9.5 | -9.7 | 0.2 |
| BH-D4 | 2701167.993 | 815172.139 | -8.7 | -8.75 | 0.05 |
| BH-E1 | 2701105.338 | 814890.18 | -0.45 | -0.45 | 0 |
| BH-E2 | 2701099.73 | 814958.538 | -1.7 | -2.6 | 0.9 |
| BH-E3 | 2701100.133 | 815017.745 | -3 | -4.9 | 1.9 |
| BH-E4 | 2701100.537 | 815076.952 | -6.1 | -6.2 | 0.1 |
| BH-E5 | 2701101.189 | 815172.595 | -9.6 | -9.8 | 0.2 |
| BH-F1 | 2701038.72 | 814917.962 | -2.4 | -2.6 | 0.2 |
| BH-F2 | 2701026.822 | 814954.48 | -2.7 | -4.1 | 1.4 |
| BH-F3 | 2701027.256 | 815018.242 | -3.6 | -4.5 | 0.9 |
| BH-F4 | 2701027.629 | 815072.895 | -4.4 | -4.4 | 0 |
| BH-G1 | 2700917.351 | 814932.452 | -2.85 | -3.3 | 0.45 |
| BH-G2 | 2700923.858 | 814996.173 | -3.7 | -4.1 | 0.4 |
| BH-G3 | 2700924.231 | 815050.827 | -3.8 | -4.1 | 0.3 |
| BH-G4 | 2700924.572 | 815100.925 | -4.85 | -4.95 | 0.1 |
| BH-H1 | 2700863.748 | 815087.676 | -4.7 | -4.7 | 0 |
| BH-I1 | 2700796.292 | 814992.488 | -3.4 | -3.45 | 0.05 |
| BH-I2 | 2700802.644 | 815033.437 | -4.2 | -4.4 | 0.2 |
| BH-I3 | 2700803.017 | 815088.09 | -4.2 | -4.2 | 0 |
| BH-J1 | 2700748.111 | 815052.027 | -4.3 | -5.25 | 0.95 |
| BH-K1 | 2700668.074 | 814893.158 | -1.25 | -1.95 | 0.7 |
| BH-K2 | 2700674.613 | 814961.434 | -2.1 | -3.3 | 1.2 |
| BH-K3 | 2700681.058 | 815016.047 | -2.4 | -4 | 1.6 |
| BH-K4 | 2700681.431 | 815070.7 | -4.15 | -4.25 | 0.1 |
| BH-L1 | 2700619.893 | 814952.697 | -1.6 | -1.7 | 0.1 |
| BH-L2 | 2700607.995 | 814989.216 | -3.2 | -3.8 | 0.6 |
| BH-L3 | 2700608.305 | 815034.761 | -3.7 | -3.9 | 0.2 |
| BH-L4 | 2700620.824 | 815089.332 | -3.85 | -3.95 | 0.1 |
| BH-M1 | 2700511.136 | 815035.423 | -3.65 | -3.75 | 0.1 |
| BH-M2 | 2700499.145 | 815058.279 | -4 | -4.6 | 0.6 |
| BH-M3 | 2700493.413 | 815108.42 | -3.55 | -4.2 | 0.65 |
| BH-N2 | 2700450.56 | 815058.61 | -3.25 | -4.25 | 1 |
| BH-N3 | 2700451.026 | 815126.928 | -3.75 | -4.65 | 0.9 |
| BH-O1 | 2700384.128 | 815113.72 | -3.85 | -4.55 | 0.7 |
| BH-P1 | 2700384.874 | 815223.029 | -8.05 | -10.65 | 2.6 |
| BH-SOIL1 | 2701074.569 | 814831.18 | N/A | N/A | N/A |
| BH-SOIL2 | 2701001.754 | 814840.785 | N/A | N/A | N/A |
| BH-SOIL3 | 2700910.843 | 814868.732 | N/A | N/A | N/A |
| BH-SOIL4 | 2700832.017 | 814887.487 | N/A | N/A | N/A |
| BH-SOIL5 | 2700771.41 | 814906.118 | N/A | N/A | N/A |

## Table 12. Total PCB Concentrations from Boat House Sediment Samples

| Station ID | Core ID | Sample Interval (ft) | Sum of 18 NOAA Congeners (mg/kg) | Total PCB (mg/kg) |
|---|---|---|---|---|
| BH-A1 | S-10O-C047-0-1.0 | 0.0-1.0 | 159.188 | 413.8888 |
| BH-A1 | S-10O-C047-1.0-2.0 | 1.0-2.0 | 32.9 | 85.54 |
| BH-A2 | S-10O-C071-0-1.0 | 0.0-1.0 | 24.823 | 64.5398 |
| BH-A2 | S-10O-C071-1.0-2.0 | 1.0-2.0 | 92.809 | 241.3034 |
| BH-A3 | S-10O-C048-0-1.0 | 0.0-1.0 | 53.853 | 140.0178 |
| BH-A3 | S-10O-C048-1.0-2.0 | 1.0-2.0 | 19.889 | 51.7114 |
| BH-B1 | S-10O-C049-0-1.0 | 0.0-1.0 | 16.736 | 43.5136 |
| BH-B1 | S-10O-C049-1.0-2.0 | 1.0-2.0 | 0.00873 | 0.022698 |
| BH-B2 | S-10OC050-0-1.0 | 0.0-1.0 | 14.575 | 37.895 |
| BH-B2 | S-10O, C050-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-C1 | S-10O-C051-0-1.0 | 0.0-1.0 | 1.2422 | 3.22972 |
| BH-C1 | S-10O-C051-1.0-2.0 | 1.0-2.0 | 7.386 | 19.2036 |
| BH-C2 | S-10N-C001-0-1.0 | 0.0-1.0 | 4.2249 | 10.98474 |
| BH-C2 | S-10N-C001-1.0-2.0 | 1.0-2.0 | 44.182 | 114.8732 |
| BH-C3 | S-10N-C002-0-1.0 | 0.0-1.0 | 0.2836 | 0.73736 |
| BH-C3 | S-10N-C002-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-C4 | S-10O-C052-0-1.0 | 0.0-1.0 | 0.7218 | 1.87668 |
| BH-C4 | S-10O-C052-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-D1 | S-10O-C053-0-1.0 | 0.0-1.0 | 23.533 | 61.1858 |
| BH-D1 | S-10O-C053-1.0-2.0 | 1.0-2.0 | 6.682 | 17.3732 |
| BH-D2 | S-10N-C003-0-1.0 | 0.0-1.0 | 12.162 | 31.6212 |
| BH-D2 | S-10N-C003-1.0-2.0 | 1.0-2.0 | 0.07915 | 0.20579 |
| BH-D3 | S-10N-C004-0-1.0 | 0.0-1.0 | 7.479 | 19.4454 |
| BH-D3 | S-10N-C004-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-D4 | S-10O-C054-0-1.0 | 0.0-1.0 | 1.0544 | 2.74144 |
| BH-D4 | S-10O-C054-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-E2 | S-10N-C005-0-1.0 | 0.0-1.0 | 25.184 | 65.4784 |
| BH-E2 | S-10N-C005-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-E3 | S-10N-C006-0-1.0 | 0.0-1.0 | 22.431 | 58.3206 |
| BH-E3 | S-10N-C006-1.0-2.0 | 1.0-2.0 | 2.472 | 6.4272 |
| BH-E4 | S-10N-C007-0-1.0 | 0.0-1.0 | 1.7097 | 4.44522 |
| BH-E4 | S-10N-C007-1.0-2.0 | 1.0-2.0 | 0.00335 | 0.00871 |
| BH-E5 | S-10O-C055-0-1.0 | 0.0-1.0 | 4.335 | 11.271 |
| BH-E5 | S-10O-C055-1.0-2.0 | 1.0-2.0 | 0.01188 | 0.030888 |
| BH-F1 | S-10O-C056-0-1.0 | 0.0-1.0 | 9.191 | 23.8966 |
| BH-F1 | S-10O-C056-1.0-2.0 | 1.0-2.0 | 0.01988 | 0.051688 |
| BH-F2 | S-10N-C008-0-1.0 | 0.0-1.0 | 27.944 | 72.6544 |
| BH-F2 | S010N-C008-1.0-2.0 | 1.0-2.0 | 15.051 | 39.1326 |
| BH-F3 | S-10N-C009-0-1.0 | 0.0-1.0 | 28.58 | 74.308 |
| BH-F3 | S-10N-C009-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-F4 | S-10O-C073-0-1.0 | 0.0-1.0 | 4.59 | 11.934 |
| BH-F4 | S-10O-C073-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-G1 | S-10O-C057-0-1.0 | 0.0-1.0 | 51.952 | 135.0752 |
| BH-G1 | S-10O-C057-1.0-2.0 | 1.0-2.0 | 0.00738 | 0.019188 |
| BH-G2 | S-10N-C010-0-1.0 | 0.0-1.0 | 23.04 | 59.904 |
| BH-G2 | S-10N-C010-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-G3 | S-10N-C011-0-1.0 | 0.0-1.0 | 4.505 | 11.713 |
| BH-G3 | S-10N-C011-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-G4 | S-10O-C072-0.0-1.0 | 0.0-1.0 | 0.04524 | 0.117624 |
| BH-G4 | S-10O-C072-1.0-2.0 | 1.0-2.0 | 2.4797 | 6.44722 |
| BH-H1 | S-10O-C074-0-1.0 | 0.0-1.0 | 3.171 | 8.2446 |
| BH-H1 | S-10O-C074-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-I1 | S-10O-C058-0-1.0 | 0.0-1.0 | 6.422 | 16.6972 |
| BH-I1 | S-10O-C058-1.0-2.0 | 1.0-2.0 | 0.01786 | 0.046436 |
| BH-I2 | S-10N-C012-0-1.0 | 0.0-1.0 | 3.0749 | 7.99474 |
| BH-I2 | S-10N-C012-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-I3 | S-10O-C075-0-1.0 | 0.0-1.0 | 1.6736 | 4.35136 |
| BH-I3 | S-10O-C075-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-J1 | S-10O-C076-0-1.0 | 0.0-1.0 | 66.642 | 173.2692 |
| BH-J1 | S-10O-C076-1.0-2.0 | 1.0-2.0 | 0.1086 | 0.28236 |
| BH-K1 | S-10O-C059-0-1.0 | 0.0-1.0 | 10.855 | 28.223 |
| BH-K1 | S-10O-C059-1.0-2.0 | 1.0-2.0 | 35.996 | 93.5896 |
| BH-K2 | S-10N-C013-0-1.0 | 0.0-1.0 | 52.942 | 137.6492 |
| BH-K2 | S-10N-C013-1.0-2.0 | 1.0-2.0 | 0.02442 | 0.063492 |
| BH-K3 | S-10N-C014-0-1.0 | 0.0-1.0 | 7.1248 | 18.52448 |
| BH-K3 | S-10N-C014-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-K4 | S-10O-C077-0-1.0 | 0.0-1.0 | 6.87 | 17.862 |
| BH-K4 | S-10O-C077-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-L1 | S-10O-C060-0-1.0 | 0.0-1.0 | 46.739 | 121.5214 |
| BH-L1 | S-10O-C060-1.0-2.0 | 1.0-2.0 | 0.05794 | 0.150644 |
| BH-L2 | S-10N-C015-0-1.0 | 0.0-1.0 | 41.789 | 108.6514 |
| BH-L2 | S-10N-C015-1.0-2.0 | 1.0-2.0 | 0.10749 | 0.279474 |
| BH-L3 | S-10N-C016-0-1.0 | 0.0-1.0 | 8.9789 | 23.34514 |
| BH-L3 | S-10N-C016-1.0-2.0 | 1.0-2.0 | 0.00626 | 0.016276 |
| BH-L4 | S-10O-C078-0-1.0 | 0.0-1.0 | 6.9 | 17.94 |
| BH-L4 | S-10O-C078-1.0-2.0 | 1.0-2.0 | 1.4556 | 3.78456 |
| BH-M1 | S-10O-C061-0-1.0 | 0.0-1.0 | 3.289 | 8.5514 |
| BH-M1 | S-10O-C061-1.0-2.0 | 1.0-2.0 | 0.00672 | 0.017472 |
| BH-M2 | S-10N-C017-0-1.0 | 0.0-1.0 | 19.025 | 49.465 |
| BH-M2 | S-10N-C017-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-M3 | S-10O-C079-0-1.0 | 0.0-1.0 | 12.438 | 32.3388 |
| BH-M3 | S-10O-C079-1.0-2.0 | 1.0-2.0 | 0.09284 | 0.241384 |
| BH-N2 | S-10O-C062-0-1.0 | 0.0-1.0 | 46.628 | 121.2328 |
| BH-N2 | S-10O-C062-1.0-2.0 | 1.0-2.0 | 0.27348 | 0.711048 |
| BH-N3 | S-10O-C080-0-1.0 | 0.0-1.0 | 12.597 | 32.7522 |
| BH-N3 | S-10O-C080-1.0-2.0 | 1.0-2.0 | 0.06674 | 0.173524 |
| BH-O1 | S-10O-C063-0-1.0 | 0.0-1.0 | 20.911 | 54.3686 |
| BH-O1 | S-10O-C063-1.0-2.0 | 1.0-2.0 | 0.04736 | 0.123136 |
| BH-P1 | S-10O-C064-0-1.0 | 0.0-1.0 | 20.966 | 54.5116 |
| BH-P1 | S-10O-C064-1.0-2.0 | 1.0-2.0 | 85.051 | 221.1326 |
| BH-SOIL1 | S-10O-C065-0-1.0 | 0.0-1.0 | 1.7558 | 4.56508 |
| BH-SOIL1 | S-10O-C065-1.0-2.0 | 1.0-2.0 | 0.9557 | 2.48482 |
| BH-SOIL2 | S-10O-C066-0-1.0 | 0.0-1.0 | 1.0989 | 2.85714 |
| BH-SOIL2 | S-10O-C066-1.0-2.0 | 1.0-2.0 | 1.7896 | 4.65296 |
| BH-SOIL3 | S-10O-C067-0-1.0 | 0.0-1.0 | 0.9641 | 2.50666 |
| BH-SOIL3 | S-10O-C067-1.0-2.0 | 1.0-2.0 | 0.539 | 1.4014 |
| BH-SOIL4 | S-10O-C068-0-1.0 | 0.0-1.0 | 2.1871 | 5.68646 |
| BH-SOIL4 | S-10O-C068-1.0-2.0 | 1.0-2.0 | 2.125 | 5.525 |
| BH-SOIL5 | S-10O-C069-0-1.0 | 0.0-1.0 | 0.14806 | 0.384956 |
| BH-SOIL5 | S-10O-C069-1.0-2.0 | 1.0-2.0 | 0 | 0 |
| BH-CSO | S-10O-C070-0-1.0 | 0.0-1.0 | 1.0768 | 2.79968 |

# 4.0 DISCUSSION

This section discusses results of the sediment samples analyses, and addresses trends in PCB concentrations. Throughout the remediation season these data have been provided to the USACE and their contractors to assist with the evaluation of remediation efficiency, to establish target dredge elevations, and plan for upcoming remediation events.

External OL thickness measurements from the Pre-Dredge core samples, which were collected in both active 2009 dredge areas (G, J, L, and M) and non-active 2009 dredge areas (K, N, O, and P) showed no localized patterns in OL thickness. However, the 2009 non-active dredge areas tended to have a greater OL thickness than the active 2009 dredge areas. This was expected because sediment had been previously removed from the active 2009 areas.

Spatially, the PCB concentrations throughout 2010 active dredge Areas G, J, K and M exhibited no clear pattern. Portions of these areas were previously dredged, some multiple times, which may have impacted the spatial distribution of the "OL" layer thickness and corresponding PCB concentrations. Concentrations were uniformly distributed throughout each dredge area with no localized spikes in concentrations (i.e., "Hotspots) (Figure 12 through 15).

At all but a few Post-Dredge core locations, the target dredge elevation (known as "z*") was within the OL layer, and above the elevation of the visual transition. In some locations, the visual transition was observed up to 2.65 feet lower than z*. These types of discrepancies show that sediment core observations of the OL visual transition can be used to supplement the use of z* as the target dredge elevation. The visual transition, as mapped from sediment coring, may serve as a "benchmark" for confidently estimating: 1) the presence of PCB contamination; 2) the target dredge elevation required for successful removal of the highest PCB concentrations; and 3) volumes of contaminated sediment that require removal (Morris, in review).

Boathouse push cores had a significantly higher PCB concentration in the 0.0–1.0 foot samples than the 1.0–2.0 foot samples ($t = 0.0014$). Statistical significance was determined by running a Welch's t-test, and results were deemed significant if t values were equal to or less than 0.05. The significant difference between the upper and lower sampling intervals supports the use of the visual transition between the OL and underlying strata as an adequate method to preliminarily distinguish highly contaminated surface sediment from less contaminated native sediments. Thirty-nine of the forty-six Boathouse cores had PCB concentration greater than 10 ppm, which are above project contamination criterion. The majority of cores that did not contain PCB levels greater than 10 ppm were found farther from the shoreline, in the center of the Boathouse sampling area. There was no significant difference between the PCB concentration between the two shoreline soil sample intervals ($t = 0.78$). The CSO and soil samples had PCB concentrations well below the 10 ppm project criterion.

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# 5.0 REFERENCES

Morris, M.W. A. Rigassio Smith, J. Cummings, and D. Walsh. 2011. Relationship between sediment morphology and PCB contamination in the Acushnet River, New Bedford, Massachusetts. *Proceedings of the Annual International Conference on Soils, Sediments, Water and Energy.*

Woods Hole Group. 2010a. 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 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group. 2010b. 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 for the U.S. Army Corps of Engineers New England District, Concord, MA.

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# APPENDIX A. 2010 CORING PHOTOGRAPHS AND FIELD LOGS (ON CD)

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# APPENDIX A: 2010 CORE PHOTOGRAPHS AND FIELD LOGS

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4-14-10
Station: GF28
Length: 1.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-14-10
Station ID: GF28
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): 2.2

Collection Mechanism: P.C.
Latitude: 41° 40.563
Length of Push Core Assembly (B): 7.3

Time on Station: 12:07
Longitude: 70° 54.980
Water Surface to Top of Handle (C): 3.6

Time of Collection: 12:13
GPS Accuracy: DB ~~30ft~~ 19ft
Length of Core (from bottom) (D): 1.4

Time Depart Station: 12:15
Tide Elevation (from tide board) (G): DB ~~-2.~~ -0.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ): -4.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) (3.7): ~~-3.8~~ (?) NA

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D: -3.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A: -3.0

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.1) | ? | sandy silt with organics | black (brown) | loose | fine | | NA |
| 0.7 | (-3.8) | CL/ML | silty clay with peat | brown gray | firm | fine with peat | | |
| 1.4 | (-4.5) | | | | | | | |

Comments
1st attempt successful

4-14-10
Station: GF31
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | |
|---|---|---|---|
| Date: 4-14-10 | Station ID: GF31 | All Measurements are ± 0.1 feet | |
| Logged By: DB | Core Sample ID: | Water Depth (A): | 1.9 |
| Collection Mechanism: P.C. | Latitude: 41° 40.551 | Length of Push Core Assembly (B): | 7.65 |
| Time on Station: 12:23 | Longitude: 70°54.979 | Water Surface to Top of Handle (C): | 3.65 |
| Time of Collection: 12.25 | GPS Accuracy: 19ft | Length of Core (from bottom) (D): | 7.95 |
| Time Depart Station: 12:27 | | Tide Elevation (from tide board) (G): | -1.1 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -1.1-(4) | ~~-4.25~~ (?) NA |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.15 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.0 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.15) | ? | Sandy silt | brown ~~&~~ black | loose | medium coarse sand | | NA |
| 1.1 | (-4.25) | CL/ML | silty clay with sand | Olive grey | firm | fine with shell hash | | |
| 1.95 | (-5.1) | | | | | | | |

Comments
1st attempt succesful

4-14-10
Station: G4134
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-14-10
Station ID: GH34
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 1.9
Collection Mechanism: P.C.
Latitude: 41°40.539
Length of Push Core Assembly (B): 8.2
Time on Station: 12:31
Longitude: 70°54.969
Water Surface to Top of Handle (C): 3.9
Time of Collection: 12:34
GPS Accuracy: 19 ft
Length of Core (from bottom) (D): 1.95
Time Depart Station: 12:36
Tide Elevation (from tide board) (G): -1.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.2

-1.2 - (8.2 - 3.9)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -5.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.05

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.55

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.1

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.55) | OL | Sandy Silt (fine sand) | black | loose | fine | | NA |
| 0.5 | (-4.05) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine | | |
| 1.95 | (-5.5) | | | | | | | |

Comments

4-14-10
Station: GJ32
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/14/10
Station ID: GJ32
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.0
Collection Mechanism: P.C.
Latitude: 41° 40.547'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:23
Longitude: 70° 54.957'
Water Surface to Top of Handle (C): 8.9
Time of Collection: 11:26
GPS Accuracy: 11 ft.
Length of Core (from bottom) (D): 2.3
Time Depart Station: 11:28
Tide Elevation (from tide board) (G): 0.1

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.1 - (4.4) | -3.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.0 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.9 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.0) | OL (?) (ML) | sandy silt | brownish black | medium | fine | | NA |
| 1.3 | (-3.3) | CL/ML | silty clay | olive grey | firm | fine | | |
| 2.3 | (-4.3) | | | | | | | |

Comments

4-14-10
Station: GK37
Length: 1.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/14/10
Station ID: GK37
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 26
Collection Mechanism: P.C.
Latitude: 41°40.526'
Length of Push Core Assembly (B): 9.15
Time on Station: 12:43
Longitude: 70°54.952'
Water Surface to Top of Handle (C): 4.6
Time of Collection: 12:52
GPS Accuracy: 16 ft.
Length of Core (from bottom) (D): 1.9
Time Depart Station: 12:56
Tide Elevation (from tide board) (G): -1.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -5.85

-1.3 - (4.55)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -5.05

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.95

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.9

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.95) | | silty sand with organics | brown/red | flocky loose | fine | | |
| 0.2 | (-4.15) | | | | | | | |
| | | OL? (ML) | silt | brown black | Medium ~~to~~ | fine | | NA |
| 1.1 | (-5.05) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.9 | (-5.85) | | | | | | | |

Comments: 1st attempt unsuccessful - hit layer of shells

4-14-10
Station: GM22
Length: 1.65

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4-14-10 | Station ID | GM22 | All Measurements are ± 0.1 feet | |
| Logged By | DB | Core Sample ID | | Water Depth (A) | 2.1 |
| Collection Mechanism | P.C | Latitude | 41° 40.588 | Length of Push Core Assembly (B) | 8.2 |
| Time on Station | 11:59 | Longitude | 70° 54.942 | Water Surface to Top of Handle (C) | 4.1 |
| Time of Collection | 12:01 | GPS Accuracy | 13 ft | Length of Core (from bottom) (D) | 1.65 |
| Time Depart Station | 12:03 | | | Tide Elevation (from tide board) (G) | -0.6 |

Calculations for Determination of Z* Elevation

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.7 |
| -0.6 - (4.1) | |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.55 ✓(?) |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.05 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.7 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.05) | OL? | sandy silt with organics | brown black | loose | fine | | NA |
| 0.5 | -(-3.55) | CL/ML | silty clay with organics | olive grey | firm | fine with shell hash | | |
| 1.65 | (-4.7) | | | | | | | |

Comments
1st attempt succesful

4-14-10
Station: GM25
Length: 1.7

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | |
|---|---|---|---|
| Date: 4-14-10 | Station ID: GM25 | All Measurements are ± 0.1 feet | |
| Logged By: DB | Core Sample ID: | Water Depth (A): | 3.3 |
| Collection Mechanism: P.C. | Latitude: 41°40.575 | Length of Push Core Assembly (B): | 8.2 |
| Time on Station: 11:45 | Longitude: 70°54.942 | Water Surface to Top of Handle (C): | 2.95 |
| Time of Collection: 11:49 | GPS Accuracy: 18 ft | Length of Core (from bottom) (D): | 1.7 |
| Time Depart Station: 11:53 | | Tide Elevation (from tide board) (G): | -0.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -0.3-(8.2-2.95) | -5.55 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | ~4.65 (?) ✓ |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | DB -3.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.6 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.85) | OV? | sandy silt w/ organics and shell hash | brown black | loose | fine | | NA |
| 0.8 | (-4.65) | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.7 | (-5.55) | | | | | | | |

Comments
1st attempt succesful

4-14-10
Station: GN28
Length: 1.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | |
|---|---|---|---|
| Date | 4-14-10 | Station ID | GN28 |
| Logged By | DB | Core Sample ID | |
| Collection Mechanism | P.C. | Latitude | 41°40.563 |
| Time on Station | 11:32 | Longitude | 70°54.936 |
| Time of Collection | 11:35 | GPS Accuracy | 20ft |
| Time Depart Station | 11:38 | | |

All Measurements are ± 0.1 feet

| | |
|---|---|
| Water Depth (A) | 2.1 |
| Length of Push Core Assembly (B) | 13.3 |
| Water Surface to Top of Handle (C) | 8.8 |
| Length of Core (from bottom) (D) | 1.9 |
| Tide Elevation (from tide board) (G) | -0.1 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -0.1-(13.3-8.8) | -4.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | ~~-3.6~~ -4.0 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.0 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0.0 (-2.7) | OL? (ML) | sandy silt (very fine sand) | brown black | loose | fine | | NA |
| 0.9 (-3.6) | marbled black / brown / grey transition layer | | | | | | |
| 1.3 (-4.0) | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.9 (-4.6) | | | | | | | |

Comments
1st attempt succesful

4-15-10
Station: GQ36
Length: 2.15

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: BQ36
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.0
Collection Mechanism: P.C.
Latitude: 41°40'53.0"
Length of Push Core Assembly (B): 13.3
Time on Station: 11:59
Longitude: 70° 54.920'
Water Surface to Top of Handle (C): 8.9
Time of Collection: 12:03
GPS Accuracy: 18 ft.
Length of Core (from bottom) (D): 2.15
Time Depart Station: 12:07
Tide Elevation (from tide board) (G): 0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.2

(H) Elevation of the bottom of the core (NGVD): G - (B - C) 0.2 - (4.4) -4.2

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ~~-2.65~~ (-3.65)

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.05

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.8

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.05) | OL | Silt with fine sand | black | loose | fine some peat throughout | | NA |
| 0.6 | (-2.65) | minimal peat | | | | | | |
| | streaked / marbled layer | OL over CL/ML | silt and clay | black over olive grey | | | | |
| 1.6 | (-3.65) | | | | | | | |
| | | CL/ML | Silty clay | olive grey | firm | fine | | |
| 2.15 | (-4.2) | | | | | | | |

Comments

4-15-10
Station: GS32
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GS32
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.9
Collection Mechanism: p.c.
Latitude: 41° 40.546'
Length of Push Core Assembly (B): 13.3
Time on Station: 10:54
Longitude: 70° 54.908'
Water Surface to Top of Handle (C): 8.3
Time of Collection: 10:56
GPS Accuracy: 10 ft
Length of Core (from bottom) (D): 1.95
Time Depart Station: 11:00
Tide Elevation (from tide board) (G): 1.5

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.5 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.5-(5) | -2.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.55 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.4 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.55) | OL | silt with fine sand | black | loose | fine | | NA |
| 1.1 | (-2.65) | CL/ML | silty clay with fine sand | olive grey | firm | fine with shell hash | | |
| 1.95 | (-3.5) | | | | | | | |

Comments

4-15-10
Station: GT35
Length: 1.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GT35
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 3.0

Collection Mechanism: P.C.
Latitude: 41° 46.534'
Length of Push Core Assembly (B): 13.3

Time on Station: 11:53
Longitude: 70° 54.902'
Water Surface to Top of Handle (C): 8.1

Time of Collection: 11:56
GPS Accuracy: 14ft.
Length of Core (from bottom) (D): 1.9

Time Depart Station: 11:57
Tide Elevation (from tide board) (G): 0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.3-(5.2) -3.4

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.0

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.7

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.0) | OL | silt | black | loose | fine | | NA |
| 0.4 | (-3.4) | ML/CL | clayey silt | v. dark grey | firm | fine | | |
| 0.8 | (-3.8) | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.9 | (-4.9) | | | | | | | |

Comments

4-15-10
Station: GU34
Length: 20

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GU34
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 3.8
Collection Mechanism: P.C.
Latitude: 41°40.538'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:04
Longitude: 70° 54.897'
Water Surface to Top of Handle (C): 7.25
Time of Collection: 11:07
GPS Accuracy: 14 ft
Length of Core (from bottom) (D): 2.0
Time Depart Station: 11:10
Tide Elevation (from tide board) (G): 1.4

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.4-(6.05) | -3.15 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.65 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.4 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.65) | OL | Silt with trace amounts of peat | black | loose | fine | | NA |
| 0.5 | (-3.15) | ML/CL | Clayey silt | very dark grey | firm | fine | | |
| 1.15 | (-4.4) | CL/ML | silty clay | olive grey | firm | fine | | |
| 2.0 | (-4.65) | | | | | | | |

Comments

4-15-10
Station: GU36
Length: 1.7

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GU36
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.8
Collection Mechanism: p.c.
Latitude: 41°4ϕ.53ϕ'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:12
Longitude: 7ϕ°54.897'
Water Surface to Top of Handle (C): 8.4
Time of Collection: 11:15
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 1.7
Time Depart Station: 11:18
Tide Elevation (from tide board) (G): 1.2

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) (4.9) | ~~-2.4~~ (-3.2) |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.ϕ |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.6 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| ϕ.ϕ | (-2.ϕ) | OL | silt with organics | black | loose | fine | | NA |
| ϕ4 | - (-2.4) - | | | | | | | |
| | marbled / streaking looks like layers were mixed | OL over CL/ML | silt and silty clay | black marbled with dark grey and olive grey | medium firm | fine | | |
| 1.2 | - (-3.2) - | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.7 | (-3.7) | | | | | | | |

Comments: slight sheen on top

4-15-10
Station: GV 35
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GV35
All Measurements are ± 0.1 feet:
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.3
Collection Mechanism: P.C.
Latitude: 41° 40.534'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:41
Longitude: 70° 54.892'
Water Surface to Top of Handle (C): ~~0.0~~ 8.4 KGM
Time of Collection: 11:44
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): 1.95
Time Depart Station: 11:50
Tide Elevation (from tide board) (G): 0.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.4

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.5-(4.9) -2.95

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.8

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.45) | OL | silt | black | loose | fine | | NA |
| 0.5 | (-2.95) | | | | | | | |
| | streaking | CL/ML | Silty Clay | Olive gray (streaks of black) | firm | fine | | |
| 1.5 | (-3.95) | | | | | | | |
| | | CL/ML | Silty Clay | olive grey | firm | fine with shell hash | | |
| 1.95 | (-4.4) | | | | | | | |

Comments

4-15-10
Station: GW 30
Length: 2.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GW3ϕ
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 2.9

Collection Mechanism: P.C
Latitude: 41°44ϕ.554'
Length of Push Core Assembly (B): 13.3

Time on Station: 10:38
Longitude: 7ϕ° 54.887'
Water Surface to Top of Handle (C): 7.5

Time of Collection: 10:41
GPS Accuracy: 12ft.
Length of Core (from bottom) (D): 2.4

Time Depart Station: 10:44
Tide Elevation (from tide board) (G): 1.7

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.7 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.1 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) 1.7-(5.8) | -2.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.2 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| ϕ.ϕ | (-1.7) | OL | Silt | black | loose | fine | | NA |
| ϕ.6 | (-2.3) | ML/CL | clayey silt | v.dark grey | medium | fine | | |
| 1.4 | (-3.1) | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 2.4 | (-4.1) | | | | | | | |

Comments

4-15-10
Station: GX38
Length: 2.05

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GX38
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 3.1
Collection Mechanism: ~~HS~~ P.C KGM
Latitude: 41° 4ϕ.522'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:34
Longitude: 7ϕ° 54.881'
Water Surface to Top of Handle (C): 7.8
Time of Collection: 11:37
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 2.ϕ5
Time Depart Station: 11:40
Tide Elevation (from tide board) (G): ϕ.7

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ϕ.7 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.8 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ϕ.7-(5.5) | -4.1 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.75 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.4 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| ϕ.ϕ | (-2.75) | OL | silt with organics, some v. fine sand | black | loose | fine | | NA |
| 1.35 | (-4.1) | CL/ML | silty clay | olive gray | firm | fine | | |
| 2.ϕ5 | (-4.8) | | | | | | | |

Comments: Shells visable surrounding target location
lost bottom of sample (clay) - piece of bark stuck in bottom fell when sample was brought up

4-15-10
Station: GY36
Length: 2.2

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: GY 36
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.2
Collection Mechanism: P.C.
Latitude: 41°40.529'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:22
Longitude: 70° 54.875'
Water Surface to Top of Handle (C): ~~9.1~~ 8.55
Time of Collection: 11:26
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 2.2
Time Depart Station: 11:30
Tide Elevation (from tide board) (G): 1.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.75

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.0 - (4.75) ~~-1.95~~ (-2.95)

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.55

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.2

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.55) | OL (PT) | sandy silt with bits of peat | v. dark grey | loose | fine w/peat | | NA |
| 0.4 | (-1.95) | | | | | | | |
| | marbled/ streaking | OL over CL/ML | Silt with silty clay | v. dark grey marbled olive grey | firm | fine | | |
| 1.4 | (-2.95) | | | | | | | |
| | | CL/ML | Silty clay | olive grey | firm | fine with shell hash | | |
| 2.2 | (-3.75) | | | | | | | |

Comments: 1st attempt unsuccessful - sample too loose, fell out of barrel possibly a rock stuck, - taking second core
2nd attempt
many shells visable surrounding target

4-15-10
Station: GZ 28
Length: 2.45

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: G728
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 27
Collection Mechanism: p.c.
Latitude: 41°40.563'
Length of Push Core Assembly (B): ~~12.3~~ 13.3
Time on Station: 10:12
Longitude: 70°54.868'
Water Surface to Top of Handle (C): 7.9
Time of Collection: 10:15
GPS Accuracy: 11 ft.
Length of Core (from bottom) (D): 2.45
Time Depart Station: 10:22
Tide Elevation (from tide board) (G): 1.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.8

(H) Elevation of the bottom of the core (NGVD): G - (B - C) -3.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.8-(5.4) -1.45

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.15

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -0.9

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.15) | OL | silt. some fine sand | v. dark grey | loose | fine | | NA |
| 0.3 | (-1.45) | CL/ML | silty clay | dark grey | firm | fine | | |
| 1.3 | (-2.45) | CL/ML | silty clay | olive grey | firm | fine some shell hash | | |
| 2.45 | (-3.6) | | | | | | | |

Comments

**NO PHOTO AVAILABLE**

**JB6**
**04/12/2010**

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: George Hampson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: JB6
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): ~~6.6~~ KGM 6.6
Collection Mechanism: p.c.
Latitude: 41° 40.497'
Length of Push Core Assembly (B): ~~14.3~~ KGM 13.3
Time on Station: 10:26
Longitude: 70° 54.952'
Water Surface to Top of Handle (C): ~~4.8~~ KGM 4.2
Time of Collection: 10:40
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): 1.8
Time Depart Station: 10:45
Tide Elevation (from tide board) (G): 0.1

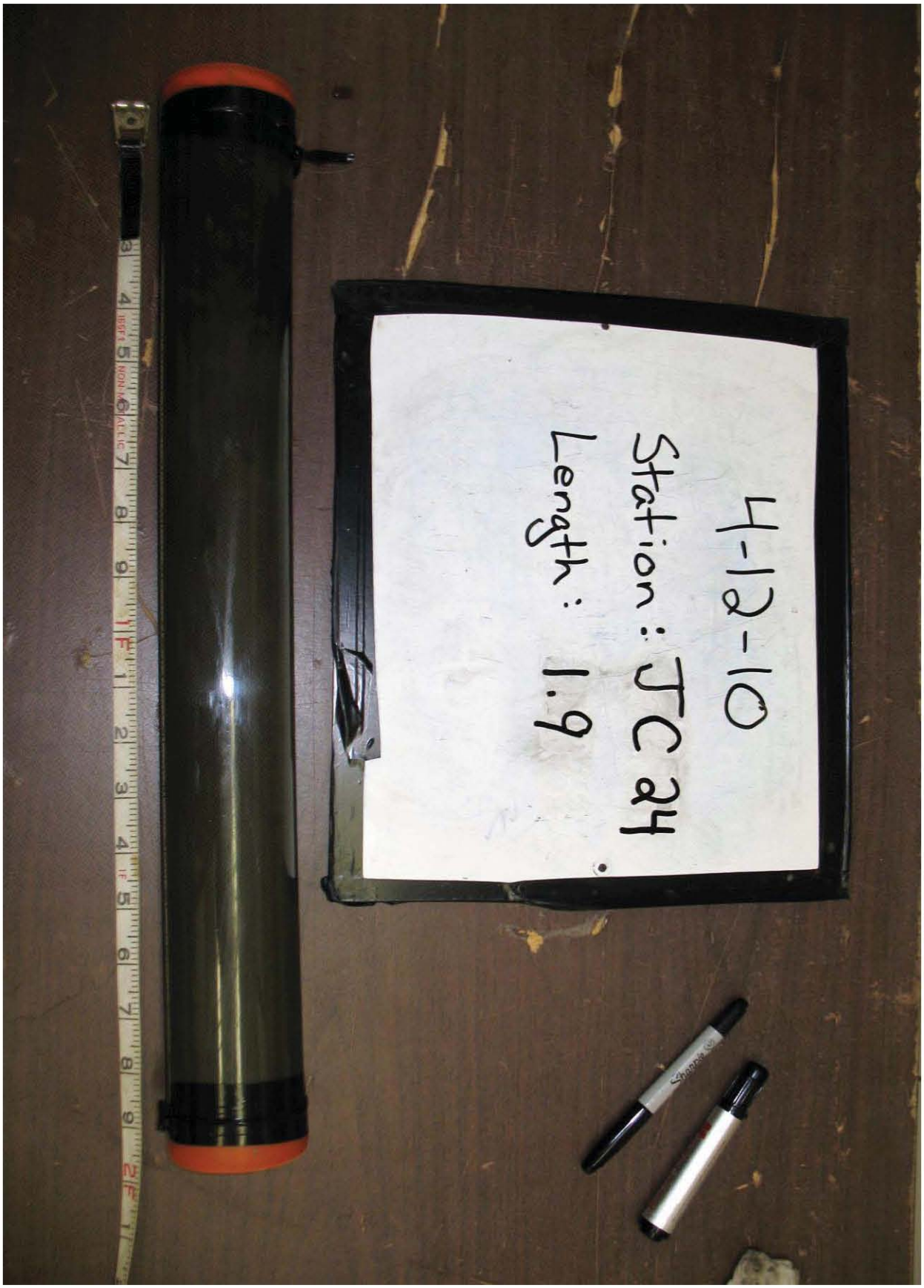
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -9.0 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.1 - (9.1) | ~~-7.4~~ KGM -7.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.5 |

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| -7.2 | (0) (-7.2) | OL | Silt | black | loose | fine | | N/A |
| -7.6 | (0.4) ~~-7.6~~ KGM | — — | — | — | — | — | — | — |
| | | ML/CL | Silty Clay | v. dark grey/olive grey | firm | fine | | |
| -9.0 | (1.8) (-9.0) | | | | | | | |

Comments: 1st core unacceptable. too much water on top, ~ 0.9 ft too short. 2nd core ok. top very silty, loosing material from surface most likely


4-12-10
Station: JC 24
Length: 1.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCarney

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4/12/10 | Station ID: | JC24 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID: | | Water Depth (A): | 6.0 |
| Collection Mechanism: | p.c. | Latitude: | 41° 40. 423' | Length of Push Core Assembly (B): | 13.3 |
| Time on Station: | 11:49 | Longitude: | 70° 54. 947' | Water Surface to Top of Handle (C): | 4.6 |
| Time of Collection: | 11:55 | GPS Accuracy: | 15 A. | Length of Core (from bottom) (D): | 1.9 |
| Time Depart Station: | 12:00 | | | Tide Elevation (from tide board) (G): | -0.8 |

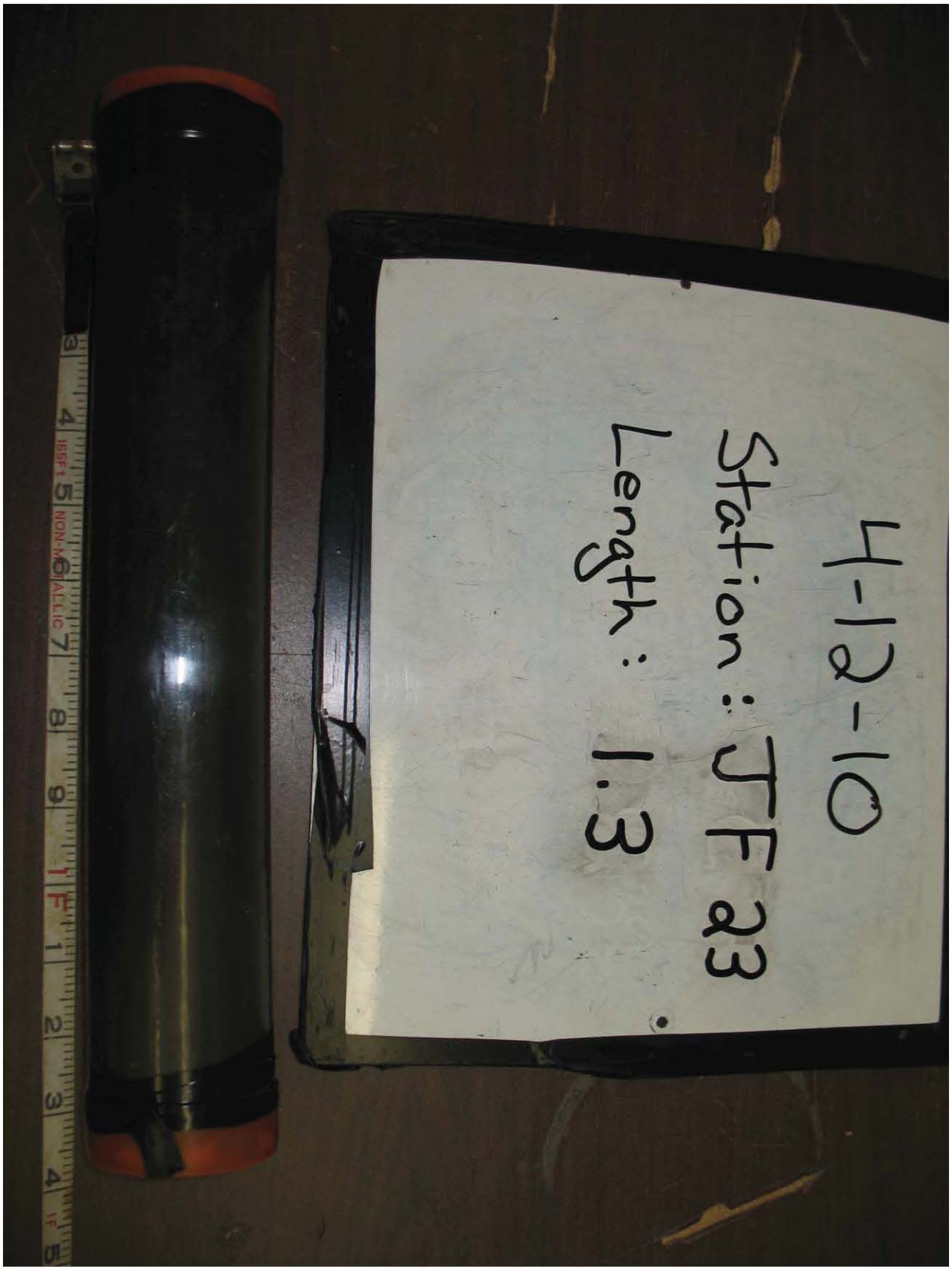
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -9.5 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) (-0.8) + (8.7) | ~~-7~~ KGM -8.1 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.8 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.6) | OL | silt | black | loose | fine w/shell hash | | NA |
| 0.5 | - (-8.1) - | - - - | - - | - - | - | | - | - |
| 1.1 | streaking of OL (-8.7) | CL/mL | Silty Clay | Olive grey | firm | fine | | |
| 1.9 | (-9.5) | | | | | | | |

Comments


4-12-10
Station: JF 23
Length: 1.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: JF23
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 6.1
Collection Mechanism: P.C.
Latitude: 41° 40. 427'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:37
Longitude: 70° 54. 931'
Water Surface to Top of Handle (C): 5.3
Time of Collection: 11:45
GPS Accuracy: 13 ft.
Length of Core (from bottom) (D): 1.3
Time Depart Station: 11:47
Tide Elevation (from tide board) (G): -0.6

**Calculations for Determination of Z^ Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.6

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.6
-0.6-(8)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.6

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.3

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.7

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.3) | OL | silt w/ clay, fine sand shell hash | ~~dark brown~~ dark KGM / black | loose | fine | | N/A |
| 0.3 | (-7.6) | | | | | | | |
| | streaking / blurred transition to 1 ft. | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 1.3 | (-8.6) | | | | | | | |

Comments

4-12-10
Station: JH5
Length: 2.2

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V George Hampson
Chief Scientist: K. McCartney

| | | | |
|---|---|---|---|
| Date: 4/12/10 | Station ID: JH5 | | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: ~~S-10A-C0022~~ KGM | | Water Depth (A): ~~6.0~~ KGM 5.7 |
| Collection Mechanism: P.C. | Latitude: 41° 40.000' | | Length of Push Core Assembly (B): ~~16.4~~ KGM ~~14.25~~ KGM 14. |
| Time on Station: 09:50 | Longitude: 70° 54.919' | | Water Surface to Top of Handle (C): ~~7.1~~ KGM ~~4.9~~ KGM 5.6 |
| Time of Collection: 10:17 | GPS Accuracy: 14 ft. | | Length of Core (from bottom) (D): 2.2 |
| Time Depart Station: 10:22 | | | Tide Elevation (from tide board) (G): ~~0.8~~ KGM 0.5 |

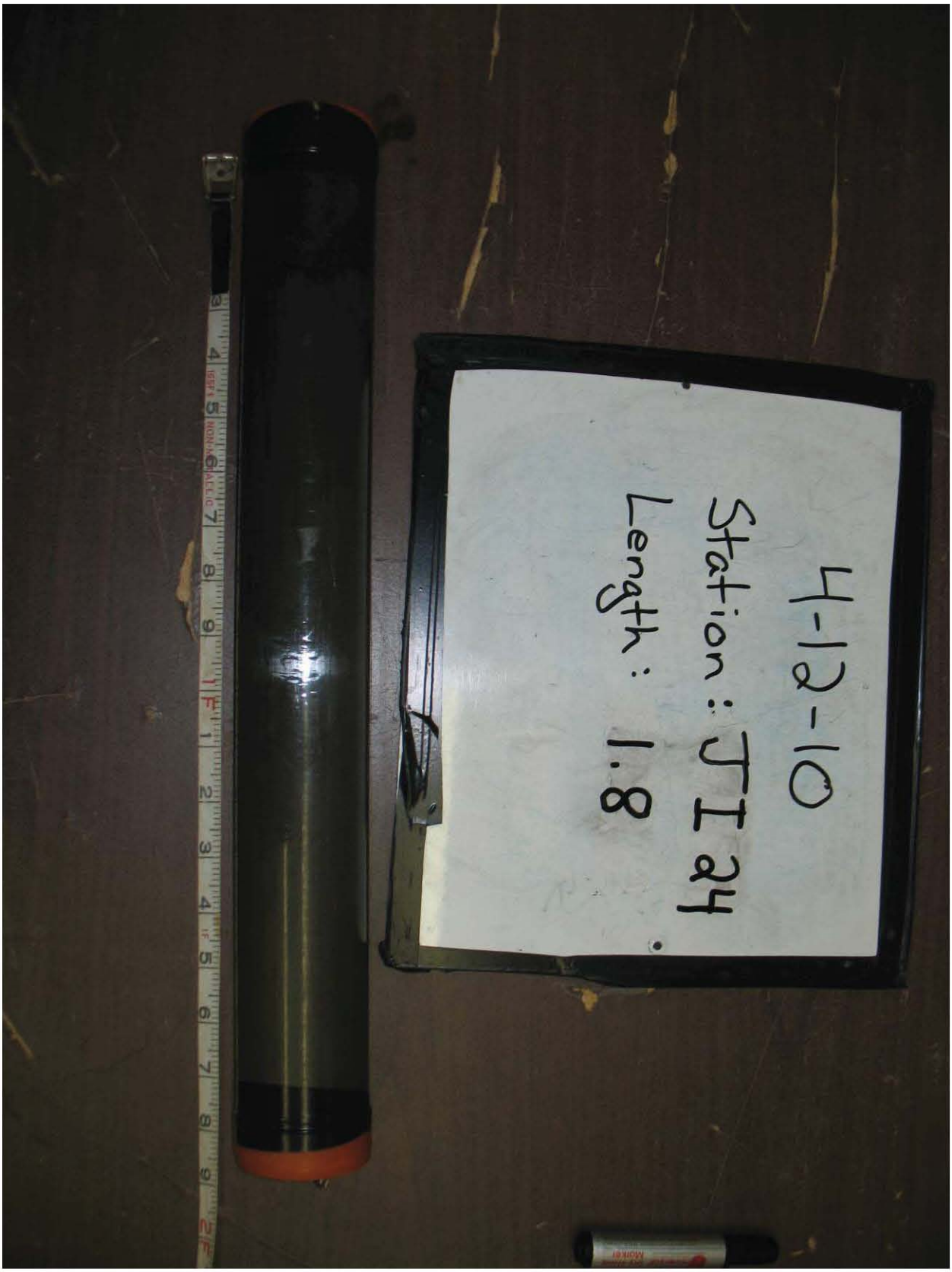
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ~~0.8~~ KGM 0.5 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.5 - (8.6) | -6.7 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.2 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | (-5.9) | OL | silty | black | very loose | fine | | N/A |
| 0.3 | - (-6.2) - | OL? | silt | black/ v.dark grey | loose | fine | | |
| 0.8 | - (-6.7) - | ML | | dark olive grey | | | | |
| | | CL/ML | silty clay | | firm | fine | | |
| 2.2 | -(-8.1) - | | | | | | | |

Comments: 1st core unacceptable. trouble w/ plunger. $I \neq I_2$ within 1ft.
2nd core unacceptable. plunger not sliding thru core barrel - water @ top of sample, less than necessary length. trimmed plunger.
3rd core successful


4-12-10
Station: JI 24
Length: 1.8

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: E/V Hampson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: JI24
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 7.2
Collection Mechanism: p.c.
Latitude: 41°40.423'
Length of Push Core Assembly (B): 13.3
Time on Station: 11:02
Longitude: 70° 54.914'
Water Surface to Top of Handle (C): 3.5
Time of Collection: 11:08
GPS Accuracy: 10 ft
Length of Core (from bottom) (D): 1.8
Time Depart Station: 11:13
Tide Elevation (from tide board) (G): -0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.3

(H) Elevation of the bottom of the core (NGVD): G - (B - C) -0.3-(9.8) — -10.1

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) — -8.6

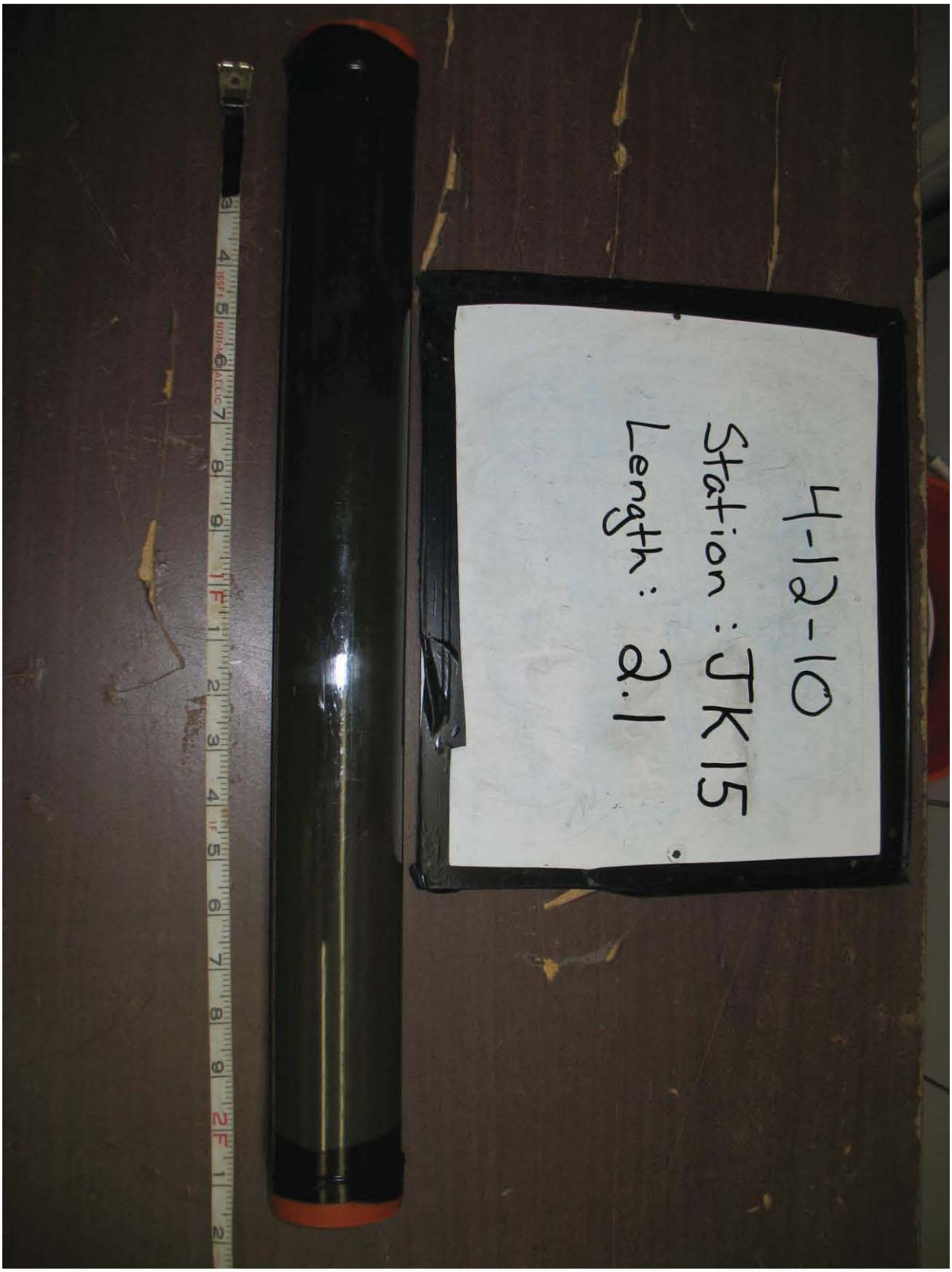
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D — -8.3

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A — -7.5

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-8.3) | OL (?) | Silt | black/brown | loose | fine | | N/A |
| 0.3 | (-8.6) | | | | | | | |
| | | Streaking | clayey silt | black olive grey | firm | fine | | |
| 0.85 | (-9.45) | | | | | | | |
| | | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 1.8 | (-10.1) | | | | | | | |

Comments


4-12-10
Station: JK15
Length: 2.1

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V George Hamerson
Chief Scientist: K. McCarthy

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4/12/10 | Station ID: | JK15 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | | Water Depth (A): | 5.5 |
| Collection Mechanism: | P.C | Latitude: | 41° 40. 460' | Length of Push Core Assembly (B): | 13.3 |
| Time on Station: | 10:48 | Longitude: | 70° 54.908' | Water Surface to Top of Handle (C): | ~~4.9~~ ~~5.0~~ 4.9 |
| Time of Collection: | 10:55 | GPS Accuracy: | 11 ft. | Length of Core (from bottom) (D): | 2.1 |
| Time Depart Station: | 11:00 | | | Tide Elevation (from tide board) (G): | -0.2 |

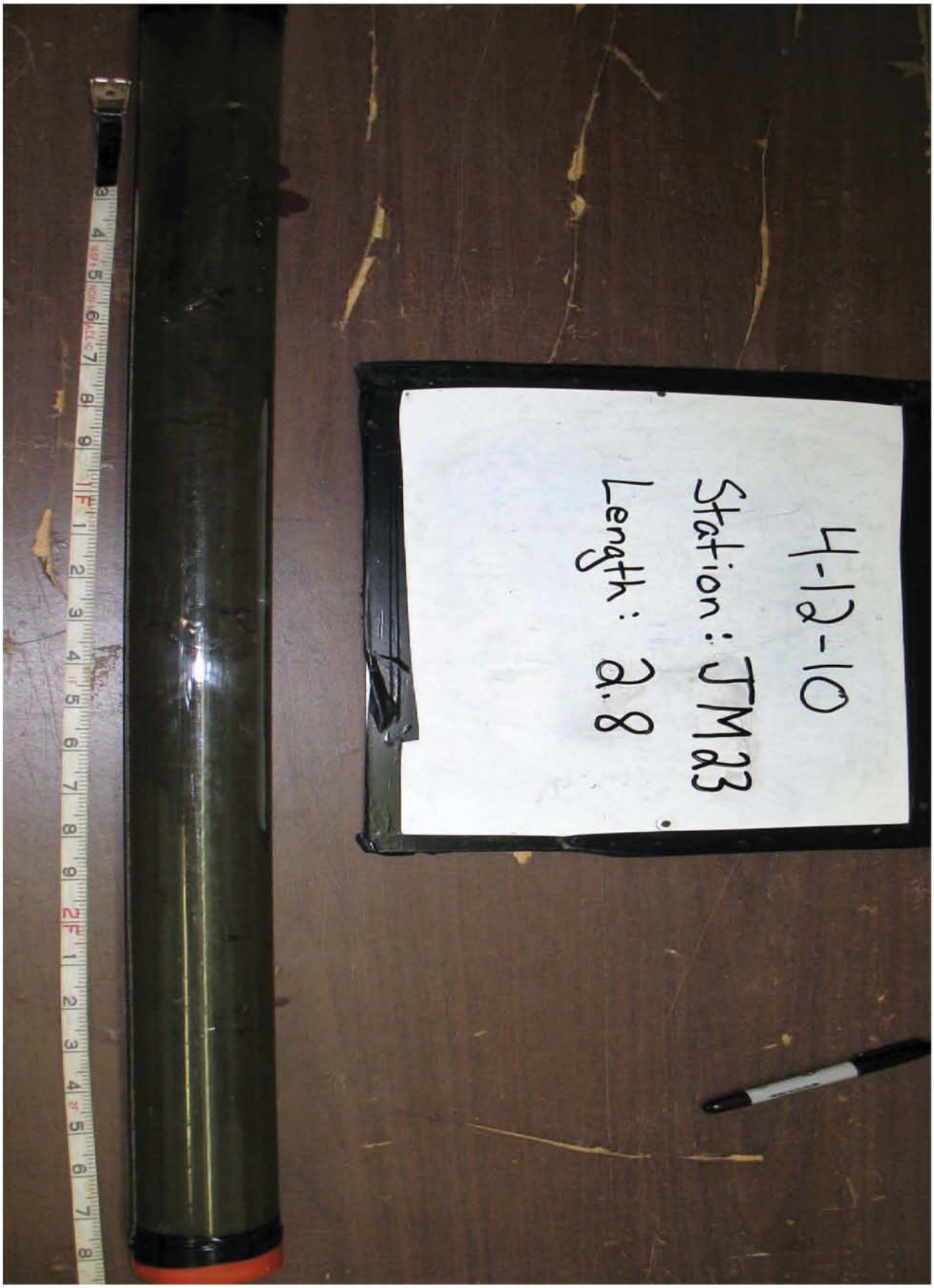
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.6 |
| -0.2 - (8.4) | |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.5 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.7 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | (-6.5) | OL | Silt | dark brown/ black | loose | fine | | N/A |
| 0.8 | (-7.3) | CL/ML | silty clay | v. dark olive grey | firm | fine | | |
| 1.3 | (-7.8) | CL | clay | dark olive grey | firm | fine | | |
| 2.1 | (-8.6) | | | | | | | |

Comments


4-12-10
Station: JM23
Length: 2.8

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hanyson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: JM23
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 5.7

Collection Mechanism: p.c.
Latitude: 41°40.427'
Length of Push Core Assembly (B): ~~13.4~~ KGM 13.3

Time on Station: 11:15
Longitude: 70°54.899'
Water Surface to Top of Handle (C): ~~4.6~~ KGM 4.2

Time of Collection: 11:30
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 2.8

Time Depart Station: 11:33
Tide Elevation (from tide board) (G): -0.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.6
-0.5 ~~(8.8)~~ (9.1)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.2

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.8

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.2

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | (-6.8) | OL | silt | black | very loose | Shell hash w/ fines | | N/A |
| 0.4 | (-7.2) | ML | clayey silt | v. dark olive gray | loose | | | |
| 0.8 | (-7.6) | ML | clayey silt | dark olive gray | loose | | | |
| 1.3 | (-8.1) | ML/CL | silty clay (mostly clay) | olive grey | firm | | | |
| 2.8 | (-9.6) | | | | | | | |

Comments: 1st core potentially over penetrated. taking second core
Keeping 2nd core

4-13-10
Station: KA 23
Length: 2.1

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: KAA23
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 4.0
Collection Mechanism: P.C.
Latitude: 41° 40.328
Length of Push Core Assembly (B): 13.3
Time on Station: 10:43
Longitude: 70° 54.948
Water Surface to Top of Handle (C): 7.6
Time of Collection: 10:48
GPS Accuracy: 11 ft
Length of Core (from bottom) (D): 2.1
Time Depart Station: 10:50
Tide Elevation (from tide board) (G): 0.2

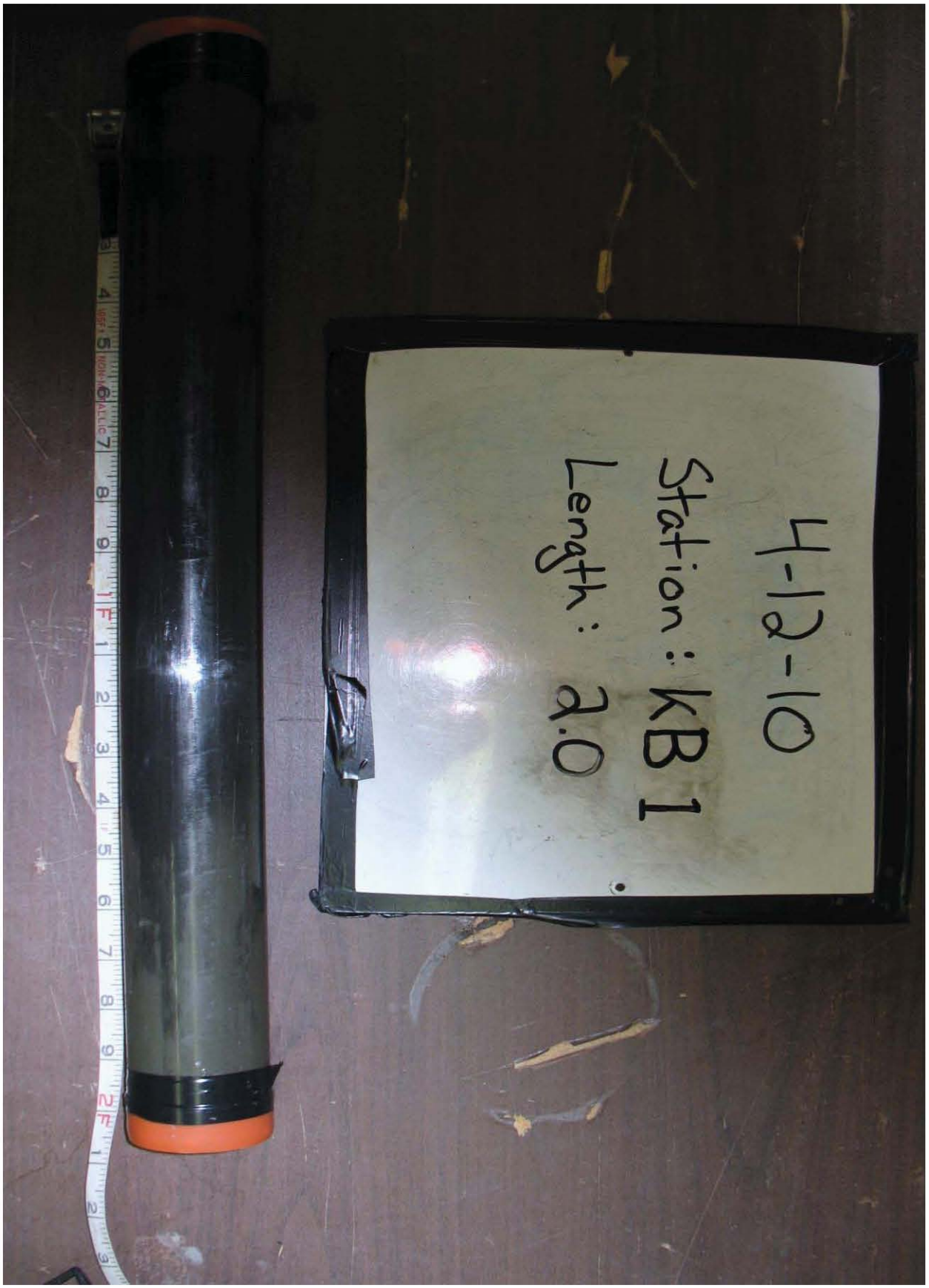
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.0 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.8 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.0) | OL | Silt w/ organics | Black mottled Brown | Loose | Fine | | |
| 0.95 | (-4.95) | - | - | - | - | - | | - - - |
| | | CL/ML | | Olive Grey | Firm | Fine | | Streaking down to 1.5 |
| 1.9 | (-5.9) | - | | - | - | - | - | - - |
| 2.1 | (-6.1) | PT | Peat w/wood | Brown | Loose | | | |

Comments
- 1st attempt succesful


4-12-10
Station: KB 1
Length: 2.0

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCartney

| | | | |
|---|---|---|---|
| Date: 4/12/10 | Station ID: KBB1 | All Measurements are ± 0.1 feet | KGM |
| Logged By: KGM | Core Sample ID: | Water Depth (A): ~~3.1~~ 3.3 | |
| Collection Mechanism: p.c. | Latitude: 41° 40.419' | Length of Push Core Assembly (B): 13.3 | |
| Time on Station: 12:10 | Longitude: 70° 54.942' | Water Surface to Top of Handle (C): ~~4.2~~ ~~8.1~~ 7.8 7. | KGM |
| Time of Collection: 12:26 | GPS Accuracy: 14 ft. | Length of Core (from bottom) (D): 2.0 | |
| Time Depart Station: 12:35 | | Tide Elevation (from tide board) (G): -1.1 | |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.2 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -1.1-(6.1) | -6.5 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.4 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0. | (-5.2) | OL | silt w/ organics | black | loose to firm | fine | | N/A |
| 1.3 | -(-6.5)-- streaking | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 1.8 | | | | | | | | |
| 2.0 | (-7.2) | | | | | | | |

Comments: 1st attempt unsuccessful, plunger stuck - refused sediment
2nd attempt unsuccessful, too short.

4-13-10
Station: KE 23
Length: 2.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: KEE23
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 3.2
Collection Mechanism: P.C.
Latitude: 41°40.328
Length of Push Core Assembly (B): 13.3
Time on Station: 10:55
Longitude: 70° 54.926
Water Surface to Top of Handle (C): 7.3
Time of Collection: 10:57
GPS Accuracy: 17ft
Length of Core (from bottom) (D): 2.4
Time Depart Station: 11:00
Tide Elevation (from tide board) (G): 0.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -6.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.65

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.6

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.2

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.6) | OL | Silt | Black | Loose | Fine | | |
| 1.05 | -(-4.65) | - | - | - | - | - | - | - - |
| | | CL/ML | Silty Clay | Grey | Firm | Fine | | |
| 1.4 | -(-5.0) | - | - | - | - | - | - | - - |
| | | Peat/Wood | | Brown | Loose | | | |
| | | 'PT' | | | | | | |
| 2.4 | (-6.0) | | | | | | | |

Comments
- 1st attempt successful

H-12-10
Station: KG 8
Length: 2.1

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K McCartney

Date: 4/12/10
Station ID: KG68
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 3.3

Collection Mechanism: p.c.
Latitude: 41° 40.390'
Length of Push Core Assembly (B): 14.3

Time on Station: 12:38
Longitude: 70° 54.915'
Water Surface to Top of Handle (C): ~~8.0~~ KGM 8.3

Time of Collection:
GPS Accuracy: 17 ft.
Length of Core (from bottom) (D): 2.1

Time Depart Station:
Tide Elevation (from tide board) (G): -1.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.0
-1-(6.0)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ~~KGM 4.9~~ -5.4

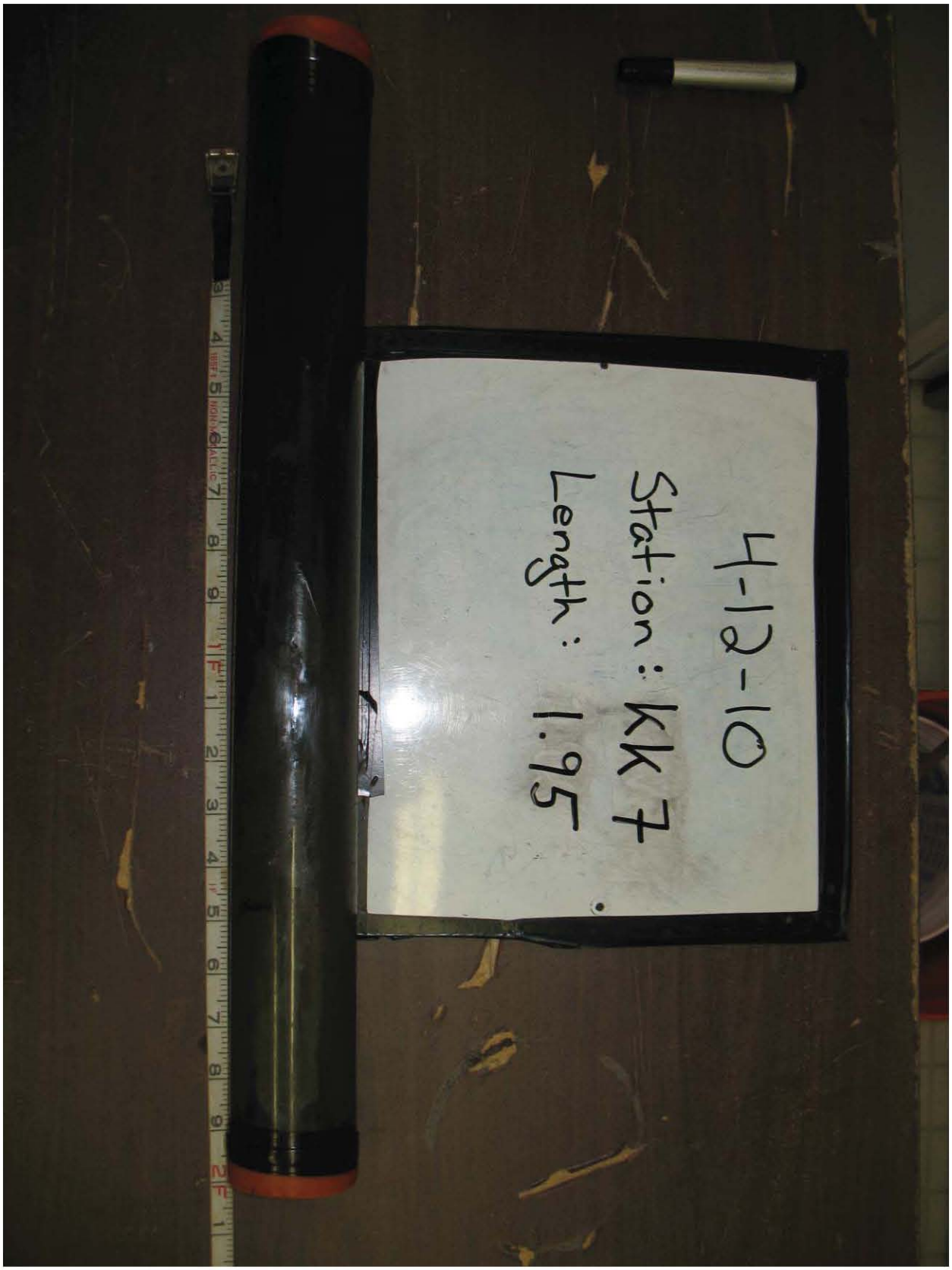
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.9

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.3

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0. | (-4.9) | OL | silt | v. dark grey/ brown | loose | fine | | N/A |
| 0.5 | - (-5.4) - | - - - | - - | - - | - - | - | - - | - - |
| | | CL/ML | silty clay w/ shell hash | olive grey | firm | fine | | |
| 2.1 | (-7.0) | | | | | | | |

Comments 1st attempt unsuccessful – too much water in sample.


4-12-10
Station: KK 7
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: KKK7
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 3.2

Collection Mechanism: p.c.
Latitude: 41° 40.395
Length of Push Core Assembly (B): 13.3

Time on Station: 12:55
Longitude: 70° 54.892
Water Surface to Top of Handle (C): ~~6.9~~ 7.6 DB

Time of Collection: 12:58
GPS Accuracy: 17ft
Length of Core (from bottom) (D): 1.95

Time Depart Station: 13:18
Tide Elevation (from tide board) (G): -1.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -1.0(13.3-7.6) -6.7

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -5.25 (-5.65)

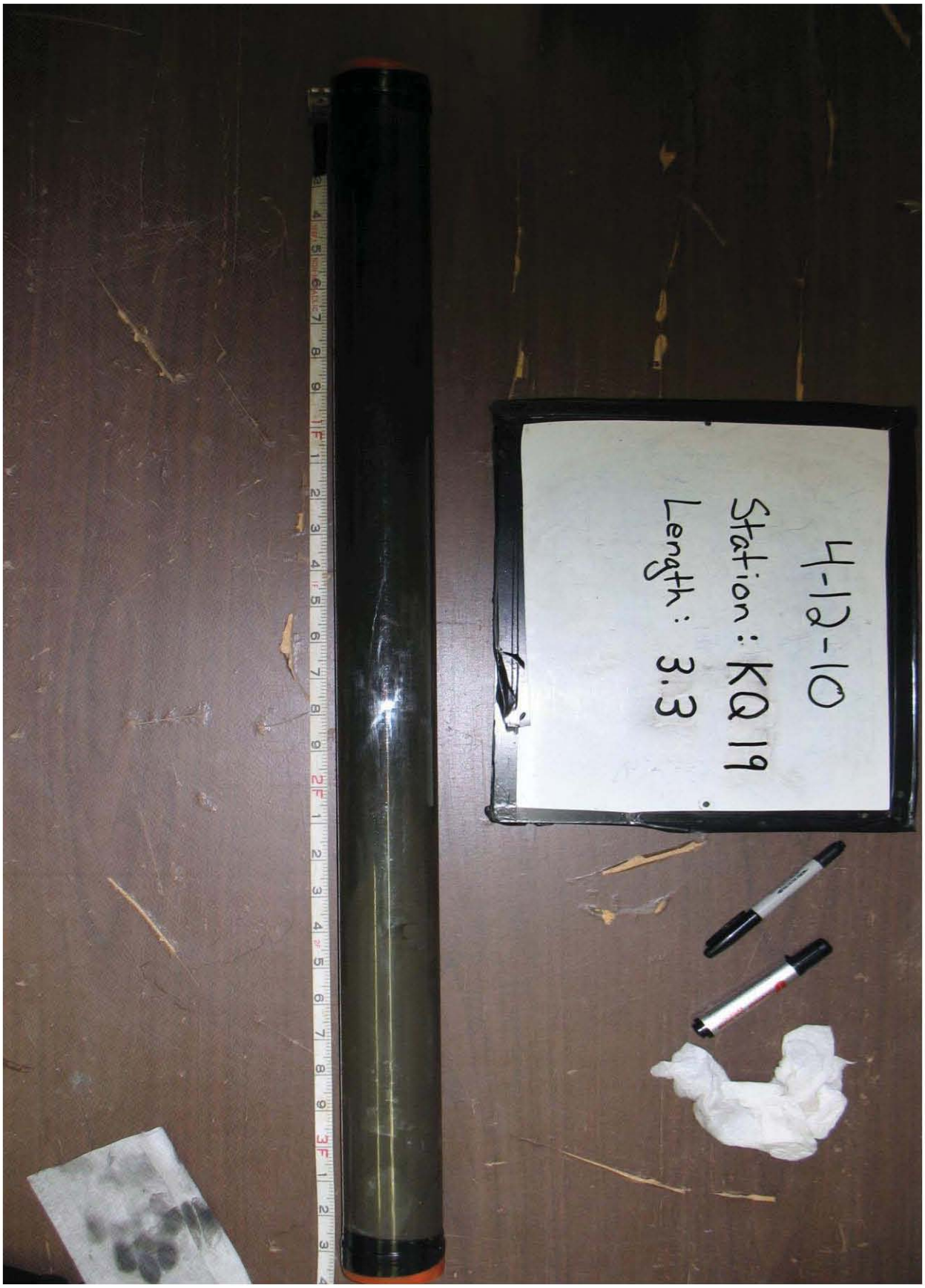
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.7 + 1.95 -4.75

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.0 - 3.2 4.2

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0. | (-4.75) | OL | silt | black | loose | fine | | N/A |
| 0.5 | (-5.25) streaking | OL (?) ML | silt | v. dark grey | loose to firm | fine | | |
| 0.9 | (-5.65) streaking at top of OL/ML into CL/ML | CL/ML | Silty clay | dark olive grey | firm | fine | | |
| 1.95 | (-6.7) | | | | | | | |

Comments
1st attempt unsuccesful - over penetration


4-12-10
Station: KQ 19
Length: 3.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCartney

Date: 4/12/10
Station ID: KQ 19
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): DB ~~3.9~~ 4.3
Collection Mechanism: P.C.
Latitude: 41°40.345
Length of Push Core Assembly (B): DB ~~13.3~~ 14.3
Time on Station: 13:36
Longitude: 70°56.004
Water Surface to Top of Handle (C): DB ~~5.1~~ 6.4
Time of Collection: 13:48
GPS Accuracy: 14ft
Length of Core (from bottom) (D): 3.3
Time Depart Station: 13:51
Tide Elevation (from tide board) (G): -0.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -0.7-(14.3-6.4) : -8.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.8

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.3

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.0

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0.0 (-5.3) | OL | silt w/ organics | black | loose | fines | | N/A |
| 1.5 - (-6.8) - | | | | | | | |
| streaking of OL thru CL/ML | | | | | | | |
| 2.5 - (-7.8) - | CL/ML | silty clay | olive grey | firm | fine | | |
| 3.3 (-8.6) | | | | | | | |

Comments
- Heavy sheen, strong petroleum odor
- 1st attempt unsuccesful - over penetration
- 2nd attempt succesful

4-12-10
Station: KQ23
Length: 2.1

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCartney

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4/12/10 | Station ID: | KQ23 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | | Water Depth (A): | 4.9 |
| Collection Mechanism: | p.c. | Latitude: | 41° 40.329 | Length of Push Core Assembly (B): | 13.3 |
| Time on Station: | 13:59 | Longitude: | 70° 55.004 | Water Surface to Top of Handle (C): | 5.6 |
| Time of Collection: | 14:11 | GPS Accuracy: | 15 ft | Length of Core (from bottom) (D): | 2.1 |
| Time Depart Station: | 14:15 | | | Tide Elevation (from tide board) (G): | -0.6 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.5 |

**(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0. | KGM ~~8.3~~ (-6.2) | OL | Silt organic | black | loose | fine | | NA |
| 0.6 | (-6.8) | ML | silt | v. dark grey | loose | fine | | |
| 1.2 | (-7.4) | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 2.1 | (-8.3) | | | | | | | |

Comments
- Heavy Sheen
- 1st attempt succesful

4-12-10
Station: KU20
Length: 1.8

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V G. Hampson
Chief Scientist: K. McCartney

| | | |
|---|---|---|
| Date: 4/12/10 | Station ID: KW2Ø | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: | Water Depth (A): 4.8 |
| Collection Mechanism: P.C. | Latitude: 41° 40.341 | Length of Push Core Assembly (B): 13.3 |
| Time on Station: 14:20 | Longitude: 70°54.981 | Water Surface to Top of Handle (C): DB 6.1 |
| Time of Collection: 14:27 | GPS Accuracy: 21 ft | Length of Core (from bottom) (D): 6.8 |
| Time Depart Station: 14:30 | | Tide Elevation (from tide board) (G): -0.4 |

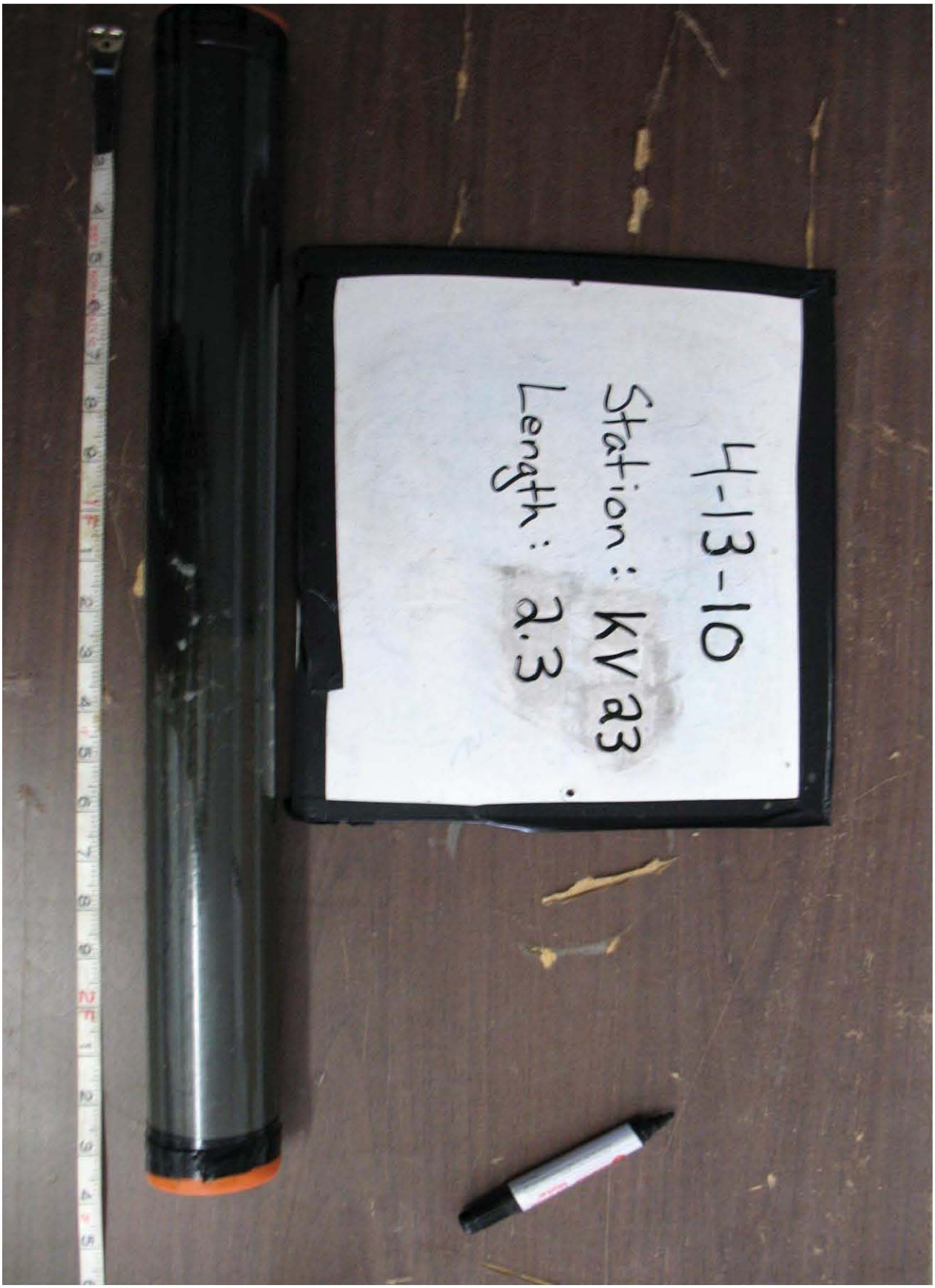
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ~~-7.6~~ KM -Ø.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.1 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.8 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.2 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| Ø.Ø | (-5.8) | OL | Silt KM organics | black | loose | fine | | N/A |
| 1.3 | (-7.1) | CL/ML | silty clay | olive grey/ brown | firm | fine | | |
| 1.8 | (-7.6) | | | | | | | |

Comments
- Heavy Sheen
- 1st attempt succesful


4-13-10
Station: KV 23
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: KV23
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): 5.3

Collection Mechanism: P.C.
Latitude: 41° 40.328
Length of Push Core Assembly (B): 13.3

Time on Station: 10:35
Longitude: 70° 54.977
Water Surface to Top of Handle (C): 5.45

Time of Collection: 10:39
GPS Accuracy: 12 ft
Length of Core (from bottom) (D): 2.3

Time Depart Station: 10:41
Tide Elevation (from tide board) (G): 0.4

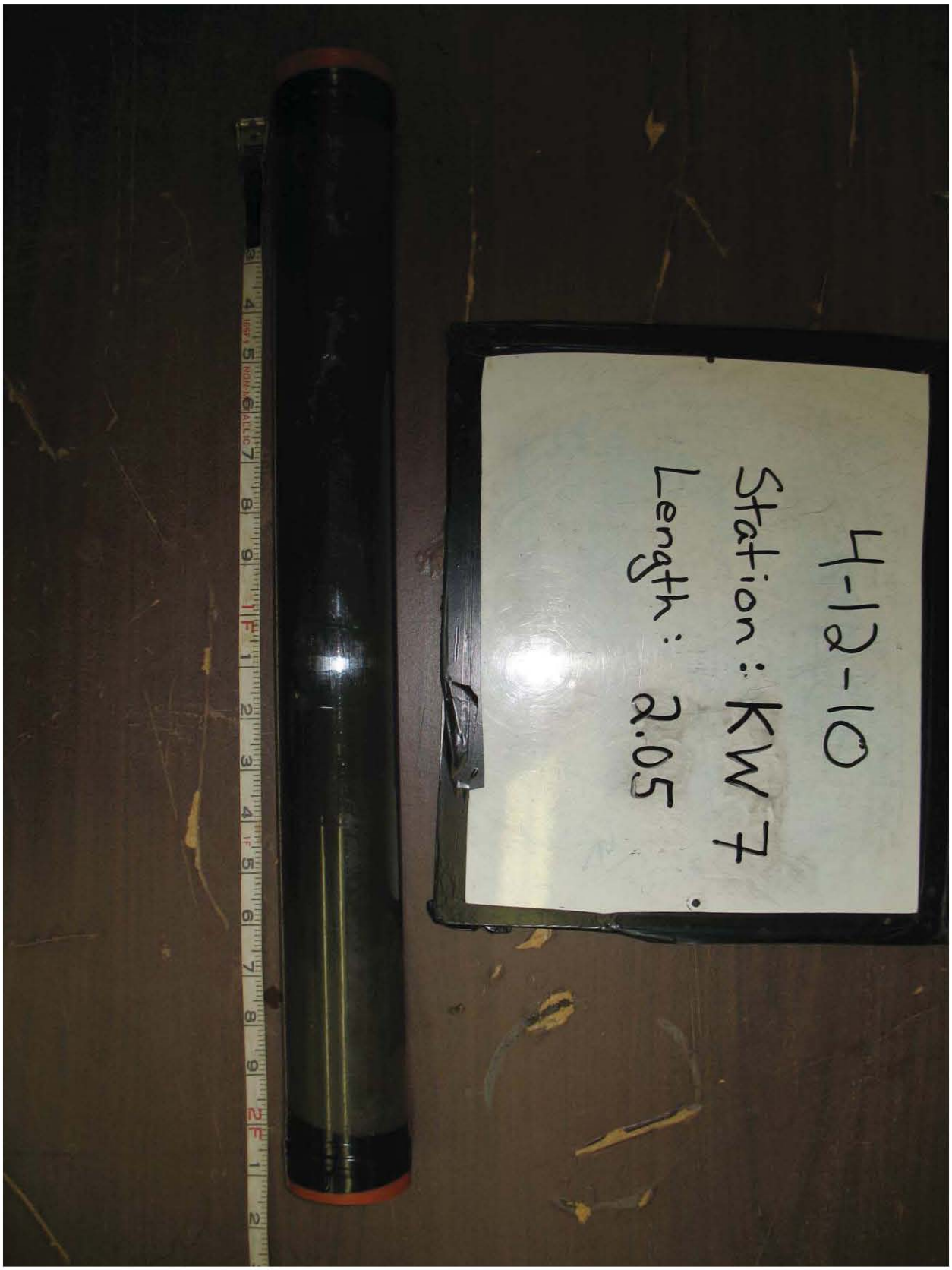
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.45 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.75 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.15 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.9 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.15) | | Organic Detritus | Brown | Loose | | | |
| 0.1 | (-5.25) | | | | | | | |
| | | OL | Silt | Black | Loose | Fine | | |
| 0.6 | (-5.75) | | | | | | | |
| | | OL? ML/CL | Clayey Silt | Dark Grey | Firm | Fine | | |
| 1.0 | (-6.15) | | | | | | | |
| | | CL/ML | Silty Clay w/fine Sand | Dark Grey | Firm | Fine | | |
| 2.3 | (-7.45) | | | | | | | |

Comments
- 1st attempt successful - slight sheen on top of core


4-12-10
Station: KW 7
Length: 2.05

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V Hampson
Chief Scientist: K. McCarthey

Date: 4/12/10
Station ID: KW7
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 2.5
Collection Mechanism: p.c.
Latitude: 41°40.394
Length of Push Core Assembly (B): 13.3
Time on Station: 13:24
Longitude: 70°54.969
Water Surface to Top of Handle (C): 8.4
Time of Collection: 13:27
GPS Accuracy: 13 ft
Length of Core (from bottom) (D): 2.05
Time Depart Station: 13:29
Tide Elevation (from tide board) (G): -0.9

2
13.3
10.9
2.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.9 — -0.9-(13.3-8.4)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ): -5.8

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ): -5.0S — -5.8+2.05

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D: -3.75 — -0.9-2.5

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A: -3.4

(Note if I ≠ $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0. | -3.75 | brown organic detritus @ top OL | silt | black | loose | fine | | N/A |
| 1.3 | (-5.05) | streaking of OL into CL/ML | | | | | | |
| 1.6 | (-5.35) | CL/ML | silty clay | olive grey | firm | fine | | |
| 2.05 | -5.8 | | | | | | | |

Comments
- Heavy sheen on water when pulling core up
- PCP odor
- 1st attempt successful

4-12-10
Station: KZ 19
Length: 2.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4/12/10 | Station ID: | KZ19 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | | Water Depth (A): | 4.4 |
| Collection Mechanism: | P.C. | Latitude: | 41° 40.345 | Length of Path Core Assembly (B): | 13.3 |
| Time on Station: | 14:37 | Longitude: | 70° 54.953 | Water Surface to Top of Handle (C): | 6.1 |
| Time of Collection: | 14:44 | GPS Accuracy: | 16ft | Length of Core (from bottom) (D): | 2.4 |
| Time Depart Station: | | | | Tide Elevation (from tide board) (G): | -0.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.7 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | (-5.1) | OL | Silt | black/ dark brown | loose | fine | | N/A |
| 1.2 | (-6.3) | CL/ML | silty clay | olive grey | firm | fine | | |
| | streaking of OL into CL/ML | | | | | | | |
| 2.0 | | | | | | | | |
| 2.4 | (-7.5) | | | | | | | |

Comments
-1st attempt succesful

4-15-10
Station: LC 3
Length: 4.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: LC3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 3.2
Collection Mechanism: P.C.
Latitude: 41°40.0391'
Length of Push Core Assembly (B): 16.3
Time on Station: 12:22
Longitude: 70°55.123'
Water Surface to Top of Handle (C): 8.5
Time of Collection: 12:27
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): 4.3
Time Depart Station: 12:32
Tide Elevation (from tide board) (G): -0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -0.3 - (7.8) -7.1

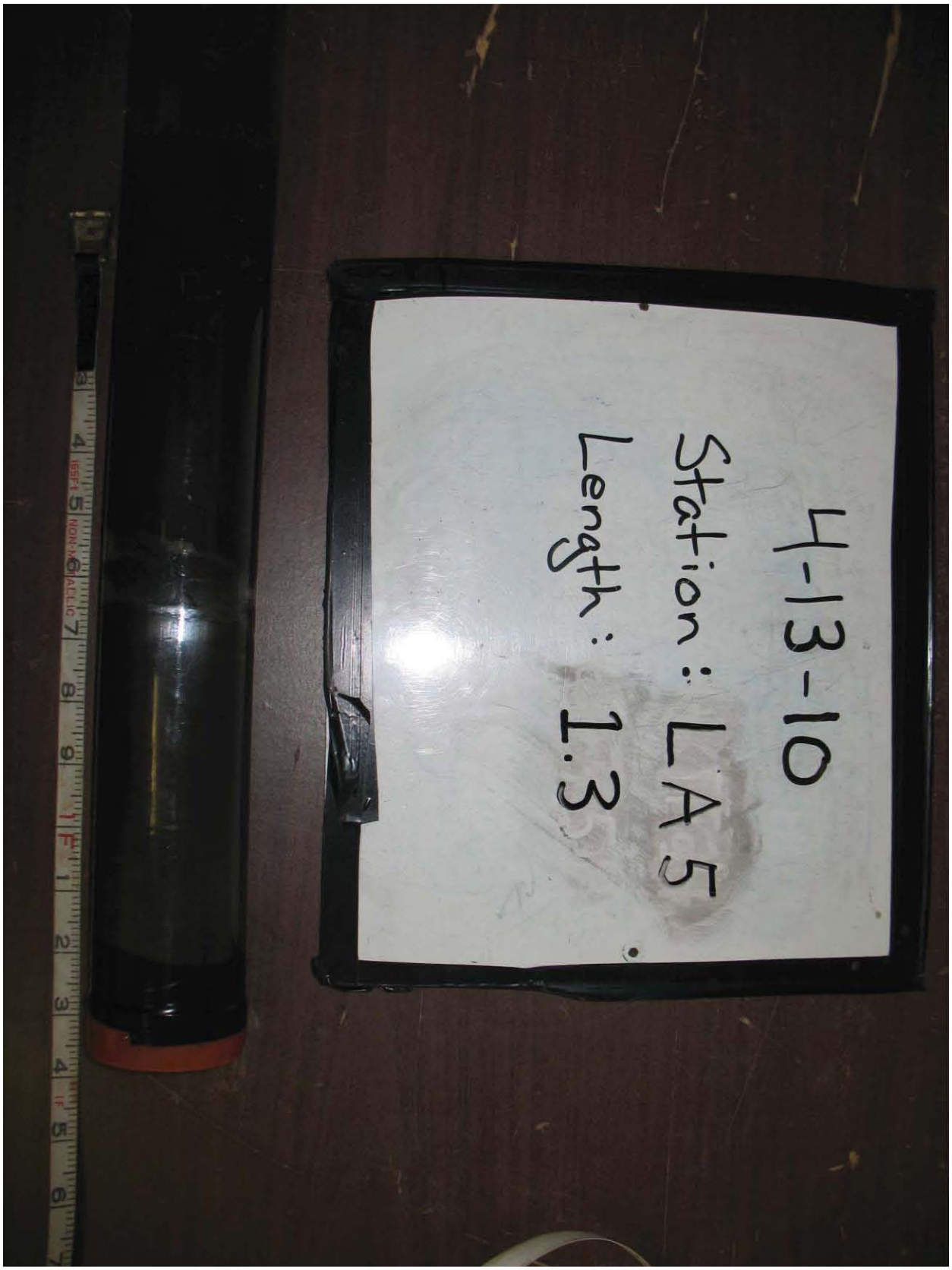
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.8

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.5

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.8) | OL | silt | black | loose | fine | | NA |
| 3.3 | - (-7.1) - | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 4.3 | (-8.1) | | | | | | | |

Comments
Strong petroleum odor


4-13-10
Station: LA 5
Length: 1.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: LA45
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): DB ~~1.2~~ 1.1

Collection Mechanism: P.C.
Latitude: 41° 40.028
Length of Push Core Assembly (B): DB ~~12.35~~ 7.25

Time on Station: 13:12
Longitude: 70° 54.995
Water Surface to Top of Handle (C): DB ~~4.25~~ 4.75

Time of Collection: 13:23
GPS Accuracy: 20 ft
Length of Core (from bottom) (D): DB ~~[illegible]~~ 1.3

Time Depart Station: 13:25
Tide Elevation (from tide board) (G): -1.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ~~-3.1~~ -2.6

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.6

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.5

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.6) | | Silt/ Clay/ Sand | Greyish Brown | Firm | Fine | - | Well mixed layer |
| 0.9 | -(-3.5)- | - | - Sandy Clay | - Olive Grey | - Firm | - Fine/ Medium | - | - |
| 1.3 | (-3.9) | | | | | | | |

Comments
- 1st attempt unsuccesful - over penetration
- 2nd attempt succesful

4-13-10
Station: LP1
Length: 2.00

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: LP1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 5.6
Collection Mechanism: P.C.
Latitude: 41°40.045
Length of Push Core Assembly (B): 13.3
Time on Station: 11:25
Longitude: 70°55.055
Water Surface to Top of Handle (C): 5.3
Time of Collection: 11:30
GPS Accuracy: 15ft
Length of Core (from bottom) (D): 2.0
Time Depart Station: 11:35
Tide Elevation (from tide board) (G): -0.6

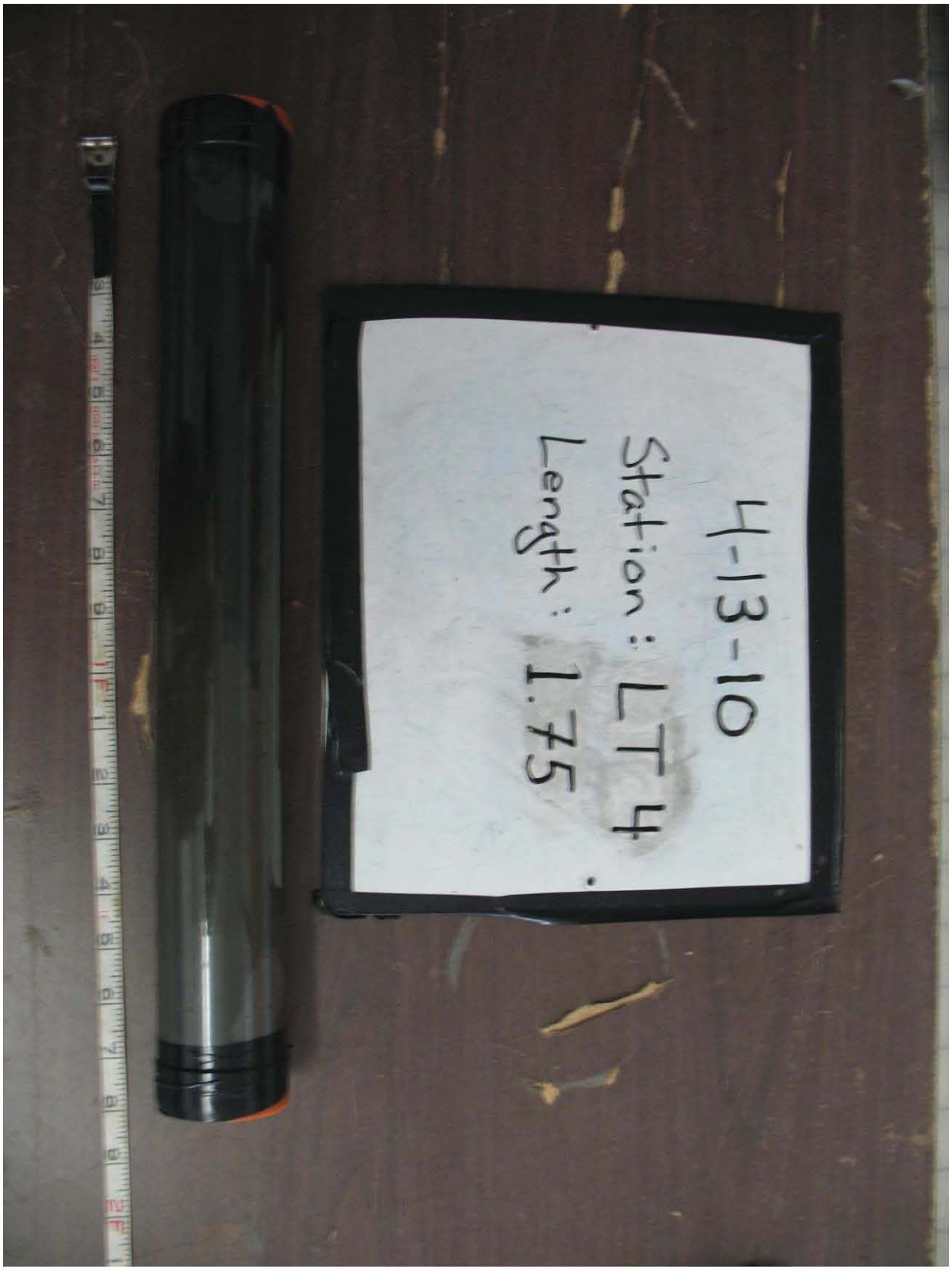
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | ~~-6.6~~ KEM -6.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.2 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.6) | ML/CL | Clayey Silt | Brown Grey | Firm | Fine | | |
| 0.35 | (-6.95) | - | - | - | | - | - | Shell Hash |
| | | | Transition | | Layer | | | |
| 1.0 | (-7.6) | — | Silty Clay | Olive Grey | Firm | Fine | — | Shell Hash |
| | | CL/ML | | | | | | |
| 2.0 | (-8.6) | | | | | | | |

Comments
1st attempt succesful


H-13-10
Station: LT4
Length: 1.75

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: LT4
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): 5.4

Collection Mechanism: P.C.
Latitude: 41° 40.032
Length of Push Core Assembly (B): 13.3

Time on Station: 11:40
Longitude: 70° 55.034
Water Surface to Top of Handle (C): 6

Time of Collection: 11:42
GPS Accuracy: 13ft
Length of Core (from bottom) (D): ~~1.85~~ 1.75 DB

Time Depart Station:
Tide Elevation (from tide board) (G): -0.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.65

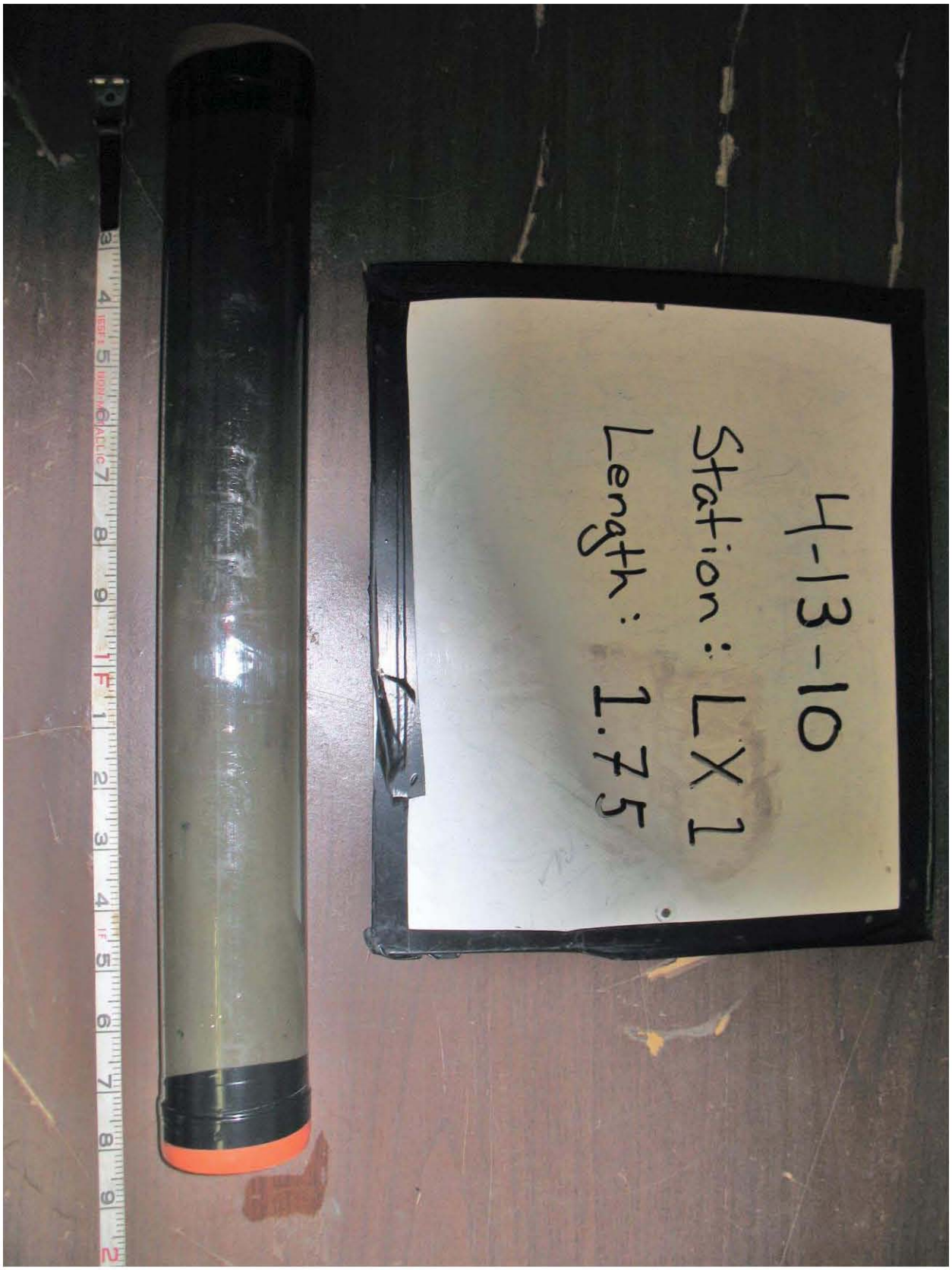
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.35

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.2

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.35) | OL | Silt | Black | Loose | Fine | | |
| 0.3 | (-6.65) | - | - | - | - | - | - | - - |
| | | ML/CL | Clayey Silt | Grey/Black | Firm | Fine | | Transition Layer |
| 0.8 | (-7.15) | — | — | — | | — | — | — |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 1.75 | (-8.1) | | | | | | | |

Comments: 1st attempt successful - strong $H_2S$ odor


4-13-10
Station: LX 1
Length: 1.75

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: LX1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 4.4
Collection Mechanism: P.C.
Latitude: 41° 40.044
Length of Push Core Assembly (B): 12.4
Time on Station: 11:50
Longitude: 70° 55.012
Water Surface to Top of Handle (C): 6.1
Time of Collection: 11:54
GPS Accuracy: 15ft
Length of Core (from bottom) (D): DB ~~1.8~~ 1.75
Time Depart Station: 11:55
Tide Elevation (from tide board) (G): -0.9

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.9

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.2

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.05

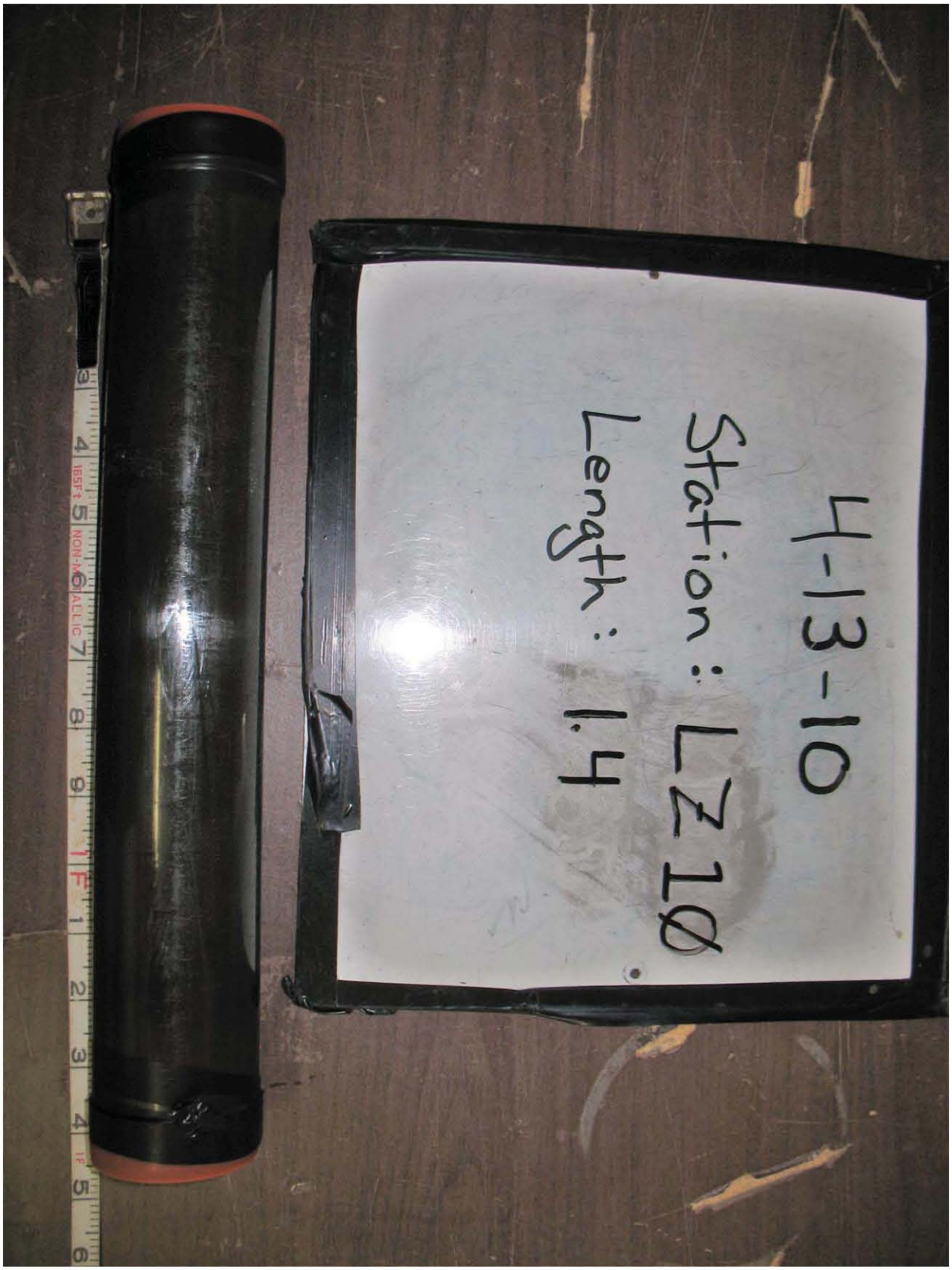
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.3

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| | (-5.45) | OL? ML | Sandy Silt | Black | Loose | Fine | | |
| 0.6 | (-6.05) | - | - | - | - | - | - | - - |
| | | CL/ML | Silty Clay w/fine Sand | Olive Grey | Firm | Fine | | |
| 1.75 | (-7.2) | | | | | | | |

Comments
- 1st attempt successful -


4-13-10
Station: LZ 10
Length: 1.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: LZ10
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 0.7
Collection Mechanism: P.C.
Latitude: 41°40.008
Length of Push Core Assembly (B): 7.3
Time on Station: 13:31
Longitude: 70°55.060
Water Surface to Top of Handle (C): 5.1
Time of Collection: 13:36
GPS Accuracy: 15 ft
Length of Core (from bottom) (D): 1.4
Time Depart Station: 13:38
Tide Elevation (from tide board) (G): -1.4

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -2.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.1 |

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.2) | ML | Sandy Silt | ~~Black~~ Dark Grey | Firm | Fine | | |
| 1.4 | (-3.6) | | | | | | | |

Comments
- 1st attempt successful

4-15-10
Station: MA8
Length: 14

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: ~~4/14/10~~ KGM 4/15/10 Station ID: MA8

All Measurements are ± 0.1 feet

Logged By: KGM

Core Sample ID:

Water Depth (A): ~~2.6~~ KGM 3.2

Collection Mechanism: P.C.

Latitude: 41° 40'. 645'

Length of Push Core Assembly (B): 12.25

Time on Station: 08:52

Longitude: 70° 55. 006'

Water Surface to Top of Handle (C): 7.4

Time of Collection: 08:55

GPS Accuracy: 14ft

Length of Core (from bottom) (D): 1.4

Time Depart Station: 08:59

Tide Elevation (from tide board) (G): 2.1

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | - 2.75 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) - (4.85) | - 1.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | - 1.35 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | - 1.1 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.35) | SM | sandy silt | black | loose | fine | | |
| 0.1 | (-1.45) | | | | | | | NA |
| | | OL | silt | black | loose | fine | | |
| 0.45 | (-1.8) | | | | | | | |
| | | CL/ML | silty clay | dark grey | firm | fine | | |
| 0.85 | (-2.2) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine | | |
| 1.4 | (-2.75) | | | | | | | |

Comments: moved location slightly east due to rocky bottom at target location

4-15-10
Station: MB 11
Length 2.15

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: MB11
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): ~~3.4~~ KGM 3.3
Collection Mechanism: P.C.
Latitude: 41°40.633'
Length of Push Core Assembly (B): ~~12.3~~ KGM 14.3
Time on Station: 09:41
Longitude: 70°55.001'
Water Surface to Top of Handle (C): ~~7.0~~ KGM 8.7
Time of Collection: 09:43
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): ~~8.7~~ KGM 2.15
Time Depart Station: 09:55
Tide Elevation (from tide board) (G): 2.0

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.05 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.45 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.3 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.45) | OL | sandy silt | black | loose | very fine sand | | NA |
| 0.8 | (-1.75) | | | | | | | |
| | | OL | silt | black | loose | fine | | |
| 1.6 | (-3.05) | | | | | | | |
| 2.15 | (-3.6) | CL/ML | silty clay | olive grey | firm | fine, with gravel, coarse sand | | |

Comments: 1st core did not show transition layer clearly - taking second core - strong $H_2S$ odor when dumped
2nd attempt successful, hit refusal, gravel

4-15-10
Station: MB 14
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: MB14
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID:
Water Depth (A): 4.9
Collection Mechanism: p.c.
Latitude: 41°40°.621'
Length of Push Core Assembly (B): 14.4
Time on Station: 09:59
Longitude: 70°55.000'
Water Surface to Top of Handle (C): 6.9
Time of Collection: 10:02
GPS Accuracy: 12 A.
Length of Core (from bottom) (D): 2.3
Time Depart Station: 10:06
Tide Elevation (from tide board) (G): 2.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -5.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.0 (entire length was marbled)

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.2

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.9

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.2) | OL | sandy silt | black | loose | fine/medium grained sand | | NA |
| 0.8 | (-4.0) | — | — | — | — | — | — | — |
| | | OL over CL/mL | silt over silty clay | black marbled with olive grey | loose and firm | fine | | |
| 2.3 | (-5.5) | | | | | | | |

Comments: strong petroleum odor, moderate sheen.
hit refusal - sandy/gravel layer

4-15-10
Station: MD4
Length: 1.6

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: ~~4/14/10~~ KGM 4/15/10
Station ID: MD4
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID: 41°40.661'
Water Depth (A): ~~4.2~~ 4.9

Collection Mechanism: P.C.
Latitude: ~~41°40.661'~~
Length of Push Core Assembly (B): ~~12.35~~ 12.4

Time on Station: 09:02
Longitude: ~~70°54.984'~~
Water Surface to Top of Handle (C): 5.5

Time of Collection: 09:14
GPS Accuracy: 15 ft.
Length of Core (from bottom) (D): 1.6

Time Depart Station: 09:20
Tide Elevation (from tide board) (G): 2.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.3

(H) Elevation of the bottom of the core (NGVD): G - (B - C) -4.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 2.3 - (6.9) NA

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.0

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.6

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.0) | SM | silty sand | brown | loose | coarse to fine sand | | NA |
| 0.3 | (-3.3) | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 0.6 | (-3.6) | w/ | fine sand | | | | | |
| | | CL/ML | silty clay with fine sand and peat | olive grey | firm | fine with some peat | | |
| 1.6 | (-4.6) | | | | | | | |

Comments: Moved location slightly west - too rocky at target location: crushed core barrel at second location: rocks and shells - moved slightly south ~ 20 ft from target 3rd attempt successful

4-15-10
Station: MD6
Length: 1.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/15/10
Station ID: MD6
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 7.9

Collection Mechanism: P.C.
Latitude: 41° 40.654'
Length of Push Core Assembly (B): ~~12.4~~ KGM 12.4

Time on Station: 09:28
Longitude: 70° 54.989'
Water Surface to Top of Handle (C): 2.95

Time of Collection: 09:32
GPS Accuracy: 17 ft.
Length of Core (from bottom) (D): 1.3

Time Depart Station: 09:36
Tide Elevation (from tide board) (G): 2.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.15

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) NA

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.85

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.6

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.85) | SM | silty sand | dark grey | loose | gravel, coarse sand | | NA |
| 0.1 | (-5.95) | CL/ML | silty clay | dark grey | firm | fine | | |
| 1.3 | (-7.15) | | | | | | | |

Comments: 1st attempt successful

4-14-10
Station: NC 24
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NC24 | All Measurements are ± 0.1 feet | |
| Logged By | DB | Core Sample ID | | Water Depth (A) | 1.45 |
| Collection Mechanism | P.C. | Latitude | 41° 40.579 | Length of Push Core Assembly (B) | 8.2 |
| Time on Station | 8:53 | Longitude | 70° 54.852 | Water Surface to Top of Handle (C) | 4.4 |
| Time of Collection | 8:55 | GPS Accuracy | 17 ft | Length of Core (from bottom) (D) | 1.95 |
| Time Depart Station | 8:57 | | | Tide Elevation (from tide board) (G) | 2.2 |

Calculations for Determination of Z* Elevation

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -1.6 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) 2.2-(3.8) | ~~-0.95~~ KGM -0.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | 0.35 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | 0.75 |

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (0.35) | PT | leafy peat w/organic detritus | brown/red | loose | peat | | NA |
| 0.3 | -(0.05) | | | | | | | |
| | -0.65 | OL | silt to clayey silt | black | loose to firm | fine | | |
| 1.0 | (KGM ~~-0.95~~) | | | | | | | |
| | | PT | peat with streaks of silty clay | brown/red | loose | peat | | |
| 1.95 | (-1.6) | | | | | | | |

Comments
- Strong Petroleum odor, oily sheen on exterior of core barrel
- 1st attempt successful

4-14-10
Station: NC 26
Length: 1.7

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NC26 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 2.8 ft. |
| Collection Mechanism | PC | Latitude | 41° 40. 571' | Length of Push Core Assembly (B) | 8.2 |
| Time on Station | 09:07 | Longitude | 70° 54.853' | Water Surface to Top of Handle (C) | 3.3 |
| Time of Collection | 09:13 | GPS Accuracy | 14 ft. | Length of Core (from bottom) (D) | 1.7 |
| Time Depart Station | 09:16 | | | Tide Elevation (from tide board) (G) | 2.0 |

Calculations for Determination of Z* Elevation

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -2.9 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) (4.9) | ~~-1.9~~ -2.1 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -0.8 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.2) | OL | Silt | black | loose | fine | | NA |
| 0.7 | (-1.9) | | | | | | | |
| | transition layer | ~~CE~~ CL/~~ML~~ | clayey ~~silty~~ ~~clay~~ | v. dark grey | firm | fine | | |
| 0.9 | (-2.1) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine | | |
| 1.7 | (-2.9) | | | | | | | |

Comments
petroleum odor
1st attempt successful

4-14-10
Station: NC 36
Length: 1.8
NC36

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NC036 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 3.5 |
| Collection Mechanism | P.C. | Latitude | 41° 40.530' | Length of Push Core Assembly (B) | 13.3 |
| Time on Station | 09:19 | Longitude | 70° 54.854' | Water Surface to Top of Handle (C) | 7.75 |
| Time of Collection | 09:25 | GPS Accuracy | 13 ft. | Length of Core (from bottom) (D) | 1.8 |
| Time Depart Station | 09:28 | | | Tide Elevation (from tide board) (G) | 1.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | KGM ~~0~~ 1.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.9-(5.55) | -2.35 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.6 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.85) | OL | silty organic detritis | brown/ black | loose | | | NA |
| 0.2 | (-2.05) | | | | | | | |
| | | OL | silt | black | loose | fine | | |
| 0.5 | (-2.35) | | | | | | | |
| | transition layer | ML/CL | clayey silt | v. dark grey | firm | fine | | |
| 0.7 | (-2.55) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine with shell hash | | |
| 1.8 | (-3.65) | | | | | | | |

Comments

4-14-10
Station: NC 42
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NC42 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 3.3 |
| Collection Mechanism | p.c. | Latitude | 41° 40.505' | Length of Push Core Assembly (B) | 13.3 |
| Time on Station | 09:30 | Longitude | 70° 54.853' | Water Surface to Top of Handle (C) | 7.5 |
| Time of Collection | 09:37 | GPS Accuracy | 13 ft. | Length of Core (from bottom) (D) | 1.95 |
| Time Depart Station | 09:42 | | | Tide Elevation (from tide board) (G) | 1.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.9 - (5.8) | -2.75 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.95 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.4 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.95) | OL | silt | v. dark grey | loose | fine | | NA |
| 0.5 | (-2.25) | | | | | | | |
| | | OL | silt | black | loose | fine | | |
| 0.8 | (-2.75) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine | | |
| 1.95 | (-3.9) | | | | | | | |

Comments

4-14-10
Station: NC46
Length: 2.05

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/14/10
Station ID: NC34-6
All Measurements are ± 0.1 feet
Logged By: KCM
Core Sample ID:
Water Depth (A): 3.2
Collection Mechanism: P.C.
Latitude: 41°40.488'
Length of Push Core Assembly (B): 13.3
Time on Station: 09:44
Longitude: 70°54.853'
Water Surface to Top of Handle (C): 7.7
Time of Collection: 09:47
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): 2.05
Time Depart Station: 09:51
Tide Elevation (from tide board) (G): 1.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.8

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.8-(5.6) -3.05

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.75

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.4

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.75) | OL | silty organic detritus | brown/black | loose | fine | | NA |
| (0.2) | (-1.95) | | | | | | | |
| | | OL | silt | black | loose | fine | | |
| 1.3 | (-3.05) | | | | | | | |
| | | CL/ML | silty clay | olive grey | firm | fine | | |
| 2.05 | (-3.8) | | | | | | | |

Comments

4-14-10
Station: NT 41
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NI-41 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 2.1 |
| Collection Mechanism | P.C. | Latitude | 41° 40. 540' | Length of Push Core Assembly (B) | 13.3 |
| Time on Station | 10:41 | Longitude | 70° 54.820' | Water Surface to Top of Handle (C) | 9.1 |
| Time of Collection | 10:44 | GPS Accuracy | 10 ft. | Length of Core (from bottom) (D) | 1.95 |
| Time Depart Station | 10:48 | | | Tide Elevation (from tide board) (G) | 0.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 0.9 - (4.2) | -2.15 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.35 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.2 |

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.35) | OL | silty organic debris | brown black | loose | | | |
| 0.1 | (-1.45) | OL ? ML | clayey silt w/ fine sand | v. dark grey | medium | fine | | NA |
| 0.8 | (-2.15) | CL | clay | grey | firm | fine | | |
| 1.5 | (-2.85) | | | | | | | |
| 1.7 | (-3.05) | Shell layer with silty clay | | | | | | |
| 1.95 | (-3.3) | CL | clay | olive grey | firm | fine | | |

Comments

4-14-10
Station: NI 43
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/14/10
Station ID: NII43
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID:
Water Depth (A): 2.6

Collection Mechanism: p.c.
Latitude: 41° 40.500'
Length of Push Core Assembly (B): 12.55

Time on Station: 09:53
Longitude: 70° 54.820'
Water Surface to Top of Handle (C): 7.9

Time of Collection: 09:57
GPS Accuracy: 15 ft.
Length of Core (from bottom) (D): 1.95

Time Depart Station: 10:01
Tide Elevation (from tide board) (G): 1.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.7-(4.65) -2.95

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -2.1

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.0

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -0.9

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.0) | OL | Silt | black | loose | fine | | NA |
| 1.1 | - - (-2.1) - | - - - CL/ML | - Silty Clay | - v. dark olive gray | - firm | - fine | - - | - |
| 1.95 | (-2.95) | | | | | | | |

Comments

4-14-10
Station: NK41
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date 4/14/10
Station ID NK41 + REP
All Measurements are ± 0.1 feet
Logged By KCM
Core Sample ID 3
Water Depth (A) 2.4 // 2.0
Collection Mechanism p.c.
Latitude ~~40~~ KM 41°40.509' // 41°40.508'
Length of Push Core Assembly (B) 12.6 // 13.2
Time on Station 10:16
Longitude 70°54.809' // 70°54.809'
Water Surface to Top of Handle (C) 8.65 // 8.6
Time of Collection 10:23 // 10:35
Accuracy 16 ft. // 17 ft.
Length of Core (from bottom) (D) 1.5 // 2.3
Time Depart Station 10:39
Tide Elevation (from tide board) (G) 1.4 // ~~1.2~~ 1.1 KCM

Calculations for Determination of Z* Elevation

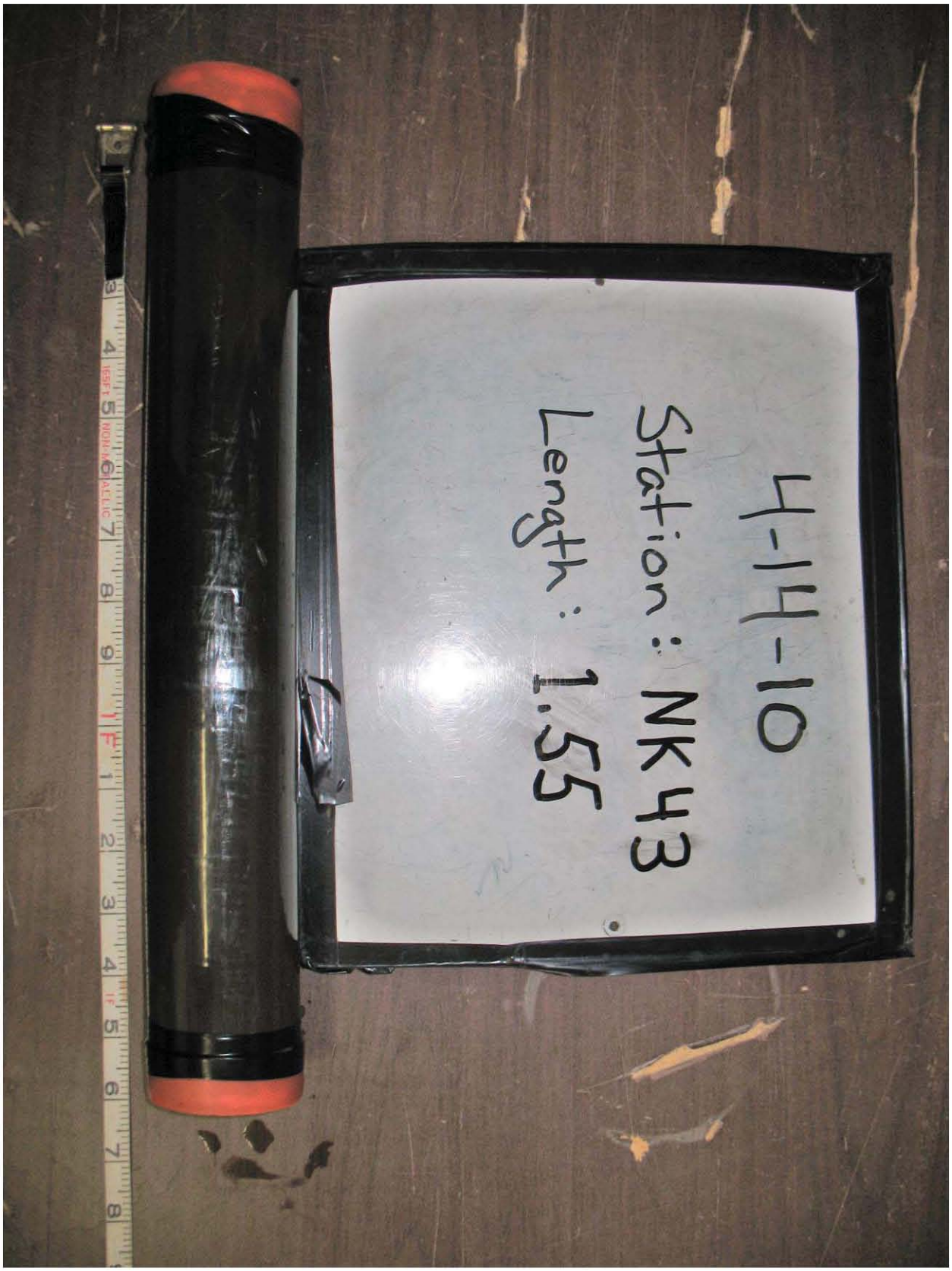
(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.1 - (4.6) — 1.4 // ~~1.2~~ 1.1 KCM
(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.4 - (3.95) — -2.55 // -3.5
(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) — -2.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D — -1.05 // -1.2
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A — -1.0 // -0.9

(Note if I ≠ $I_2$ within ± 1.0 feet, discard and resample)

DESCRIBED LONGER (SECOND) CORE

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.2) | OL | silty organic detrits | brownish black | very loose | fine | | N/A |
| 0.1 | (-1.3) | | | | | | | |
| | | OL | silt | black | loose | fine | | |
| 1.3 | (-2.5) | | | | | | | |
| | | CL/ML | silty clay | dark olive grey gradually gets lighter in color | firm | fine w/ shell hash | | |
| 2.3 | (-3.5) | | | | | | | |

Comments
1st core acceptable but transition layer isn't completely clear - taking replicate sample, sheen on exterior of core barrel
1st core = NK41 REP 2nd core = NK41


4-14-10
Station: NK43
Length: 1.55

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | N1443 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 2.2 |
| Collection Mechanism | p.c. | Lattude | 41°40.500' | Length of Push Core Assembly (B) | 12.3 |
| Time on Station | 10:02 | Longitude | 70°54.809' | Water Surface to Top of Handle (C) | 8.4 |
| Time of Collection | 10:07 | GPS Accuracy | 12 ft. | Length of Core (from bottom) (D) | 1.55 |
| Time Depart Station | 10:10 | | | Tide Elevation (from tide board) (G) | 1.6 |

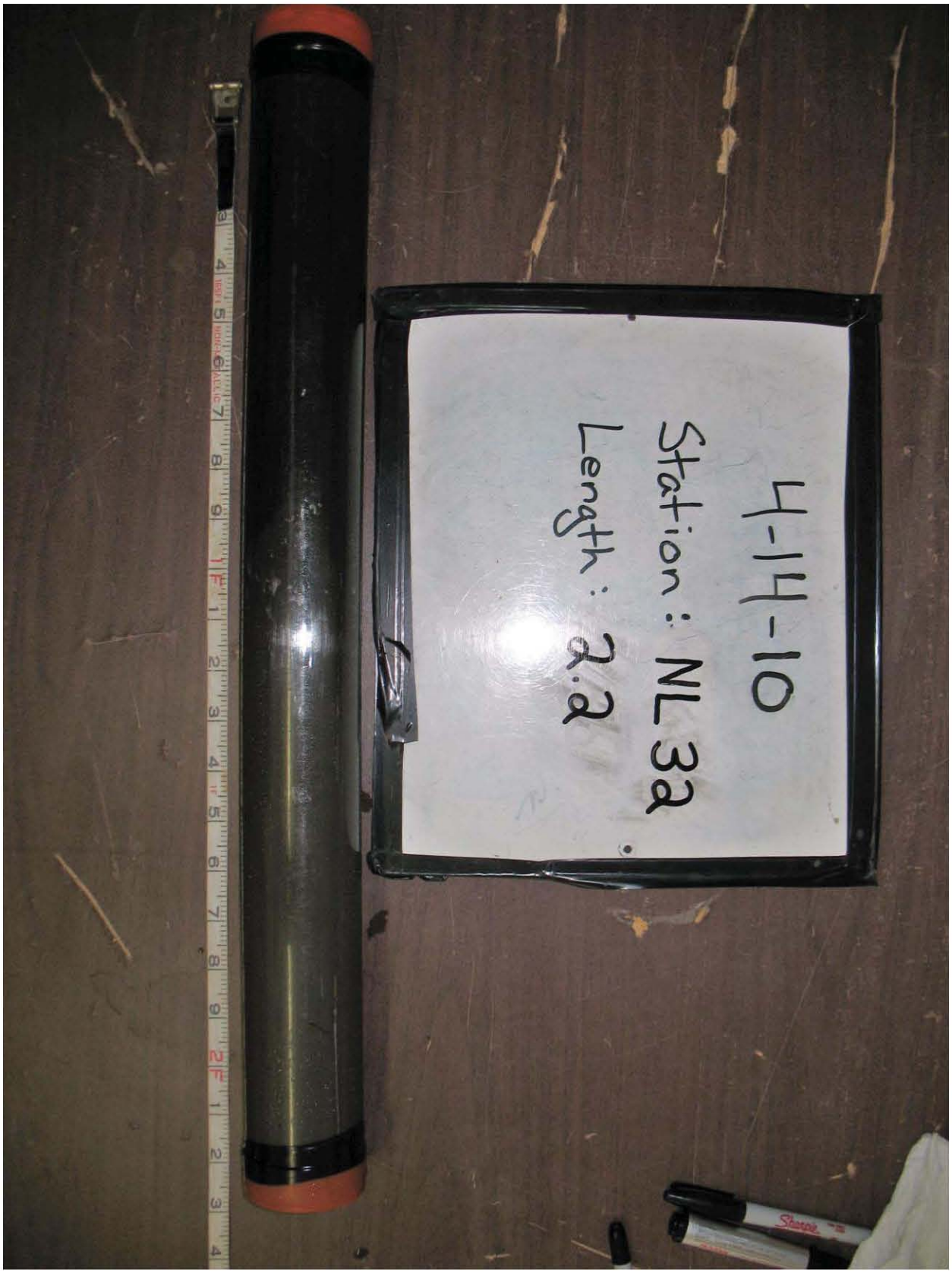
Calculations for Determination of Z* Elevation

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -2.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) 1.6-(3.9) | -1.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -0.75 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -0.6 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-0.75) | OL | silt w/ minimal fine sand | black | loose | fine | | NA |
| 0.9 | (-1.65) | CL/ML | silty clay | dark olive grey | firm | fine | | |
| 1.55 | (-2.3) | | | (-2.2) olive grey | | | | |

Comments


4-14-10
Station: NL 32
Length: 2.2

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date | 4/14/10 | Station ID | NU32 | All Measurements are ± 0.1 feet | |
| Logged By | KGM | Core Sample ID | | Water Depth (A) | 1.4 |
| Collection Mechanism | P.C. | Latitude | 41°40.546' | Length of Push Core Assembly (B) | 13.3 |
| Time on Station | 10:50 | Longitude | 70°54.8041 | Water Surface to Top of Handle (C) | 9.5 |
| Time of Collection | 10:52 | GPS Accuracy | 10 ft. | Length of Core (from bottom) (D) | 2.2 |
| Time Depart Station | 10:53 | | | Tide Elevation (from tide board) (G) | 0.7 |

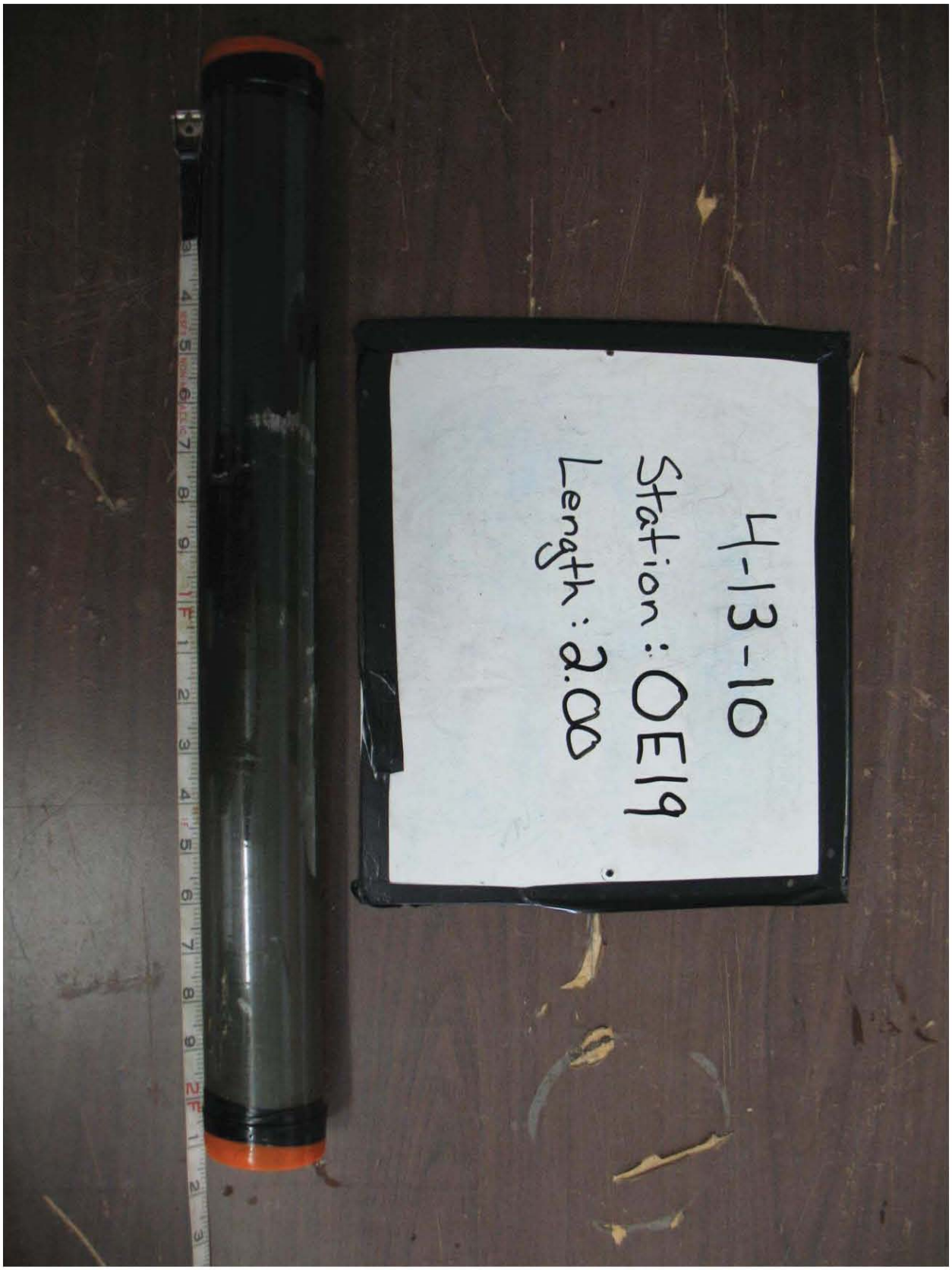
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.7 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -1.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD). H + D | -0.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -0.7 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = 10) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-0.9) | OL | Silt | black | loose | fine | | NA |
| 0.9 | (-1.8) | | | | | | | |
| | streaking | | | | | | | |
| 1.3 | (-2.2) | CL/ML | silty clay | olive grey | firm | fine | | |
| 2.2 | (-3.1) | | | | | | | |

Comments


4-13-10
Station: OE19
Length: 2.00

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/13/10
Station ID: OE19
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): 3.8

Collection Mechanism: P.C.
Latitude: 41° 40.345
Length of Push Core Assembly (B): 13.3

Time on Station: 08:39
Longitude: 70° 54.894
Water Surface to Top of Handle (C): 7.2

Time of Collection: 08:51
GPS Accuracy: 22ft
Length of Core (from bottom) (D): 2.0

Time Depart Station: 08:54
Tide Elevation (from tide board) (G): 2.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.1

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.8

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.1) | | | | | | | |
| | | OL | Silt w/organics at the surface | Black/ Dark Grey | Loose | Fine | | |
| 1.0 | (-3.1) | | | | | | | |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | -Shell Hash at bottom |
| 2.0 | (-4.1) | | | | | | | |

Comments: 1st attempt - successful

4-13-10
Station: OJ8
Length: 2.00

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4-13-10 | Station ID: | OS 8 | All Measurements are ± 0.1 feet | |
| Logged By | DB | Core Sample ID: | | Water Depth (A): | 2.3 |
| Collection Mechanism: | P.C | Latitude: | 41°40.390 | Length of Push Core Assembly (B): | 13.3 |
| Time on Station: | 10:18 | Longitude: | 70°54.865 | Water Surface to Top of Handle (C): | 8.6 |
| Time of Collection: | 10:19 | GPS Accuracy: | 11 ft | Length of Core (from bottom) (D): | 2.0 |
| Time Depart Station: | 10:25 | | | Tide Elevation (from tide board) (G): | 0.6 |

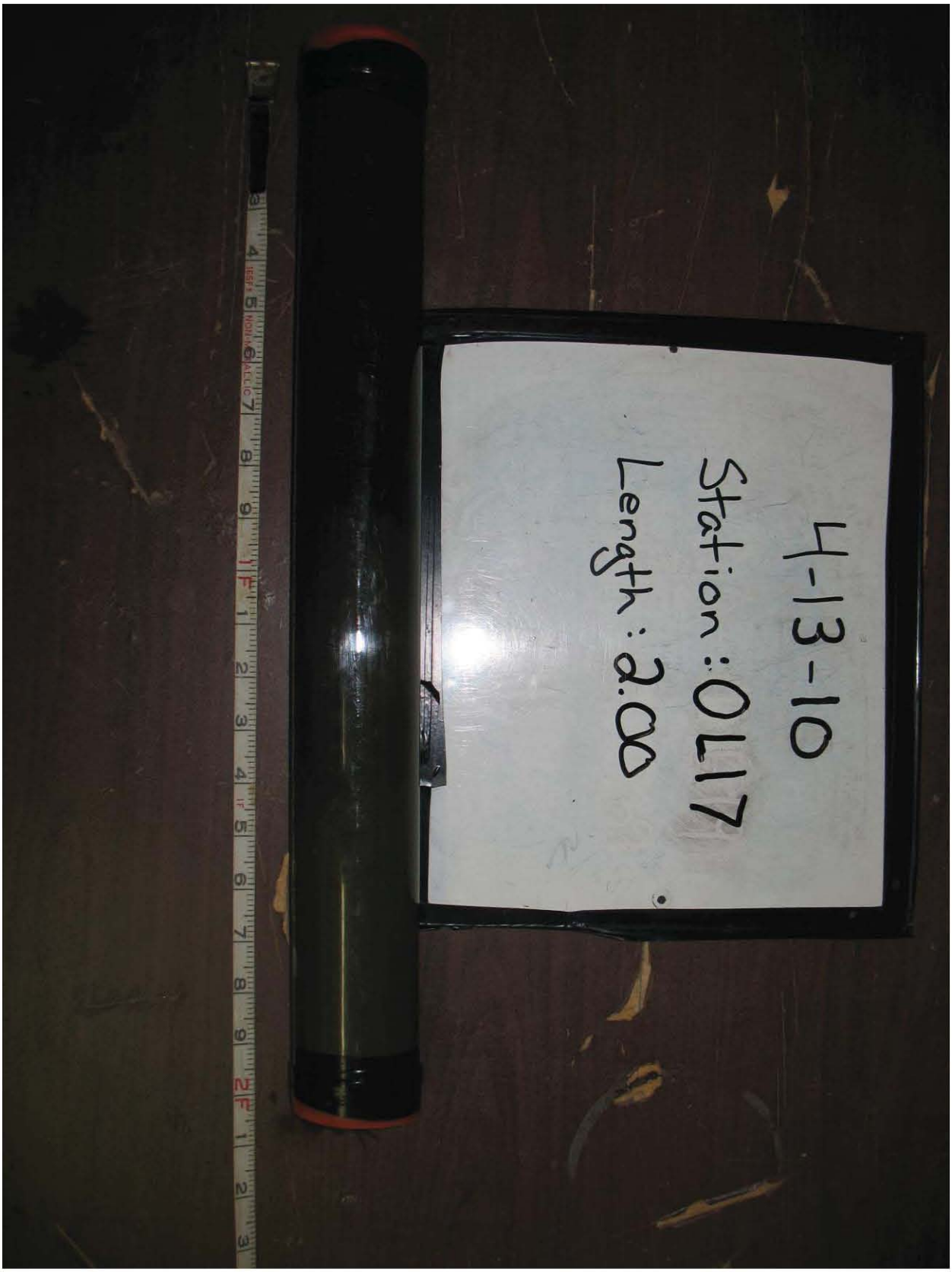
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | Ø.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.Ø |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.7 |

**(Note if I ≠ $I_2$ within ± 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.1) | OL | Silt | Black | Loose | Fine | | |
| 0.9 | (-3.0) | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | Stretching from 0.9-1.1 |
| 2.0 | (-4.1) | | | | | | | |

Comments
1st attempt successful : Heavy sheen on core barrel


4-13-10
Station: 0117
Length: 2.00

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: OL17
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 2.5
Collection Mechanism: P.C.
Latitude: 41° 40.353
Length of Push Core Assembly (B): 13.3
Time on Station: 09:51
Longitude: 70° 54.855
Water Surface to Top of Handle (C): 8.5
Time of Collection: 09:58
GPS Accuracy: 13ft
Length of Core (from bottom) (D): 2.0
Time Depart Station: 09:59
Tide Elevation (from tide board) (G): 1.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -2.05

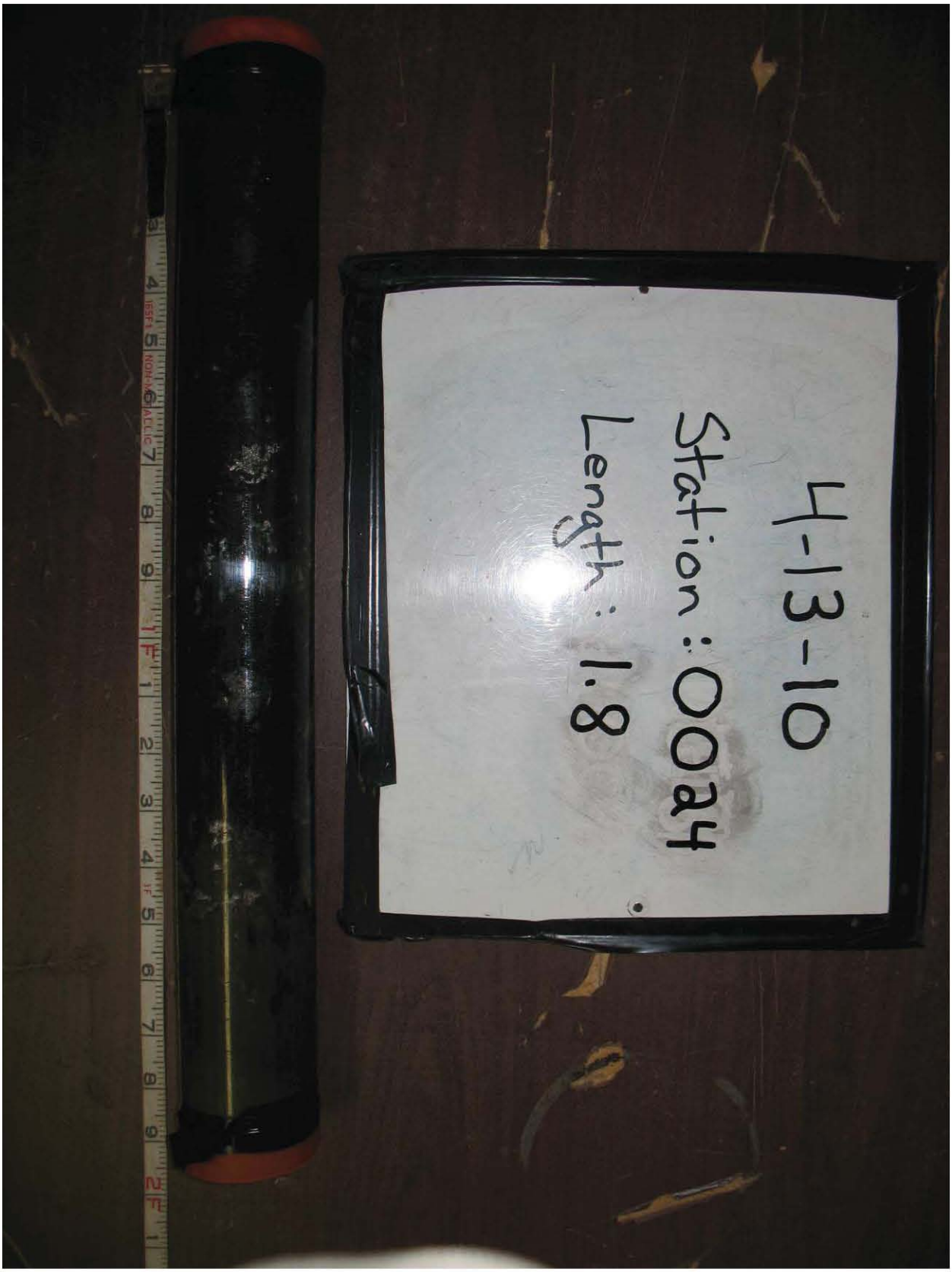
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.6

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.3

(Note if I ≠ $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.6) | | | Dark Grey to Black | | | | |
| 0.45 | (-2.05) | OL | Silt | | Loose | Fine | Slight | Transition layer, better on bottom layer |
| 0.9 | (-2.5) | | | | | | | |
| | | ML/CL | Clayey Silt | Brownish Grey | Firm | Fine | | |
| 1.35 | (-2.95) | | | | | | | |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 2.0 | (-3.6) | | | | | | | |

Comments: 1st attempt successful


4-13-10
Station: 0024
Length: 1.8

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4/13/10
Station ID: 0024
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 2.1
Collection Mechanism: P.C.
Latitude: 41° 40. 324
Length of Push Core Assembly (B): DB ~~12.5~~ 12.45
Time on Station: 09:03
Longitude: 70°54. 838
Water Surface to Top of Handle (C): DB ~~8.0~~ 8.35
Time of Collection: 09:10
GPS Accuracy: 21 ft
Length of Core (from bottom) (D): 1.8
Time Depart Station: 09:12
Tide Elevation (from tide board) (G): 1.8

**Calculations for Determination of Z* Elevation**

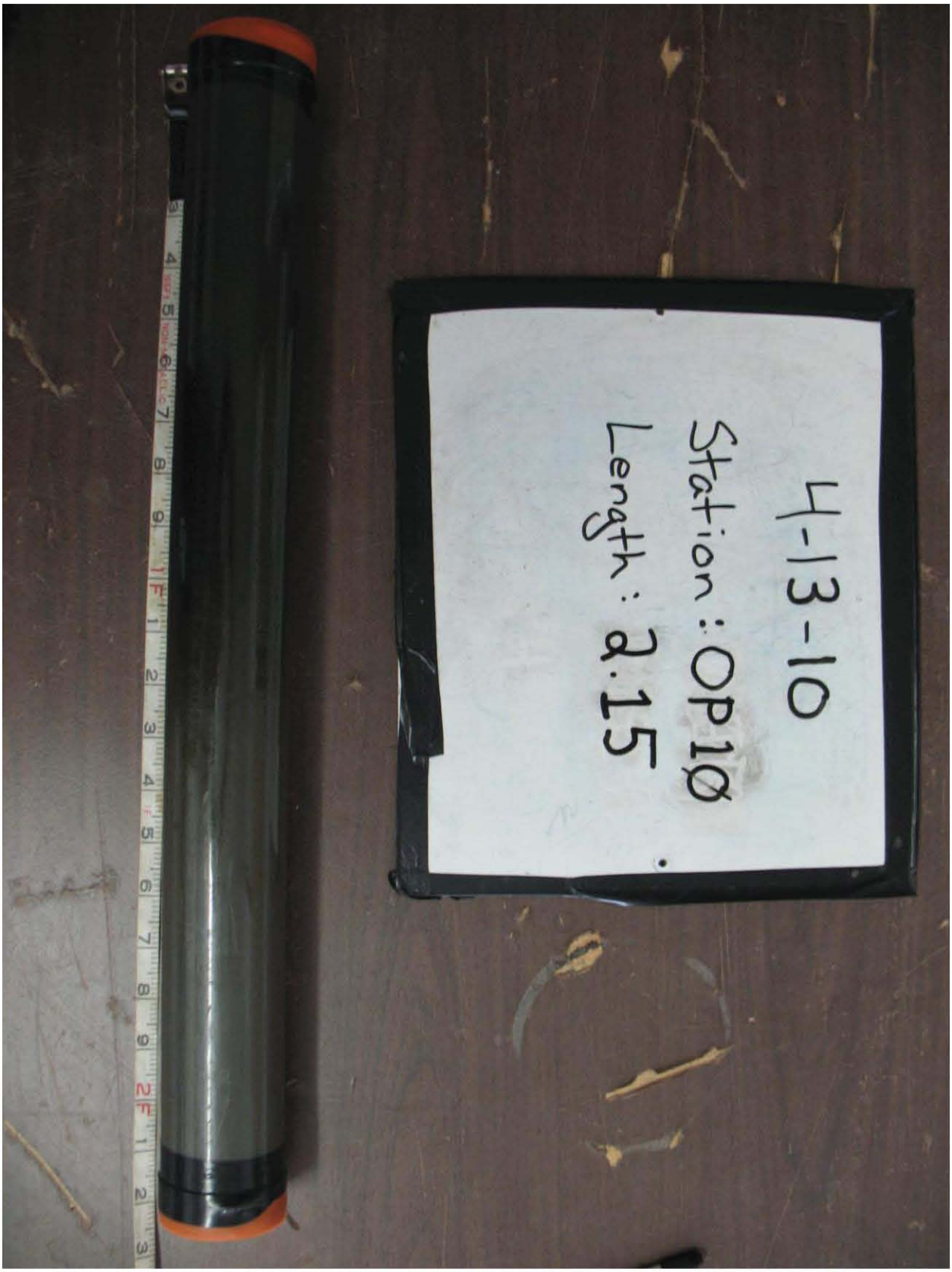
| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ~~1.8~~ KGM 1.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | −2.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | −1.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | −0.5 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | −0.3 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-0.5) | OL | Silt | Black | Loose | Fine | | |
| 0.45 | (-0.95) | Transition Layer | Silt Sand Clay | Black/ Grey | Firm | Fine | | -High amount of organic detritus |
| 1.3 | (-1.8) | CL | Clay with fine sand | Olive Grey | Firm | Fine | | |
| 1.8 | (-2.3) | | | | | | | |

Comments
1st attempt unsuccessful - hit rock left down, heavy sheen when dumping sediment
2nd attempt unsuccessful - bent barrel

3rd attempt successful


4-13-10
Station: OP10
Length: 2.15

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: OP10
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 1.9
Collection Mechanism: P.C.
Latitude: 41°40.381
Length of Push Core Assembly (B): 13.3
Time on Station: 10:06
Longitude: 70°54.833
Water Surface to Top of Handle (C): 8.9
Time of Collection: 10:12
GPS Accuracy: 19ft
Length of Core (from bottom) (D): 2.15
Time Depart Station: 10:16
Tide Elevation (from tide board) (G): 0.8

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -2.55

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.1

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.45) | OL | Silt with small amount of fine sand | Black | Loose | Fine | | -Heavy sheen |
| 1.1 | (-2.55) | - | - | - | - | - | - | - |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 2.15 | (-3.6) | | | | | | | |

Comments: 1st attempt successful - Heavy sheen on core barrel

4-13-10
Station: OP18
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 4/13/10 | Station ID: | OP18 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | | Water Depth (A): | 2.3 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.348 | Length of Push Core Assembly (B): | 13.3 |
| Time on Station: | 09:39 | Longitude: | 70° 54.833 | Water Surface to Top of Handle (C): | 8.3 |
| Time of Collection: | 09:42 | GPS Accuracy: | 15ft | Length of Core (from bottom) (D): | 2.3 |
| Time Depart Station: | 09:46 | | | Tide Elevation (from tide board) (G): | 1.4 |

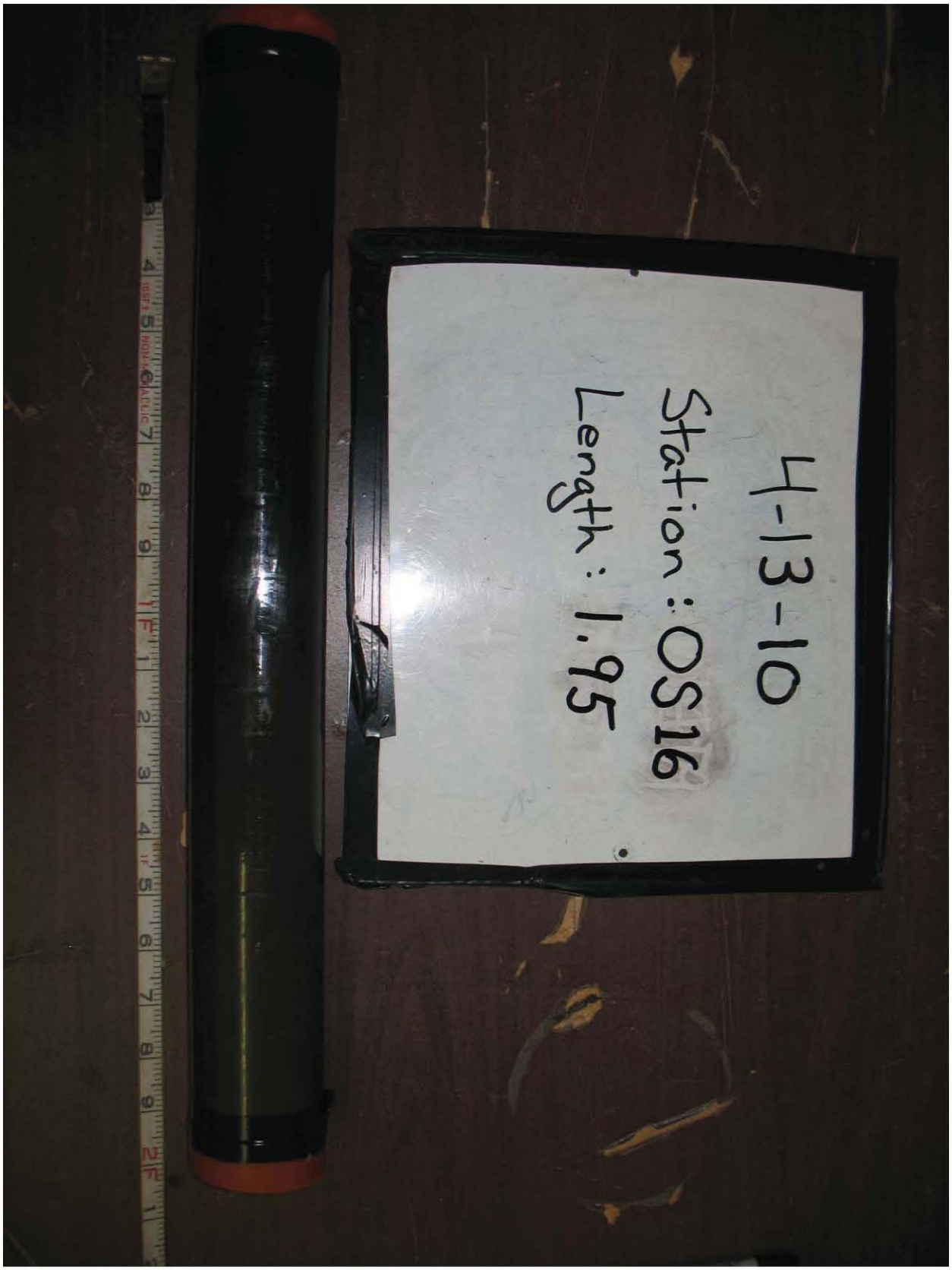
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -3.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -2.4 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.3 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -0.9 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.3) | | Organic Detritus | Grey | Loose | | | |
| 0.0 | -(-1.4)- | - - | - | - | - | - | - | - - |
| | | OL | Silt | Black | Loose | Fine | | |
| 1.1 | -(-2.4)- | - | - | - | | - | - | - - |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 2.3 | (-3.6) | | | | | | | |

Comments: 1st attempt successful


4-13-10
Station: OS16
Length: 1.95

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: 0516
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 2.1
Collection Mechanism: P.C.
Latitude: 41° 40.357
Length of Push Core Assembly (B): 13.3
Time on Station: 09:22
Longitude: 70° 54.816
Water Surface to Top of Handle (C): 8.8
Time of Collection: 09:28
GPS Accuracy: 16 ft
Length of Core (from bottom) (D): 1.95
Time Depart Station: 09:30
Tide Elevation (from tide board) (G): 1.6

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.6

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -2.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -1.95

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -0.95

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -0.5

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-0.95) | OL | Silt | Black | Loose | Fine | | Slight layer of organic detritus at the top |
| 1.0 | - - - (-1.95) - | - - | - - | - | - . | - | - - | - - - |
| | | CL/ML | Silty Clay | Olive Gray | Firm | Fine | | |
| 1.95 | (-2.9) | | | | | | | |

Comments
1st attempt successful

4-13-10
Station: PP15
Length: 4.2

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: PP15
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID:
Water Depth (A): 6.6

Collection Mechanism: P.C
Latitude: 41°39.906
Length of Push Core Assembly (B): DB ~~13.3~~ 15.3

Time on Station: 12:06
Longitude: 70° 55.034
Water Surface to Top of Handle (C): DB ~~3.9~~ 4.2

Time of Collection: 12:20
GPS Accuracy: 21 ft
Length of Core (from bottom) (D): 4.2

Time Depart Station: 12:25
Tide Elevation (from tide board) (G): -1.2

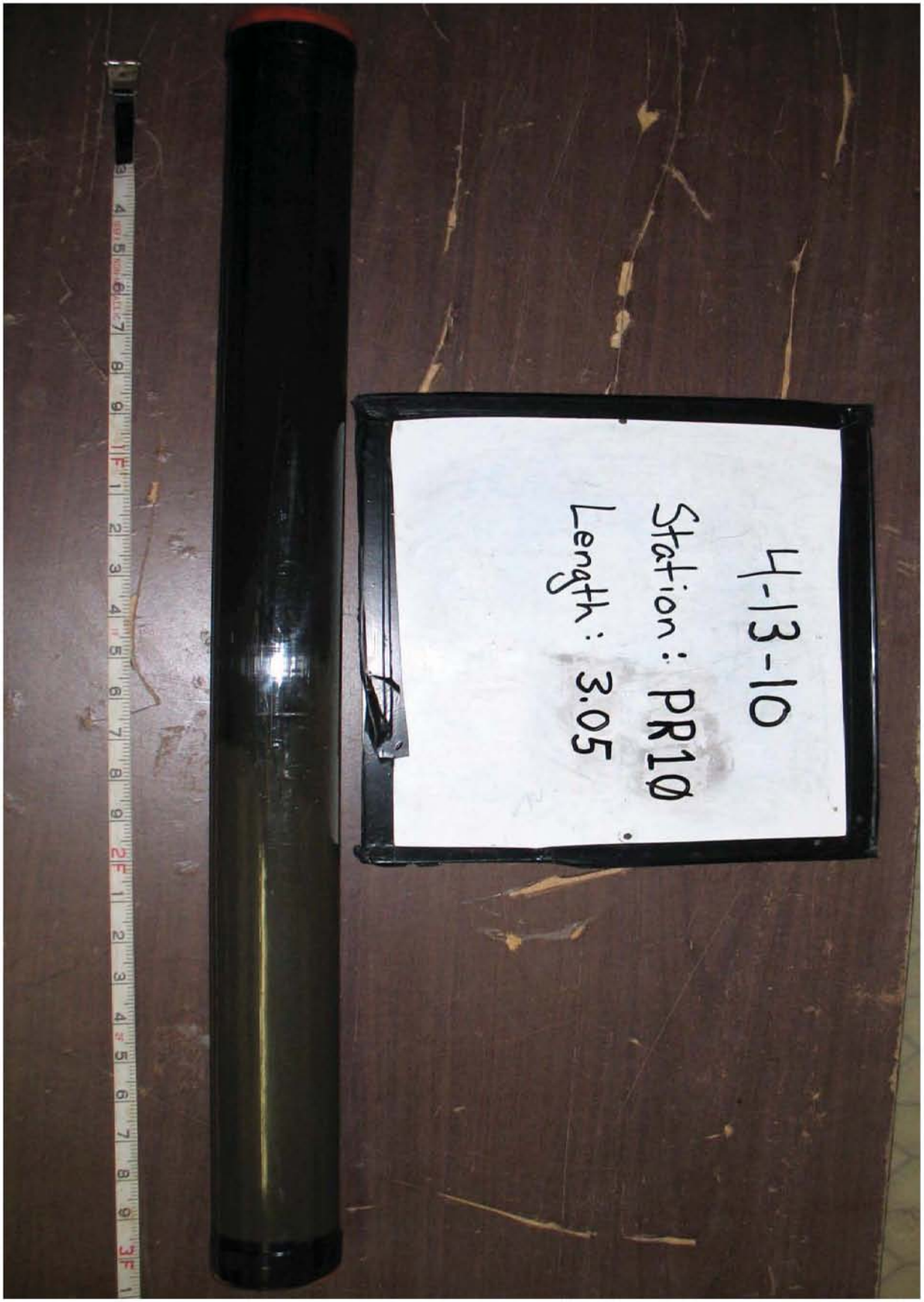
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -12.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -11.15 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -8.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -7.8 |

**(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-8.1) | OL | Silt | Black | Loose to Moderate | Fine | | |
| 3.05 | - -(-11.15)- | - CL/ML | - Silty Clay | - - Brownish Grey | - Firm | - Fine | - | - — - -Shell Hash |
| 4.2 | (-12.3) | | | | | | | |

Comments
1st attempt unsuccesful - did not reach visual transition layer, need to use bigger barrel
2nd attempt succesful


4-13-10
Station: PR10
Length: 3.05

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | |
|---|---|---|
| Date: 4-13-10 | Station ID: PR10 | All Measurements are ± 0.1 feet |
| Logged By: DB | Core Sample ID: | Water Depth (A): 4.4 |
| Collection Mechanism: P.C. | Latitude: 41°39.925 | Length of Push Core Assembly (B): 15.3 |
| Time on Station: 12:28 | Longitude: 70°55.023 | Water Surface to Top of Handle (C): 7.9 |
| Time of Collection: 12:30 | GPS Accuracy: 15ft | Length of Core (from bottom) (D): 3.05 |
| Time Depart Station: 12:35 | | Tide Elevation (from tide board) (G): -1.3 |

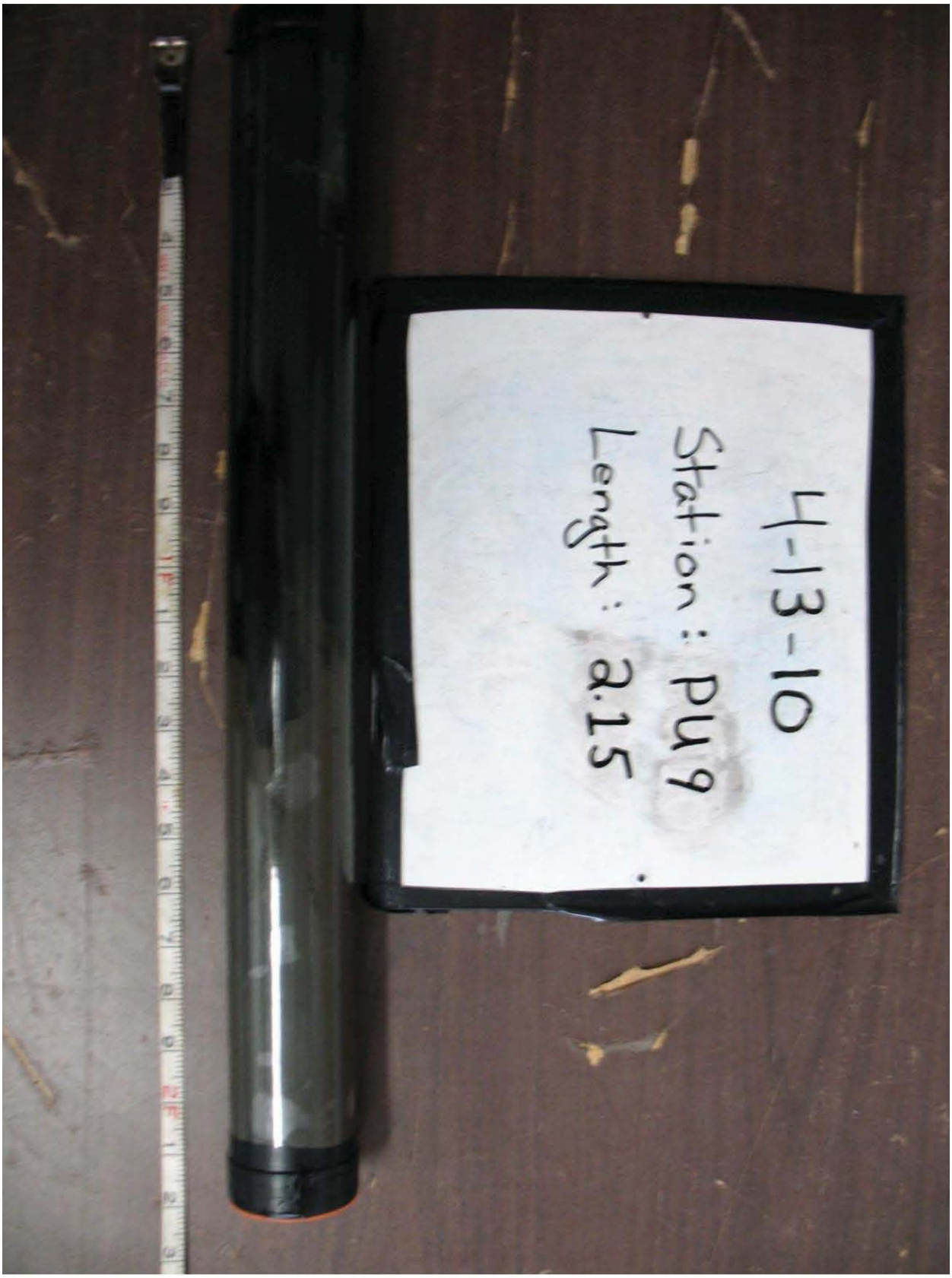
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.05 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.65 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.7 |

(Note if $I \neq I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.65) | | | | | | | |
| | | OL | Silt | Black | Loose to Firm | Fine | | |
| 1.4 | (-7.05) | - | - | - | - | - | — | — Streaking down to 1.7 |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 3.05 | (-8.7) | | | | | | | |

Comments
- 1st attempt successful


4-13-10
Station: PU9
Length: 2.15

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: PU9
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 3.0
Collection Mechanism: P.C.
Latitude: 41°39.929
Length of Push Core Assembly (B): 13.3
Time on Station: 12:41
Longitude: 70° 55.007
Water Surface to Top of Handle (C): DB ~~8.6~~ 7.7
Time of Collection: 12:43
GPS Accuracy: 17ft
Length of Core (from bottom) (D): 2.15
Time Depart Station: 12:53
Tide Elevation (from tide board) (G): -1.3

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.85 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.75 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.3 |

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.75) | OL | Silt | Black | Loose | Fine | | -Shell hash |
| 1.1 | -(-5.85) | - | - | - | - | - | - | - |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | Streaking down to 1.35 |
| 2.15 | (-6.9) | | | | | | | |

Comments
- 1st attempt unsuccesful - too much water between plunger and sediment
- 2nd attempt succesful

4-13-10
Station: PU 19
Length: 2.3

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 4-13-10
Station ID: PU19
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 4.6
Collection Mechanism: P.C.
Latitude: 41°39.888
Length of Push Core Assembly (B): 13.3
Time on Station: 12:59
Longitude: 70° 55.008
Water Surface to Top of Handle (C): 6.2
Time of Collection: 13:01
GPS Accuracy: 22ft
Length of Core (from bottom) (D): 2.3
Time Depart Station: 13:05
Tide Elevation (from tide board) (G): -1.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) ~~-7.9~~ KGM -8.3

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.6

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D ~~-5.6~~ KGM -6.0

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A ~~-8.~~ KGM -5.8

(Note if $I \neq I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | ~~(-5.6)~~ KGM -6.0 | OL | Silt | Black | Loose | Fine | | |
| 1.6 | - - ~~(-7.2)~~ -7.6 KGM - | - | - - | - | - | - | - | - Streaking down to 1.9 |
| | | CL/ML | Silty Clay | Olive Grey | Firm | Fine | | |
| 2.3 | ~~(-7.9)~~ -8.3 KGM | | | | | | | |

Comments
-1st attempt succesful

9/15/10
JB3
0' - 1.35'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JB3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦΦ3
Water Depth (A): 7.4
Collection Mechanism: PC
Latitude: 41°40.510
Length of Push Core Assembly (B): 12.3
Time on Station: 09:37
Longitude: 70°54.952
Water Surface to Top of Handle (C): 3.3
Time of Collection: 09:44
GPS Accuracy: 15 ft
Length of Core (from bottom) (D): 1.35
Time Depart Station: —
Tide Elevation (from tide board) (G): 0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C) -9.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.15

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.65

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.4

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.65 | OL/ML/CL (mottled) | silt marbled with silty clay some fine sand | 5Y 3/1 and 5Y 2.5/1 | loose | fine | $H_2S$ | S-1ΦS-CΦΦ3-Φ-Φ.5 | + MS/MSD sample S-1ΦS-CΦΦ3-Φ-Φ.5 MSMSD |
| 0.5 | -8.15 | KGM ~~ML/CL~~ CL/ML | silty clay | 5Y 3/1 | firm | fine | none | | |
| 1.35 | -9.0 | | | | | | | | |

Comments

9/15/10
JB13
0'-1.25'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JB13
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ØS-CØ12
Water Depth (A): 9.9
Collection Mechanism: pc
Latitude: 41°40.468
Length of Push Core Assembly (B): 17.25
Time on Station: — 14:01
Longitude: 70°54.953
Water Surface to Top of Handle (C): 5.95
Time of Collection: — 14:06
GPS Accuracy: ±13
Length of Core (from bottom) (D): 1.25
Time Depart Station: —
Tide Elevation (from tide board) (G): 2.6

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.6

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.7

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) —

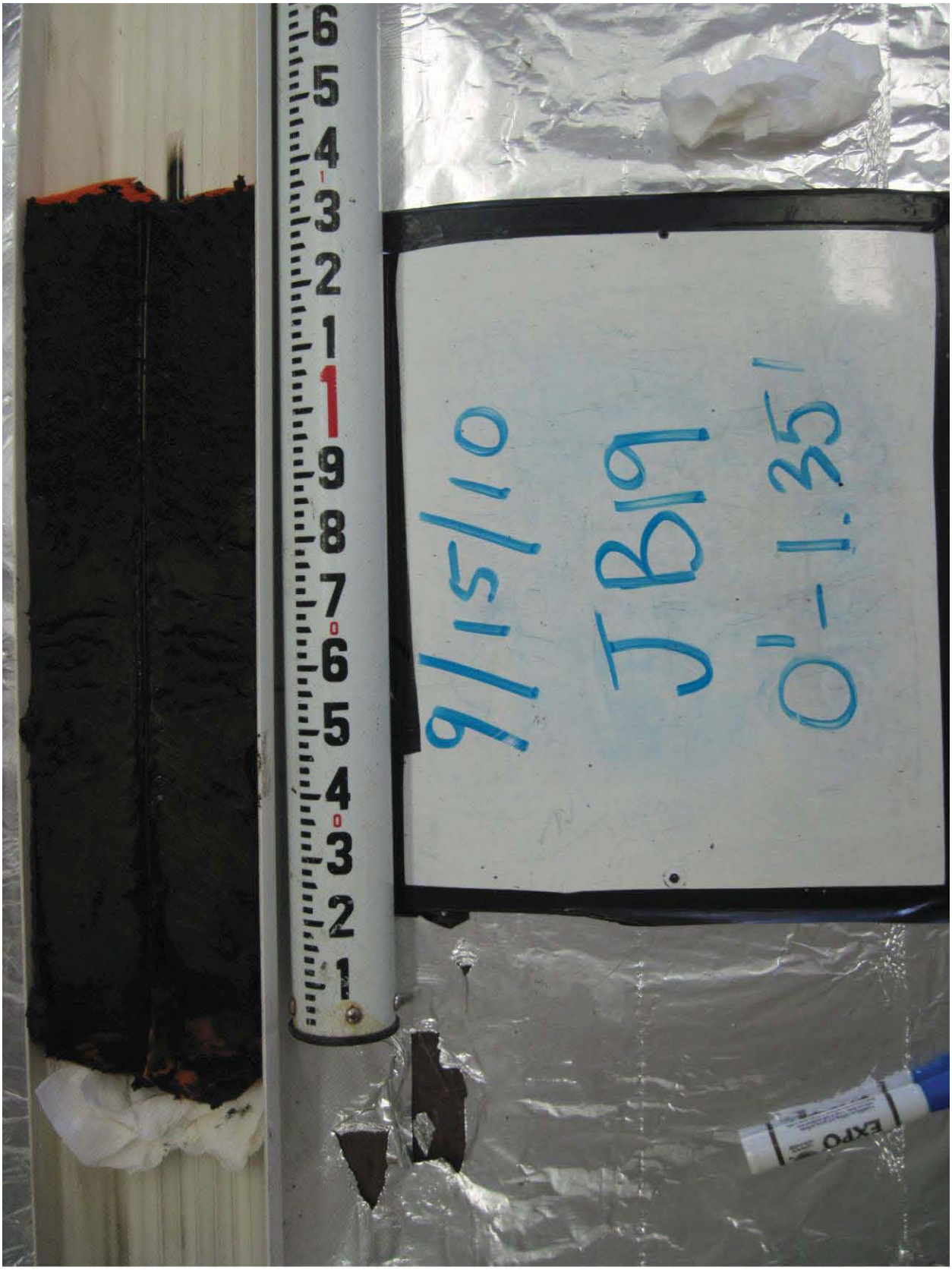
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.3

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.45 | OL/ML | silt, fine to coarse sand w/ gravel | 5y 3/1 (very dark grey) | loose | coarse gravel ~1cm) | | S-1ØS-CØ12-Ø-Ø.5 |
| 0.2 | -7.65 | — — — | — — — | — | — | — | — | |
| | | SC/SM | sand with silt and clay gravel, shell hash | 2.5y 3/1 (very dark grey) | firm | coarse (gravel ~2cm) | | |
| 0.75 | -8.2 | — — | — — — | — | — | — | — | |
| 1.25 | -8.7 | SP/SM | poorly graded poorly sorted sand with silt | 10y 4/2 (dark greyish brown) | firm | coarse (gravel ~2cm) | | |

Comments


9/15/10
JBIG
0'-1.35'
EXPO

Final

Woods Hole Group

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JB19
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ16
Water Depth (A): 7.4
Collection Mechanism: pc
Latitude: 41°40.444
Length of Push Core Assembly (B): 12.25
Time on Station: 09:39
Longitude: 70°54.953
Water Surface to Top of Handle (C): 3.35
Time of Collection: 09:41
GPS Accuracy: ±12ft
Length of Core (from bottom) (D): 1.35
Time Depart Station: 09:49
Tide Elevation (from tide board) (G): 0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.75

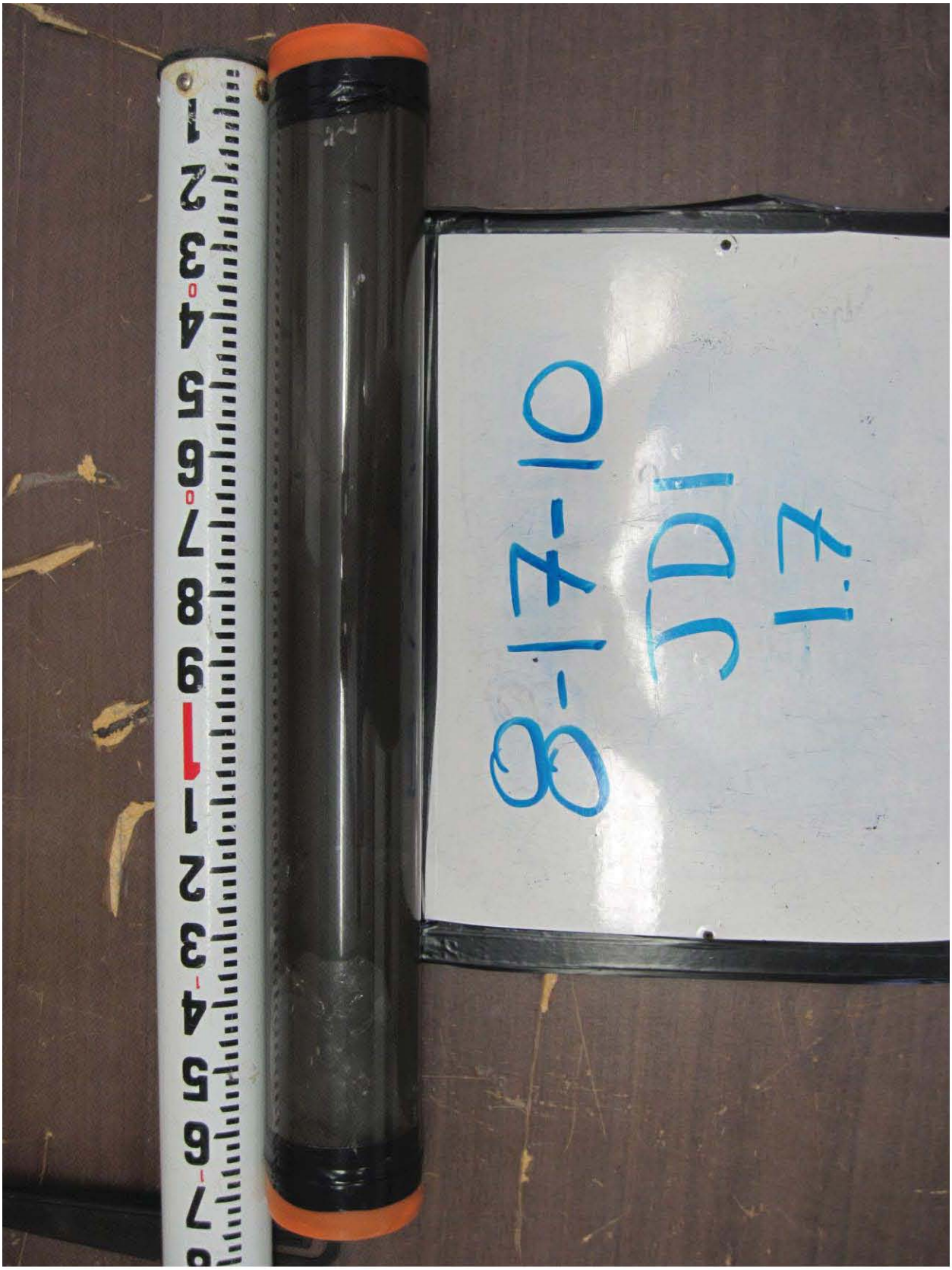
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.75

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.6

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.75 | OL/ML | silty clay with fine sand | 5Y 2.5/1 | firm | fine | none | S-1ΦS-CΦ16-Φ-Φ.5 |
| 0.2 | -7.95 | | | | | | | |
| | | OL/ML | silty clay with fine sand | 5Y 3/1 | firm | fine | none | |
| 0.85 | -8.6 | | | | | | | |
| | | PT | peat with clay | 2.5Y 3/3 | firm | fine | none | |
| 1.36 | -9.1 | | | | | | | |

Comments


8-17-10
JDI
Z:1

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8/17/10
Station ID: JD1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 8.0
Collection Mechanism: P.C.
Latitude: 41°40.517
Length of Push Core Assembly (B): 12.3
Time on Station: 9:55
Longitude: 70°54.942
Water Surface to Top of Handle (C): ~~3.1~~ 2.4
Time of Collection: 10:02
GPS Accuracy: ±11
Length of Core (from bottom) (D): 1.7
Time Depart Station: 10:08
Tide Elevation (from tide board) (G): 0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) —

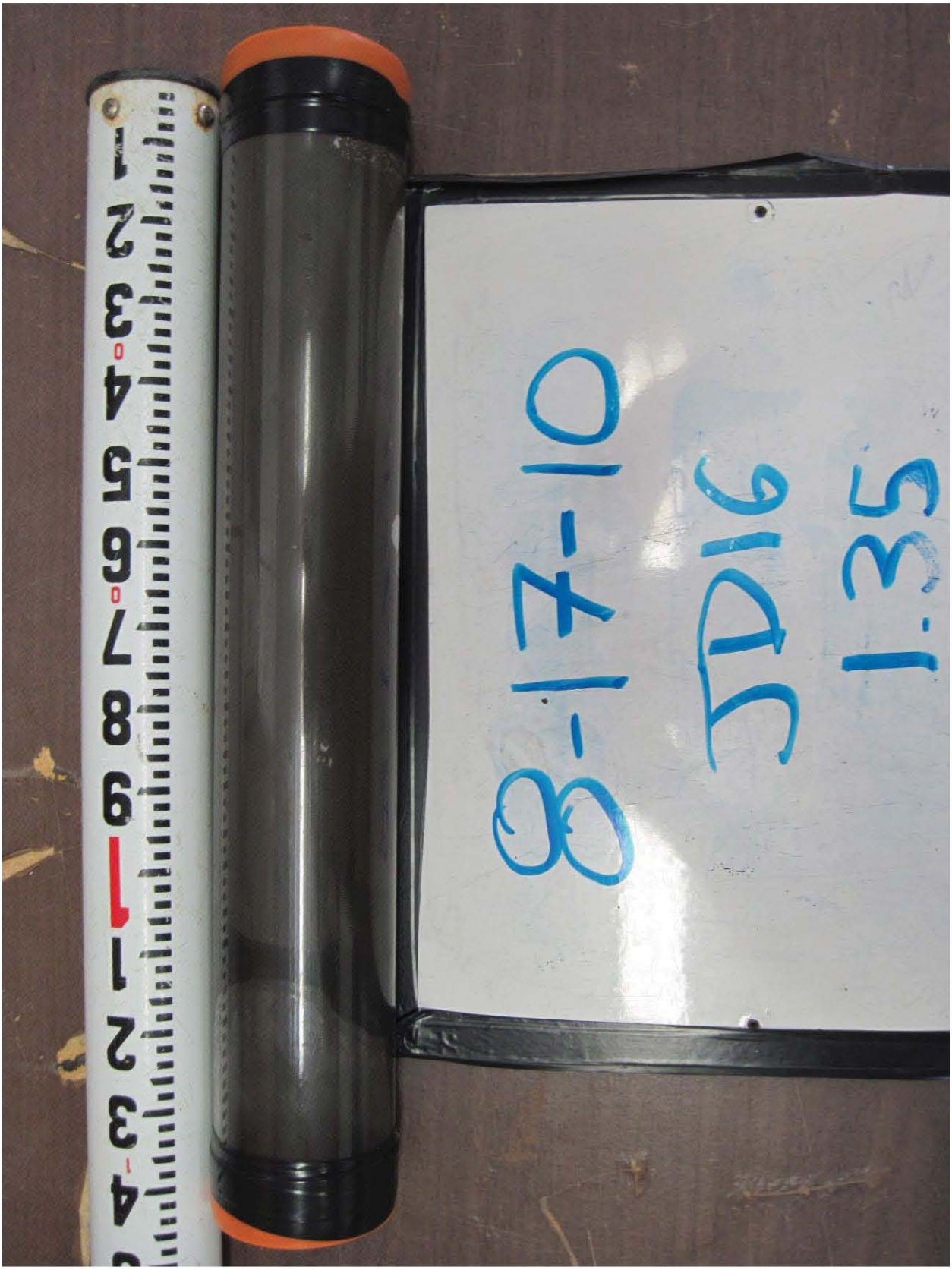
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.9

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.7

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NOVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | | ML | 5Y 3/1 Very dark Grey | | | | |
| 0.9 | | | Streaking | | | | | |
| 1.15 | | | CL/ML | 5Y 4/1 Dark Grey | | | | |
| 1.7 | | | | | | | | |

Comments: 1st attempt unsuccessful rock stuck in core barrel


8-17-10
JPD16
1:35

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8-17-10
Station ID: JD16
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 9.8
Collection Mechanism: PC
Latitude: 41°40.458
Length of Push Core Assembly (B): 17.3
Time on Station: 14:14
Longitude: 70°54.942
Water Surface to Top of Handle (C): 5.45
Time of Collection: 14:17
GPS Accuracy: ±9
Length of Core (from bottom) (D): 1.35
Time Depart Station: 14:25
Tide Elevation (from tide board) (G): 2.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.0

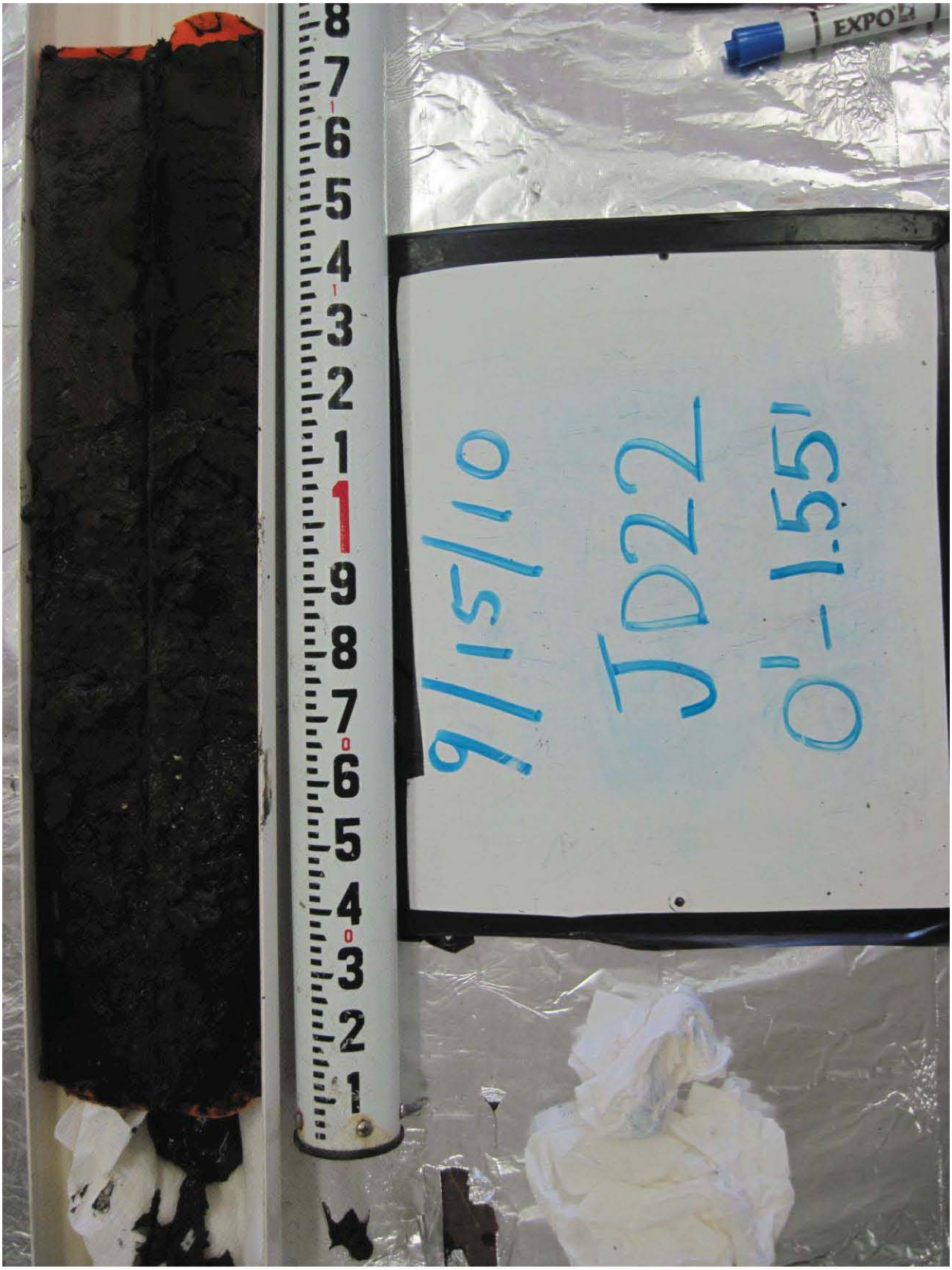
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.0

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | | OL/CL | 5y 2.5/1 | | | | |
| 0.3 | | | | | | | | |
| | | | CL/ML | 5y 3/1 Very Dark Grey | | | | |
| 1.35 | | | | | | | | |

Comments


9/15/10
JD22
0'-1.55'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JD22
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ19
Water Depth (A): 7.0
Collection Mechanism: pc
Latitude: 41°40.431
Length of Push Core Assembly (B): 12.3
Time on Station: 09:55
Longitude: 70°54.942
Water Surface to Top of Handle (C): 3.6
Time of Collection: 09:57
GPS Accuracy: ±12ft
Length of Core (from bottom) (D): 1.55
Time Depart Station: 10:03
Tide Elevation (from tide board) (G): 0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.85

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.35

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.3

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.35 | OL / ML/CL | silt, shell hash, some clay | 5y 2.5/1 | loose | fine | $H_2S$ slight chemical | S-1ΦS-CΦ19-Φ-Φ.5 |
| 0.5 | -7.85 | | | | | | | |
| | | CL/ML | silty clay, some fine to medium sand | 5y 3/1 | firm | fine | none | |
| 1.55 | -8.9 | | | | | | | |

Comments

9/15/10
JD24
0'-1.55'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JD24
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ2Φ
Water Depth (A): 7.8
Collection Mechanism: PC
Latitude: 41°40.423
Length of Push Core Assembly (B): 12.3
Time on Station: 10:19
Longitude: 70°54.941
Water Surface to Top of Handle (C): 2.65
Time of Collection: 10:23
GPS Accuracy: ±10ft
Length of Core (from bottom) (D): 1.55
Time Depart Station: 10:30
Tide Elevation (from tide board) (G): -0.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.95

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.5

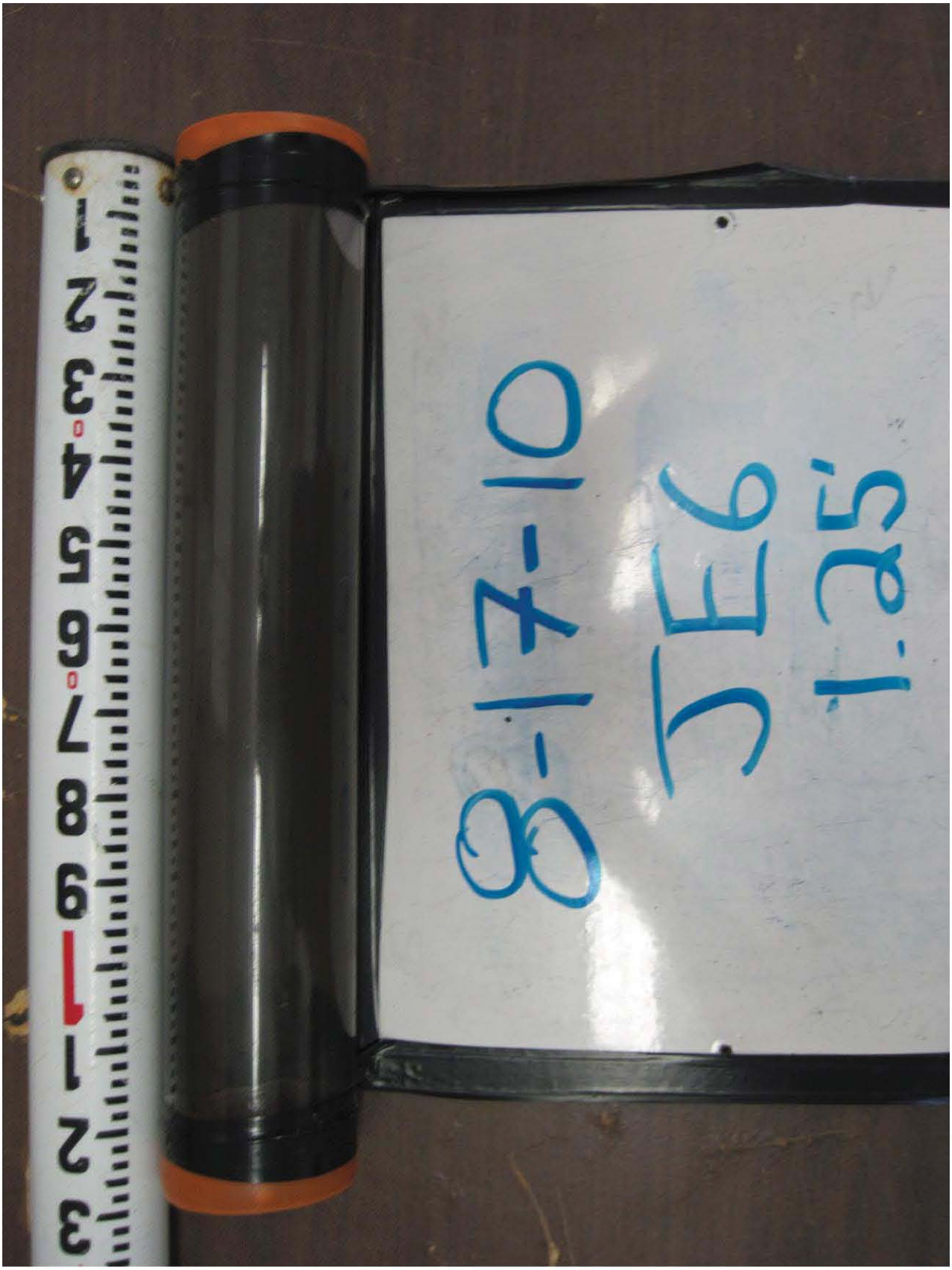
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -8.4

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -8.1

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Oder | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -8.4 | OL | Silt, some fine sand | 5Y 2.5/1 | loose | fine | $H_2S$ (slight chemical?) | S-1ΦS-CΦ2Φ-Φ-Φ.5 |
| 0.1 | -8.5 | ML/CL | clayey silt with fine sand | 5Y 3/1 | moderately firm | fine | | |
| 0.5 | -8.9 | CL/ML | silty clay with fine sand | 5Y 3/1 | firm | fine | none | |
| 1.55 | -9.95 | | | | | | | |

Comments


8-17-10
7E6
1:25

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

Date: 9/15/10 Station ID: JE6 All Measurements are ± 0.1 feet

Logged By: KGM Core Sample ID: S-1ϕS-CϕϕS Water Depth (A): 8.1

Collection Mechanism: PC Latitude: 41°40.497 Length of Push Core Assembly (B): 12.3

Time on Station: 11:17 Longitude: 70°54.937 Water Surface to Top of Handle (C): 2.4

Time of Collection: 11:23 GPS Accuracy: ±12 Length of Core (from bottom) (D): 1.25

Time Depart Station: 11:25 Tide Elevation (from tide board) (G): 0.8

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -9.1 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) | -7.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -7.3 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.85 | OL | Silt with sand | 5y 2.5/1 (black) | loose | fine/medium | $H_2S$ | S-1ϕS -CϕϕS -ϕ-ϕ.5 ↓ |
| 0.1 | -7.95 | CL/ML | Silty clay with shell hash, some fine sand | 5y 3/1 (very dark grey) | firm | fine | none | |
| 1.25 | -9.1 | | | | | | | |

Comments

8-17-10
JFB
1.75

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8-17-10
Station ID: JF3
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 6.9
Collection Mechanism: P.C.
Latitude: 41°40.509
Length of Push Core Assembly (B): 12.25
Time on Station: 10:14
Longitude: 70° 54.929
Water Surface to Top of Handle (C): 3.25
Time of Collection: 10:18
GPS Accuracy: ±11
Length of Core (from bottom) (D): 1.75
Time Depart Station: 10:21
Tide Elevation (from tide board) (G): 0.35

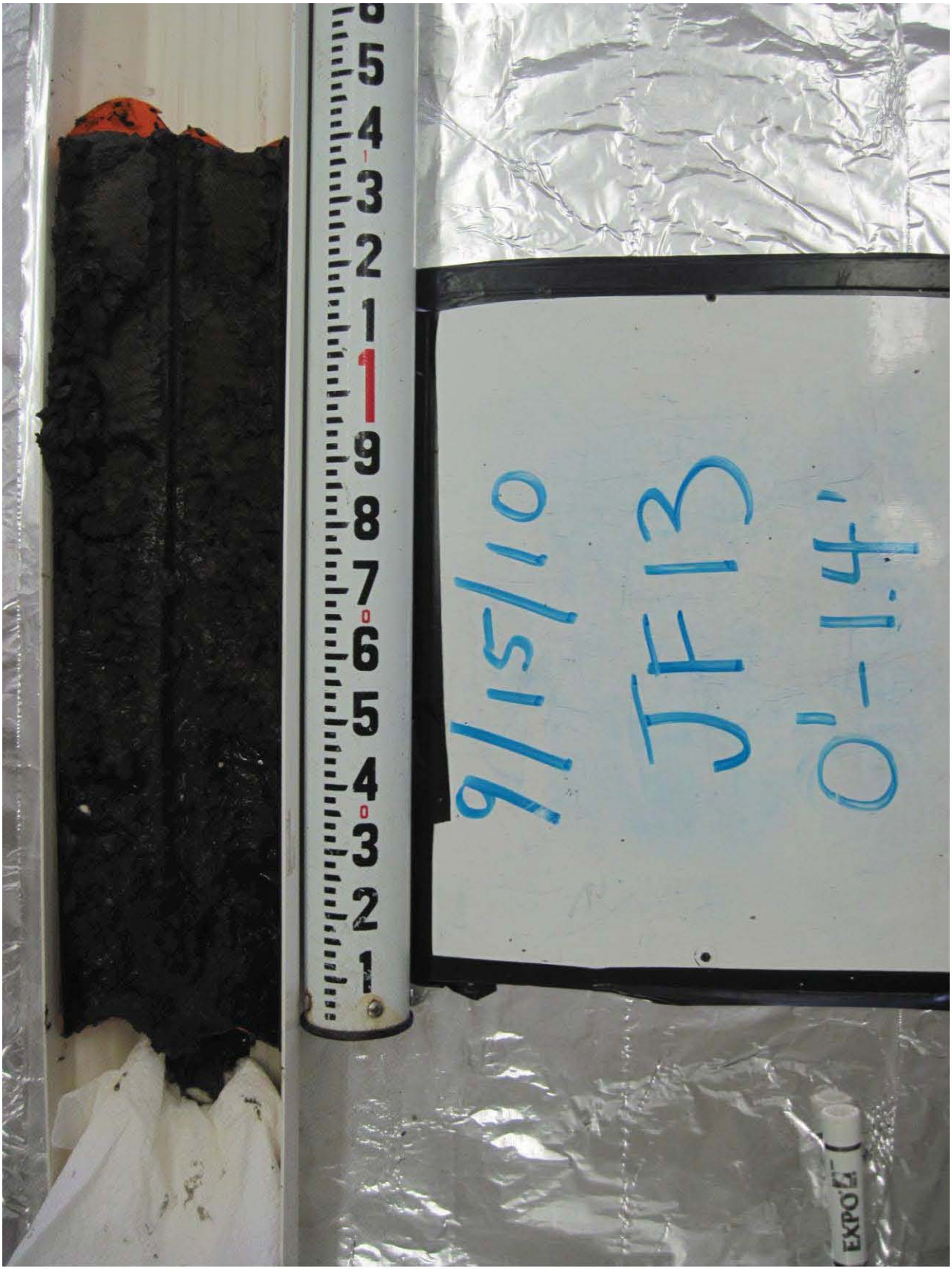
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.35 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.1 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.55 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample ID# |
|---|---|---|---|---|---|---|---|
| 0 | | OL/CL | 5y 2.5/1 Black | | | | |
| 0.2 | | | | | | | |
| 0.4 | | Stretching | | | | | |
| | | CL/ML | 5y 3/1 Very Dark Grey | | | | -Shell Hash |
| 1.75 | | | | | | | |

Comments


9/15/10
JF13
0'-1.4'
EXPO

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JF13
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ11
Water Depth (A): 8.7
Collection Mechanism: PC
Latitude: 41°40.468
Length of Push Core Assembly (B): 12.2
Time on Station: 13:47
Longitude: 70°54.930
Water Surface to Top of Handle (C): 1.85
Time of Collection: 13:53
GPS Accuracy: ±13
Length of Core (from bottom) (D): 1.4
Time Depart Station: —
Tide Elevation (from tide board) (G): 2.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.15

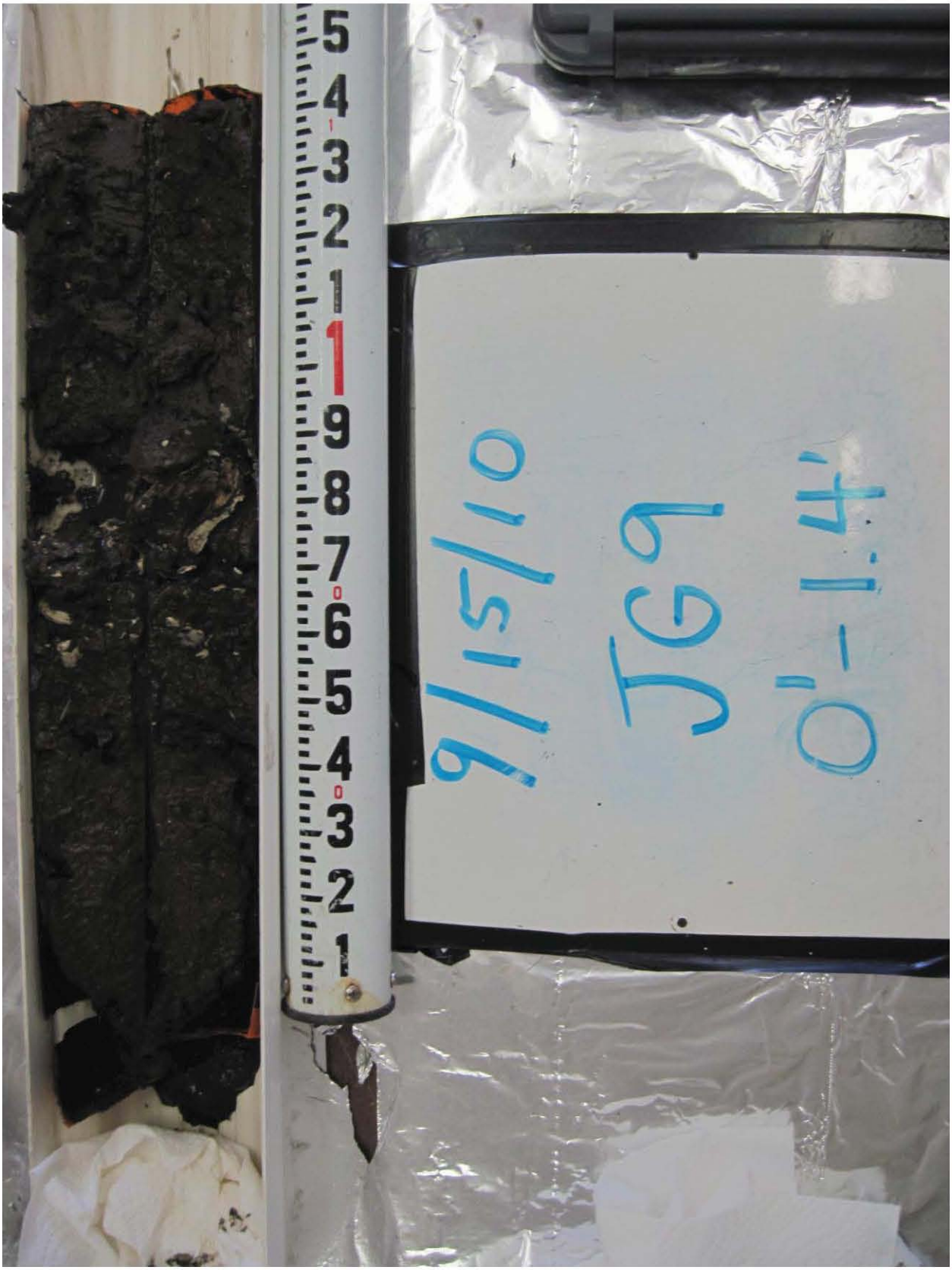
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.65

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.4

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom - H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.65 | OL | Silt with very fine sand | 5Y 2.5/1 | loose | fine | Strong $H_2S$ | S-1ΦS-CΦ11-Φ-Φ.5 |
| 0.2 | -6.85 | OL / ML / CL | marbled clayey silt with very fine sand | 5Y 3/1 | loose | fine | $H_2S$ | |
| 0.5 | -7.15 | CL/ML | Silty clay, some very fine sand | 5Y 3/1 | firm | fine | none | |
| 1.4 | -8.05 | | | | | | | |

Comments


9/15/10
JG9
0'-1.4'

Final

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JG9 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ϕS-CϕϕS | Water Depth (A): | 7.3 |
| Collection Mechanism: | pc | Latitude: | 41°40.485 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | -11:57 | Longitude: | 70°54.925 | Water Surface to Top of Handle (C): | 3.0 |
| Time of Collection: | -12:03 | GPS Accuracy: | ±18 | Length of Core (from bottom) (D): | 1.4 |
| Time Depart Station: | -12:06 | | | Tide Elevation (from tide board) (G): | 1.0 |

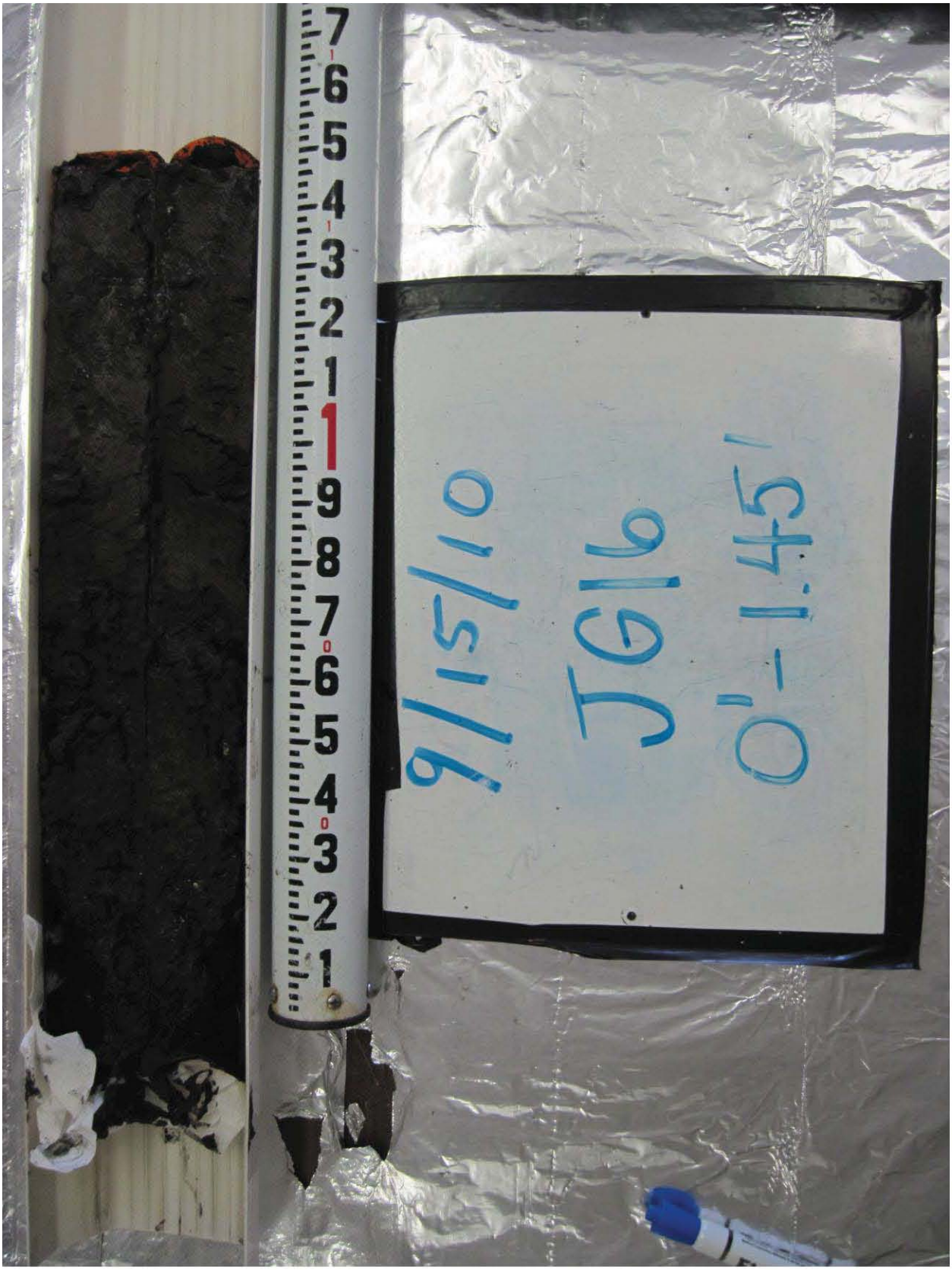
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.9 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.3 |

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.9 | ML (OL?)/CL | clayey silt with fine sand | 5Y 3/1 ~~(black)~~ | loose gradually more firm | fine | $H_2S$ | S-1ϕS-CϕϕS-ϕ-ϕ.5 |
| 0.4 | -7.3 | CL/ML | silty clay shell hash from 0.6-0.9 some fine sand | 5Y 3/1 very dark grey | firm | fine | none | |
| 1.4 | -8.3 | | | | | | | |

Comments


9/15/10
JG16
0'-1.45'

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JG16 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦS-CΦ15 | Water Depth (A): | 6.2 |
| Collection Mechanism: | pc | Latitude: | 41°40.456 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 08:43 | Longitude: | 70°54.925 | Water Surface to Top of Handle (C): | 4.3 |
| Time of Collection: | 08:47 | GPS Accuracy: | ±13 ft | Length of Core (from bottom) (D): | 1.45 |
| Time Depart Station: | 08:52 | | | Tide Elevation (from tide board) (G): | -0.5 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.5 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.35 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.05 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.7 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -7.05 | OL | silt with fine sand | 5Y 2.5/1 | loose | fine | strong $H_2S$ | S-1ΦS-CΦ15-Φ-Φ.5 |
| 0.3 | -7.35 | ML/CL | clayey silt with fine sand | 5Y 3/1 | moderately firm | fine | $H_2S$ | |
| 0.6 | -7.65 | CL/ML | silty clay with fine sand | 5Y 3/1 | firm | fine | none | |
| 1.45 | -8.5 | | | | | | | |

Comments

8/18/10
JG19
1.20 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8/18/10
Station ID: JG19
All Measurements are ± 0.1 foot
Logged By: KGM
Core Sample ID:
Water Depth (A): 5.8
Collection Mechanism: PC
Latitude: 41° 40.443'
Length of Push Core Assembly (B): 12.3
Time on Station: 08:55
Longitude: 70° 54.926'
Water Surface to Top of Handle (C): 4.9
Time of Collection: 08:58
GPS Accuracy: ± 12 ft.
Length of Core (from bottom) (D): 1.2
Time Depart Station: 09:02
Tide Elevation (from tide board) (G): -0.6

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.6

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.05

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.8

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.4

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 0.25 | - | OL/ML | 5y 3/1 Very Dark Grey | | | | |
| | | CL/ML | 5y 3/2 Dark olive Grey | | | | -Slight streaking throughout layer |
| 1.2 | | | | | | | |

Comments

#: 07.1
170
JH23
01/8/18

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8-18-16
Station ID: JH23
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID:
Water Depth (A): 8.6
Collection Mechanism: P.C.
Latitude: 41°40.428'
Length of Push Core Assembly (B): 12.25
Time on Station: 08:26
Longitude: 70° 54.920'
Water Surface to Top of Handle (C): 1.5
Time of Collection: 08:29
GPS Accuracy: ± 14 ft.
Length of Core (from bottom) (D): 1.7
Time Depart Station: 08:33
Tide Elevation (from tide board) (O): -0.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -11.15

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -9.65

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -9.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -9.0

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 0.16 | | OL | 5Y 2.5/1 Black | | | | |
| | | OL | 5Y 2.5/2 Black | | | | |
| 0.5 | | | | | | | |
| | | CL/ML | 5Y 3/1 Very Dark Grey | | | | Shell Hash w/ Peat |
| 1.7 | | | | | | | |

Comments

8-17-10
JT6
1:45

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JI6
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ØS-CØØ6
Water Depth (A): 7.1
Collection Mechanism: pc
Latitude: 41°40.497
Length of Push Core Assembly (B): 12.3
Time on Station: ~11:36
Longitude: 70°54.915
Water Surface to Top of Handle (C): 3.45
Time of Collection: ~11:40
GPS Accuracy: ±13 ft
Length of Core (from bottom) (D): 1.45
Time Depart Station: ~11:50
Tide Elevation (from tide board) (G): 0.8

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.8

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.1

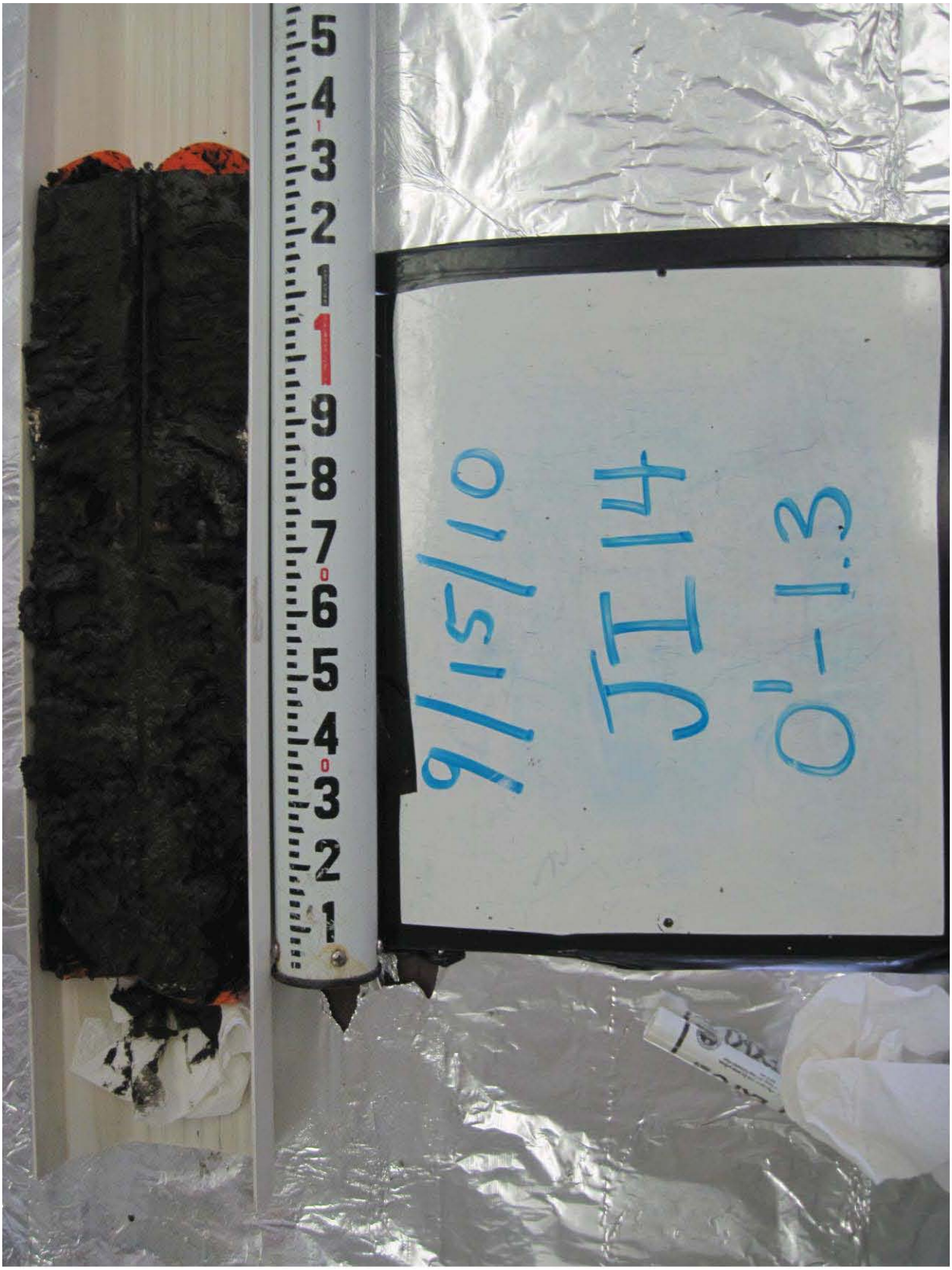
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.6

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.3

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.6 | OL/ML/CL mottled | silt & clayey silt with fine sand | 5Y 2.5/1 (black) | loose gradually more firm | fine | Strong $H_2S$ | S-1ØS-CØØ6-Ø-Ø.5 |
| 0.5 | -7.1 | CL/ML | Silty clay, some fine sand, shell hash throughout | 5Y 3/1 (very dark grey) | firm | fine | none | |
| 1.45 | -8.05 | | | | | | | |

Comments


9/15/10
JT14
0'-1.3

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JI14 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦS-CΦ13 | Water Depth (A): | 8.6 |
| Collection Mechanism: | PC | Latitude: | 41°40.464 | Length of Push Core Assembly (B): | 12.4 |
| Time on Station: | 13:33 | Longitude: | 70°54.914 | Water Surface to Top of Handle (C): | 2.35 |
| Time of Collection: | 13:35 | GPS Accuracy: | ±12ft | Length of Core (from bottom) (D): | 1.3 |
| Time Depart Station: | — | | | Tide Elevation (from tide board) (G): | 2.2 |

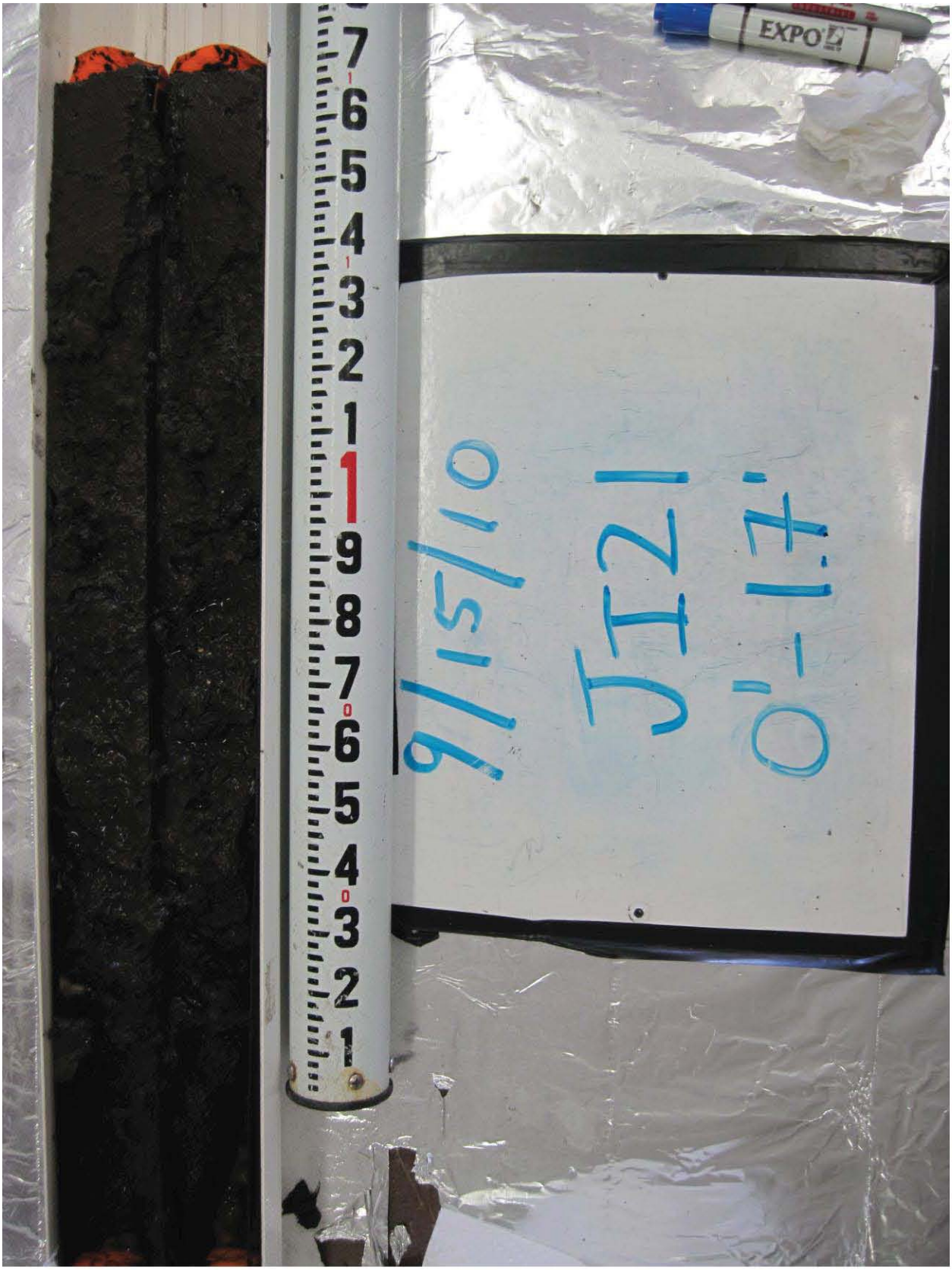
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.85 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.55 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.55 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.4 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.55 | ML/CL | clayey silt with fine sand shell hash | 5Y 3/1 (v. dark grey) | moderately firm | fine | $H_2S$ | S-1ΦS-CΦ13-Φ-Φ.5 |
| 0.4 | -6.95 | CL/ML | silty clay with fine sand | 5Y 3/1 (v. dark grey) | firm | fine | none | |
| 1.3 | -7.85 | | | | | | | |

Comments


EXPO
9/15/10
JT21
0'-1.7'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JI21
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ18
Water Depth (A): 7.0
Collection Mechanism: PC
Latitude: 41°40.435
Length of Push Core Assembly (B): 12.3
Time on Station: 09:26
Longitude: 70°54.914
Water Surface to Top of Handle (C): 2.95
Time of Collection: 09:28
GPS Accuracy: ±13ft
Length of Core (from bottom) (D): 1.7
Time Depart Station: 09:37
Tide Elevation (from tide board) (G): -0.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.75

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.55

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -8.05

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.4

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -8.05 | OL | silt with very little fine sand | 5Y 2.5/1 | loose | fine | chemical | S-1ΦS-CΦ18-Φ-Φ.5 |
| 0.5 | -8.55 | | | | | | | |
| | | ML/CL | clayey silt with fine sand | 5Y 3/1 | moderately firm | fine | $H_2S$ | |
| 1.05 | -9.1 | | | | | | | |
| | | CL/ML | silty clay with fine sand | 5Y 3/1 | firm | fine | none | |
| 1.7 | -9.75 | | | | | | | |

Comments

8-17-10
TK3
1.5

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JK3 | All Measurements are ±0.1 foot | |
| Logged By: | KGM | Core Sample ID: | S-1ØS-CØØ4 | Water Depth (A): | 6.5 |
| Collection Mechanism: | PC | Latitude: | 41°40.510 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | —10:28 | Longitude: | 70°54.908 | Water Surface to Top of Handle (C): | 3.9 |
| Time of Collection: | —10:32 | GPS Accuracy: | ±11ft | Length of Core (from bottom) (D): | 1.5 |
| Time Depart Station: | —10:36 | | | Tide Elevation (from tide board) (G): | 0.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.2 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.6 | ~~CL~~ KGM ~~ML~~ ML/CL | clayey silt | (black) 5Y 2.5/1 | firm | fine | slight $H_2S$ | S-1ØS-CØØ4-Ø-Ø.5 |
| 0.45 | -7.05 | - - - | layer of organics | - - - | - | - - - | - - - | |
| | | ~~ML~~ KGM ~~CL~~ CL ~~ML~~ | silty clay with shell hash and some fine sand | 5Y 3/1 very dark grey | firm | fine | none | |
| 1.5 | -8.1 | | | | | | | |

Comments

8-17-10
7KG
1.25'

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JK9 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦS-CΦΦ7 | Water Depth (A): | 7.3 |
| Collection Mechanism: | PC | Latitude: | 41°40.485 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 12:10 | Longitude: | 70°54.908 | Water Surface to Top of Handle (C): | 2.95 |
| Time of Collection: | 12:38 | GPS Accuracy: | ±15ft | Length of Core (from bottom) (D): | 1.25 |
| Time Depart Station: | 12:40 | | | Tide Elevation (from tide board) (G): | 1.4 |

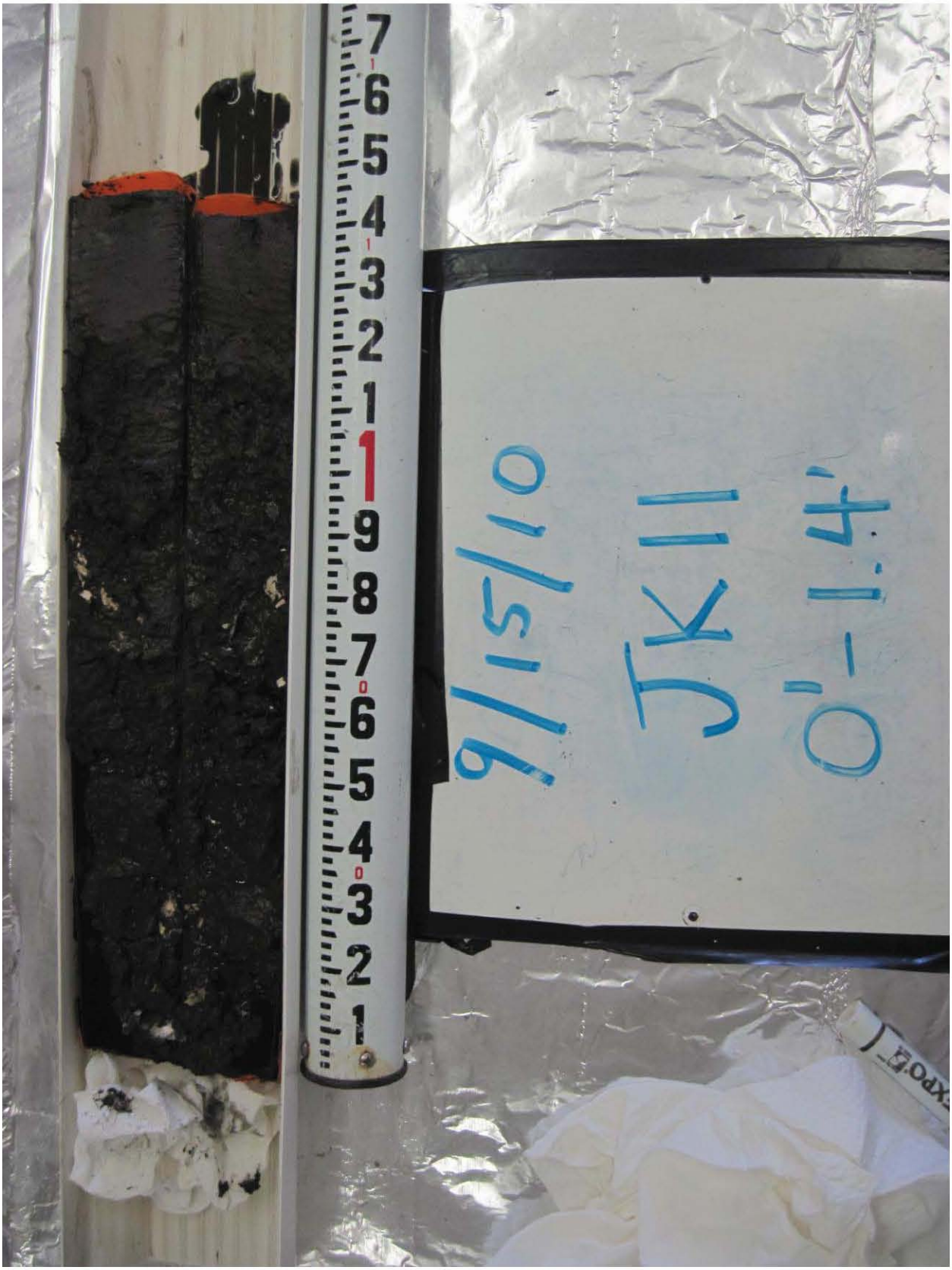
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.95 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.7 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.7 | ML/CL | clayey silt with fine sand shell hash | 5Y 2.5/1 (black) | moderately firm | fine | $H_2S$ | S-1ΦS-CΦΦ7-Φ-Φ.5 ↓ |
| 0.25 | -6.95 | - - - | - - - - - | - - | - - | - - | - | |
| | | CL/ML | silty clay (high water content) shell hash | 5Y 3/1 (very dark grey) | moderately firm | fine | $H_2S$ | |
| 1.25 | -7.95 | | | | | | | |

Comments


9/15/10
JK11
0'-1.4'

Final

Woods Hole Group

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JK11
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦΦ9
Water Depth (A): 7.5
Collection Mechanism: PC
Latitude: 41040.476
Length of Push Core Assembly (B): 12.25
Time on Station: ~12:44
Longitude: 70°54.908
Water Surface to Top of Handle (C): 2.9
Time of Collection: ~12:50
GPS Accuracy: ±19ft
Length of Core (from bottom) (D): 1.4
Time Depart Station: —
Tide Elevation (from tide board) (G): 1.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.95

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.55

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.55

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.1

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.55 | ML/CL | clayey silt, some fine sand | 5y 3/1 | loose | fine | slight $H_2S$ | S-1ΦS-CΦΦ9-Φ-Φ.5 |
| 0.5 | -7.05 | CL/ML | silty clay shell hash some fine sand | 5y 3/1 (very dark grey) | firm | fine | slight $H_2S$ | |
| 1.4 | -7.95 | | | | | | | |

Comments

9/15/10
JK12
0"-1.6'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JK12
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦS-CΦ1Φ
Water Depth (A): 8.4
Collection Mechanism: PC
Latitude: 41°40.472
Length of Push Core Assembly (B): 12.3
Time on Station: 13:07
Longitude: 70° 54.908
Water Surface to Top of Handle (C): 2.0
Time of Collection: —
GPS Accuracy: ±9ft
Length of Core (from bottom) (D): 1.6
Time Depart Station: —
Tide Elevation (from tide board) (G): 1.8

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.5 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.6 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = 1f) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.9 | OL | silt, organics | 5Y 2.5/1 | loose | fine | very slight $H_2S$ | S-1ΦS-CΦ1Φ-Φ-Φ.5 |
| 0.1 | -7.0 | OL/ML/CL | mottled clayey silt with fine to coarse sand | 5Y 2.5/1 / 5Y 3/1 | loose | coarse | | |
| 0.6 | -7.5 | CL/ML | silty clay with fine to coarse sand, shell hash | 5Y 3/1 (very dark grey) | firm | coarse | none | |
| 1.6 | -8.5 | | | | | | | |

Comments

#08.1
8L7C
01/8/18

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 8/18/10
Logged By: KGM
Collection Mechanism: PC
Time on Station: 09:07
Time of Collection: 09:10
Time Depart Station: 09:14

Station ID: JL18
Core Sample ID:
Latitude: 41° 40.448'
Longitude: 70° 54.903'
GPS Accuracy: ± 12 ft

All Measurements are ± 0.1 feet
KGM 8/18/10
Water Depth (A): ~~4.3~~ 5.3
Length of Push Core Assembly (B): 12.3
Water Surface to Top of Handle (C): 4.9
Length of Core (from bottom) (D): 1.8
Tide Elevation (from tide board) (G): -0.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) —

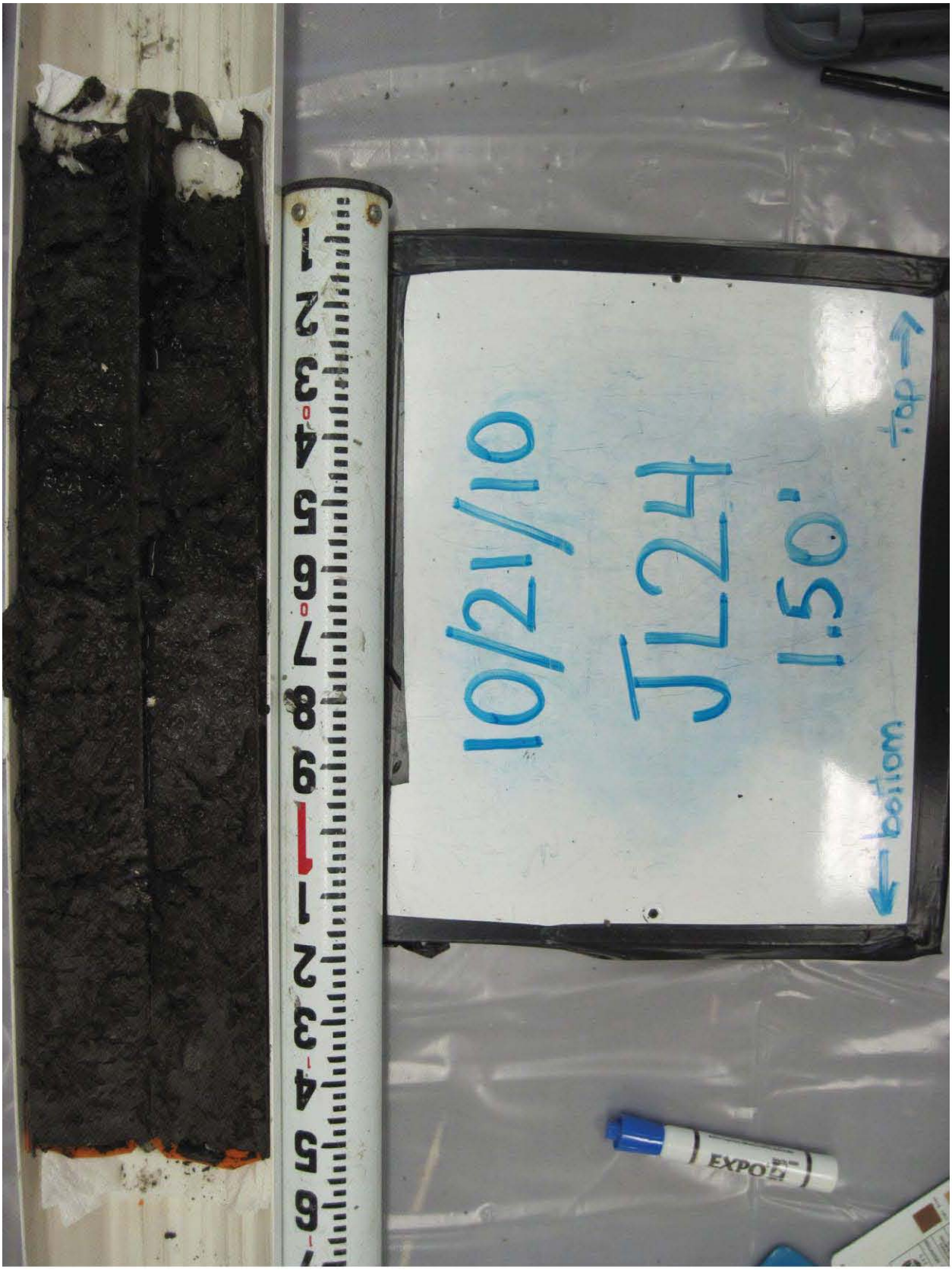
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.3

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.0

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | | ML | 5y 3/1 Very Dark Grey | | | | |
| 0.3 | — | — | — | — | — | | — | — — |
| | | | CL/ML | 5y 3/2 Dark olive Grey | | | | Variable streaks throughout |
| 1.8 | | | | | | | | |

Comments


10/21/10
JL24
1.50'
top
bottom
EXPO

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/21/10 | Station ID: | JL24 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ46 | Water Depth (A): | 8.2 |
| Collection Mechanism: | PC | Latitude: | 41°40.423 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 08:14 | Longitude: | 70°54.904 | Water Surface to Top of Hurdle (C): | 2.15 |
| Time of Collection: | 08:20 | GPS Accuracy: | ±17ft | Length of Core (from bottom) (D): | 1.55 |
| Time Depart Station: | 08:24 | | | Tide Elevation (from tide board) (G): | -0.4 |

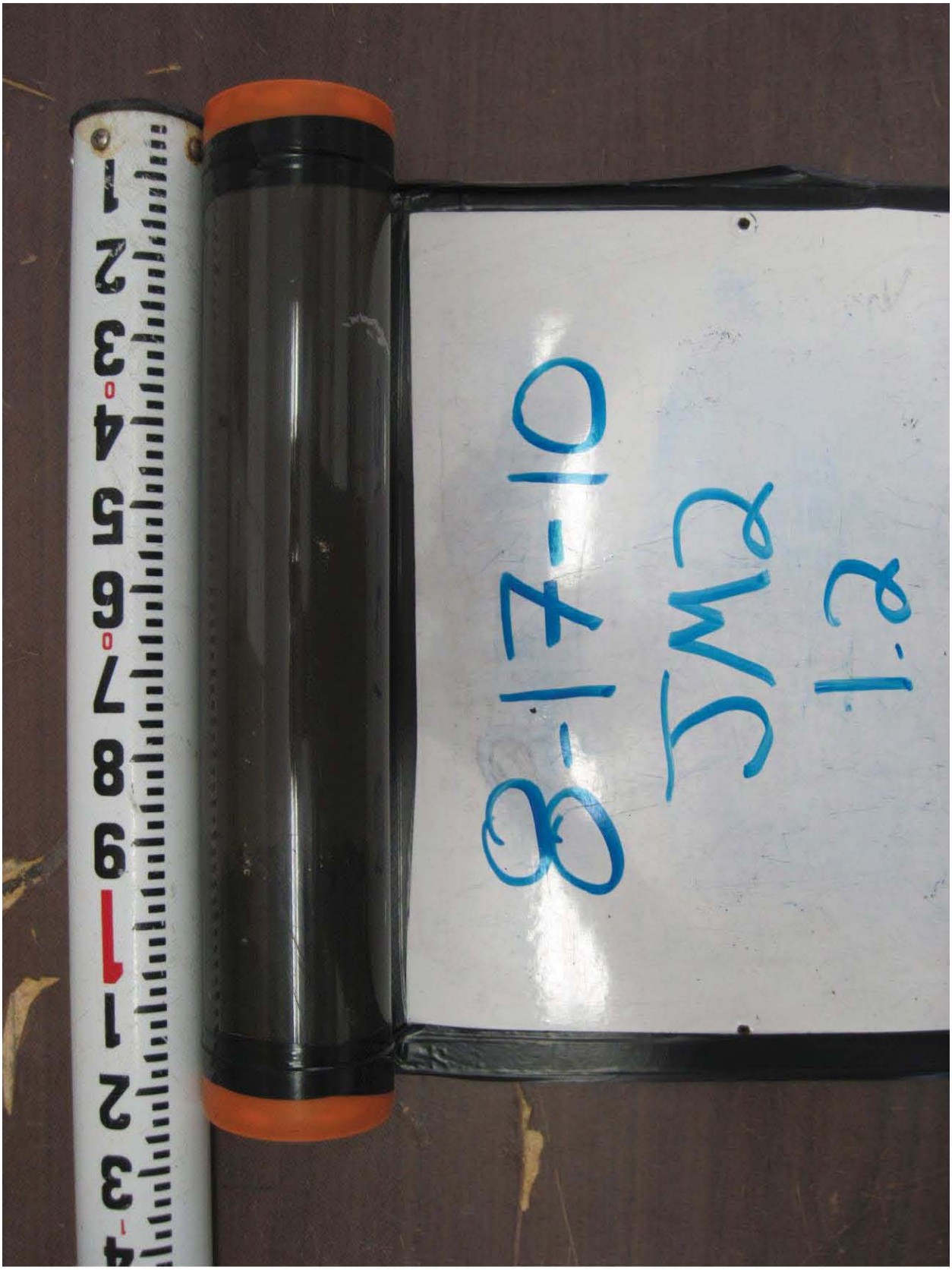
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -10.55 |
| (z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) | -9.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -9.0 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -8.0 |

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0.0 | OL / ML/CL | OL marbled with clayey silt | 5y 2.5/1 | loose | fine | | S-1Φ0-CΦ46-Φ-Φ.5 |
| 0.6 | CL/ML | silty clay, fine to medium grain sand | 5y 3/2 | firm | medium sand | | S-1Φ0-CΦ46-Φ.5-1.Φ |
| 1.5 ~~1.4~~ | | | | | | | |

Comments


2.1
CWS
01-7-18
01-7-10

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JM2 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ØS-CØØ1 ~~-Ø Ø.5~~ | Water Depth (A): | 6.5 |
| Collection Mechanism: | PC | Latitude: | — 41°40.513 | Length of Push Core Assembly (B): | 12.35 |
| Time on Station: | — 10:45 | Longitude: | — 70°54.897 | Water Surface to Top of Handle (C): | 4.35 |
| Time of Collection: | — 10:50 | GPS Accuracy: | — ±11ft | Length of Core (from bottom) (D): | 1.2 |
| Time Depart Station: | — 10:52 | | | Tide Elevation (from tide board) (G): | 0.3 |

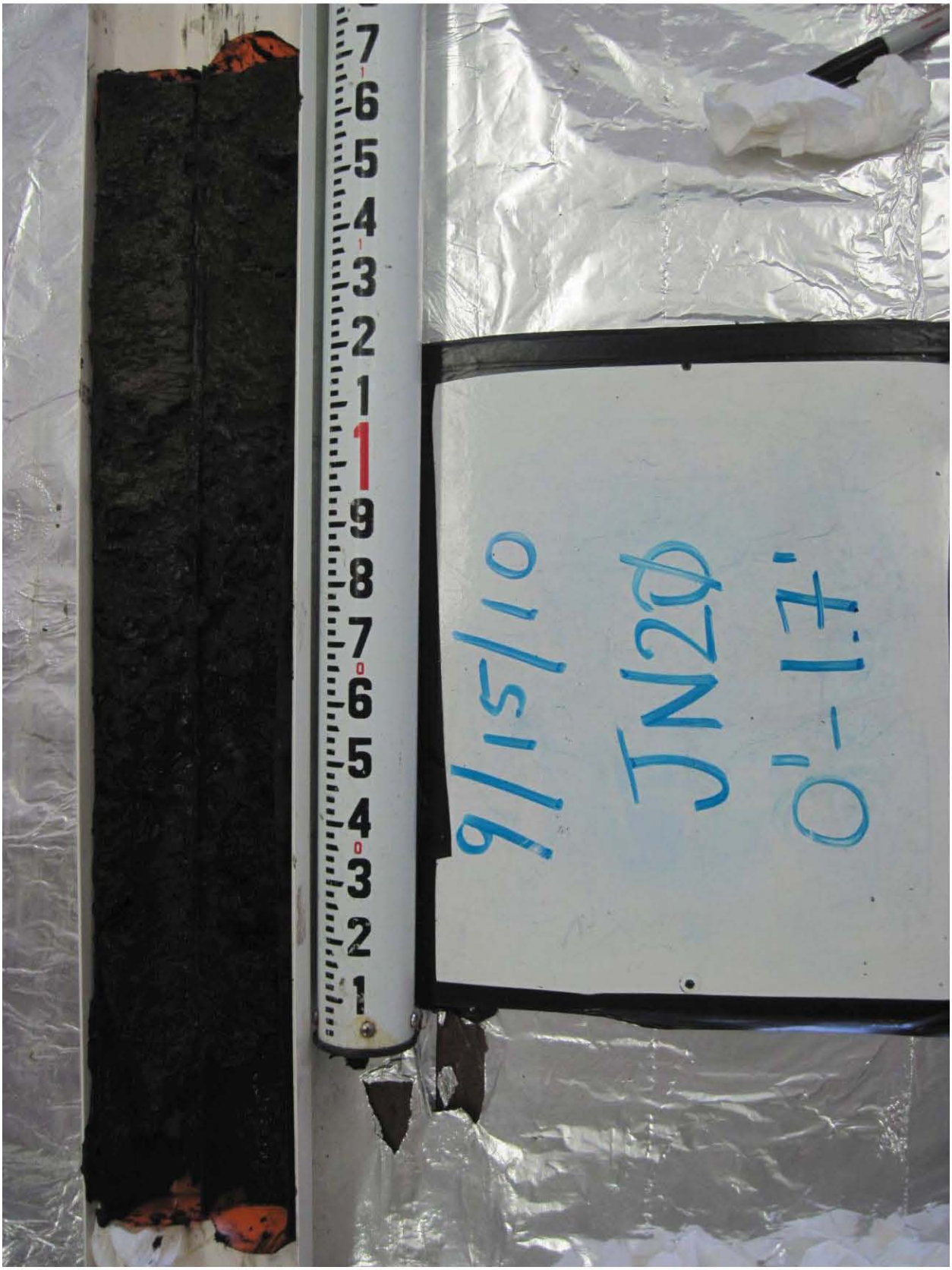
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.5 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.2 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| (0.0) | -6.5 | OL | Silt w/ fine sand, shell hash | (black) 5Y 2.5/1 | loose | fine | slight $H_2S$ s. chemical | S-1ØS-CØØ1 -0-0.5 |
| (0.15) | -6.65 | CL/ML | Silty clay | 5Y 3/1 (very dark grey) | firm | fine | none | ↓ |
| (1.2) | -7.7 | | | | | | | |

Comments


9/15/10
JN20
0'-1.7'

Final

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 9/15/10 | Station ID: | JN20 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦS-CΦ17 | Water Depth (A): | 6.0 |
| Collection Mechanism: | pc | Latitude: | 41°40.439 | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | -09:17 | Longitude: | 70°54.893 | Water Surface to Top of Handle (C): | 4.35 |
| Time of Collection: | -09:20 | GPS Accuracy: | ±11ft | Length of Core (from bottom) (D): | 1.7 |
| Time Depart Station: | -09:23 | | | Tide Elevation (from tide board) (G): | -0.6 |

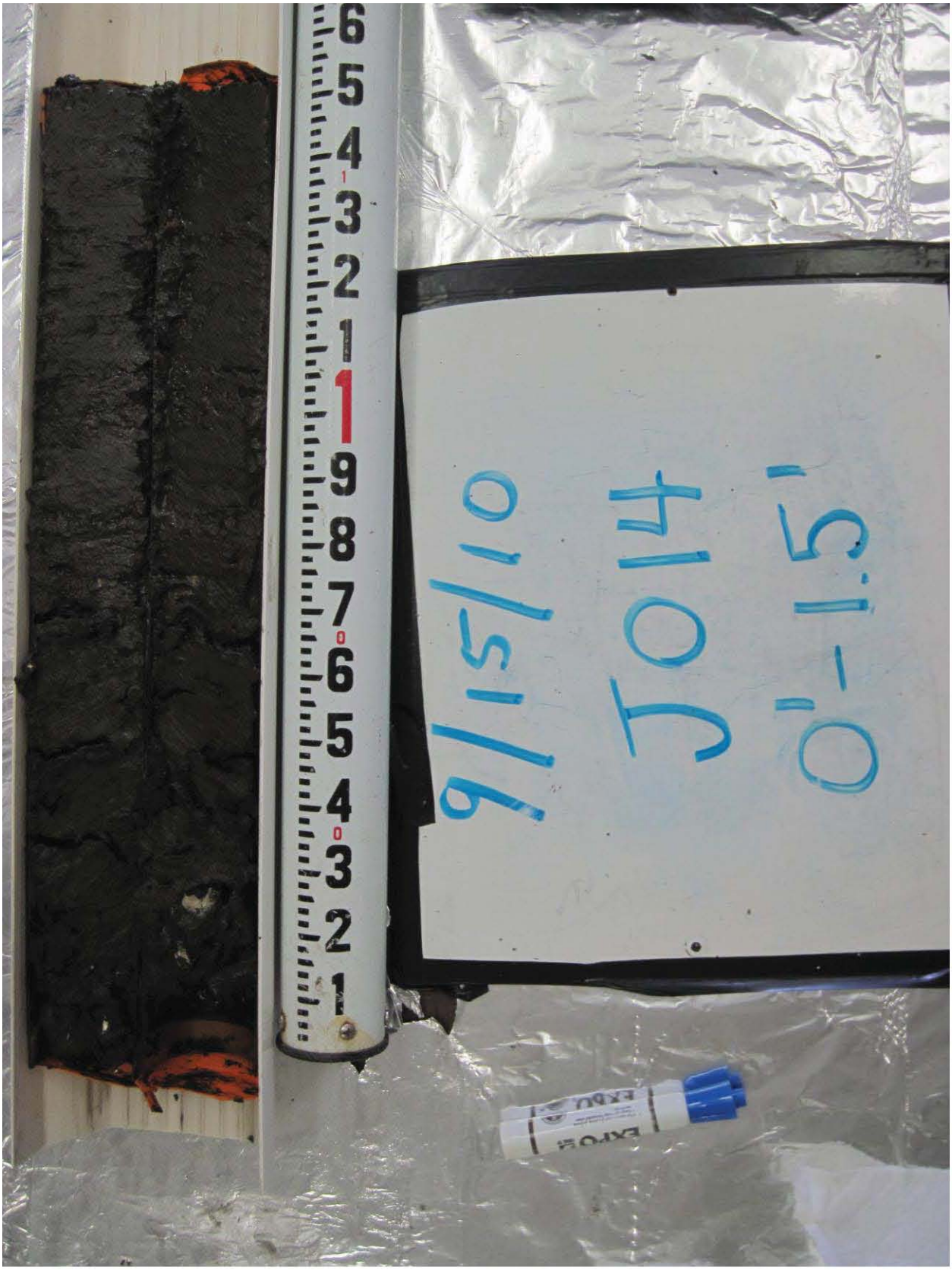
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.55 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.75 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.6 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom – H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.85 | OL (marked) / ML / CL | clayey silt w/ fine sand | 5Y 2.5/1 (black) | loose | fine | chemical | S-1ΦS-CΦ17-Φ-Φ.5 |
| 0.9 | -7.75 | CL/ML | silty clay w/ fine to medium sand | 5Y 3/1 (v. dark grey) | firm | medium | $H_2S$ | |
| 1.7 | -8.55 | | | | | | | |

Comments


9/15/10
J014
0'-1.5'

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: J014
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ØS-CØ14
Water Depth (A): 8.3
Collection Mechanism: PC
Latitude: 41°40.464
Length of Push Core Assembly (B): 12.25
Time on Station: 13:19
Longitude: 70° 54.887
Water Surface to Top of Handle (C): 2.05
Time of Collection: 13:24
GPS Accuracy: ±10ft
Length of Core (from bottom) (D): 1.5
Time Depart Station: 13:27
Tide Elevation (from tide board) (G): 2.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.2

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.7

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.3

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | -6.7 | ML/CL (OL?) | clayey silt with fine sand | marbled 5Y 2.5/1 5Y 3/1 | moderately firm | fine | $H_2S$ | S-1ØS-CØ14-Ø-Ø.5 |
| 0.3 | -7.0 | — | Shell hash | — | — | — | — | |
| | | CL/ML | Silty clay with fine sand | 5Y 3/1 | moderately firm | fine | none/slight $H_2S$ | |
| 1.2 | -7.9 | — | — | — | — | — | — | |
| 1.5 | -8.2 | CL/ML | silty clay with fine sand | 5Y 3/1 | firm | fine | | |

Comments

8-17-10
7002
1-65

Final

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 9/15/10
Station ID: JQ2
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ØS-CØØ2
Water Depth (A): 5.7
Collection Mechanism: PC
Latitude: 41°40.513
Length of Push Core Assembly (B): 12.3
Time on Station: 11:00
Longitude: 70°54.875
Water Surface to Top of Handle (C): 4.45
Time of Collection: 11:05
GPS Accuracy: ±11ft
Length of Core (from bottom) (D): 1.65
Time Depart Station: 11:07
Tide Elevation (from tide board) (G): 0.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.15

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -5.6

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.5

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.0

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| (0.0) | -5.5 | OL | Silt w/ clay | 5Y 2.5/1 (black) | loose | fine | $H_2S$ | S-1ØS-CØØ2 |
| (0.1) | -5.6 | | | | | | | -Ø- Ø.5 ↓ |
| | | CL/ML | Silty clay | 5Y 3/1 (very dark grey) | firm | fine | none | |
| (1.65) | -7.15 | | | | | | | |

Comments

top
10/20/10
GD30
1.65'
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/20/10
Logged By: KGM
Collection Mechanism: PC.
Time on Station: 09:33
Time of Collection: 09:36
Time Depart Station: 09:39

Station ID: GD30
Core Sample ID: S-1Φ0-CΦ26
Latitude: 41° 40.554'
Longitude: 70° 54.989'
GPS Accuracy: 11 ft.

All Measurements are ± 0.1 feet
Water Depth (A): 4.2
Length of Push Core Assembly (B): 12.3
Water Surface to Top of Handle (C): 6.1
Length of Core (from bottom) (D): 1.65
Tide Elevation (from tide board) (G): 1.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.7

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.35

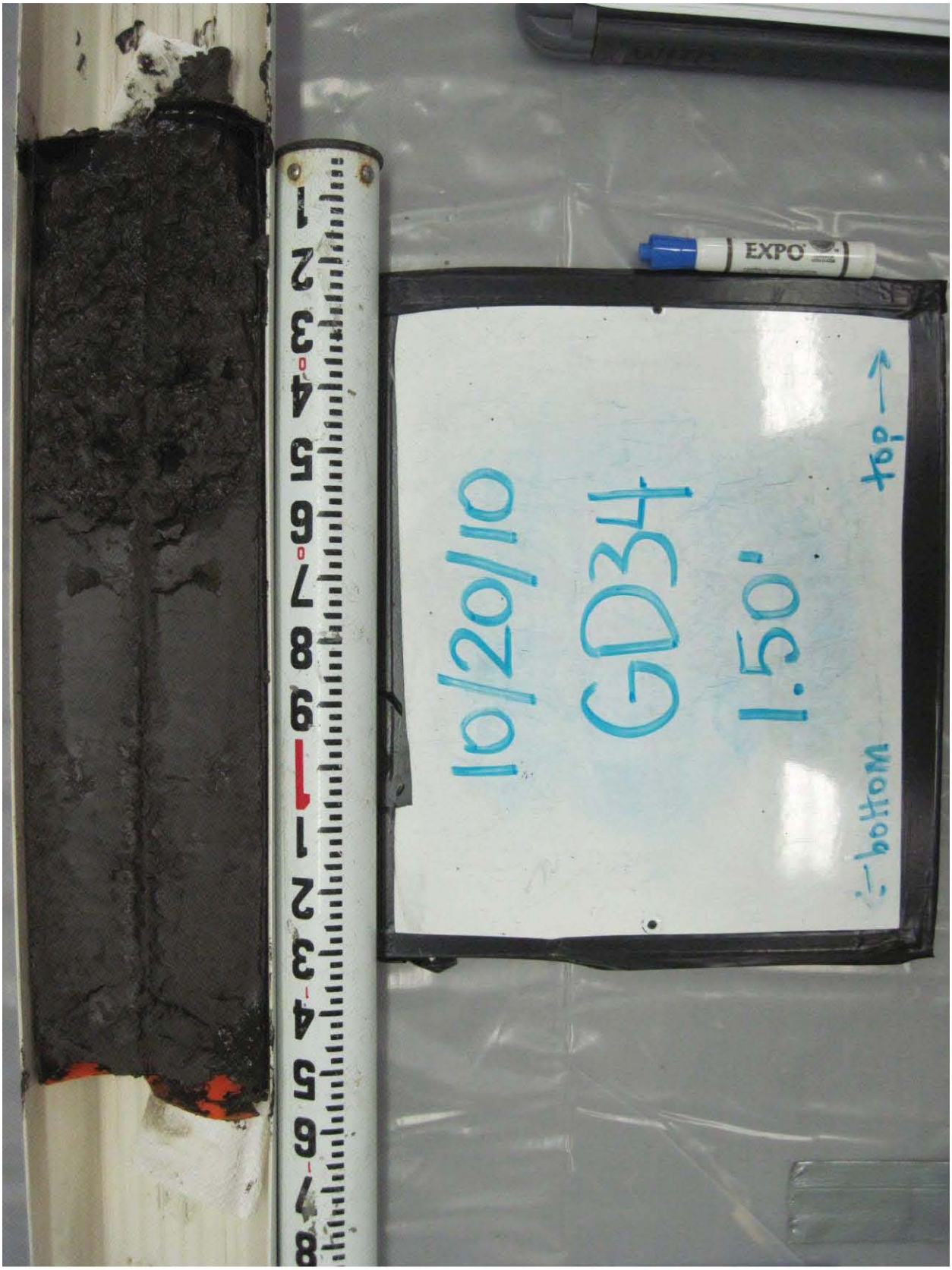
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.05

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.7

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.05) | OL | organic silt | 5Y 2.5/1 | | loose fine | Strong $H_2S$ | S-1Φ0-CΦ26-Φ-Φ.5 + MSMS |
| 0.3 | (-3.35) | ML/CL | Clayey silt | 5Y 2.5/2 | | moderately firm fine | | S-1Φ0-CΦ26-Φ.5-1.Φ |
| 0.7 | (-3.75) | CL/ML | Silty clay, well graded fine to medium sand, poorly sorted (veins of sand unevenly distributed) | 5Y 3/1 | firm | firm | | |
| 1.65 | (-4.7) | | | | | | | |

Comments


EXPO
10/20/10
GD34
1.50'
top
bottom

| | | |
|---|---|---|
| WOODS HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GD34 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ27 | Water Depth (A): | ~~5.4~~ 5.6 KGM |
| Collection Mechanism: | pc | Latitude: | 41° 40.538' | Length of Push Core Assembly (B): | 12.35 |
| Time on Station: | 09:24 | Longitude: | 70° 54.989' | Water Surface to Top of Handle (C): | 4.85 |
| Time of Collection: | 09:27 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 1.5 |
| Time Depart Station: | 09:30 | | | Tide Elevation (from tide board) (G): | 1.7 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.7 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.8 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.5 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.3 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.3) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ27-Φ-Φ.5 |
| 0.2 | (-4.5) | — — | — — | — — | — — | — — | — — | |
| | | mY/CL | clayey silt | 5Y 2.5/2 | loose | fine | | S-1Φ0-CΦ27-Φ.5-1.Φ |
| 0.6 | (-4.9) | thin layer of medium to coarse sand with small gravel | | | | | | |
| | | CL/mL | silty clay | 5Y 3/1 | firm | fine | | |
| 1.5 | (-5.8) | | | | | | | |

Comments

10/20/10
GH34
1.70'
bottom
top

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | |
|---|---|---|
| Date: 10/20/10 | Station ID: GH34 | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: S-1Φ0-CΦ29 | Water Depth (A): 6.3 |
| Collection Mechanism: PC | Latitude: 41° 40.538' | Length of Push Core Assembly (B): 12.35 |
| Time on Station: 09:15 | Longitude: 70° 54.969' | Water Surface to Top of Handle (C): 4.2 |
| Time of Collection: 09:18 | GPS Accuracy: 12 ft. | Length of Core (from bottom) (D): 1.7 |
| Time Depart Station: 09:21 | | Tide Elevation (from tide board) (G): 1.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.35 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.25 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.65 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.5 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.65) | OL | organic silt | 5Y 2.5/1 | loose | fine | strong $H_2S$ | S-1Φ0-CΦ29-Φ-Φ.5 |
| 0.6 | (-5.25) | ML/CL | clayey silt, fine sand | 5Y 3/1 | moderately firm | fine | | S-1Φ0-CΦ29-Φ.5-1.Φ |
| Φ.0 | (-5.65) | CL/ML | silty clay, some fine sand | 5Y 3/1 | firm | fine | | |
| 1.7 | (-6.35) | | | | | | | |

Comments

10/20/10
GI36
1.25"
← bottom
top →

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GI36 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ3Φ | Water Depth (A): | 7.2 |
| Collection Mechanism: | pc. | Latitude: | 41° 40.529' | Length of Push Core Assembly (B): | 12.35 |
| Time on Station: | 09:03 | Longitude: | 70° 54.962' | Water Surface to Top of Handle (C): | 3.55 |
| Time of Collection: | 09:07 | GPS Accuracy: | 14 ft. | Length of Core (from bottom) (D): | 1.25 |
| Time Depart Station: | 09:12 | | | Tide Elevation (from tide board) (G): | 2.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.35 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -7.0 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.35) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ3Φ-Φ-Φ.5 |
| 0.1 | (-7.45) | ML/CL | clayey silt | 5Y 3/1 | moderately firm | fine | | S-1Φ0-CΦ3Φ-Φ.5-1.Φ |
| 0.6 | (-7.95) | CL/ML | silty clay | 5Y 3/1 | firm | | | |
| 1.25 | (-8.6) | | | | | | | |

Comments

top
10/20/10
GJ29
1.50'
bottom
EXPO

| | | |
|---|---|---|
| WOODS HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | G529 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ28 | Water Depth (A): | 5.4 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.558' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 09:45 | Longitude: | 70°54.957' | Water Surface to Top of Handle (C): | 5.1 |
| Time of Collection: | 09:47 | GPS Accuracy: | 15 ft. | Length of Core (from bottom) (D): | 1.5 |
| Time Depart Station: | 09:52 | | | Tide Elevation (from tide board) (G): | ~~+.4~~ KGM 1.3 |

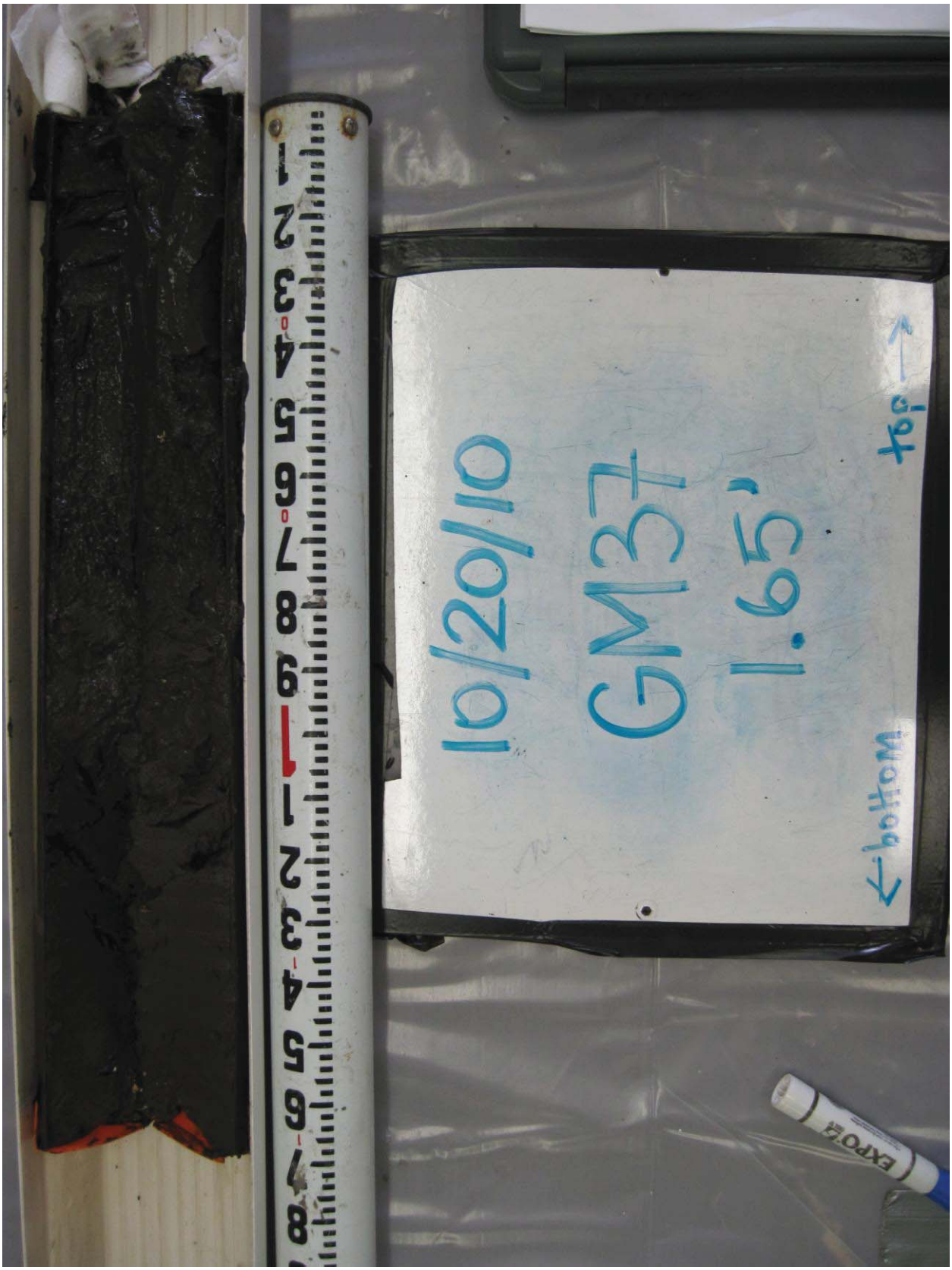
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ~~+.4~~ KGM 1.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.9 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.4 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.1 |

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.4) | OL | organic silt, oyster shells | 5Y 2.5/2 | loose | fine | | S-1Φ0-CΦ28-Φ-Φ.5 |
| 0.5 | (-4.9) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ28-Φ.5-1.0 |
| 0.8 | (-5.2) | layer of dense oyster shell hash | | | | | | |
| 1.1 | (-5.5) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.5 | (-5.9) | | | | | | | |

Comments


10/20/10
GM37
1.65'
top
bottom
EXPO

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GM37 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ32 | Water Depth (A): | 5.4 |
| Collection Mechanism: | pc | Latitude: | 41°40.526' | Length of Push Core Assembly (B): | 12.25 |
| Time on Station: | 11:00 | Longitude: | 70°54.940' | Water Surface to Top of Handle (C): | 5.05 |
| Time of Collection: | 11:03 | GPS Accuracy: | 13 ft. | Length of Core (from bottom) (D): | 1.65 |
| Time Depart Station: | 11:10 | | | Tide Elevation (from tide board) (G): | 0.3 |

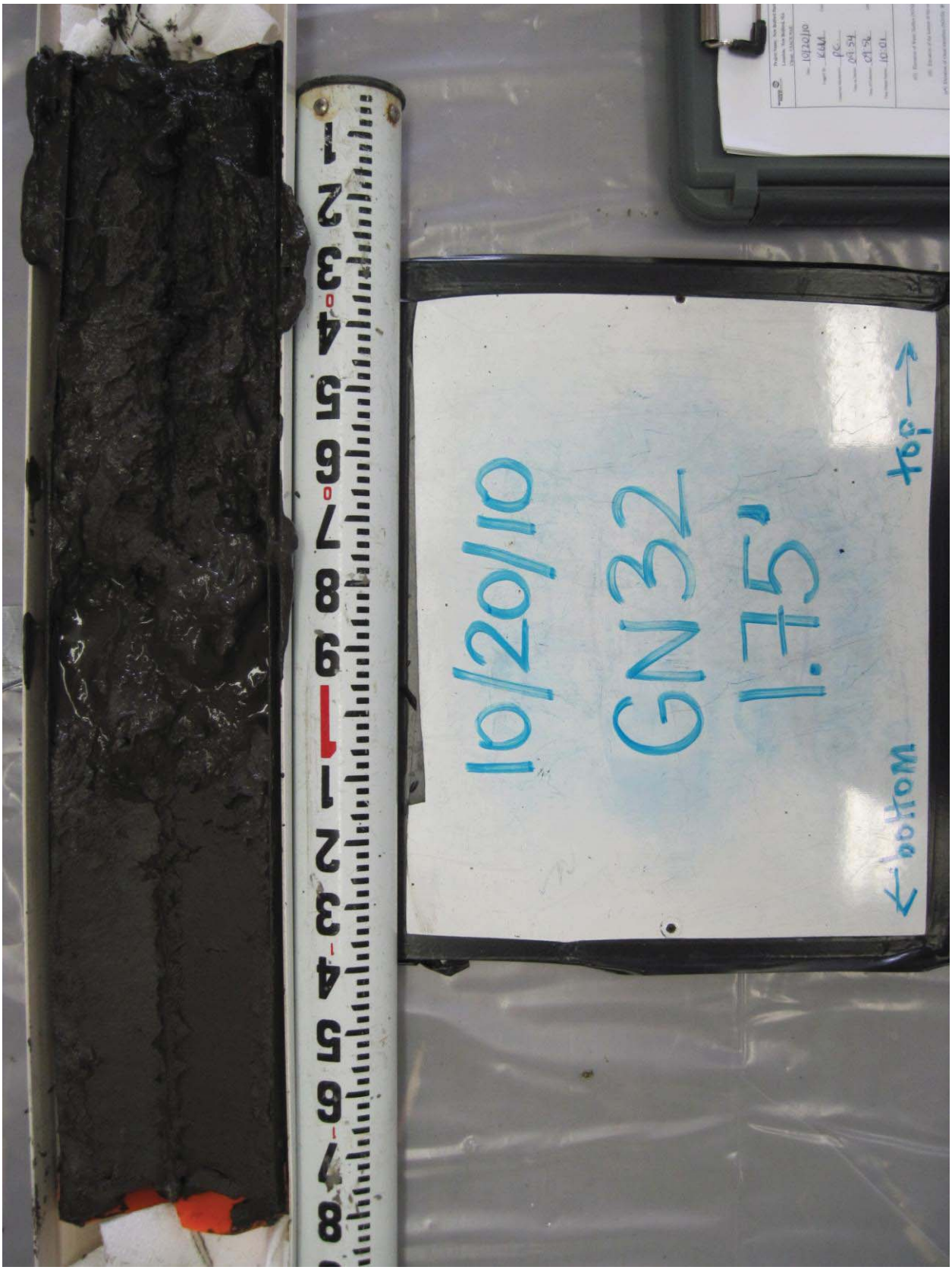
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | (-5.95) |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.25 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.1 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.25) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ32-Φ-Φ.5 |
| 0.7 | (-5.95) | ML/CL | clayey silt | 5Y 3/1 | moderately firm | fine | | S-1Φ0-CΦ32-Φ.5-1.Φ |
| 1.0 | (-6.25) | CL/ML | silty clay | 5Y 3/1 | | fine | | |
| 1.65 | (-6.9) | | | | | | | |

Comments


10/20/10
GN32
1.75'
top
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GN32 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ31 | Water Depth (A): | 4.8 |
| Collection Mechanism: | PC. | Latitude: | 41°40.546' | Length of Push Core Assembly (B): | 12.35 |
| Time on Station: | 09:54 | Longitude: | 70°54.935' | Water Surface to Top of Handle (C): | 5.5 |
| Time of Collection: | 09:56 | GPS Accuracy: | 15 ft. | Length of Core (from bottom) (D): | 1.75 |
| Time Depart Station: | 10:01 | | | Tide Elevation (from tide board) (G): | 1.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.6 |

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.9) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ31-Φ-Φ.5 |
| 0.2 | (-4.1) | OL / ML/CL | organic silt marbled clayey silt, fine sand | 5Y 2.5/1 / 5Y 3/1 | moderately loose | fine | | S-1Φ0-CΦ31-Φ.5-1.Φ |
| 0.7 | (-4.6) | ML/CL | clayey silt, high water content shell hash | 5Y 3/1 | loose | fine | | |
| 1.1 | (-5.0) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.75 | (-5.65) | | | | | | | |

Comments

10/20/10
GR35
1.60'
bottom
top

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/20/10
Station ID: GR35
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ34
Water Depth (A): 3.8
Collection Mechanism: PC
Latitude: 41° 40.533'
Length of Push Core Assembly (B): 12.3
Time on Station: 10:49
Longitude: 70° 54.907'
Water Surface to Top of Handle (C): 6.6
Time of Collection: 10:51
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 1.6
Time Depart Station: 10:54
Tide Elevation (from tide board) (G): 0.4

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.0 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.4 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.7) | OL | organic silt | 5Y 2.5/2 | loose | fine | | S-1Φ0-CΦ34-Φ-Φ.5 |
| 0.3 | (-4.0) | | wood chips & fine sand | | | | | |
| 0.6 | (-4.3) | ML/CL | clayey silt, some fine sand | 5Y 3/1 | loose | fine | | S-1Φ0-CΦ34-Φ.5-1.Φ |
| 1.2 | (-4.9) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.3 | (-5.0) | layer of dense shell hash (oyster) | | | | | | |
| 1.6 | (-5.3) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |

Comments

10/20/10
GS29
1.70'
← bottom
top →

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GS29 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ33 | Water Depth (A): | 3.9 |
| Collection Mechanism: | p.c. | Latitude: | 41°40.558' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 10:06 | Longitude: | 70°54.907' | Water Surface to Top of Handle (C): | 6.35 |
| Time of Collection: | 10:09 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 1.7 |
| Time Depart Station: | 10:13 | | | Tide Elevation (from tide board) (G): | 1.0 |

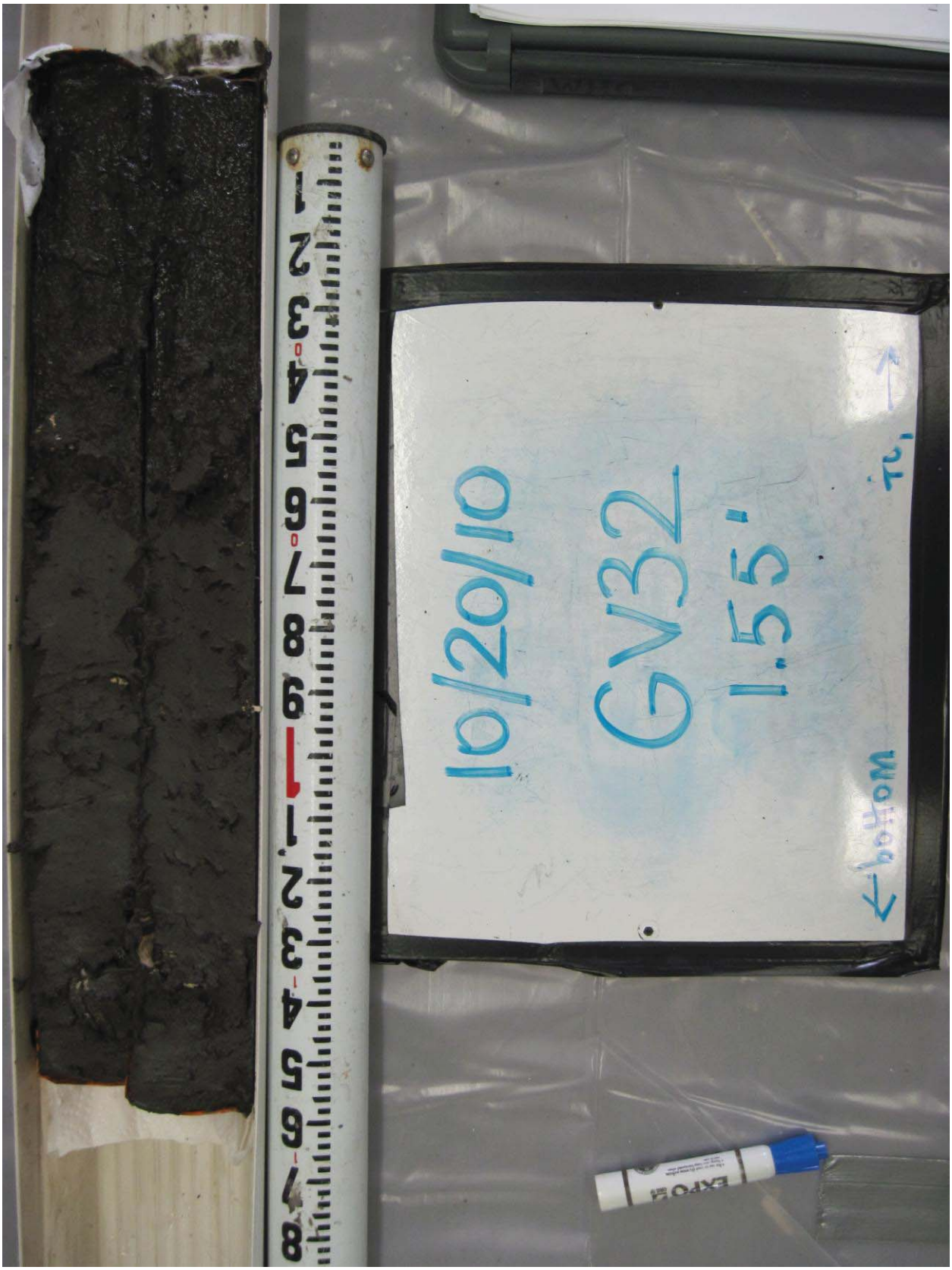
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | ~~-4.25~~ KGM -4.95 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.35 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.25 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.9 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.25) | OL | organic silt | 5Y 2.5/2 | loose | fine | strong $H_2S$ | S-1Φ0-CΦ33-Φ-Φ.5 |
| 0.1 | (-3.35) | OL / ML/CL | OL marbled with clayey silt, fine sand | 5Y 2.5/2 / 5Y 3/1 | moderately loose | fine | | |
| 0.5 | (-3.75) | CL/ML | silty clay with ample oyster shells | 5Y 3/1 | firm | fine, shells | | S-1Φ0-CΦ33-Φ.5-1.Φ |
| Φ.0 | (4.25) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.7 | (-4.95) | | | | | | | |

Comments


10/20/10
GV32
1.55'
top
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/20/10 | Station ID: | GV32 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ35 | Water Depth (A): | 3.5 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.545' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 10:27 | Longitude: | 70°54.891' | Water Surface to Top of Handle (C): | 6.95 |
| Time of Collection: | 10:31 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 1.55 |
| Time Depart Station: | 10:34 | | | Tide Elevation (from tide board) (G): | 0.6 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.75 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.2) | OL | organic silt | 5y 2.5/1 | loose | fine | | S-1Φ0-CΦ35-Φ-Φ.5 |
| 0.1 | (-3.3) | OL/ML | OL mixed with silt, fine sand wood chips | 5y 2.5/2 | loose | fine | strong $H_2S$ | |
| 0.4 | (-3.8) | CL/ML | silty clay, shell hash | 5y 3/1 | firm | fine | | S-1Φ0-CΦ35-Φ.5-1.Φ |
| 1.55 | (-4.75) | | | | | | | |

Comments

10/20/10
GW36
1.65'
top
bottom

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/20/10
Station ID: GW36
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ37
Water Depth (A): 4.6
Collection Mechanism: pc
Latitude: 41°40.529'
Length of Push Core Assembly (B): 12.3
Time on Station: 10:36
Longitude: 70°54.885'
Water Surface to Top of Handle (C): 6.1
Time of Collection: 10:39
GPS Accuracy: 10ft.
Length of Core (from bottom) (D): 1.65
Time Depart Station: 10:45
Tide Elevation (from tide board) (G): 0.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -5.7

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

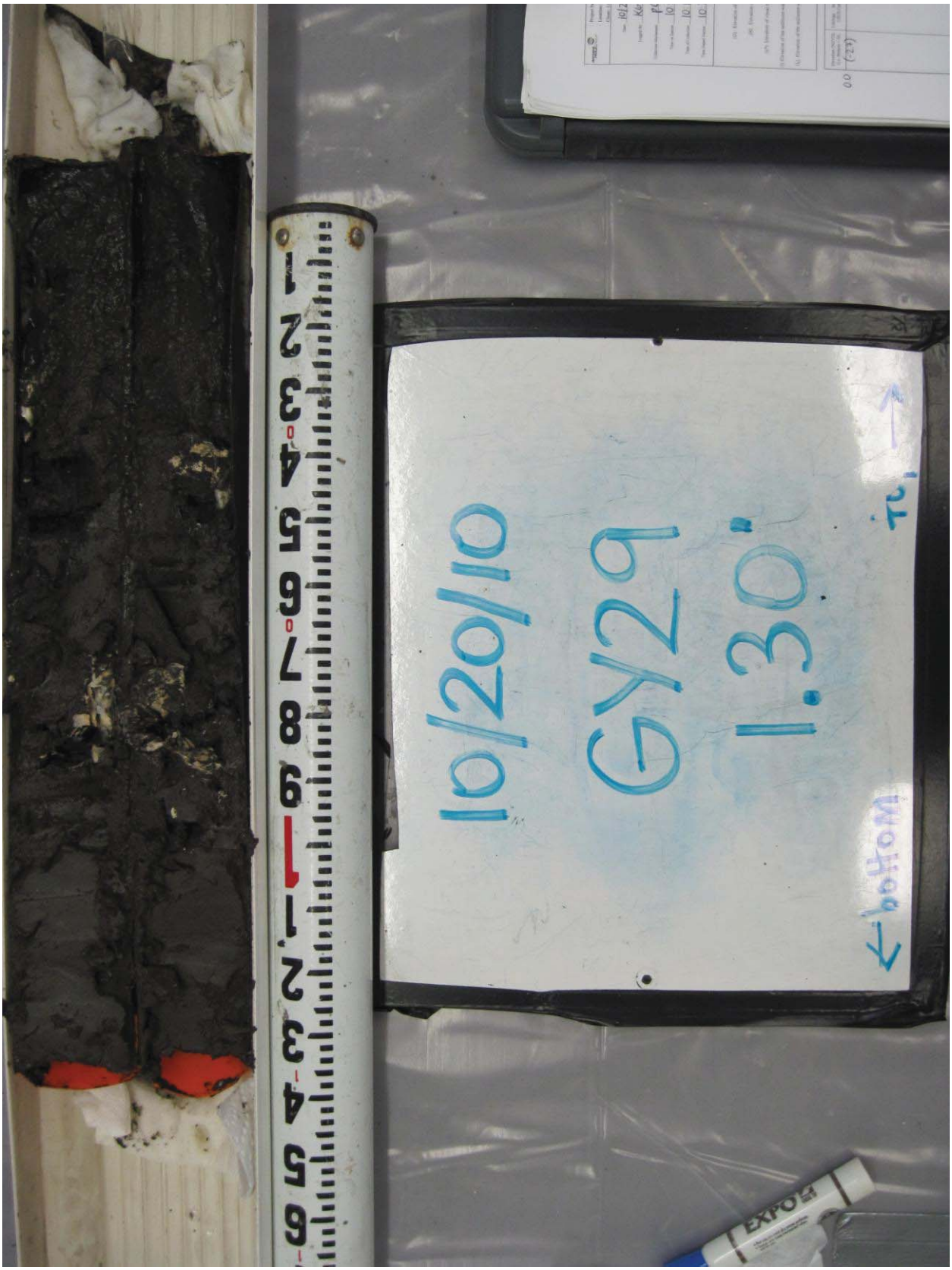
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.05

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.1

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.05) | ~~Small layer of OL-type silt at surface.~~ ML (OL?) | Silt, wood chips, some fine sand | 5Y 2.5/2 | loose | fine | $H_2S$ | S-1Φ0-CΦ37-Φ-Φ.5 |
| 0.6 | (-4.65) | CL/ML | silty clay, oystershell hash | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ37-Φ.5-1.Φ |
| 1.65 | (-5.7) | | | | | | | |

Comments


10/20/10
GY29
1.30"
top
bottom
EXPO

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |
| Date: 10/20/10 | Station ID: GY29 | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: S-1Φ0-CΦ36 | Water Depth (A): 3.2 |
| Collection Mechanism: pc | Latitude: 41° 40.558' | Length of Push Core Assembly (B): 12.15 |
| Time on Station: 10:15 | Longitude: 70° 54.874' | Water Surface to Top of Handle (C): 7.35 |
| Time of Collection: 10:19 | GPS Accuracy: 13 ft. | Length of Core (from bottom) (D): 1.3 |
| Time Depart Station: 10:23 | | Tide Elevation (from tide board) (G): 0.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.0 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -2.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.4 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.7) | | | | | | | |
| 0.1 | (-2.8) | OL | Organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ36-Φ-Φ.5 |
| | | OL/ML | OL (slight) with clayey silt, fine sand | 5Y 2.5/2 | loose | fine | | |
| 0.4 | (-3.1) | | | | | | | S-1Φ0-CΦ36-Φ.5-1.Φ |
| | | CL/ML | silty clay, layers of shell hash at -3.1 → -3.2 and -3.5 | 5Y 3/1 | firm | fine | | |
| 1.3 | (-4.0) | | | | | | | |

Comments

top
10/18/10
KBB4
1.35'
bottom
EXPO

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Logged By: KGM
Collection Mechanism: pc
Time on Station: 09:45
Time of Collection: 09:48
Time Depart Station: 09:53

Station ID: KBB4
Core Sample ID: S-1Φ0-CΦΦ3
Latitude: 41°40.406'
Longitude: 70°54.942'
GPS Accuracy: 12ft.

All Measurements are ± 0.1 feet
Water Depth (A): 6.9
Length of Push Core Assembly (B): 11.75
Water Surface to Top of Handle (C): 3.55
Length of Core (from bottom) (D): 1.35
Tide Elevation (from tide board) (G): 0.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.2

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.45

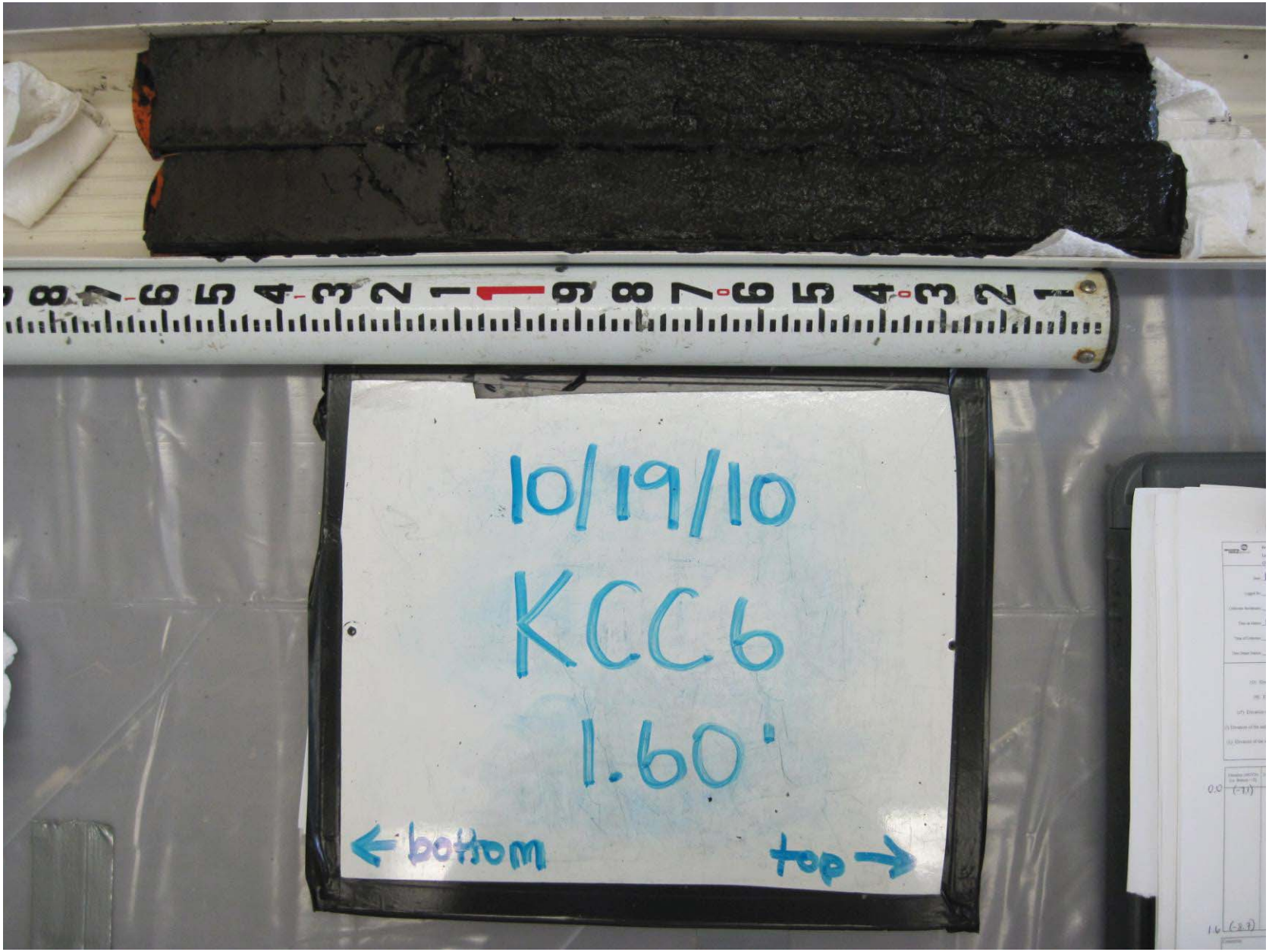
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D KGM ~~-7.05~~ ~~-7.~~ -6.85

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.9

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | ~~(-7.05)~~ KGM -6.85 | OL | organic silt | 5Y 2.5/1 black | loose | fine | | S-1Φ0-CΦΦ3-Φ-Φ.5 |
| 0.6 | (-7.45) | OL | organic silt marbled with | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦΦ3-Φ.5-1.Φ |
| | | ML/CL | clayey silt. fine sand throughout | 5Y 3/1 | | | | |
| 1.1 | (-7.95) | CL/ML | silty clay fine sand | 5Y 3/1 | firm | fine | | |
| 1.35 ~~1.15~~ KGM | (-8.2) | | | | | | | |

Comments


10/19/10
KCC6
1.60'
← bottom
top →

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KCC6 | All Measurements are ± 0.1 feet | |
| Logged By: | KCM | Core Sample ID: | S-1Φ0-CΦ23 | Water Depth (A): | 7.6 |
| Collection Mechanism: | PC | Latitude: | 41°40.398' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 09:29 | Longitude: | 70°54.938' | Water Surface to Top of Handle (C): | 2.8 |
| Time of Collection: | 09:31 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 1.6 |
| Time Depart Station: | 09:40 | | | Tide Elevation (from tide board) (G): | 0.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -8.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.8 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.1) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$ & petroi odor | S-1Φ0-CΦ23-Φ-Φ.5 |
| 0.6 | (-7.7) | | | | | | | |
| | | OL | organic silt with fibers (wood?) and fine sand | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ23-Φ.5-1.Φ |
| 1.1 | (-8.2) | | | | | | | |
| | | CL/ML | silty clay with fine to medium sand | 5Y 3/1 | firm | medium sand | | |
| 1.6 | (-8.7) | | | | | | | |

Comments

top
bottom
1.60'
KDD2
10/18/10

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KDD2
All Measurements are ± 0.1 feet

Logged By: KGM
Core Sample ID: S-1Φ0-CΦΦ4
Water Depth (A): 6.1

Collection Mechanism: pc.
Latitude: 41° 40.414'
Length of Push Core Assembly (B): 13.35

Time on Station: 09:56
Longitude: 70° 54.931'
Water Surface to Top of Handle (C): 5.25

Time of Collection: 10:00
GPS Accuracy: 13 A.
Length of Core (from bottom) (D): 1.6

Time Depart Station: 10:06
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.3

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ——

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.3

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.7) | ML/CL | clayey silt poorly sorted fine to coarse sand | 5Y 2.5/2 | loose | Coarse sand | | S-1Φ0-CΦΦ4-Φ-Φ.5 |
| 0.3 | (-7.0) | CL/ML | silty clay poorly sorted fine sand to gravel | 5Y 3/1 | firm | gravel 1-2cm | $H_2S$ | S-1Φ0-CΦΦ4-Φ.5-1.Φ |
| 1.6 | (-8.3) | | | | | | | |

Comments

top
bottom
10/19/10
KF15
1.55'
EXPO

WOOD ROLEIGHOUR

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/19/10
Station ID: KFF15
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ18
Water Depth (A): 5.2
Collection Mechanism: PC
Latitude: 41° 40.361'
Length of Push Core Assembly (B): 12.2
Time on Station: 10:52
Longitude: 70° 54.920'
Water Surface to Top of Handle (C): 5.4
Time of Collection: 10:55
GPS Accuracy: 12ft.
Length of Core (from bottom) (D): 1.55
Time Depart Station: 10:57
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -5.65

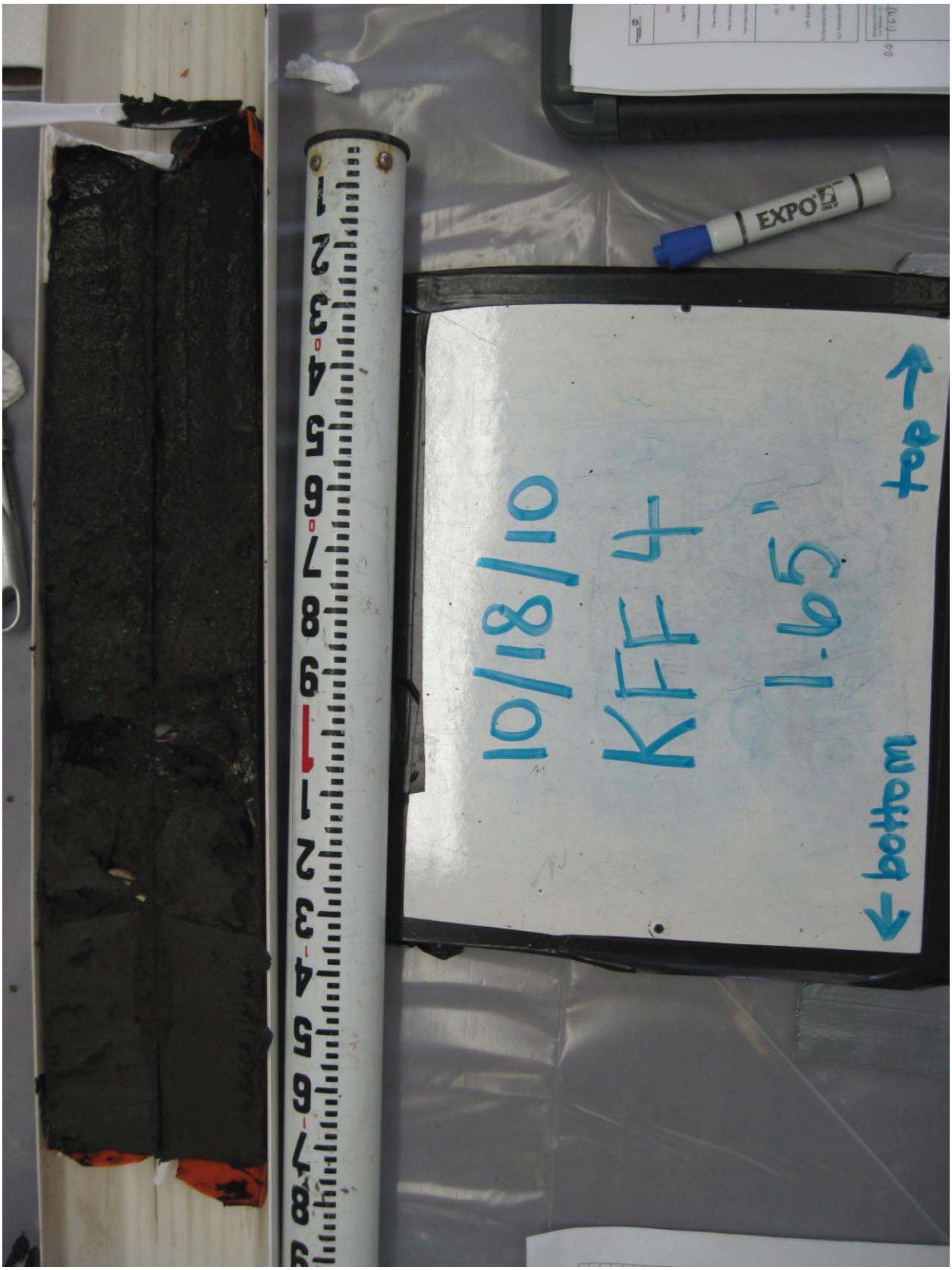
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.45

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.4

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.45) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ18-Φ-Φ.5 |
| 0.2 | (-5.65) | ML/CL | clayey silt, some fine sand | 5Y 3/1 | loose | fine | $H_2S$ | |
| 0.5 | (-5.95) | CL/ML | silty clay, fine to medium grain sand | 5Y 3/1 | firm | medium sand | — | S-1Φ0-CΦ18-Φ.5-1.Φ |
| 1.55 | (-7.0) | | | | | | | |

Comments


top
bottom
10/18/10
KFF4
1.65'
EXPO

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/18/10 | Station ID: | KFF4 | All Measurements are ± 0.1 feet | |
| Logged By: | RGM | Core Sample ID: | S-1Φ0-CΦΦ9 | Water Depth (A): | 6.4 |
| Collection Mechanism: | P.C. | Latitude: | 41° 40.406' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 11:02 | Longitude: | 70° 54.920' | Water Surface to Top of Handle (C): | 3.95 |
| Time of Collection: | 11:06 | GPS Accuracy: | 12 ft. | Length of Core (from bottom) (D): | 1.65 |
| Time Depart Station: | 11:11 | | | Tide Elevation (from tide board) (G): | -0.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.55 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.9 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.6 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.9) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$ & petrol odor | S-1Φ0-CΦΦ9-Φ-Φ.5 |
| 0.7 | (-7.6) | ML | silt with clay and fine sand | 5Y 3/1 | loose | fine | | S-1Φ0-CΦΦ9-Φ.5-1.Φ |
| 1.1 | (-8.0) | ~~oyster trash~~ CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.65 | (-8.55) | | | | | | | |

Comments

top
bottom
10/18/10
KFE8
1.70'

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KFE8
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ10
Water Depth (A): 5.8
Collection Mechanism: P.C.
Latitude: 41° 40.390'
Length of Push Core Assembly (B): 12.25
Time on Station: 11:53
Longitude: 70° 54.921'
Water Surface to Top of Handle (C): 4.4
Time of Collection: 11:57
GPS Accuracy: 12 feet.
Length of Core (from bottom) (D): 1.7
Time Depart Station: 12:00
Tide Elevation (from tide board) (G): 0.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.85

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.75

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.15

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.8

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.15) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ1Φ-Φ-Φ5 |
| 0.6 | (-6.75) | | | | | | | |
| 0.8 | (-6.95) | CL/ML | silty clay, some fine sand | 5Y 3/1 | firm loose | fine | | S-1Φ0-CΦ1Φ-Φ.5-1.Φ |
| 1.4 | (-7.55) | | | | | | | |
| 1.7 | (-7.85) | | | | | | | |

Comments

top
bottom
10/19/10
KGG11
1.50'

Woods Hole Group

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KGG11 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ15 | Water Depth (A): | 6.4 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.377' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 09:59 | Longitude: | 70°57.914' | Water Surface to Top of Handle (C): | 4.4 |
| Time of Collection: | 10:02 | GPS Accuracy: | 14 ft. | Length of Core (from bottom) (D): | 1.5 |
| Time Depart Station: | 10:07 | | | Tide Elevation (from tide board) (G): | 0.4 |

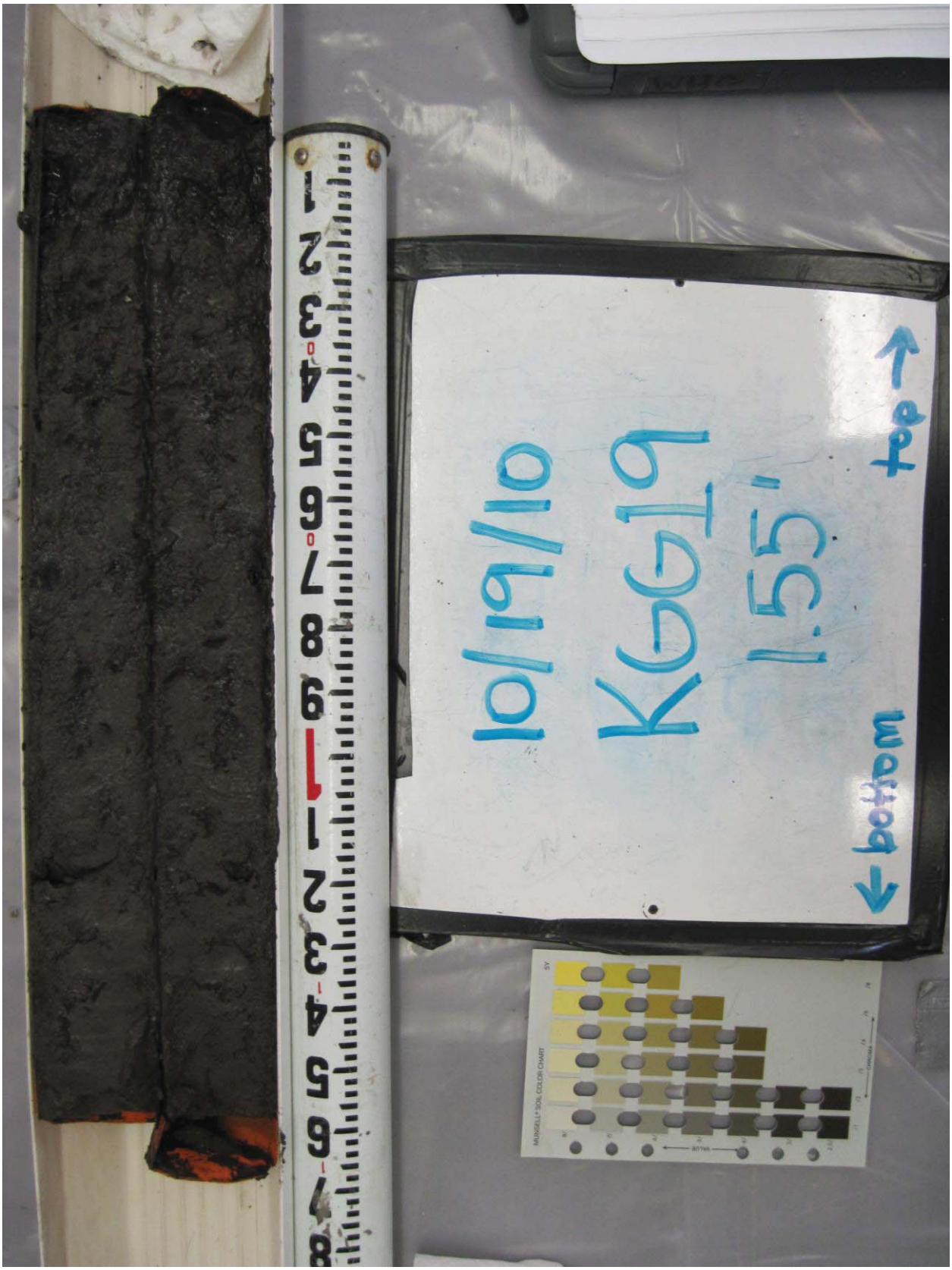
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.0 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.0 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.0) | OL | Organic silt, Some fine sand | 5Y 2.5/1 | loose | fine | strong $H_2S$ | S-1Φ0-CΦ15-Φ-Φ.5 |
| 0.3 | (-6.3) | | | | | | | |
| | | ML/CL ~ OL | Clayey silt marbled w/ silt (OL?), fine sand | 5Y 2.5/1 ~ 5Y 3/1 | loose | fine | | S-1Φ0-CΦ15-Φ.5-1.Φ |
| 0.8 | (-6.8) | | | | | | | |
| | | CL/ML | Silty clay, Some fine sand | 5Y 3/1 | firm | fine | | |
| 1.5 | (-7.5) | | | | | | | |

Comments


top
bottom
10/19/10
KGG19
1.55'
MUNSELL® SOIL COLOR CHART
HUE
VALUE
CHROMA

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/19/10
Station ID: KG619
All Measurements are ± 0.1 feet
Logged By: KCM
Core Sample ID: S-1Ø0-CØ21
Water Depth (A): 4.5
Collection Mechanism: PC.
Latitude: 41°40.344'
Length of Push Core Assembly (B): 12.3
Time on Station: 11:23
Longitude: 70°54.916'
Water Surface to Top of Handle (C): 5.85
Time of Collection: 11:27
GPS Accuracy: 16 ft.
Length of Core (from bottom) (D): 1.55
Time Depart Station: 11:32
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -6.65

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.7

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.1) | OL | organic silt, fine sand | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Ø0-CØ21-Ø-Ø.5 |
| 0.2 | (-5.3) | OL / ML/CL | OL marbled with clayey silt, well ~~sorted~~ graded fine sand to gravel | 5Y 2.5/1 / 5Y 3/1 | moderately firm | 1-2 cm gravel | $H_2S$ | S-1Ø0-CØ21-Ø.5-1.Ø |
| 1.0 | (-6.1) | CL/ML | silty clay with well ~~sorted~~ graded fine sand to gravel | 5Y 3/1 | firm | 1-2 cm gravel | | |
| 1.55 | (-6.65) | | | | | | | |

Comments

top
bottom
2.10'
KHH2
10/18/10

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KHH2
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: ~~X~~-S-1Φ0-CΦΦ5
Water Depth (A): 6.9
Collection Mechanism: PC.
Latitude: 41°40.414'
Length of Push Core Assembly (B): 13.3
Time on Station: 10:12
Longitude: 70°54.910'
Water Surface to Top of Handle (C): 4.05
Time of Collection: 10:16
GPS Accuracy: 13ft.
Length of Core (from bottom) (D): 2.1
Time Depart Station: 10:23
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -9.45

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.55

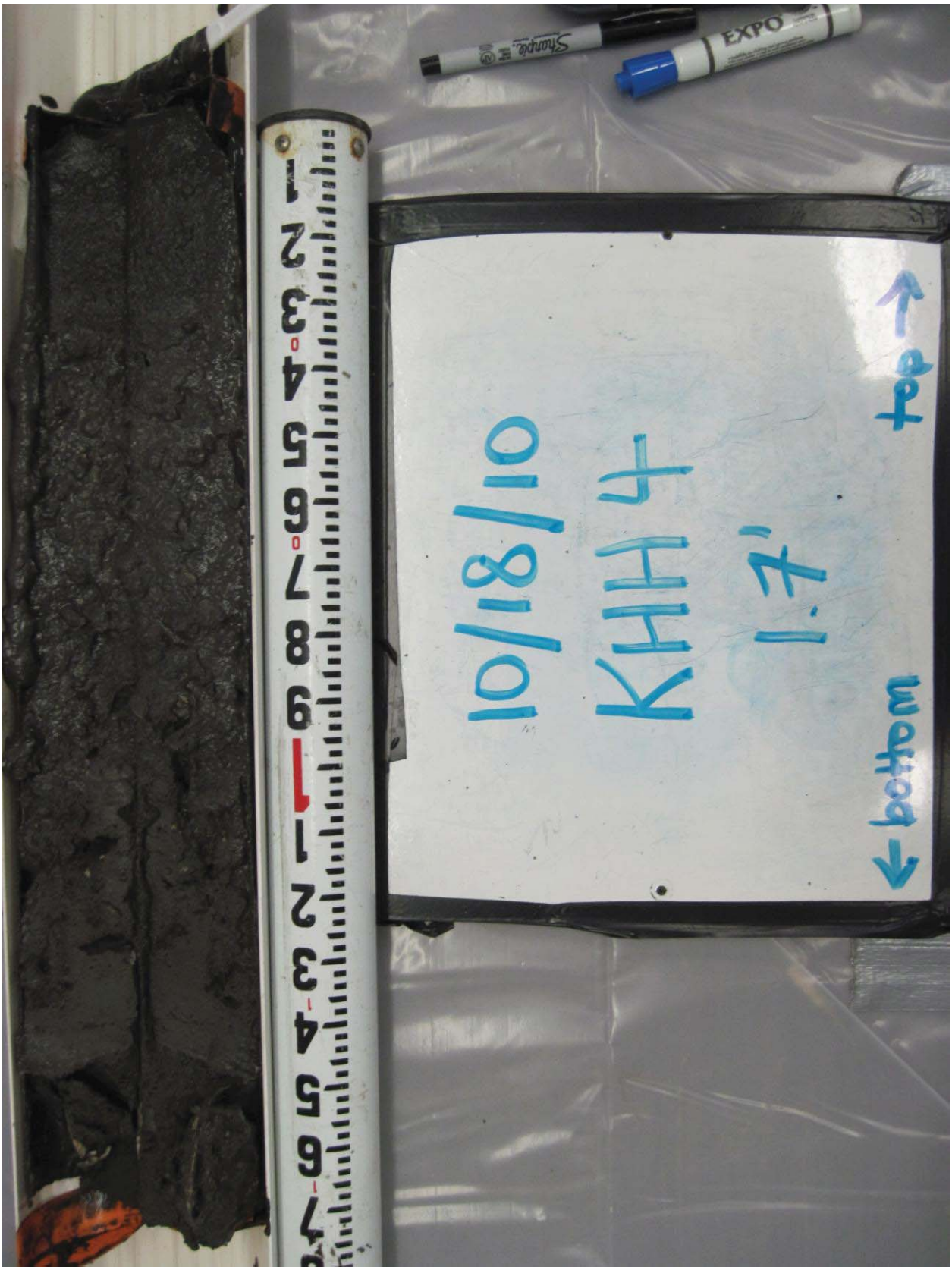
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.35

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.1

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.35) | OL w/ ML | silt | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦΦ5-Φ-Φ.5 |
| 0.2 | (-7.55) | | | | | | | |
| 0.5 | (-7.85) | ML | Silt | 5Y 3/1 | loose | fine | | S-1Φ0-CΦΦ5-Φ.5-1.Φ |
| | | CL/ML | Silty clay with fine sand | 5Y 3/1 | firm | Coarse gravel | | |
| 1.8 | (-9.15) | coarse gravel band, 1-2 cm, with clay | | | | | | |
| 2.1 | (-9.45) | | | | | | | |

Comments


top
bottom
1.7'
KHH4
10/18/10
EXPO

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KHH4
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦΦ8
Water Depth (A): ~~7.3~~ 6.5
Collection Mechanism: P.C.
Latitude: 41°40.406'
Length of Push Core Assembly (B): 12.3
Time on Station: 10:50
Longitude: 70°54.909'
Water Surface to Top of Handle (C): 3.75
Time of Collection: 10:55
GPS Accuracy: 10 ft.
Length of Core (from bottom) (D): 1.7
Time Depart Station: 10:59
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.75

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.35

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.05

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.7

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.05) | OL/ML | silt | 5Y 2.5/1 | loose | fine | strong $H_2S$, possibly chemical | S-1Φ0-CΦΦ8-Φ-Φ.5 |
| 0.3 | (-7.35) | ML/CL | clayey silt | 5Y 3/1 | loose | coarse sand | | S-1Φ0-CΦΦ8-Φ.5-1.Φ |
| 1.0 | (-8.05) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.7 | (-8.75) | | | | | | | |

Comments

top
bottom
KHH8
1.70'
10/18/10

| | | |
|---|---|---|
| WOODS HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | |
|---|---|---|
| Date: 10/18/10 | Station ID: KHH8 | All Measurements are ± 0.1 feet: X |
| Logged By: KGM | Core Sample ID: S-1Ø0-CØ12 | Water Depth (A): 6.4 |
| Collection Mechanism: P.C. | Latitude: 41°40.390' | Length of Push Core Assembly (B): 12.3 |
| Time on Station: 11:42 | Longitude: 70° 54.909' | Water Surface to Top of Handle (C): 3.9 |
| Time of Collection: 11:46 | GPS Accuracy: 12 ft. | Length of Core (from bottom) (D): 1.7 |
| Time Depart Station: 11:50 | | Tide Elevation (from tide board) (G): -0.1 |

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.1

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

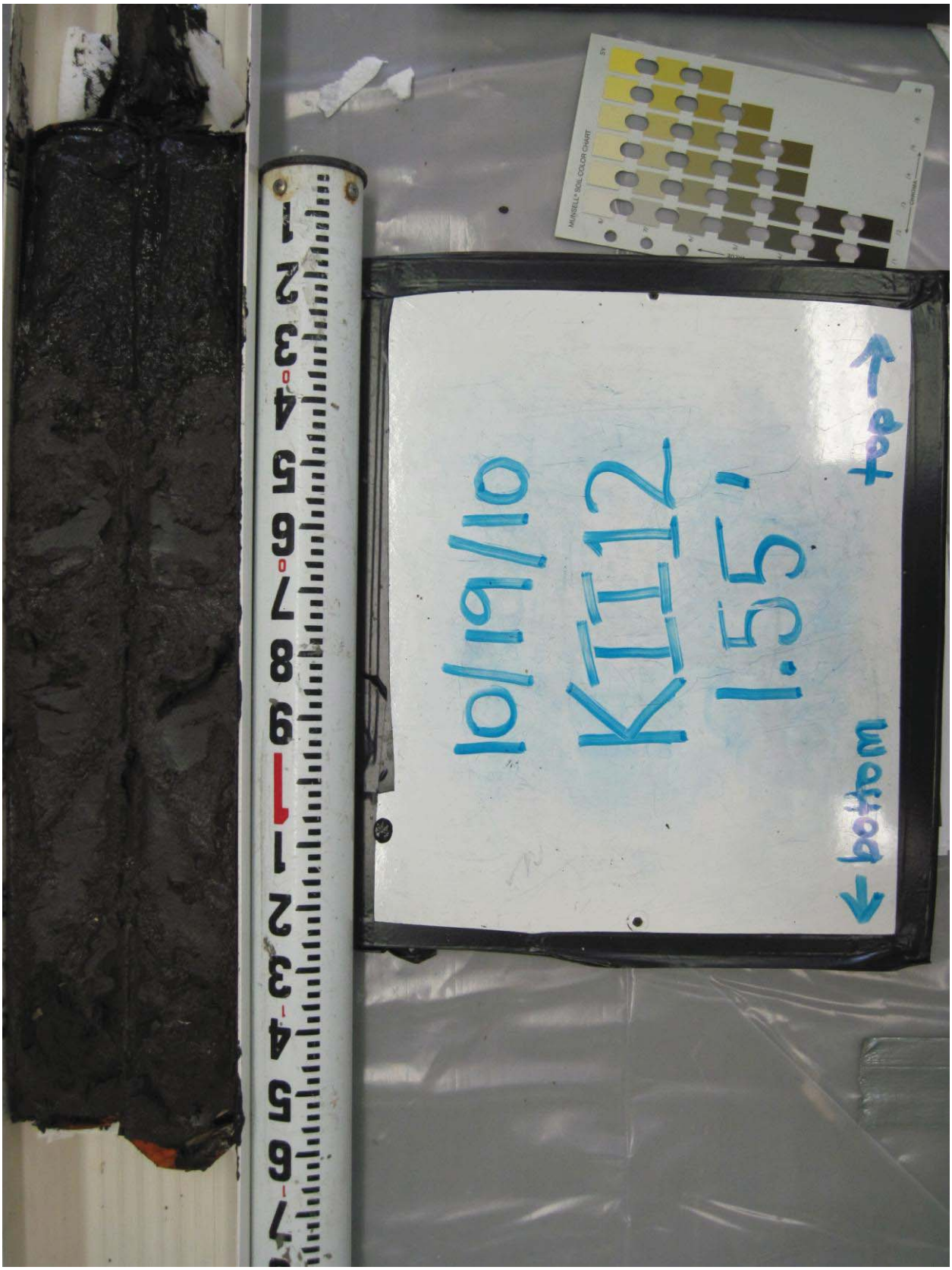
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.8

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.5

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.8) | OL | organic silt | 5Y 2.5/1 | loose | fine | $H_2S$'s petrol odor | S-1Ø0-CØ12-Ø-Ø.5 |
| 0.7 | (-7.5) | ML/CL | clayey silt, fine to med. sand | 5Y 2.5/2 with marbled 2.5/1 | mostly loose slightly firm | medium sand | petrol odor | S1Ø0-CØ12-Ø.5-1.Ø |
| 1.2 | (-8.0) | CL/ML | silty clay, fine sand | 5Y 3/1 marbled w/ 5Y 2.5/1 | firm | | | |
| 1.7 | (-8.5) | | | | | | | |

Comments


top
1.55'
KII12
10/19/10
bottom
MUNSELL® SOIL COLOR CHART

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |
| Date: 10/19/10 | Station ID: KII12 | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: S-1Φ0 - CΦ16 | Water Depth (A): 5.9 |
| Collection Mechanism: P.C. | Latitude: 41°40.373' | Length of Push Core Assembly (B): 12.3 |
| Time on Station: 10:08 | Longitude: 70°54.904' | Water Surface to Top of Handle (C): 4.65 |
| Time of Collection: 10:12 | GPS Accuracy: 11 ft. | Length of Core (from bottom) (D): 1.55 |
| Time Depart Station: 10:16 | | Tide Elevation (from tide board) (G): 0.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.35 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.8 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.6 |

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.8) | OL | organic silt, some fine sand | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ16-Φ-Φ5 |
| 0.4 | (-6.2) | CL/ML | silty clay, fine sand, varying pockets of water content (some looser, some more dense) | 5Y 3/1 | mostly firm, some loose spots | fine | | S-1Φ0-CΦ16-Φ5-1.Φ |
| 1.55 | (-7.35) | | | | | | | |

Comments

top
bottom
KIII14
1.55'
10/19/10

| | | |
|---|---|---|
| WOOD HOLEGROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | |
|---|---|---|
| Date: 10/19/10 | Station ID: KII14 | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: S-1Φ0-CΦ17 | Water Depth (A): 4.8 |
| Collection Mechanism: PC | Latitude: 41° 40.365' | Length of Push Core Assembly (B): 12.3 |
| Time on Station: 10:40 | Longitude: 70° 54.904' | Water Surface to Top of Handle (C): 5.6 |
| Time of Collection: 10:44 | GPS Accuracy: 16 ft. | Length of Core (from bottom) (D): 1.55 |
| Time Depart Station: 10:50 | | Tide Elevation (from tide board) (G): -0.1 |

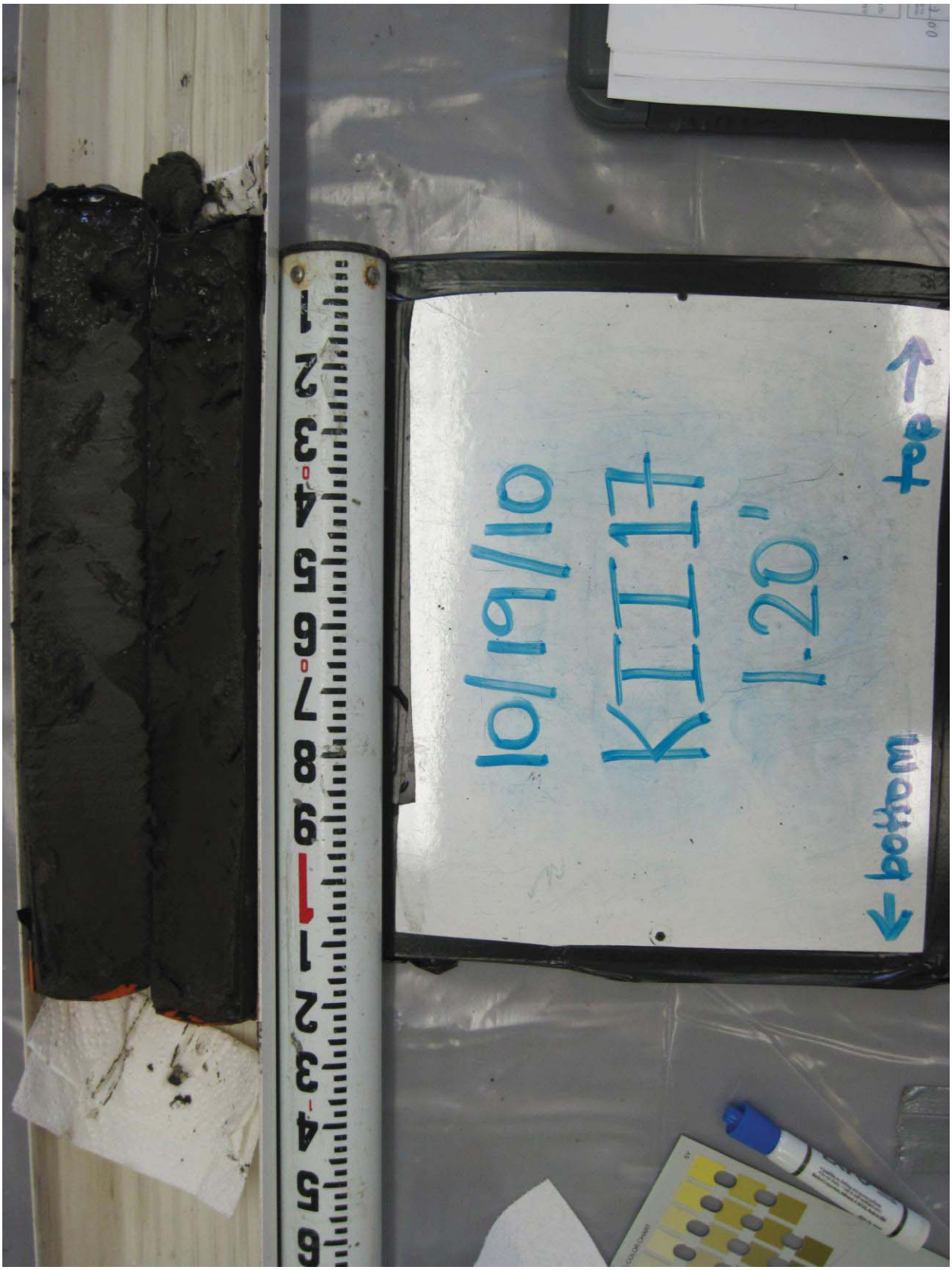
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.8 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.55 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.25 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.9 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.25) | OL ML/CL | Silt, clayey silt | 5Y 2.5/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ17-Φ-Φ.5 |
| 0.3 | (-5.55) | | | | | | | |
| | | CL/ML | Silty clay, fine sand | 5Y 3/1 | mostly firm (moderate) | fine | | S-1Φ0-CΦ17-Φ5-1.Φ |
| 1.4 | (-6.65) | | Silt | 5Y 2.5/1 | | | | pocket of black OL type sediment |
| 1.55 | (-6.8) | | | | | | | |

Comments


top
bottom
10/19/10
KIII17
1.20"

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KII17 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ2Φ | Water Depth (A): | 4.8 |
| Collection Mechanism: | PC. | Latitude: | 41° 40.352' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 11:01 | Longitude: | 70° 54.904' | Water Surface to Top of Handle (C): | 5.9 |
| Time of Collection: | 11:05 | GPS Accuracy: | 10 A. | Length of Core (from bottom) (D): | 1.2 |
| Time Depart Station: | 11:09 | | | Tide Elevation (from tide board) (G): | -0.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | — |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.4 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.0 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.4) | ML/CL | clayey silt, fine to medium sand | 5Y 3/1 | moderately firm to loose | fine | $H_2S$ | S-1Φ0-CΦ20-Φ-Φ.5 | top <Φ.1 is black (5Y 2.5/1 |
| 0.2 | (-5.6) | | | | | | | | |
| | | CL/ML | silty clay, fine to coarse sand | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ20-0.5-1.Φ | |
| 1.2 | (-6.6) | | | | | | | | |

Comments

top
1.65'
KII6
10/18/10
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KII6
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ11
Water Depth (A): ~~6.0~~ KGM 6.3
Collection Mechanism: p.c.
Latitude: 41° 40.398'
Length of Push Core Assembly (B): 12.3
Time on Station: 11:13
Longitude: 70° 54.903'
Water Surface to Top of Handle (C): 4.15
Time of Collection: 11:20
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 1.65
Time Depart Station: 11:24
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.35

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.2

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A ~~-6.5~~ KGM -6.5

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.7) | OL | Organic silt. fine sand | 5Y 2.5/1 | loose | fine | $H_2S$'s petrol odor | S-1Φ0-CΦ11-Φ-Φ5 |
| 0.5 | (-7.2) | ML/CL | clayey silt fine sand | ↑ | slightly firm | fine | | S-1Φ0-CΦ11-Φ.5-1.Φ |
| 1.0 | (-7.7) | CL/ML | silty clay, oyster shell hash | 5Y 3/1 ↓ | firm | fine | | |
| 1.65 | (-8.35) | | | | | | | |

Comments

top
bottom
10/19/10
KJJ19
1:50'

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/19/10
Station ID: KJJ19
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ22
Water Depth (A): ~~3.8~~ 3.9
Collection Mechanism: PC.
Latitude: 41°40.344'
Length of Push Core Assembly (B): 12.35
Time on Station: 11:12
Longitude: 70°54.898'
Water Surface to Top of Handle (C): 6.5
Time of Collection: 11:15
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 1.5
Time Depart Station: 11:20
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -6.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.75

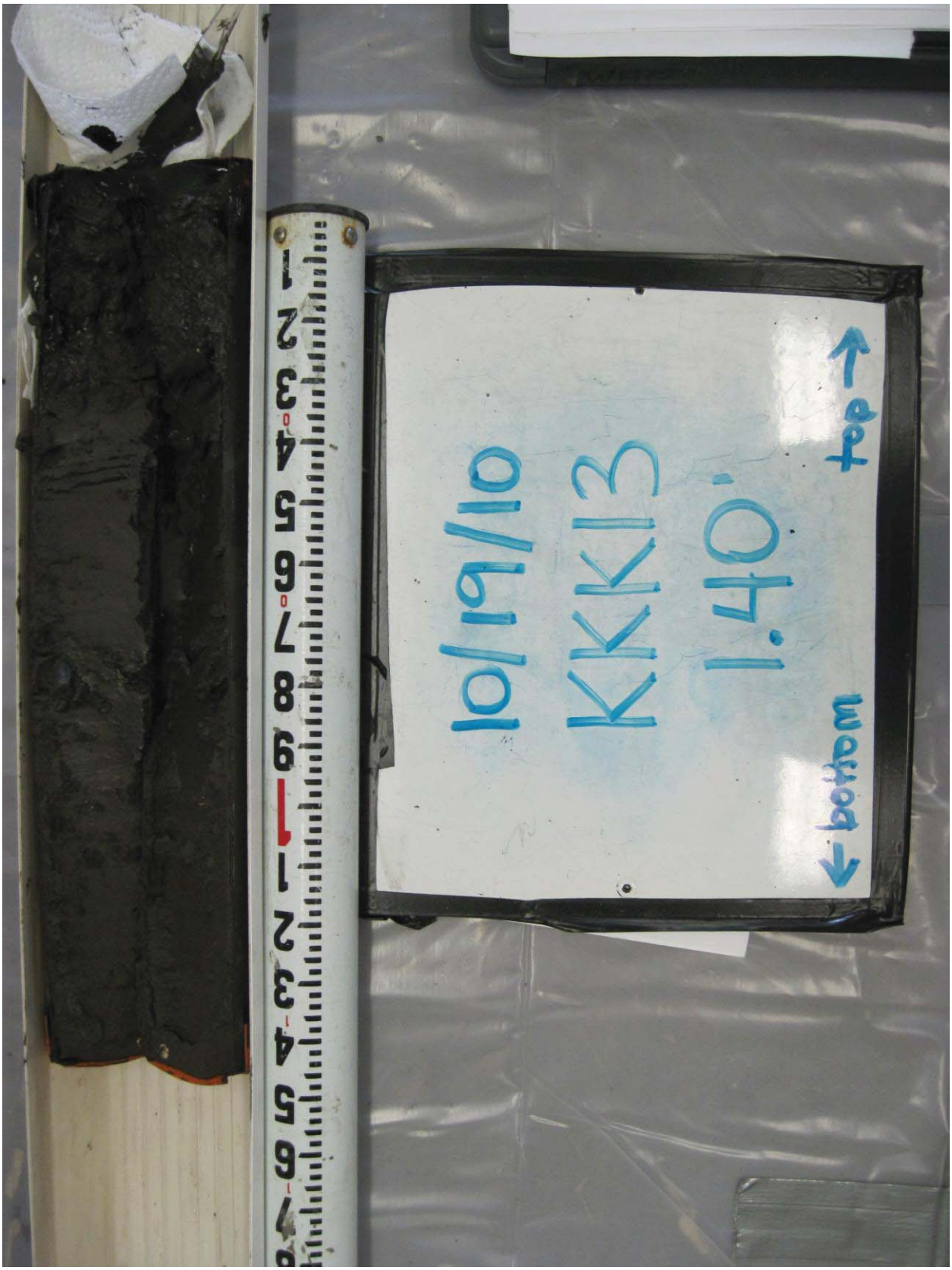
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.55

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.1

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.55) | OL | organic silt | 5y 2.5/1 | loose | fine | | S-1Φ0-CΦ22-Φ-Φ.5 |
| 0.2 | (-4.75) | ML/CL | clayey silt | 5y 3/1 | loose | fine | | |
| 0.5 | (-5.05) | SC/SM | clayey silty sand | 5y 3/1 | firm | medium | | S-1Φ0-CΦ22-Φ.5-1.Φ |
| 0.6 | (-5.15) | CG/CS | sandy clay with gravel | 5y 3/1 | firm | 2-4cm gravel | | |
| 1.3 | (-5.85) | SM/SC | silty, clayey sand ~~v/fgr~~ | 2.5y 3/2 | firm | fine | | |
| 1.5 | (-6.05) | | | | | | | |

Comments


top
bottom
10/19/10
KKK13
1.40'

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KKK13 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ25 | Water Depth (A): | 5.0 |
| Collection Mechanism: | PC | Latitude: | 41° 40.369' | Length of Push Core Assembly (B): | ~~12.3~~ KGM 12.2 |
| Time on Station: | 10:17 | Longitude: | 70° 57.893' | Water Surface to Top of Handle (C): | 5.2 |
| Time of Collection: | 10:20 | GPS Accuracy: | 12 ft. | Length of Core (from bottom) (D): | 1.4 ~~X~~ KGM |
| Time Depart Station: | 10:27 | | | Tide Elevation (from tide board) (G): | 0.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.8 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.7 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -5.4 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.8 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.4) | thin layer of black (5Y 2.5/1) OL on surface | | | | | | |
| 0.3 | (-5.7) | OL ML CL | OL marbled w/ clayey silt | 5Y 3/1 | loose | fine | $H_2S$ | S-1Φ0-CΦ25-Φ-Φ.5 |
| | | CL/ML | Silty Clay | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ25-Φ.5-1.Φ |
| 1.4 | (-6.8) | | | | | | | |

Comments: slight oily sheen on top of core when collected.

top
10/19/10
KK15
0.9'
bottom

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KKK15 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ19 | Water Depth (A): | 4.8 |
| Collection Mechanism: | pc | Latitude: | 41° 40.361' | Length of Push Core Assembly (B): | 12.25 |
| Time on Station: | 10:30 | Longitude: | 70° 54.893' | Water Surface to Top of Handle (C): | 6.4 |
| Time of Collection: | 10:33 | GPS Accuracy: | 11 ft. | Length of Core (from bottom) (D): | 0.9 |
| Time Depart Station: | 10:38 | | | Tide Elevation (from tide board) (G): | 0.1 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.75 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.35 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.7 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.85) | OL CL/ML | organic silt marbled with silty clay | 5Y 2.5/1 5Y 3/1 | moderately firm to loose | fine | | S-1Φ0-CΦ19-Φ-Φ.5 |
| 0.5 | (-5.35) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ19-Φ.5-Φ.9 |
| 0.9 | (-5.75) | | | | | | | |

Comments: slight oily sheen on surface of core when collected.

top
0-8"
KKK7
10/18/10
bottom
EXPO
S-180-
CAAL-A-S
10/18/10
S-180-
CAAL-A-S.1.A
10/18/10

| | | |
|---|---|---|
| WOOD HOLEGROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | |
|---|---|---|
| Date: 10/18/10 | Station ID: KKK2 | All Measurements are ± 0.1 feet |
| Logged By: KGM | Core Sample ID: S-1Φ0-CΦΦ6 | Water Depth (A): 6.6 KGM |
| Collection Mechanism: P.C. | Latitude: 41° 40.414' | Length of Push Core Assembly (B): ~~13.3~~ 12.25 |
| Time on Station: 10:28 | Longitude: 70° 54.892' | Water Surface to Top of Handle (C): 4.5 |
| Time of Collection: 10:32 | GPS Accuracy: 11 ft. | Length of Core (from bottom) (D): 0.8 |
| Time Depart Station: | | Tide Elevation (from tide board) (G): -0.2 |

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.95

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) —

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.15

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.8

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.15) | ML/CL | clayey silt | 5Y 3/1 | loose | fine | | S-1Φ0-CΦΦ6-Φ-Φ.5 |
| 0.1 | (-7.25) | — — | — — — — | — — — | — | — | — | |
| | | CL/ML | silty clay well sorted sand, fine to coarse | 5Y 3/1 | firm | coarse sand | | S-1Φ0-CΦΦ6-Φ.5-1.Φ |
| 0.8 | (-7.95) | | | | | | | |

Comments

top
10/18/10
KKK4
1.3'
bottom

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/18/10 | Station ID: | KKK4 | All Measurements are ±0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦΦ7 | Water Depth (A): | 6.8 |
| Collection Mechanism: | PC. | Latitude: | 41°40.406' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 10:39 | Longitude: | 70° 54.892' | Water Surface to Top of Handle (C): | 4.1 |
| Time of Collection: | 10:42 | GPS Accuracy: | 12ft. | Length of Core (from bottom) (D): | 1.3 |
| Time Depart Station: | | | | Tide Elevation (from tide board) (G): | -0.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -8.4 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -7.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -7.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -7.0 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.1) | OL/ML | Silt | 5Y 2.5/1 | loose | fine | strong $H_2S$ | S-1Φ0-CΦΦ7-Φ-Φ.5 |
| 0.2 | (-7.3) | | | | | | | |
| | | CL/ML | Silty clay some fine sand | 5Y 3/1 | firm | fine | | S-1Φ0-CΦΦ7-Φ5-1.Φ |
| 0.8 | dense layer of oyster shells | | | | | | | |
| 1.3 | (-8.4) | | | | | | | |

Comments

top
10/18/10
KKK7
1.30"
bottom
EXPO

| | |
|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | Vessel: |
| Client: USACE NAE | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/18/10 | Station ID: | KKK7 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ13 | Water Depth (A): | ~~6.4~~ KGM 6.2 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.394' | Length of Push Core Assembly (B): | 12.25 |
| Time on Station: | 11:27 | Longitude: | 70° 54.893' | Water Surface to Top of Handle (C): | 4.6 |
| Time of Collection: | 11:30 | GPS Accuracy: | 13 ft. | Length of Core (from bottom) (D): | 1.3 |
| Time Depart Station: | 11:35 | | | Tide Elevation (from tide board) (G): | -0.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.85 |
| (Z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.55 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -6.4 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.55) | OL | Organic Silt, Some fine sand | 5Y 2.5/1 | loose | fine | $H_2S$ petrol odor | S-1Φ0-CΦ13-Φ-Φ.5 |
| 0.5 | (-7.05) | ML/CL | Clayey silt, fine sand | 5Y 3/1 | loose | fine | | S-1Φ0-~~CΦ13~~ CΦ13-Φ.5-1.Φ |
| 0.65 | (-7.2) | CL/ML | Silty clay | 5Y 3/1 | firm | fine | | |
| | | | (ample oyster shells) | | | | | |
| 1.3 | (-7.85) | | | | | | | |

Comments

10/19/10
KKG
135'
top
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/19/10
Station ID: KKK9
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ14
Water Depth (A): 6.1
Collection Mechanism: PC.
Latitude: 41° 40.385'
Length of Push Core Assembly (B): 12.3
Time on Station: 09:45
Longitude: 70° 54.893'
Water Surface to Top of Handle (C): ~~6.1~~ KGM 4.7
Time of Collection: 09:47.
GPS Accuracy: 13 ft.
Length of Core (from bottom) (D): 1.35
Time Depart Station: 09:57
Tide Elevation (from tide board) (G): 0.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -5.85

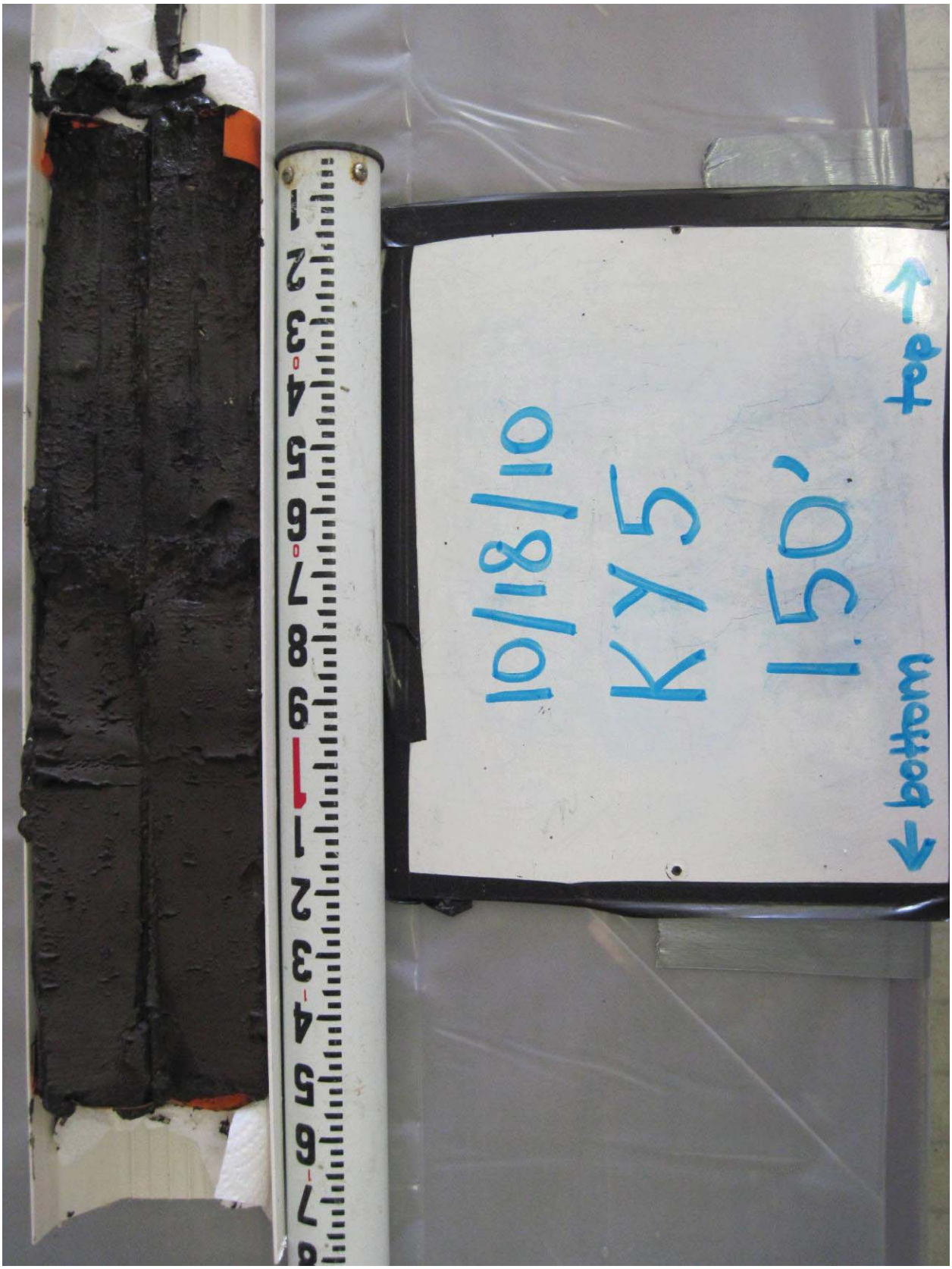
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -5.75

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.6

**(Note if I • $I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-5.75) | OL | organic silt, fine sand | 5Y 2.5/1 | loose | fine | Strong $H_2S$ | S-1Φ0-CΦ14-Φ-Φ.5 |
| 0.1 | (-5.85) | | | | | | | |
| Ø | | ML/CL | clayey silt, some fine sand, shell hash | 5Y 3/1 | loose | fine | | S-1Φ0-CΦ14-Φ.5-1.Φ |
| 0.8 | (-6.55) | | | | | | | |
| | | CL/ML | silty clay, some fine sand | 5Y 3/1 | firm | fine | | |
| 1.35 | (-7.1) | | | | | | | |

Comments
Slight oily sheen on top of core when collected.


top
bottom
10/18/10
KY5
1.50'

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: KY5
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦΦ2
Water Depth (A): 5.7
Collection Mechanism: PC
Latitude: 41° 40.402'
Length of Push Core Assembly (B): 13.3
Time on Station: 09:31
Longitude: 70° 54.959'
Water Surface to Top of Handle (C): 5.5
Time of Collection: 09:38
GPS Accuracy: 13ft.
Length of Core (from bottom) (D): 1.5
Time Depart Station: 09:42
Tide Elevation (from tide board) (G): 0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -6.8

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -6.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -5.5

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.1) | OL | organic silt, fine sand | 5Y 2.5/1 black | loose | fine | $H_2S$ slight petroleum | S-1Φ0-CΦΦ2-Φ-Φ.5 |
| 0.2 | (-6.3) | OL marbled CL/ML | organic silt marbled with silty clay, fine sand | 5Y 2.5/1 | loose | fine | | |
| 0.7 | (-6.8) | CL/ML | Silty Clay | 5Y 3/1 dark | firm | fine | | S-1Φ0-CΦΦ2-Φ.5-1.Φ |
| 1.5 | (-7.6) | | | 5Y 3/1 dark grey | | | | |

Comments

top
bottom
10/19/10
KY7
130'

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/19/10 | Station ID: | KY7 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ24 | Water Depth (A): | 6.7 |
| Collection Mechanism: | pc | Latitude: | 41° 40.394' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 09:18 | Longitude: | 70° 54.959' | Water Surface to Top of Handle (C): | 3.9 |
| Time of Collection: | 09:23 | GPS Accuracy: | 13 ft. | Length of Core (from bottom) (D): | 1.3 |
| Time Depart Station: | 09:27 | | | Tide Elevation (from tide board) (G): | 0.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.3 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.9 |

**(Note if I • $I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.3) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ24-Φ-Φ.5 |
| 0.1 | (-6.4) | OL ML/CL | OL marbled w/ clay silt | 5Y 2.5/1 | moderately loose | fine | $H_2S$ | |
| 0.3 | (-6.6) | | | 5Y 3/1 | | | | |
| | | CL/ML with PT (wood chips?) | silty clay with peat (wood chips) piece of wood at 1 foot | 5Y 3/1 | firm | fine, one rock ~ 6cm | | S-1Φ0-CΦ24-Φ.5-1.Φ |
| 1.3 | (-7.6) | | | | | | | |

Comments
oily sheen on surface of core when collected.

top
bottom
10/18/10
KZ2
1.35'

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/18/10
Station ID: K72
All Measurements are ± 0.1 feet
Logged By: RGM
Core Sample ID: S-1Φ0-CΦΦ1
Water Depth (A): ~~7.1~~ KGM 6.7
Collection Mechanism: P.C.
Latitude: 41° 40.414'
Length of Push Core Assembly (B): 13.3
Time on Station: 09:10
Longitude: 70° 54.953'
Water Surface to Top of Handle (C): ~~4.9~~ KGM 4.6
Time of Collection: 09:20
GPS Accuracy: 13ft.
Length of Core (from bottom) (D): 1.35
Time Depart Station: 09:28
Tide Elevation (from tide board) (G): 0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -7.35

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -7.15

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -6.5

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | (-7.15) | OL | organic silt, some fine sand | 5y 2.5/1 black | loose | fine | Strong $H_2S$ | S-1Φ0-CΦΦ1-Φ-Φ.5 | |
| 0.2 | (-7.35) | | | | | | | | |
| | | CL/ML | Silty clay some fine sand | 5y 4/1 dark grey | loose | fine | | S-1Φ0-CΦΦ1-Φ.5-1.Φ | Shell hash (oyster shells |
| 1.1 | (-8.25) | | | | | | | | |
| 1.35 | (-8.5) | CL/ML | Silty clay | 5y 4/1 | firm | fine | | | |

Comments 1st attempt unsuccessful - oyster shells - core 1ft long, should have been 1.7ft. long

10/21/10
MA4
0.80'
top
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/21/10 | Station ID: | MA4 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ39 | Water Depth (A): | 0.3 |
| Collection Mechanism: | P.C. | Latitude: | 41°40.651' | Length of Push Core Assembly (B): | 6.7 |
| Time on Station: | 10:36 | Longitude: | 70°55.007' | Water Surface to Top of Handle (C): | 5.5 |
| Time of Collection: | 10:41 | GPS Accuracy: | 12 ft. | Length of Core (from bottom) (D): | 0.8 |
| Time Depart Station: | 10:45 | | | Tide Elevation (from tide board) (G): | 1.7 |

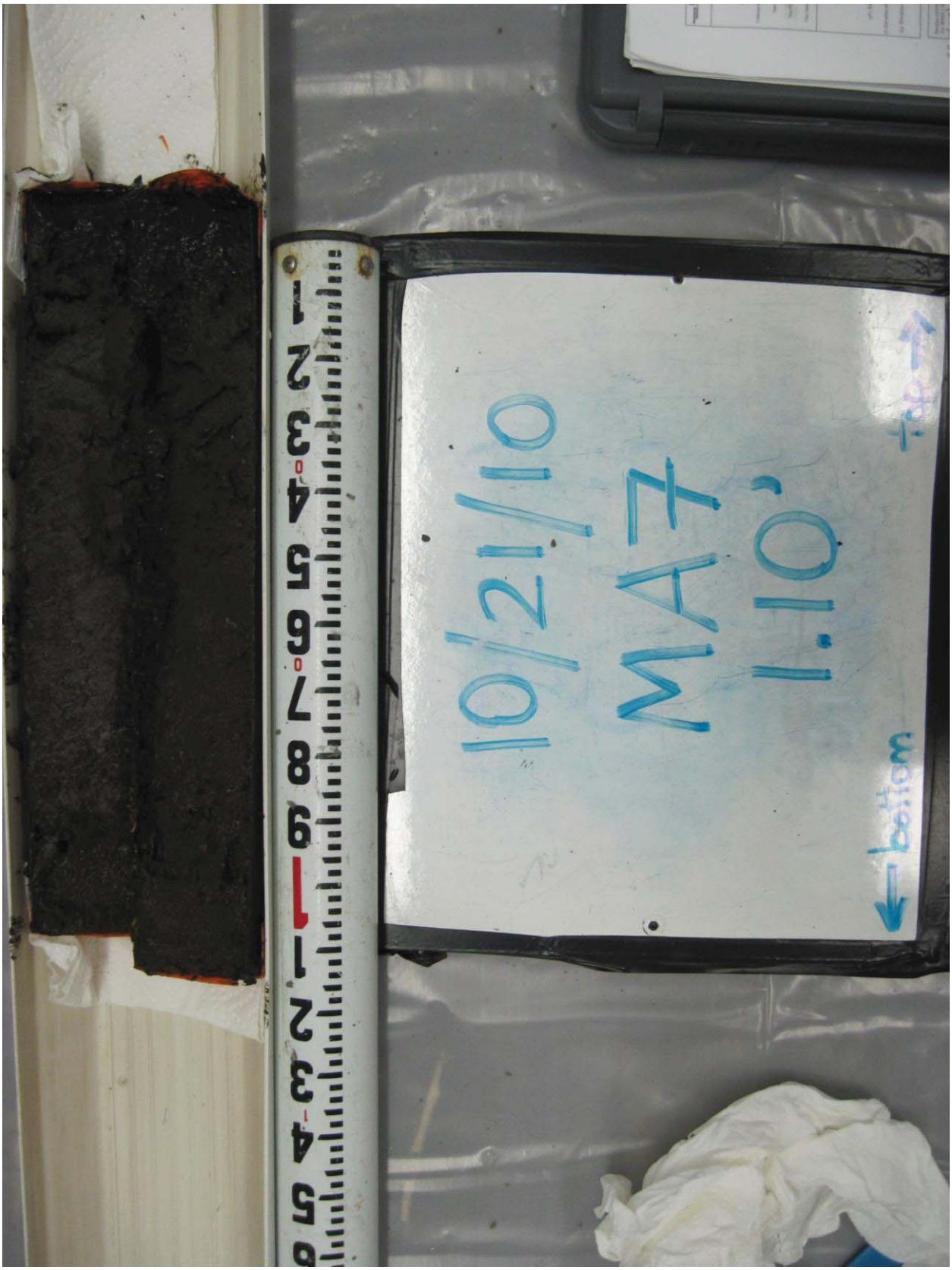
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.7 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | + 0.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | — |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | KGM ~~0.3~~ 1.3 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | 1.4 |

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| | Elevation (NGVD) (i.e. Bottom = 11) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (1.3) | PT, ML/CL | roots, organic material, clayey silt surrounding, some fine sand | 2.5y 3/2 | firm | fine | | S-1Φ0-CΦ39-Φ-Φ.5 |
| 0.6 | (0.7) | ↓ | ↓ | 2.5y 2.5/1 | firm | fine | | S-1Φ0-CΦ39-Φ.5-Φ.8 |
| 0.8 | (0.5) | | black | | | | | |

Comments: hit refusal at depth of 0.8 feet.


top
0'-1"
MAZ
10/21/10
bottom

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/21/10
Station ID: MA7
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ41
Water Depth (A): 4.5
Collection Mechanism: PC
Latitude: 41° 40.637'
Length of Push Core Assembly (B): 12.3
Time on Station: 09:29
Longitude: 70° 55.006'
Water Surface to Top of Handle (C): 6.6
Time of Collection: 09:32
GPS Accuracy: 13ft.
Length of Core (from bottom) (D): 1.1
Time Depart Station: 09:34
Tide Elevation (from tide board) (G): 2.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -3.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -2.0

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.9

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.8

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.9) | | | | | | | |
| 0.1 | (-2.0) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ41-Φ-Φ.5 |
| | | CL/ML SW | silty clay, well graded fine to medium sand. | 5Y 3/1 | firm | ~~fine~~ medium | | |
| 0.6 | (-2.5) | | | | | | | S-1Φ0-CΦ41-Φ.5-1.Φ |
| | | PT/CL ML | silty clay organics (peat) some fine sand | 5Y 3/2 | firm | fine | | |
| 1.1 | (-3.0) | | | | | | | |

Comments hitrefusal at 1.1 foot depth

10/21/10
MA9
0.50'
bottom
top

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/21/10
Logged By: KGM
Collection Mechanism: PC
Time on Station: 10:07
Time of Collection: 10:27
Time Depart Station: 10:32

Station ID: MA9
Core Sample ID: S-1Φ0-CΦ43
Latitude: ~~41° 40.628'~~ 41° 40.629'
Longitude: ~~70° 55.006'~~ 70° 55.004'
GPS Accuracy: 10 ft.

All Measurements are ± 0.1 feet
Water Depth (A): ~~1.1~~ KGM ~~2.4~~ KGM 3.6
Length of Push Core Assembly (B): ~~11.8~~ KGM ~~6.1~~ KGM 6.65
Water Surface to Top of Handle (C): ~~4.95~~ KGM 2.5
Length of Core (from bottom) (D): 0.5
Tide Elevation (from tide board) (G): ~~2.2~~ KGM 1.9

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): ~~2.2~~ KGM 1.9

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -2.75

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.75

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.7

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.75) | OL | Organic silt, fine to coarse sand | 5Y 2.5/1 | loose | coarse sand | petro odor | S-1Φ0-CΦ43-Φ-Φ.5 |
| 0.2 | (-1.95) | CL/ML | Silty clay organic detritis | 5Y 2.5/1 | firm | fine | | |
| 0.4 | (-2.15) | CL/ML | Silty clay, Shell hash | 5Y 3/1 | firm | fine | | |
| 0.5 | (-2.25) | | | | | | | |

Comments: 1st attempt unsuccessful - hit refusal at ~0.5 ft.
2nd attempt unsuccessful - hit refusal at ~0.3ft - moved location ~10 feet into channel for 3rd attempt

10/21/10
MB11
0.85'
bottom
top

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/21/10 | Station ID: | MB11 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ44 | Water Depth (A): | ~~5.8~~ KGM 6.0 |
| Collection Mechanism: | PC | Latitude: | 41° 40.621' | Length of Push Core Assembly (B): | 12.0 |
| Time on Station: | 09:51 | Longitude: | 70° 55.001' | Water Surface to Top of Handle (C): | ~~4.75~~ KGM 5.0 |
| Time of Collection: | 09:57 | GPS Accuracy: | 11 ft. | Length of Core (from bottom) (D): | 0.85 |
| Time Depart Station: | 10:03 | | | Tide Elevation (from tide board) (G): | ~~2.4~~ KGM 2.3 |

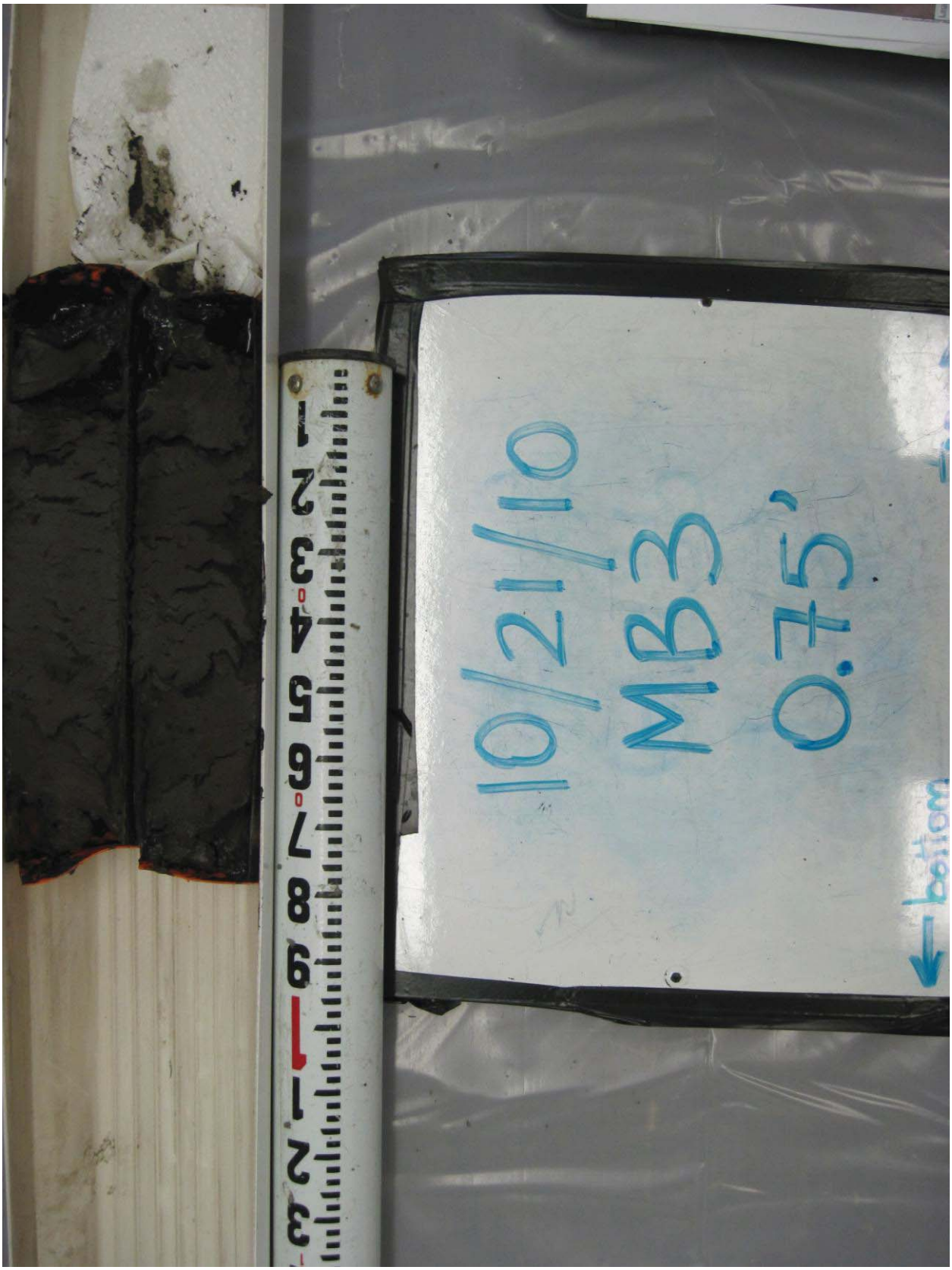
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | ~~2.4~~ KGM 2.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.05 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.7 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.85) | OL/SW | Sandy silt | 5Y 2.5/1 | loose | Coarse | petrol odor | S-1Φ0-CΦ44-Φ-Φ.5 |
| 0.2 | (-4.05) | — | — | — | — | — | — | |
| | | CL/SW/M | Sandy silty clay, fine to coarse sand, some gravel | 5Y 2.5/1 | firm | Coarse | | S-1Φ0-CΦ44-Φ-Φ.9 |
| 0.8 | (-4.65) | — | — | — | — | — | — | |
| 0.85 | (-4.7) | CL/SW/M | Sandy silty clay | 5Y 3/2 | firm | Coarse | | |

Comments
1st try unsuccessful - hit refusal at ~0.75 ft
hit refusal on second attempt at approx. same depth.
Slight spotty sheen on surface of core sample observed during collection


10/21/10
MB3
0.75'
bottom

Woods Hole Group

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/21/10
Station ID: MB3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ38
Water Depth (A): 7.2
Collection Mechanism: pc
Latitude: 41° 40.654'
Length of Push Core Assembly (B): 12.4
Time on Station: 08:54
Longitude: 70° 54.000'
Water Surface to Top of Handle (C): 4.05
Time of Collection: 08:58
GPS Accuracy: 17 ft.
Length of Core (from bottom) (D): 0.75
Time Depart Station: 09:02
Tide Elevation (from tide board) (G): 3.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 3.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) ~~-5.5~~ -5.15

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ——

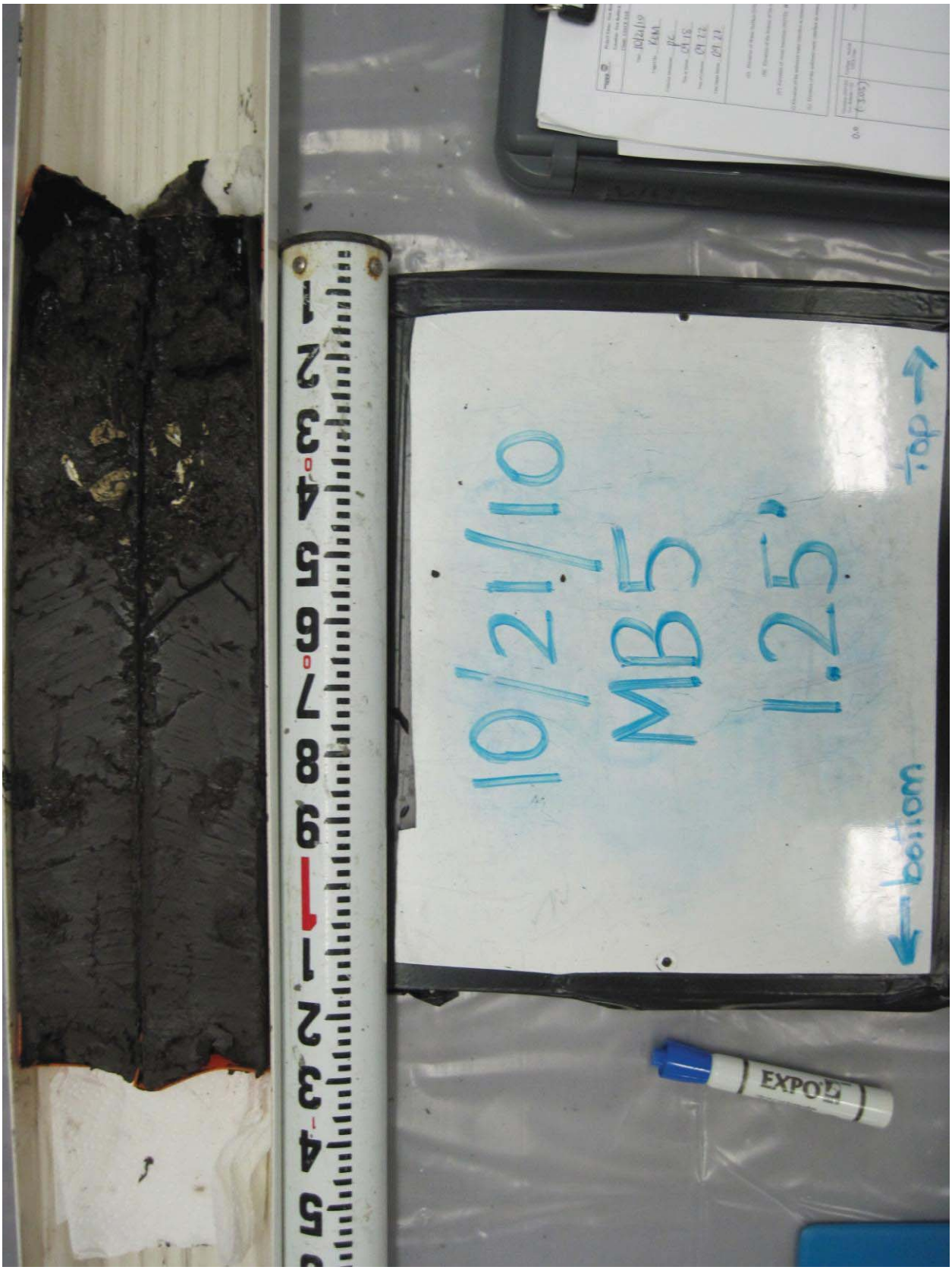
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.4

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.0

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.4) | thin layer of OL (ML), black (5y 2.5/1), fine silt, loose | | | | | | S-1Φ0-CΦ38-Φ-Φ.5 |
| | | CL/ML | Silty clay | 5y 3/1 | | | | S-1Φ0-CΦ38-Φ.5-Φ.8 |
| 0.75 | (-5.15) | | | | | | | |

Comments: slight spotty oily sheen on top of core during collection
hit refusal at 0.75 ft. depth - could not push core deeper.


top
bottom
10/21/10
MB5
1.25'
EXPO

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/21/10 | Station ID: | MB5 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1Φ0-CΦ4Φ | Water Depth (A): | 5.6 |
| Collection Mechanism: | pc. | Latitude: | 41°40.646' | Length of Push Core Assembly (B): | 12.3 |
| Time on Station: | 09:18 | Longitude: | 70°55.001' | Water Surface to Top of Handle (C): | 5.1 |
| Time of Collection: | 09:22 | GPS Accuracy: | 14 ft. | Length of Core (from bottom) (D): | 1.25 |
| Time Depart Station: | 09:27 | | | Tide Elevation (from tide board) (G): | 2.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -4.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.15 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.05 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.7 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.05) | OL | organic silt | 5Y 2.5/1 | loose | fine | | S-1Φ0-CΦ40-Φ-Φ.5 |
| 0.1 | (-3.15) | SM/SC | well graded fine to coarse sand w/ clay & silt | 5Y 3/1 | firm | coarse | | |
| 0.5 | (-3.55) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | S-1Φ0-CΦ4Φ-Φ.5-1.Φ |
| 1.25 | (-4.3) | | | | | | | |

Comments

top
10/21/10
MB8
120'
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/21/10
Station ID: MB8
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1Φ0-CΦ42
Water Depth (A): 5.4
Collection Mechanism: PC
Latitude: 41°40.633'
Length of Push Core Assembly (B): 12.35
Time on Station: 09:39
Longitude: 70°55.000'
Water Surface to Top of Handle (C): 5.3
Time of Collection: 09:44
GPS Accuracy: 15 ft.
Length of Core (from bottom) (D): 1.2
Time Depart Station: 09:48
Tide Elevation (from tide board) (G): 2.5

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.5

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.55

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.35

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.25

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.9

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.25) | OL | organic silt | 5Y 2.5/1 | loose | fine | slight petroleum odor | S-1Φ0-CΦ42-Φ-Φ.5 |
| 0.1 | (-3.35) | SW | well graded sand (fine to gravel) | 5Y 3/1 | firm | coarse gravel | | |
| 0.5 | (-3.75) | CL/ML | silty clay, poorly graded fine sand | 5Y 3/2 | firm | fine | | S-1Φ0-CΦ42-Φ.5-1.Φ |
| | | SP | | | | | | |
| 0.8 | (-4.05) | CL/ML | silty clay, well graded fine sand to gravel | 5Y 4/2 | moderately firm | 6cm stone (cobble) | | |
| | | ~~SR~~ SW | | | | | | |
| 1.2 | (-4.55) | | | | | | | |

Comments

top
10/21/10
ME7
1.00'
bottom

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/21/10 | Station ID: | ME7 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | ~~ESS~~ S-1Φ0-CΦ45 | Water Depth (A): | 7.2 |
| Collection Mechanism: | pc | Latitude: | 41°40.650' | Length of Push Core Assembly (B): | 11.6 |
| Time on Station: | 09:07 | Longitude: | 70° 54.984' | Water Surface to Top of Handle (C): | 3.0 |
| Time of Collection: | 09:11 | GPS Accuracy: | 11 ft. | Length of Core (from bottom) (D): | 1.0 |
| Time Depart Station: | 09:15 | | | Tide Elevation (from tide board) (G): | 3.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 3.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -5.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | ---- |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.2 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.6) | thin layer of OL, black (5Y 2.5/1), very loose | | | | | $H_2S$ | S-1Φ0-CΦ45-Φ-Φ.5 |
| | | ML | silt, some fine sand | 5Y 2.5/2 | loose | fine | | |
| 0.3 | (-4.9) | | | | | | | |
| | | ML/CL | clayey silt, fine to medium sand | 5Y 3/1 | moderately firm | medium grain sand | | S-1Φ0-CΦ45-Φ.5-1.Φ |
| 0.8 | (-5.4) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| 1.0 | (-5.6) | | | | | | | |

Comments

A1
S-100-C047
10-26-10
3.6 ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: A1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID: S-1Ø0-CØ47
Water Depth (A): 4.7
Collection Mechanism: P.C.
Latitude: 41°39.551
Length of Push Core Assembly (B): 15.25
Time on Station: 0913
Longitude: 70°55.139
Water Surface to Top of Handle (C): 6.2
Time of Collection: 0917
GPS Accuracy: ± 9
Length of Core (from bottom) (D): 3.8
Time Depart Station: 0922
Tide Elevation (from tide board) (G): 3.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 3.0-(15.25-6.2)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -6.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) ~~-6.05~~ -2.25

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.25

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.7

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | | ML/CL Clayey-silt | Sy 2.5/1 Black | Loose | Fine | | -Mixed shells |
| 1.4 | | CL/ML Silty-clay | Sy 2.5/1 | Firm | Fine | Strong Petroleum and H2S Odor | organics throughout |
| 3.0 | | Sand Layer | | Fine/med | | | |
| 3.6 | | CL/ML Silty-Clay | Sy 2.5/1 | Firm | Fine | | |

Comments
-Sheen when pushing core barrel
-Strong petroleum odor and $H_2S$ odor

Samples: S-1Ø0-CØ47-Ø-1Ø.
S-1Ø0-CØ47-1.Ø-2.Ø
S-1Ø0-CØ47-2.Ø-3.Ø
S-1Ø0-CØ47-3.Ø-3.6

A2
S-100-C021
10/28/10
3.9 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/28/10
Station ID: A2
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-1Ø0-CØ71
Water Depth (A): 4.2

Collection Mechanism: P.C.
Latitude: 41° 39.551
Length of Push Core Assembly (B): 10.15

Time on Station: 0833
Longitude: 70°55.126
Water Surface to Top of Handle (C): 1.1

Time of Collection:
GPS Accuracy: ±9
Length of Core (from bottom) (D): 3.9

Time Depart Station:
Tide Elevation (from tide board) (G): 1.0

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.0

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.0-(10.15-1.1) -8.05

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.4

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.15

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 0.25 | OL | Organic Silt | 5Y 2.5 Black | Loose | | | Shell hash |
| 1.4 | ML | Silt w/ fine sand | 5Y 4/2 Olive Gray | Loose | | | |
| 2.5 | ML/CL | Clayey Silt w/ fine sand | 5Y 2.5/1 Black | Medium | Fine | Petroleum | |
| 3.9 | CL/ML | Silty Clay w/ fine sand | 5Y 2.5/1 Black | Firm | Fine | | Organic Detritus |

Comments
Strong $H_2S$ odor

Sample Grab opened 10/28/10 @ 10:53

SAmples: S-1Ø0-CØ71-Ø-1.Ø
S-1Ø0-CØ71-1.Ø-2.Ø
S-1Ø0-CØ71-2.Ø-3.Ø
S-1Ø0-CØ71-3.Ø-3.9

A3
S-100-C048
10-26-10
4.0 ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | A3 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | ~~S-100~~ S-100-C048 | Water Depth (A): | 6.8 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.552 | Length of Push Core Assembly (B): | 15.3 |
| Time on Station: | 0856 | Longitude: | 70°55.114 | Water Surface to Top of Handle (C): | 3.85 |
| Time of Collection: | 0905 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 4.0 |
| Time Depart Station: | 0910 | | | Tide Elevation (from tide board) (G): | 3.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 3.0-(15.3-3.85) | -8.45 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.45 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.8 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL | Silty w/fine sand | 5Y 2.5/1 Blk | loose | Fine | | organics |
| 0.2 | | CL/ML | Silty Clay w/fine sand | 5Y 4/2 Olive Grey | loose | Fine | | |
| 0.7 | | ML/CL | Clayey Silt w/fine sand | 5Y 2.5/1 Black | | Fine | | |
| 1.6 | | CL/ML | Silty Clay | 5Y 2.5/1 Black | ~~loose~~ medium | Fine | | |
| 2.35 | | CL/ML | Silty Clay fine sand and shells | 5Y 2.5/2 Black | Firm | Fine | | |
| 4.0 | | | | | | | | |

Comments
$H_2S$ + Petroleum odor

Samples: S-100-C048-0-1.0
S-100-C048-1.0-2.0
S-100-C048-2.0-3.0
S-100-C048-3.0-4.0

B1
S-100-C049
10-26-10
4.05ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: B1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID: S-1Ø0-CØ49
Water Depth (A): 3.1
Collection Mechanism: P.C.
Latitude: 41°39.536
Length of Push Core Assembly (B): 15.3
Time on Station: 1442
Longitude: 70°55.127
Water Surface to Top of Handle (C): 7.45
Time of Collection: 1450
GPS Accuracy: ±9
Length of Core (from bottom) (D): 4.05
Time Depart Station: 1455
Tide Elevation (from tide board) (G): -0.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.4-(15.3-7.45)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.45

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.65

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.4

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.5

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom ⇒ H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt Fine to medium sand | 5Y 2.5/1 Black | loose | | | Shells throughout |
| 0.25 | ML/CL | Clayey Silt w/ fine sand | 5Y 3/2 Dark olive Gray | loose | | | |
| 0.45 | CL/ML | Silty Clay w/ fine sand | 5Y 2.5/2 Black | Firm | | | |
| 0.7 | CL/ML | Silty Clay w/ fine sand + shell hash | 5Y 3/2 Dark olive gray | Firm | | | |
| 4.05 | | | | | | | |

Comments: $H_2S$ Odor

Samples = S-1Ø0-CØ49-Ø-1.Ø
S-1Ø0-CØ49-1.0-2.Ø
S-1Ø0-CØ49-2.Ø-3.Ø
S-1Ø0-CØ49-3.Ø-4.Ø5

B2
S-100
10-26-10
4.25ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | B2 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ5Ø | Water Depth (A): | 3.6 |
| Collection Mechanism: | P.C. | Latitude: | 41° 39.535 | Length of Push Core Assembly (B): | 15.3 |
| Time on Station: | 1426 | Longitude: | 70° 55.111 | Water Surface to Top of Handle (C): | 6.95 |
| Time of Collection: | 1432 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 4.15 |
| Time Depart Station: | 1437 | | | Tide Elevation (from tide board) (G): | -0.4 |

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.4-(15.3-6.95)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.75

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.6

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.6

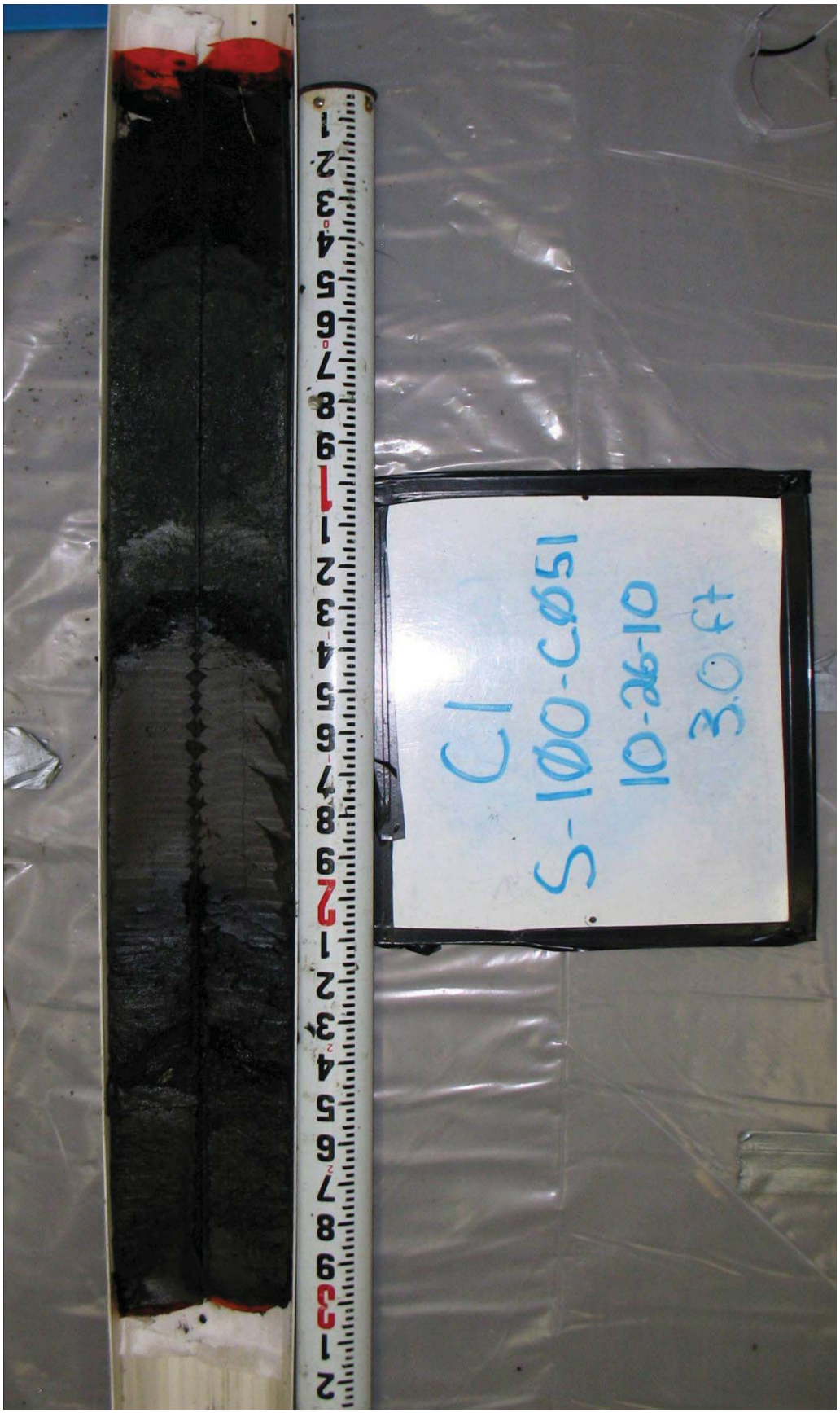
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -4.0

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL/ML | Silt | 5Y2/1 | loose | | | |
| 0.1 | | CL/ML | Silty Clay w/fine sand | 5Y 2.5/2 Black | loose | | | |
| 0.6 | | CL/ML | Silt / Clay w/ fine sand + shell hash | 5Y 3/2 Dark olive gray | loose - medium | | | |
| 1.4 | | CL/ML | Silty Clay w/fine sand shell hash | 5Y 4/2 Olive gray | Firm | | | |
| 4.25 | | | | | | | | |

Comments
- Strong $H_2S$ + Petroleum odor

Samples: S-1Ø0-CØ5Ø-Ø-1.Ø
S-1Ø0-CØ5Ø-1.Ø-2.Ø
S-1Ø0-CØ5Ø-2.Ø-3.Ø
S-1Ø0-CØ5Ø-3.Ø-4.Ø


C1
S-100-C051
10-26-10
30 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: C1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID: S-1Ø0-CØS1-
Water Depth (A): 3.6
Collection Mechanism: P.C.
Latitude: 41°39.526
Length of Push Core Assembly (B): ~~15.25~~ 10.2
Time on Station: 0923
Longitude: 70°55.140
Water Surface to Top of Handle (C): 2.85
Time of Collection: 0937
GPS Accuracy: ±9
Length of Core (from bottom) (D): 3.0
Time Depart Station: 0945
Tide Elevation (from tide board) (G): 3.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 3.2 - (10.2 - 2.85)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -4.2

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.2

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.2

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -0.4

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom - H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | SM | Fine to coarse sand well sorted | Gley1 2.5/ Black | Medium | | Petroleum | |
| 0.4 | - | - | - | - | - | - | - |
| | SM/SC | Silty Clayey Sand | Gley1 4/10y Dark greenish grey | Firm | | | |
| 1.25 | - | - | - | - | - | | - |
| | SM | | Gley1 4/10y | Firm | | Petroleum | |
| 1.4 | - | - | - | - | - | - | - |
| | CL | Clay | 5y 2.5/2 Black | | | | |
| 2.0 | - | - | - | - | - | | - |
| | CL/ML | Silty Clay w/ fine to medium sand | 5y 2.5/1 Black | | | Petroleum | |
| 2.45 | - | - | - | - | - | - | - |
| | CL | Clay w/ fine sand | 5y 2.5/1 Black | | | | |
| 3.0 | | | | | | | |

Comments
-1st attempt unsuccessful, using fingers on second attempt

Samples: S-1Ø0-CØS1-Ø-1.Ø
S-1Ø0-CØS1-1.Ø-2.Ø
S-1Ø0-CØS1-2.Ø-3.Ø

C2
S-10N-C001
11/3/10

| | | |
|---|---|---|
| WOODS HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | |
|---|---|---|
| Date: 11/3/10 | Station ID: C2 | All Measurements are ± 0.1 feet |
| Logged By: DRW | Core Sample ID: S-1ØN-CØØ1 | Water Depth (A): 1.0 |
| Collection Mechanism: P.C. | Latitude: 41° 39.526' | Length of Push Core Assembly (B): 10.1 |
| Time on Station: 13:35 | Longitude: 70° 55.128' | Water Surface to Top of Handle (C): 4.4 |
| Time of Collection: 13:43 | GPS Accuracy: 12 ft. | Length of Core (from bottom) (D): 4.0 |
| Time Depart Station: 13:53 | | Tide Elevation (from tide board) (G): -0.9 |

**Calculations for Determination of Z* Elevation**

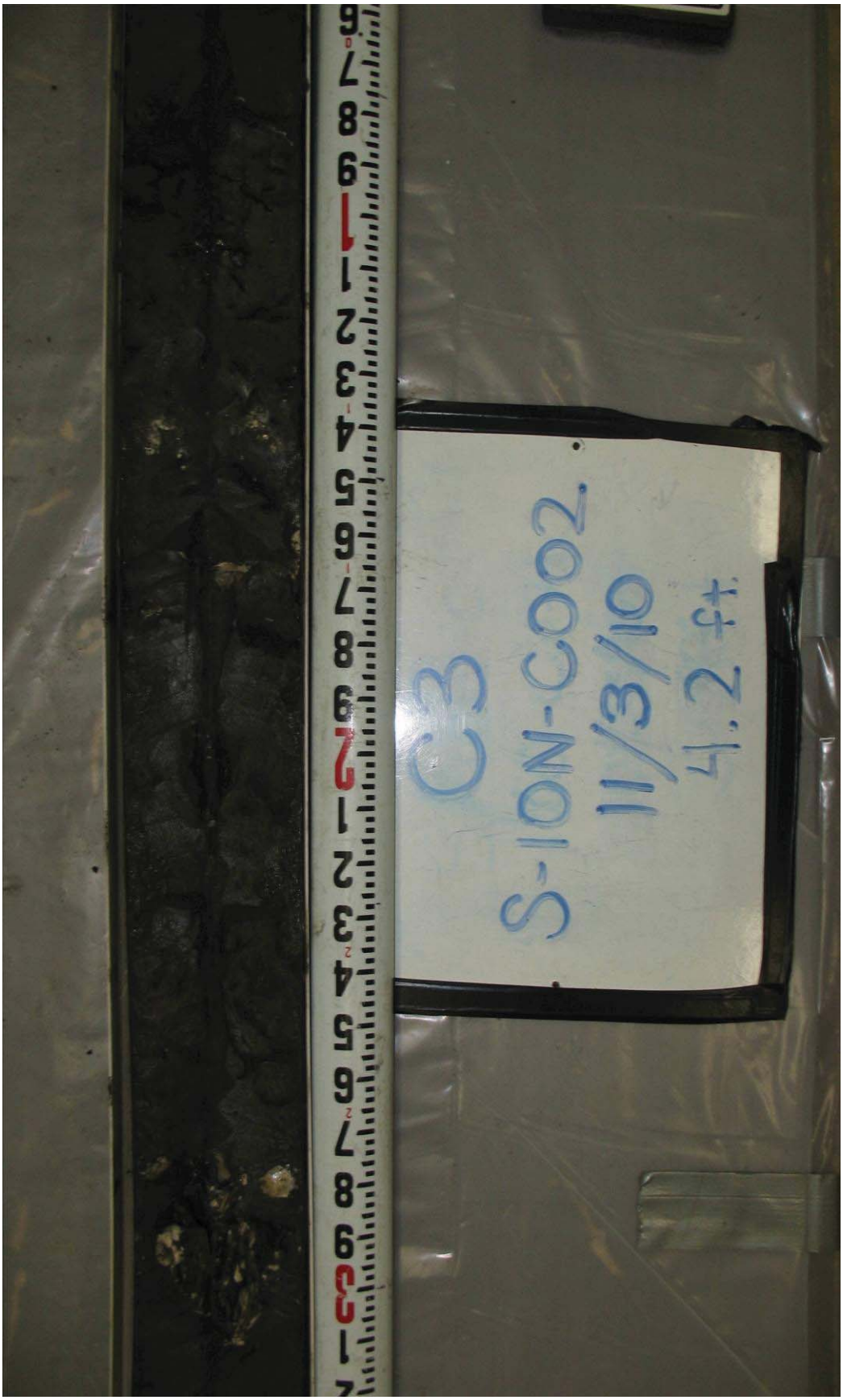
| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -0.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | ~~-4.0~~ -4 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | ~~-4.0~~ -2.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.6) | OL/SM | Silty fine to coase well graded sand, organics | 5y 2.5/1 black | firm | coarse | strong $H_2S$ | S-1ØN-CØØ1-Ø-~~Ø.5~~ 1.Ø | + one MSMSD |
| 1.4 | (-4.0) | CL/mL | Silty clay | 5y 4/1 dark grey | firm | fine | | S-1ØN-CØØ1-1.Ø-2.Ø | |
| 1.8 | (-4.4) | SM/SC | Silty clayey sand - fine to medium w/gravel | 5y black 2.5/1 | firm | 2cm gravel | | S-1ØN-CØØ1-2.Ø-3.Ø | archive |
| 2.6 | (-5.2) | CL/mL | Silty clay | 5y 4/1 dark grey | firm | fine | | S-1ØN-CØØ1-3.Ø-4.Ø | |
| 3.2 | (-5.8) | CL/mL | Silty clay, some fine sand | 5y 3/1 very dark grey | firm | fine | | | |
| 4.0 | (-6.6) | | | | | | | | |

Comments 1st attempt successful

Cut open 11/4/10 at 09:00


C3
S-10N-C002
11/3/10
4.2 ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: C3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦN-CΦΦ2
Water Depth (A): 6.5
Collection Mechanism: PC
Latitude: 41°39.526'
Length of Push Core Assembly (B): 15.2
Time on Station: 13:13
Longitude: 70°55.117'
Water Surface to Top of Handle (C): 4.0
Time of Collection: 13:20
GPS Accuracy: 10 ft.
Length of Core (from bottom) (D): 4.2
Time Depart Station: 13:30
Tide Elevation (from tide board) (G): ~~-1.2~~ KGM -1.1

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): ~~-1.2~~ KGM -1.1

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -12.3

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.5

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -8.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.6

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-8.1) | OL/SM | silty sand (fine) with organics | 5Y black 2.5/1 | firm | fine | $H_2S$ | S-1ΦN-CΦΦ2-Φ-1.Φ |
| 0.4 | (-8.5) | OL/ML | silty clay, some fine sand, oyster shell hash | 5Y 3/1 very dark grey | firm | fine | strong $H_2S$ | S-1ΦN-CΦΦ2-1.Φ-2.Φ<br>S-1ΦN-CΦΦ2-2.Φ-3.Φ<br>S-1ΦN-CΦΦ2-3.Φ-4.Φ |
| 4.2 | (-12.3) | | | | | | | |

Comments
1st attempt successful
cut open 11/4/10 at 09:20

S-100-0052
10-30-10
4.054
CH

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Logged By: DB
Collection Mechanism: P.C.
Time on Station: 1414
Time of Collection: 1420
Time Depart Station: 1426

Station ID: C4
Core Sample ID: S-100-C052
Latitude: 41°39.526
Longitude: 70°55.104
GPS Accuracy: ±9

All Measurements are ± 0.1 feet
Water Depth (A): 7.7
Length of Push Core Assembly (B): 15.3
Water Surface to Top of Handle (C): 3.0
Length of Core (from bottom) (D): 4.05
Tide Elevation (from tide board) (G): -0.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): ~~-12.5~~ -0.2
-0.2(15.3-3.0)

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -12.5

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.65

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -8.45

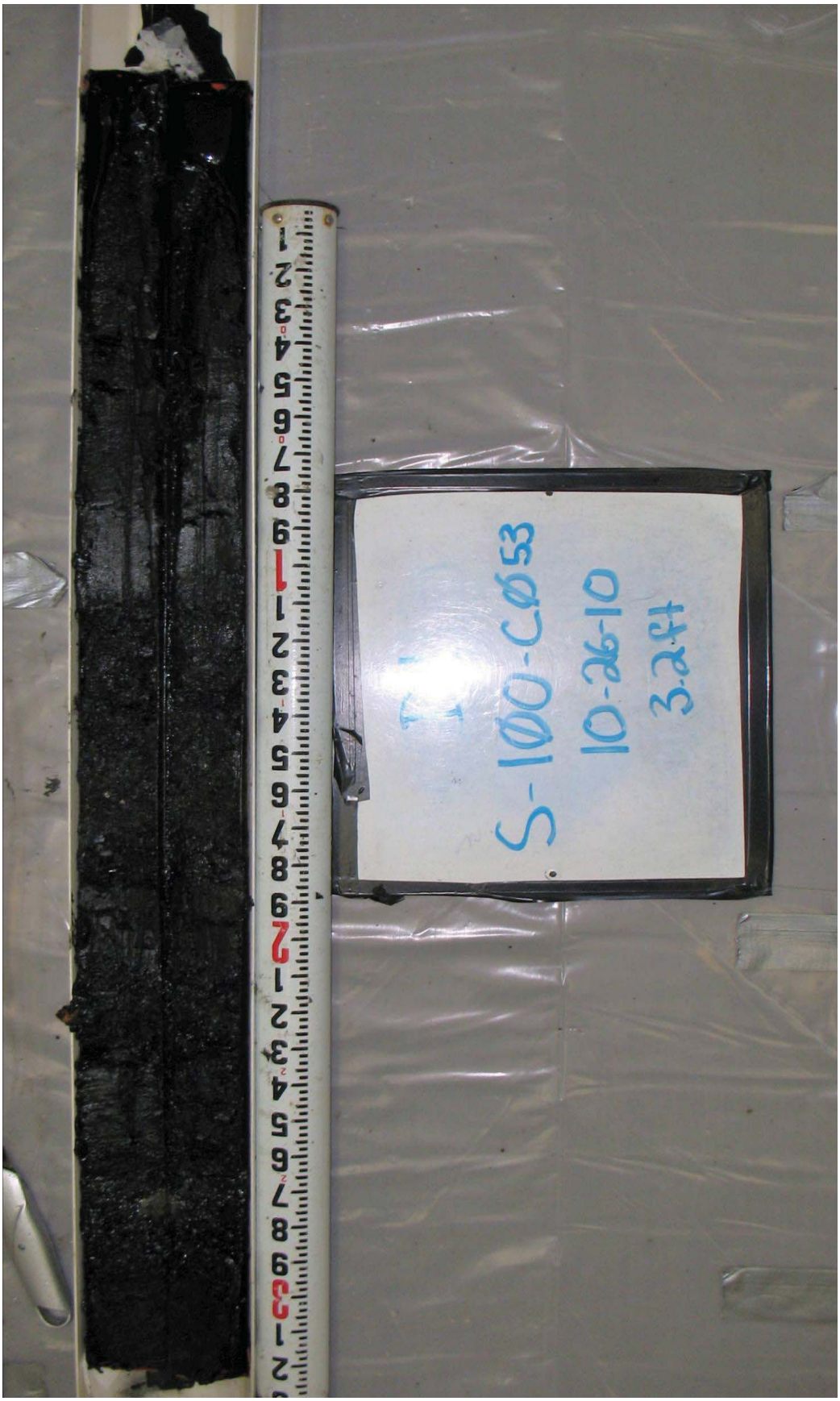
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.5

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Clayey Silt w/ fine sand | 5Y 2.5/1 Black | Loose | | | |
| 0.2 | CL/ML | Silty Clay w/ fine sand | 5Y 3/1 | Firm | | | |
| 1.0 | CL/ML | Clay w/ shell hash | 5Y 3/2 Dark Olive Grey | Firm | | | Lots of shell hash |
| 3.0 | CL/ML | Silty Clay w/ fine to medium sand | 5Y 3/2 Dark Olive Grey | Loose | | | |
| 4.05 | | | | | | | |

Comments

Samples = S-100-C052-0-1.0
S-100-C052-1.0-2.0
S-100-C052-2.0-3.0
S-100-C052-3.0-4.0


S-100-C053
10-26-10
3-2ft

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | D1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØS3 | Water Depth (A): | 5.1 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.518 | Length of Push Core Assembly (B): | 10.25 |
| Time on Station: | 0948 | Longitude: | 70°55.153 | Water Surface to Top of Handle (C): | 1.2 |
| Time of Collection: | 0955 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | ~~3.4~~ 3.2 |
| Time Depart Station: | 1000 | | | Tide Elevation (from tide board) (G): | 3.4 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 3.4-(10.25-1.2) | -5.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.45 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.45 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.7 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| Ø | | OL | Silt to Clayey Silt | | Loose | | | |
| 1.Ø | | SM/SC | Sand with Clayey silt | | Poorly Sorted | | | |
| 1.85 | | CL/ML | Silt/Clay | 5Y 5/6 | Firm | | | |
| 2.1 | | ML/CL | Clayey silt w/detritus | 5Y 5/2 | Loose | | | |
| 2.75 | | SC | Sand with Clay | | Well Sorted | | | |
| 3.2 | | | | | | | | |

Comments
- Sheen on surface
- Strong Petroleum + $H_2S$ Odor

Samples: S-1Ø0-CØS3-Ø-1Ø.
S-1Ø0-CØS3-1.Ø-2.Ø
S-1Ø0-CØS3-2.Ø-3.Ø

D2
S-10N-C003
11/3/10
3.9 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: D2
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ØN-CØØ3
Water Depth (A): 2.7
Collection Mechanism: PC
Latitude: 41° 39.517'
Length of Push Core Assembly (B): 10.1
Time on Station: 13:55
Longitude: 70° 55.139'
Water Surface to Top of Handle (C): 2.7
Time of Collection: 14:02
GPS Accuracy: 9ft.
Length of Core (from bottom) (D): 3.9
Time Depart Station: 1410
Tide Elevation (from tide board) (G): -0.6

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.6

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -8.0

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.7

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.1

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.3

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.1) | OL/ML | organic silt, some fine sand | black 5Y 2.5/1 | loose | fine | $H_2S$ | S-1ØN-CØØ3-Ø1Ø |
| 0.6 | (-4.7) | SM/GM | silty medium to coarse sand with gravel, organics | | firm | 3 cm | | S-1ØN-CØØ3-1.Ø-2.Ø |
| 1.4 | (-5.5) | SM | silty fine to coarse sand | | firm | coarse sand | | S-1ØN-CØØ3-2.Ø-3.Ø |
| 2.4 | (-6.5) | GM/SM | silty medium to coarse sand with gravel | | firm | 3 cm | | S-1ØN-CØØ3-3.Ø-3.9 |
| 3.9 | (-8.0) | | | | | | | |

Comments 1st attempt successful

Cut open 11/4/10 at 09:40

C3
S-10N-C004
11/3/10
3.6 ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Logged By: KGM
Collection Mechanism: PC
Time on Station: 12:56
Time of Collection: 13:03
Time Depart Station: 13:11

Station ID: D3
Core Sample ID: S-1ΦN-CΦΦ4
Latitude: 41° 39.516'
Longitude: 70° 58.117'
GPS Accuracy: 10 ft.

All Measurements are ± 0.1 feet
Water Depth (A): ~~10.2~~ KGM 7.4
Length of Push Core Assembly (B): ~~10.2~~ KGM 15.3
Water Surface to Top of Handle (C): ~~7.4~~ KGM 3.4
Length of Core (from bottom) (D): 3.6
Tide Elevation (from tide board) (G): −1.2

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): −1.2

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) −13.1

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) −9.7

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D −9.5

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A −8.6

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-9.5) | OL | organic silt, fine sand | black 5Y 2.5/1 | loose | fine | | S-1ΦN-CΦΦ4-Φ-1.Φ |
| 0.2 | (-9.7) | CL/ML (OL) | organic silty clay, detritus, fine sand | very dark grey 5Y 3/1 | firm | strong fine | $H_2S$ | S-1ΦN-CΦΦ4-1.Φ-2.Φ |
| 1.0 | (-10.5) | CL/ML | silty clay, some shell hash | dark grey 5Y 4/1 | very firm | fine | | S-1ΦN-CΦΦ4-2.Φ-3.Φ |
| 3.6 | (-13.1) | | | | | | | S-1ΦN-CΦΦ4-3.Φ-3.6 |

Comments: 1st attempt successful

out open 11/4/10 at 10:05

S-100-C054
10-26-10
3.7ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: D4
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-1Ø0-CØ54
Water Depth (A): 7.8

Collection Mechanism: P.C
Latitude: 41°39.517
Length of Push Core Assembly (B): 15.3

Time on Station: 1345
Longitude: 70°55.088
Water Surface to Top of Handle (C): 2.8

Time of Collection: 1353
GPS Accuracy: ±9
Length of Core (from bottom) (D): 3.7

Time Depart Station: 1356
Tide Elevation (from tide board) (G): 0.1

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.1

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 0.1-(15.3-2.8) -12.4

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -8.75

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -8.7

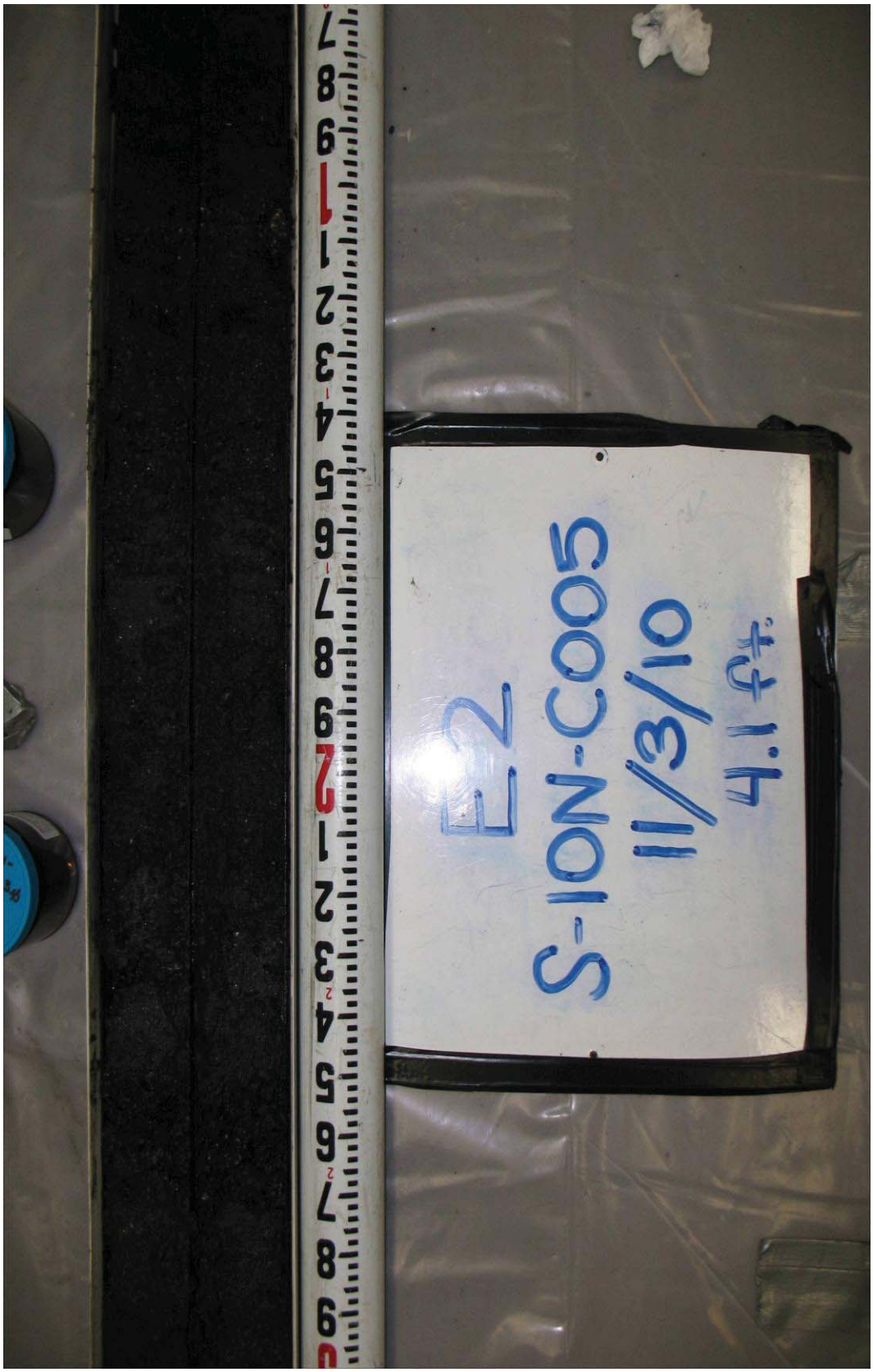
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -7.7

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 / 0.05 | OL | | 5Y 2.5/1 Black | | | | |
| | CL/ML | Silty Clay w/ fine to medium sand | 5Y 4/2 Olive Grey | Firm | | | Shell Hash |
| 3.7 | | | | | | | |

Comments $H_2S$ Odor

Samples: S-1Ø0-CØ54-Ø-1.Ø
S-1Ø0-CØ54-1.Ø-2.Ø
S-1Ø0-CØ54-2Ø-3.Ø
S-1Ø0-CØ54-3.Ø-4.Ø


E2
S-ION-C005
11/3/10
4.1 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Logged By: KGM
Collection Mechanism: PC
Time on Station: 15:05
Time of Collection: 15:10
Time Depart Station: 15:15

Station ID: E2
Core Sample ID: S-1ΦN-CΦΦ5
Latitude: 41° 39.506'
Longitude: 70° 55.135'
GPS Accuracy: 10 ft.

All Measurements are ± 0.1 feet
Water Depth (A): 1.6
Length of Push Core Assembly (B): 10.1
Water Surface to Top of Handle (C): 3.8
Length of Core (from bottom) (D): 4.1
Tide Elevation (from tide board) (G): 0.4

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.4
(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -5.8
(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -2.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -1.7
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.2

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-1.7) | OL/SM | organic silty sand - well graded fine to medium | black 5Y 2.5/1 | firm | medium | light $H_2S$ | S-1ΦN-CΦΦ5-Φ-1.Φ |
| 0.9 | (-2.6) | | | | | | | |
| | | SM | silty sand - well graded fine to coarse with gravel | very dark grey 2.5Y 3/1 | firm | coarse 2cm gravel | | S-1ΦN-CΦΦ5-1.Φ-2.Φ |
| 2.2 | (-3.9) | | | | | | | |
| | | SM | silty fine sand some organics | very dark grey 5Y 3/1 | firm | fine | | S-1ΦN-CΦΦ5-2.Φ-3.Φ |
| 3.4 | (-5.1) | | | | | | | |
| 3.7 | (-5.4) | CL/ML | silty clay | 5Y 3/1 | firm | fine | | |
| | | ML/CL | clayey silt with fine sand | 5Y 3/1 | firm | fine | | S-1ΦN-CΦΦ5-3.Φ-4.Φ |
| 4.1 | (-5.8) | | | | | | | |

+ one MSMSD (archive)

Comments 1st attempt successful -

cut open 11/4/10 at 10:20

E3
S-10N-C006
11/3/10
#4 1.4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 11/3/10 | Station ID: | E3 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦN-CΦΦ6 | Water Depth (A): | 1.0 |
| Collection Mechanism: | PC. | Latitude: | 41°39.506' | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 12:41 | Longitude: | 70°55.122' | Water Surface to Top of Handle (C): | 4.6 |
| Time of Collection: | 12:46 | GPS Accuracy: | 11 ft. | Length of Core (from bottom) (D): | 3.9 |
| Time Depart Station: | 12:51 | | | Tide Elevation (from tide board) (G): | -1.3 |

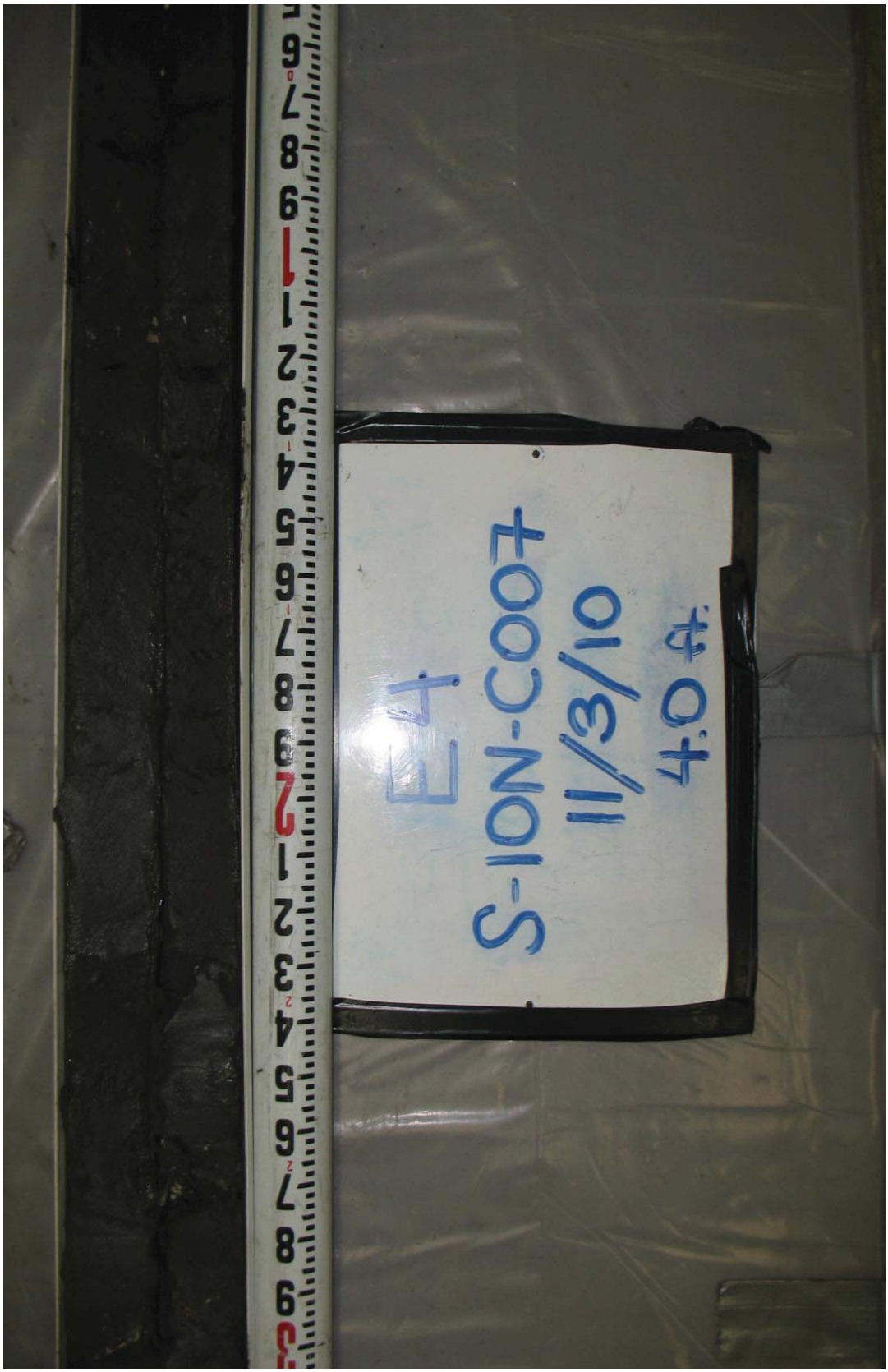
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.9 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.Φ |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.3 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.0) | OL/SM | organic silty well graded fine to medium sand | black 5y 2.5/1 | firm | medium | $H_2S$ | S-1ΦN-CΦΦ6-Φ-1.Φ |
| 1.9 | (-4.9) | OL/mL/CL | organic clayey silt, some fine sand, detritis | very dark grey 5y 3/1 | firm | fine | light $H_2S$ | S-1ΦN-CΦΦ6-1.Φ-2.Φ |
| 2.5 | (-5.5) | CL/mL | silty clay | 5y 4/2 olive grey | firm | fine | | S-1ΦN-CΦΦ6-2.Φ-3.Φ |
| 2.7 | (-5.7) | OL/mL/CL | organic clayey silt, detritis | 5y 3/1 | firm | fine | | S-1ΦN-CΦΦ6-3.Φ-3.9 |
| 3.3 | (-6.3) | CL/mL | silty clay. shell hash | 5y 3/2 dark olive grey | firm | fine | | |
| 3.9 | (-6.9) | | | | | | | |

Comments
1st attempt successful
out open 11/4/10 at 10:50


S-ION-C007
11/3/10
#04
E4

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 11/3/10 | Station ID: | E4 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦN-CΦΦ7 | Water Depth (A): | 4.2 |
| Collection Mechanism: | PC. | Latitude: | 41° 39.506' | Length of Push Core Assembly (B): | 10.1 |
| Time on Station: | 12:23 | Longitude: | 70°55.109' | Water Surface to Top of Handle (C): | ~~1.7~~ 1.3 |
| Time of Collection: | 12:34 | GPS Accuracy: | 10 ft | Length of Core (from bottom) (D): | ~~1.3~~ KGM 4.0 |
| Time Depart Station: | 12:39 | | | Tide Elevation (from tide board) (G): | -1.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -10.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -6.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -6.1 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -5.5 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-6.1) | OL | organic silt, fine sand | 5Y black 2.5/1 | loose | fine | | S-1ΦN-CΦΦ7-Φ-1Φ |
| 0.1 | (-6.2) | ML/CL | clayey silt, fine sand | 5Y 3/1 dark gray | moderately firm | fine | | S-1ΦN-CΦΦ7-1.Φ-2.Φ |
| 0.6 | (-6.7) | CL/ML | silty clay, shell hash throughout | ~~dark~~ olive grey 5Y 4/1 | firm | fine | | S-1ΦN-CΦΦ7-2.Φ-3.Φ + one MSMSD (archive) |
| 4.0 | (-10.1) | | | | | | | S-1ΦN-CΦΦ7-3.Φ-4.Φ |

Comments: 1st attempt - successful

cut open 11/4/10 at 11:10

E
S-10U-C055
10-26-10
3.95

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | |
|---|---|---|
| Date: 10/25/10 | Station ID: E5 | All Measurements are ± 0.1 feet |
| Logged By: DB | Core Sample ID: S-1Ø0-CØSS | Water Depth (A): 8.7 |
| Collection Mechanism: P.C. | Latitude: 41° 39.506 | Length of Push Core Assembly (B): 15.25 |
| Time on Station: 1357 | Longitude: 70° 55.088 | Water Surface to Top of Handle (C): 1.7 |
| Time of Collection: 1404 | GPS Accuracy: ± 9 | Length of Core (from bottom) (D): 3.95 |
| Time Depart Station: 1412 | | Tide Elevation (from tide board) (G): 0.0 |

**Calculations for Determination of Z* Elevation**

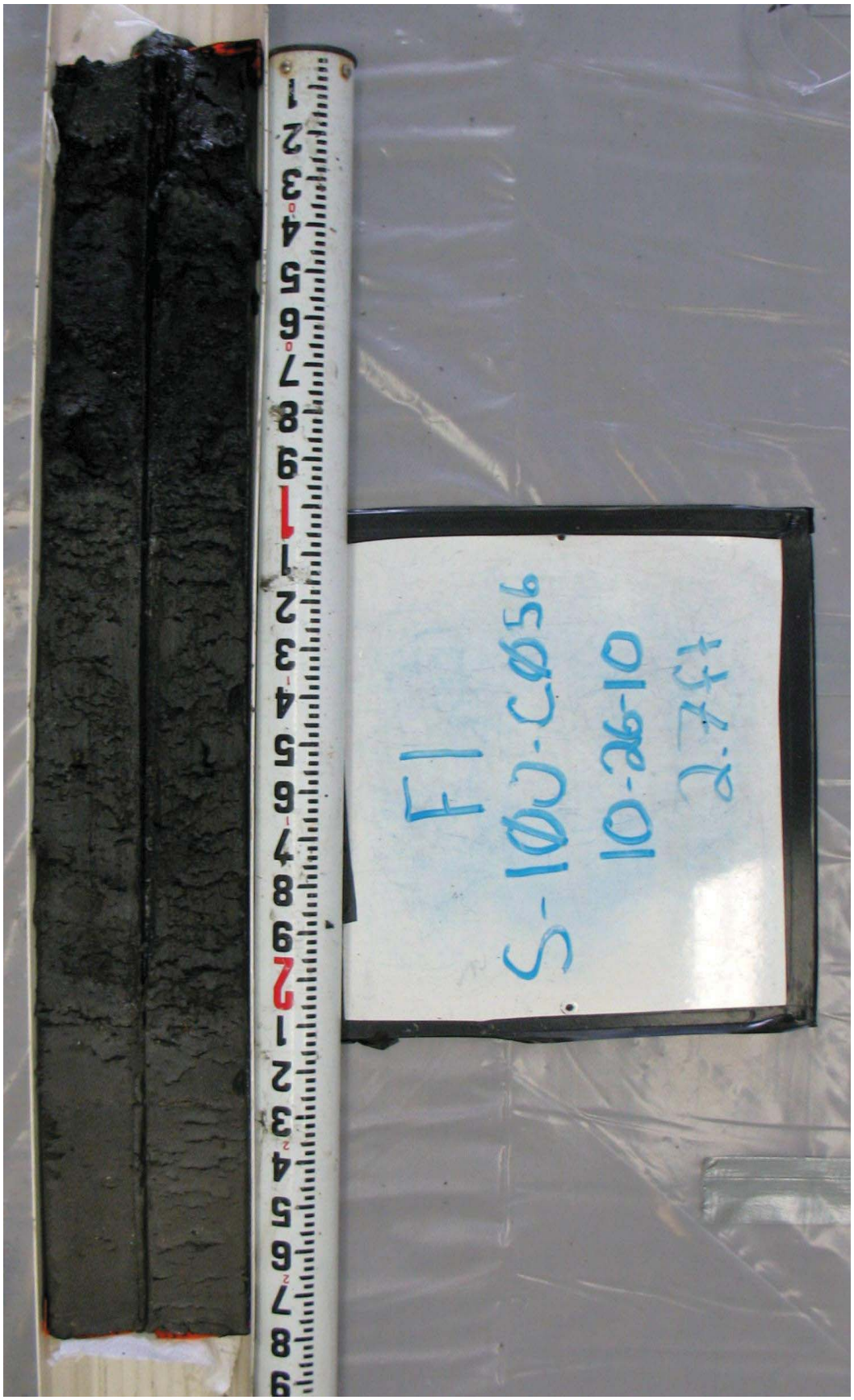
| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 0.0-(15.25-1.7) | 0.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -13.55 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -9.8 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -9.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -8.7 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt w/ organics | 5Y 2.5/1 Black | Loose | | | |
| 0.2 | CL/ML | Silty Clay w/ fine sand | 5Y 3/2 | Firm | | | |
| 1.7 | CL/ML | Loose Oyster Shells | | | | | |
| 2.25 | CL/ML | Silty Clay w/fine sand | Dark Olive Grey | Firm | | | |
| 3.95 | | | | | | | |

Comments
$H_2S$ Odor

Samples: S-1Ø0-CØSS-Ø-1.Ø
S-1Ø0-CØSS-1.Ø-2.Ø
S-1Ø0-CØSS-2.Ø-3.Ø
S-1Ø0-CØSS-3.Ø-4.Ø


S-100-C056
F1
10-26-10
2.44

M

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | F1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-100-C056 | Water Depth (A): | ~~[illegible]~~ DB 4.9 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.496 | Length of Push Core Assembly (B): | 9.55 |
| Time on Station: | 1026 | Longitude: | 70°55.1484 | Water Surface to Top of Handle (C): | 0.45 |
| Time of Collection: | 1036 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 2.7 |
| Time Depart Station: | 1039 | | | Tide Elevation (from tide board) (G): | 3.0 |

**Calculations for Determination of Z* Elevation**

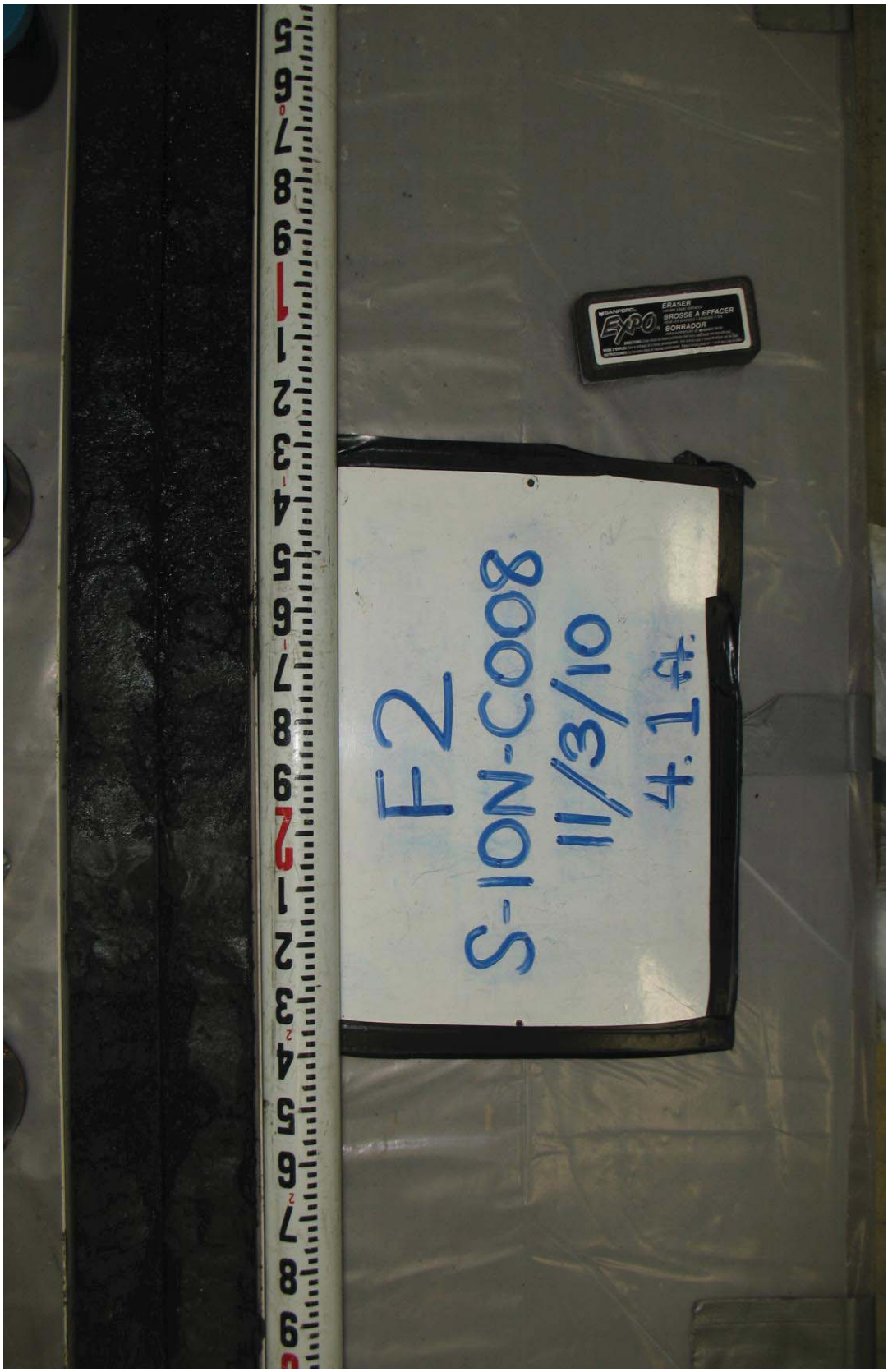
| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 3-(9.55-0.45) | 3.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | ~~[illegible]~~ DB -5.1 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -2.6 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | ~~-3.4~~ DB -2.4 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | | Sy 2.5 Black | Loose | | Petroleum | |
| 0.2 | SM | Silty Sand | Sy 2.5 Black | Firm | | | |
| 0.9 | CL/ML | Silty Clay w/ fine sand | Sy 2.5/2 | Firm | | | Detritus |
| 2.0 | CL/ML | Silty Clay w/ fine sand | Sy 3/2 Dark Olive gray | Firm | | | Shell hash |
| 2.7 | | | | | | | |

Comments
- 1st attempt only recoved a 0.4 ft core
- 2nd attempt moved to back of the boat
- Fingers used

Samples: S-100-C056-0-1.0
S-100-C056-1.0-2.0
S-100-C056-2.0-3.0


F2
S-10N-C008
11/3/10
4.14
SANFORD
EXPO
ERASER
BROSSE À EFFACER
BORRADOR

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: F2
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦN-CΦΦ8
Water Depth (A): 1.4
Collection Mechanism: pc
Latitude: 41° 39.494'
Length of Push Core Assembly (B): 10.2
Time on Station: 14:16
Longitude: 70° 55.136'
Water Surface to Top of Handle (C): 3.8
Time of Collection: 14:22
GPS Accuracy: 9 ft.
Length of Core (from bottom) (D): 4.1
Time Depart Station: 14:28
Tide Elevation (from tide board) (G): -0.4

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -6.8

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.1

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -2.7

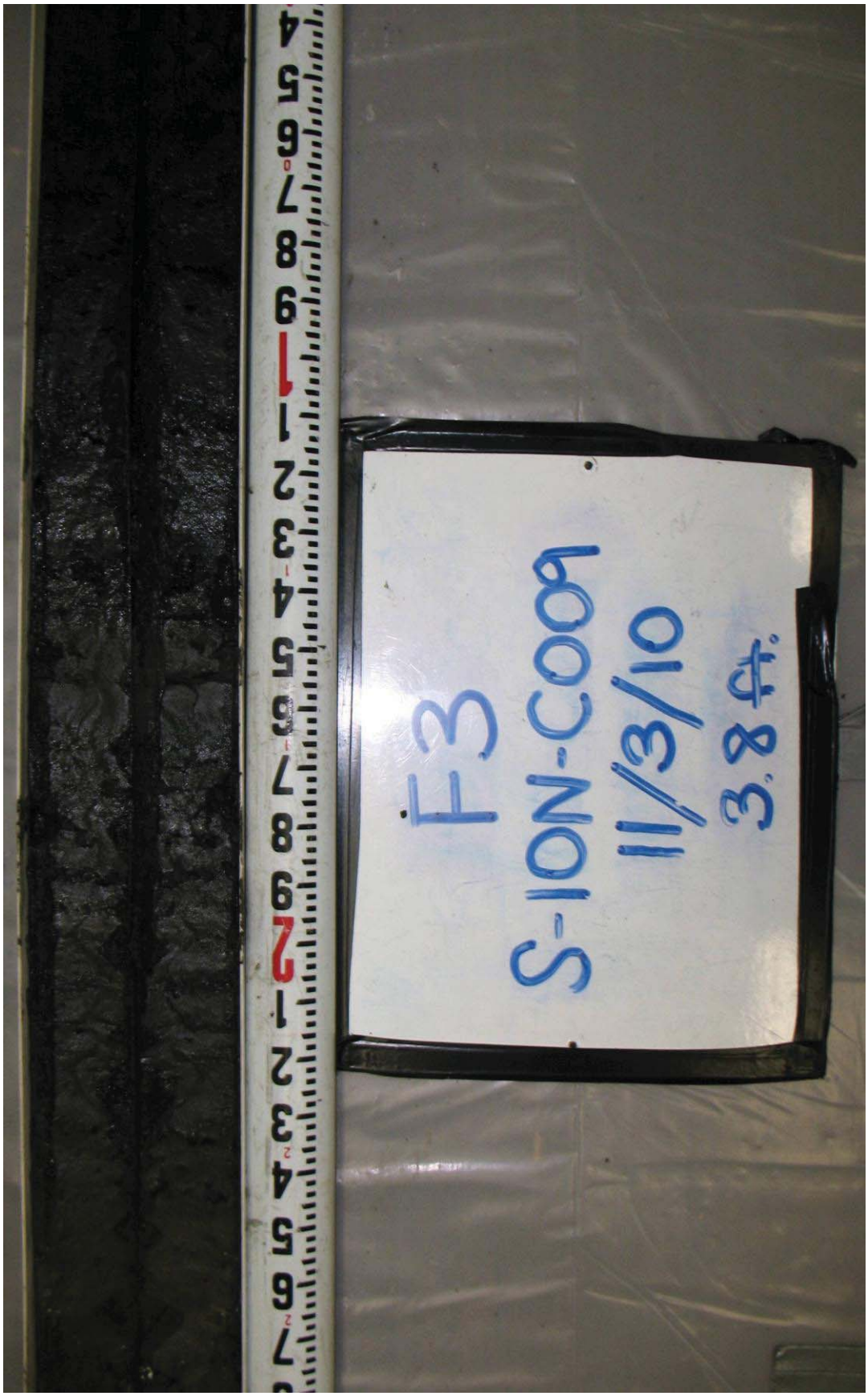
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -1.8

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.7) | OL/SM | organic silty sand - well graded fine to coarse | 5Y 2.5/1 black | firm | coarse | Strong $H_2S$ | S-1ΦN-CΦΦ8-Φ-1.Φ |
| 1.4 | (-4.1) | OL/SM/SC | organic silty clayey fine sand | 5Y 2.5/1 | firm | fine | | S-1ΦN-CΦΦ8-1.Φ-2.Φ |
| 1.9 | (-4.6) | CL/ML | silty clay | 5Y 4/1 dark grey | firm | fine | | |
| 2.1 | (-4.8) | CL/ML | silty clay with organic detritus | 5Y 3/1 very dark grey | firm | fine | | S-1ΦN-CΦΦ8-2.Φ-3.Φ |
| 2.9 | (-5.6) | CL/ML | silty clay with fine sand, shell hash | 5Y 4/1 dark grey | firm | fine | | S-1ΦN-CΦΦ8-3.Φ-4.Φ |
| 4.1 | (-6.8) | | | | | | | |

Comments 1st attempt successful

cut open 11/4/10 at 11:35


F3
S-10N-C009
11/3/10
3.8#

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: F3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦN-CΦΦ9
Water Depth (A): 1.8
Collection Mechanism: PC
Latitude: 41° 39.494'
Length of Push Core Assembly (B): 10.1
Time on Station: 12:09
Longitude: 70° 55.122'
Water Surface to Top of Handle (C): 4.0
Time of Collection: 12:16
GPS Accuracy: 10 ft.
Length of Core (from bottom) (D): 3.8
Time Depart Station: 12:20
Tide Elevation (from tide board) (G): -1.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.4

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.5

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.6

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.1

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.6) | OL/SM | organic silt/ silty Sand - fine to medium | 5Y 2.5/1 black | firm | medium | $H_2S$ | S-1ΦN-CΦΦ9-Φ-~~ΦΦ~~ 1.Φ |
| 0.9 | (-4.5) | OL/SM/SC | organic silty clayey sand | 5Y 3/1 dark grey | firm | fine | | S-1ΦN-CΦΦ9-1.Φ-2.Φ |
| 1.4 | (-5.0) | CL/ML | silty clay | 5Y 4/1 | firm | fine | | |
| 1.6 | (-5.2) | CL/ML | silty clay, some organics | 5Y 3/1 very dark grey | | fine | | S-1ΦN-CΦΦ9-2.Φ-3.Φ |
| 2.3 | (-5.9) | CL/ML | silty clay | 5Y 4/1 dark grey | firm | fine | | S-1ΦN-CΦΦ9-3.Φ-3.8 |
| 3.8 | (-7.4) | | | | | | | |

Comments 1st attempt successful

Cut open 11/4/10 at 11:45

F4
S-100-C073
10/28/10
3.9ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | F4 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ73 | Water Depth (A): | 4.9 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.494 | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 0850 | Longitude: | 70°55.110 | Water Surface to Top of Handle (C): | 0.9 |
| Time of Collection: | 0855 | GPS Accuracy: | ±.9 | Length of Core (from bottom) (D): | 3.9 |
| Time Depart Station: | 0905 | | | Tide Elevation (from tide board) (G): | 1.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.0-(10.2-0.9) | -8.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.4 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.4 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.9 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = I) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | SM | Silty Sand | 5Y 2.5/1 | Loose | Medium | Petroleum | |
| 0.45 | | | | | | | |
| | ML/CL CL/ML | Silty Clay w/fine sand | 5Y 3/1 Very Dark Grey | Loose | Fine | | |
| 1.8 | | | | | | | |
| | ~~ML/CL~~ CL/ML | Silty Clay w/fine sand | 5Y 4/1 Dark grey | Loose | Fine | | |
| 3.9 | | | | | | | |

Shells throughout

Comments
$H_2S$ odor

Cut open 10/28/10 @ 11:38

Samples: S-1Ø0-CØ73-Ø-1.Ø
S-1Ø0-CØ73-1.Ø-2.Ø
S-1Ø0-CØ73-2-Ø-3.Ø
S-1Ø0-CØ73-2.Ø-3.ØMSD
S-1Ø0-CØ73-3.Ø-4.Ø

G1
S-100-C057
10-26-10
3.4ft

| | | |
|---|---|---|
| WOOD HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | G1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-100-C057 | Water Depth (A): | ~~3.9~~ DB 5.0 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.476 | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 1049 | Longitude: | 70°55.141 | Water Surface to Top of Handle (C): | 0.65 |
| Time of Collection: | 1100 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | ~~3.8~~ DB 3.9 |
| Time Depart Station: | 1108 | | | Tide Elevation (from tide board) (G): | 2.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 2.8-(10.2-0.65) | -6.75 |
| (Z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.2 |

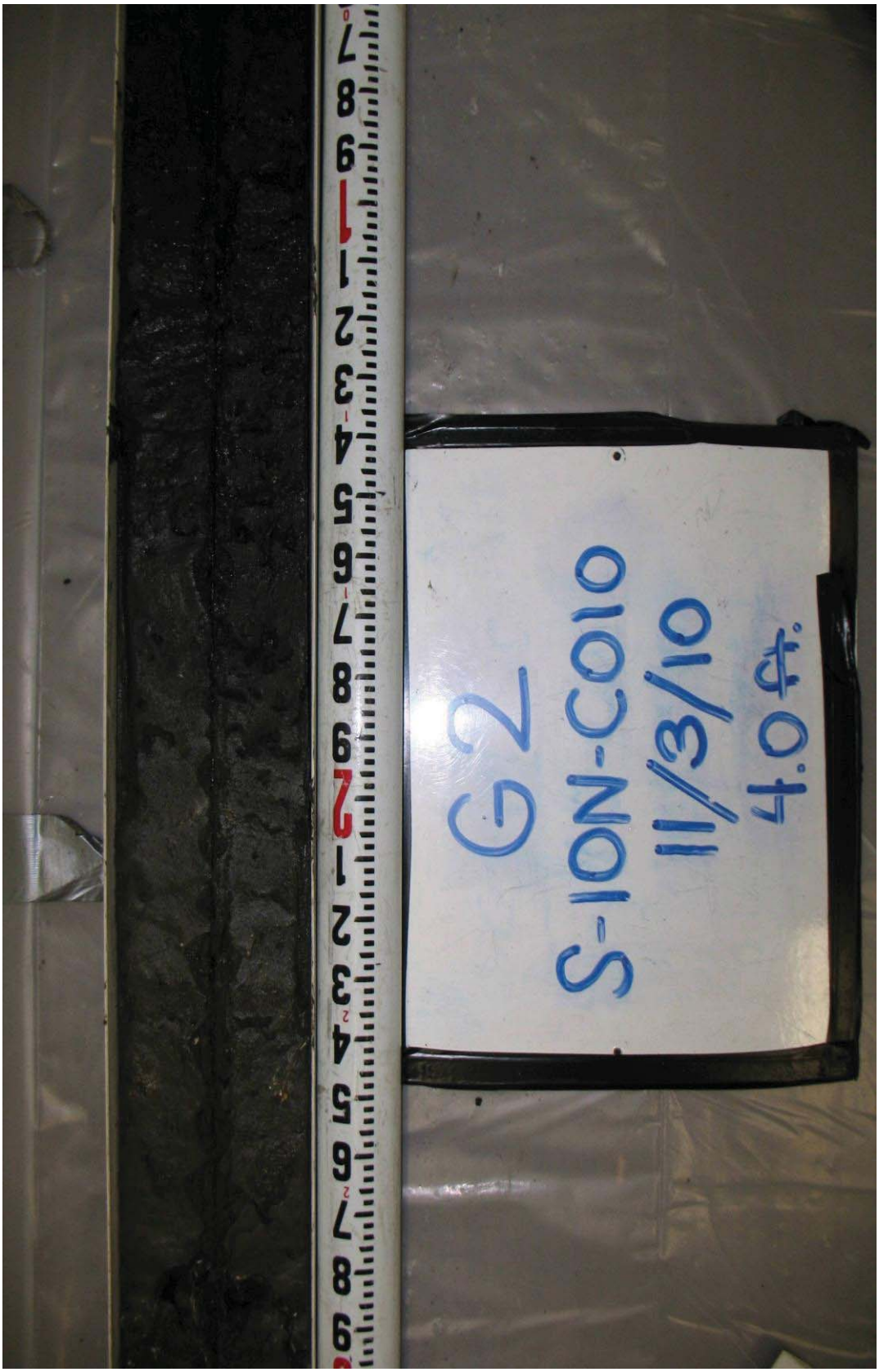
(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | | 5Y 2.5/1 Black | Loose | | Petroleum | |
| 0.45 | CL/ML | Silty Clay w/Fine to medium sand | 5Y 2.5/1 Black | Loose | | | |
| 1.1 | CL/ML | Silty Clay w/fine sand | 5Y 2.5/2 | Firm | | | organics |
| 1.6 | CL/ML | Silty Clay w/fine sand | 5Y 3/1 | Firm | | | |
| 3.9 | | | 5Y 3/2 | | | | |

Shell Hash throughout

Comments
- Fingers used - Strong tar odor

Samples: S-100-C057-0-10
S-100-C057-1.0-2.0
S-100-C057-2.0-3.0
S-100-C057-3.0-4.0


G2
S-10N-C010
11/3/10
4.0ft.

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: G2
All Measurements are ± 0.1 feet
Logged By: RGM
Core Sample ID: S-1ΦN-CΦ1Φ
Water Depth (A): 1.6
Collection Mechanism: PC
Latitude: 41°39.477'
Length of Push Core Assembly (B): 10.2
Time on Station: 11:37
Longitude: 70°55.127'
Water Surface to Top of Handle (C): 3.9
Time of Collection: 11:42
GPS Accuracy: 11 ft.
Length of Core (from bottom) (D): 4.0
Time Depart Station: 11:45
Tide Elevation (from tide board) (G): -1.4

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.4

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.7

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.1

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.0

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.7) | OL | organic silt, some fine sand | 5Y 2.5/1 black | loose | fine | $H_2S$ | S-1ΦN-CΦ1Φ-Φ-1.Φ |
| 0.4 | (-4.1) | OL/SM | organic silty fine to coarse sand | | firm | coarse | | |
| 0.7 | (-4.4) | CL/ML | silty clay, some fine sand, organic detritis | 5Y 3/1 | firm | fine | | S-1ΦN-CΦ1Φ-1.Φ-2.Φ |
| 1.7 | (-5.4) | CL/ML | ~~organic~~ silty clay, some fine sand, shell hash | 5Y 4/1 | firm | fine | | S-1ΦN-CΦ1Φ-2.Φ-3.Φ |
| | | | | | | | | S-1ΦN-CΦ1Φ-3.Φ-4.Φ |
| 4.0 | (-7.7) | | | | | | | |

Comments: 1st attempt successful

cut open 11/4/10 at 12:05

G3
S-ION-C011
11/3/10
3.8 ft.

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: G3
All Measurements are ±0.1 feet

Logged By: KGM
Core Sample ID: S-1ØN-CØ11
Water Depth (A): 2.1

Collection Mechanism: pC
Latitude: 41°39.477'
Length of Push Core Assembly (B): 10.1

Time on Station: 11:51
Longitude: 70° 55.115'
Water Surface to Top of Handle (C): 3.8

Time of Collection: 11:56
GPS Accuracy: 10 ft.
Length of Core (from bottom) (D): 3.8

Time Depart Station: 12:00
Tide Elevation (from tide board) (G): -1.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -1.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.1

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.8

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.4

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.8) | OL | organic silt some fine sand | 5Y 2.5/1 black | loose | fine | $H_2S$ | S-1ØN-CØ11-Ø-1.Ø |
| 0.3 | (-4.1) | CL/ML | silty clay with fine to medium sand, organics | very dark grey 5Y 3/1 | firm | medium | | S-1ØN-CØ11-1.Ø-2.Ø |
| 1.3 | (-5.1) | (OL) SM | | | | | | |
| | | CL/ML | Silty clay, some fine sand, shell hash | dark grey 5Y 4/1 | firm | fine | | S-1ØN-CØ11-2.Ø-3.Ø |
| | | | | | | | | S-1ØN-CØ11-3.Ø-~~4.Ø~~ 3.8 |
| (3.8) | (-7.6) | | | | | | | |

Comments 1st attempt successful
cut open 11/4/10 at 12:30

G4
S-100-C022
10/28/10
3.2 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | G4 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-100-C072 | Water Depth (A): | 5.2 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.477 | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 0902 | Longitude: | 70°55.104 | Water Surface to Top of Handle (C): | 0.65 |
| Time of Collection: | 0909 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 3.7 |
| Time Depart Station: | 0915 | | | Tide Elevation (from tide board) (G): | 1.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.0-(10.2-0.65) | -8.55 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.2 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL | | 5Y 2.5/1 | Loose | | | Quahog |
| 0.1 | | ML | Silt w/ fine to coarse sand | 5Y 2.5/1 | Loose | | | |
| 0.25 | | ML/CL | Clayey Silt w/ fine to medium sand | 5Y 4/1 Dark Grey | Medium | Medium | | |
| 3.4 | | CL/ML | Silty Clay w/ fine to medium sand | 5Y 4/1 dark grey | Firm | Medium | | |
| 3.7 | | | | | | | | |

Shell Hash throughout

Comments
Slight $H_2O$ Odor

Samples - S-100-C072-1.0-2.0 S-100-C072-1.0-2.0-MS/MSD
S-100-C072-0.0-1.0
S-100-C072-2.0-3.0
S-100-C072-3.0-4.0

H1
S-1Ø0-CØ75
10/28/10
3.6 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | H1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ74 | Water Depth (A): | 5.1 |
| Collection Mechanism: | P.C. | Latitude: | 41° 39.467 | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 0916 | Longitude: | 70° 55.107 | Water Surface to Top of Handle (C): | 0.9 |
| Time of Collection: | 0920 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 3.6 |
| Time Depart Station: | 0925 | | | Tide Elevation (from tide board) (G): | 1.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.0-(10.2-0.9) | -8.3 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.7 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -4.1 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | ML/SM | Silt with Sand Coarse to gravel | 5Y 2.5/1 | Loose | Gravel | $H_2S$ | |
| 0.4 | - - | - | - | - | - | | - | - - |
| | | ML/CL | Clayey Silt w/ fine Sand | 5Y 4/2 Olive Grey | Loose | | | Shell Hash Throughout |
| 3.6 | | | | | | | | |

Comments

Samples Taken @ 10/28/10 1204

Samples = S-1Ø0-CØ74-Ø-1.0
S-1Ø0-CØ74-1.Ø-2.Ø
S-1Ø0-CØ74-2.Ø-3.Ø
S-1Ø0-CØ74-2.Ø-3.Ø MS/MSD
S-1Ø0-CØ74-3.Ø-4.Ø

S-100-C058
10-26-10
3.5ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: I1
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-100-C058
Water Depth (A): 5.6

Collection Mechanism: P.C.
Latitude: 41°39.456
Length of Push Core Assembly (B): 10.1

Time on Station: 1116
Longitude: 70°55.128
Water Surface to Top of Handle (C): 0.5

Time of Collection: 1132
GPS Accuracy: ± 9
Length of Core (from bottom) (D): 3.5

Time Depart Station:
Tide Elevation (from tide board) (G): 2.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 2.7-(10.1-0.8) -6.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.45

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.4

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.9

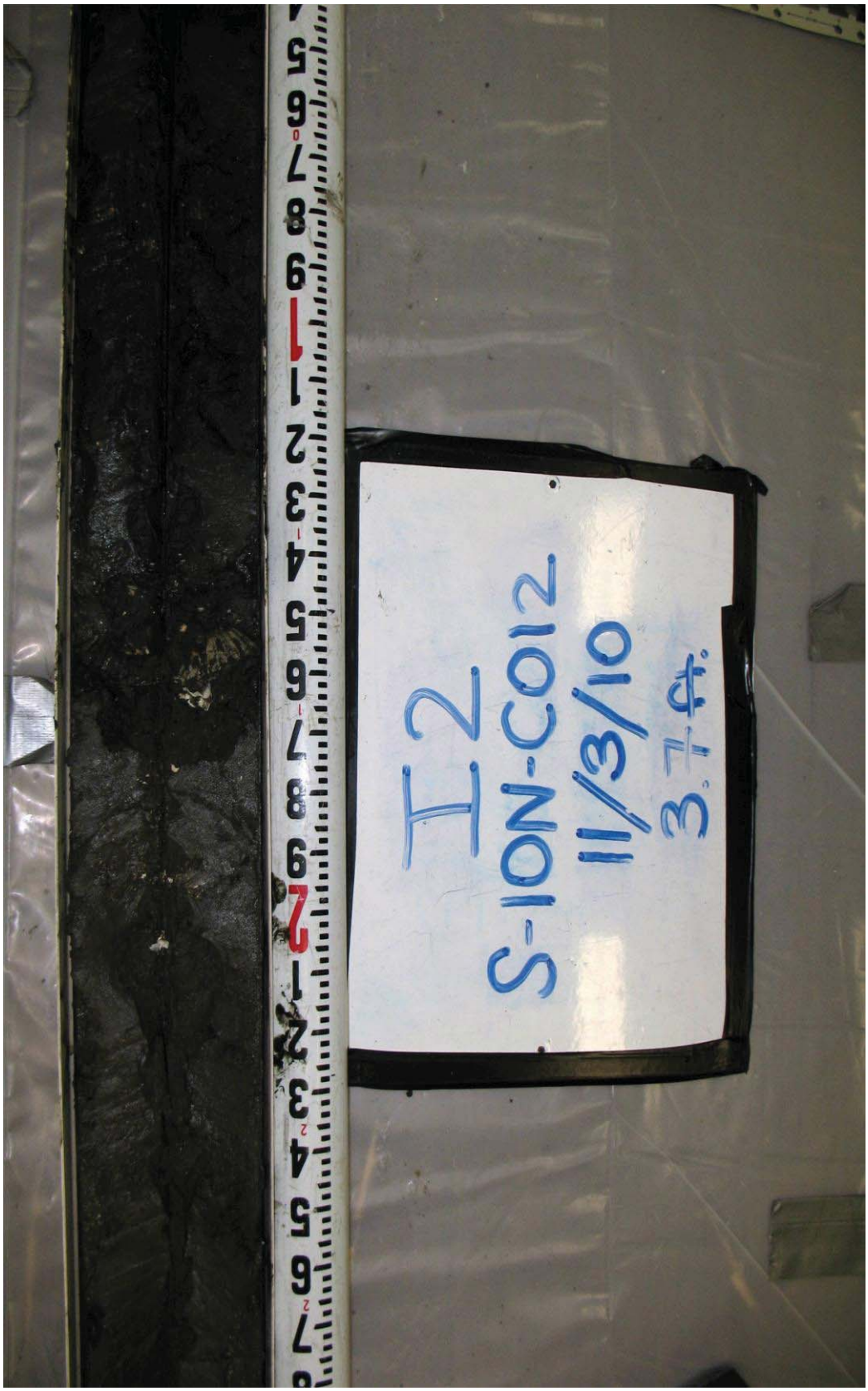
(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL | | | Loose | | | |
| 0.05 | | CL/ML | Silt/Clay w/ sand | | Loose | | Petroleum | |
| 0.35 | | SC | Sand with Clay and cobbel | | Firm | | | |
| 0.65 | | CL/SC | Clay with sand | | Firm | | | |
| 1.2 | | SC | Sand with small amount of clay | | Firm | | | |
| 1.4 | | CL/SC | 50% clay 50% sand | | Firm | | | |
| 1.65 | | CL/ML | Silty Clay w/ trace amount of sand | | Firm | | | |
| 3.5 | | | | | | | | |

Shell Hash throughout

Comments

Samples: S-100-C058-0-1.0
S-100-C058-1.0-2.0
S-100-C058-2.0-3.0
S-100-C058-3.0-4.0


I2
S-10N-C012
11/3/10
3.7 ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: I1
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-100-C058
Water Depth (A): 5.6

Collection Mechanism: P.C.
Latitude: 41°39.456
Length of Push Core Assembly (B): 10.1

Time on Station: 1116
Longitude: 70°55.128
Water Surface to Top of Handle (C): 0.5

Time of Collection: 1132
GPS Accuracy: ± 9
Length of Core (from bottom) (D): 3.5

Time Depart Station:
Tide Elevation (from tide board) (G): 2.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 2.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 2.7-(10.1-0.8) -6.9

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.45

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.4

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.9

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | | | Loose | | | |
| 0.05 | CL/ML | Silt/Clay w/ sand | | Loose | | Petroleum | |
| 0.35 | SC | Sand with Clay and cobbel | | Firm | | | |
| 0.65 | CL/SC | Clay with sand | | Firm | | | |
| 1.2 | SC | Sand with small amount of clay | | Firm | | | |
| 1.4 | CL/SC | 50% clay 50% sand | | Firm | | | |
| 1.65 | CL/ML | Silty Clay w/ trace amount of sand | | Firm | | | |
| 3.5 | | | | | | | |

Shell Hash throughout

Comments

Samples: S-100-C058-0-1.0
S-100-C058-1.0-2.0
S-100-C058-2.0-3.0
S-100-C058-3.0-4.0

I3
S-1ØØ-CØ75
10/28/10
3.6ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | I3 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ75 | Water Depth (A): | 4.6 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.457 | Length of Push Core Assembly (B): | 10.15 |
| Time on Station: | 0930 | Longitude: | 70° 55.107 | Water Surface to Top of Handle (C): | 0.95 |
| Time of Collection: | 0935 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 3.6 |
| Time Depart Station: | 0941 | | | Tide Elevation (from tide board) (G): | 1.4 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 1.4-(10.15-0.95) | 1.4 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.8 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.2 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.2 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | SM | Silty-Sand | Sy 2.5/1 Black | Loose | Coarse | $H_2S$ | |
| 0.5 | ML | Silt with Sand w/medium-coarse sand | Sy 3/1 very Dark Grey | Loose | Coarse | | |
| 1.05 | ML/CL | Clayey Silt w/ fine Sand | Sy 3/2 | Firm | Fine | | |
| 2.0 | CL/ML | Silty Clay w/shell Hash | Sy 3/2 | Firm | | | |
| 3.6 | | | | | | | |

Comments
-1st attempt unsuccessful, core length only 3ft

Samples: S-1Ø0-CØ75-Ø-1.Ø
S-1Ø0-CØ75-1.Ø-2.Ø
S-1Ø0-CØ75-2.Ø-3.Ø
S-1Ø0-CØ75-3.Ø-4.Ø

J1
S-100-C076
10/28/10
3.85ft

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | J1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ76 | Water Depth (A): | 5.3 |
| Collection Mechanism: | P.C. | Latitude: | 41° 39.448 | Length of Push Core Assembly (B): | 10.15 |
| Time on Station: | 0954 | Longitude: | 70° 55.115 | Water Surface to Top of Handle (C): | 0.4 |
| Time of Collection: | 1000 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 3.85 |
| Time Depart Station: | 1002 | | | Tide Elevation (from tide board) (G): | 1.6 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.6-(10.16-0.4) | -8.15 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -5.25 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.3 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.7 |

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt w/ sand + Detritus | Sy 2.5/1 Black | Loose | Coarse | Petroleum | |
| 0.95 | - | - | - | - | - | - | - |
| | ML/CL | Clayey Silt w/ gravel poorly sorted throughout | Sy 2.5/1 | Firm | gravel | | |
| 3.85 | | | | | | | |

Comments

Samples: S-1Ø0-CØ76-Ø-1.Ø
S-1Ø0-CØ76-Ø-1.Ø-MS/MSD
S-1Ø0-CØ76-1.Ø-2.Ø
S-1Ø0-CØ76-2.Ø-3.Ø
S-1Ø0-CØ76-3.Ø-4.Ø

K1
S-10U-C059
10-26-10
3 of 4

| | | |
|---|---|---|
| WOOD HOLEGROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | K1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØS9 | Water Depth (A): | 3.3 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.435 | Length of Push Core Assembly (B): | 10.35 |
| Time on Station: | 1141 | Longitude: | 70°55.150 | Water Surface to Top of Handle (C): | 3.30 |
| Time of Collection: | 1154 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 3.7 |
| Time Depart Station: | 1159 | | | Tide Elevation (from tide board) (G): | 2.1 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 2.1-(10.35-3.30) | -4.95 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -1.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.25 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -1.2 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | | |
| 0.8 | | OL | | Sy 2.5/1 Black | Loose | | | |
| | | ML/CL | Clayey silt with sand/gravel | Sy 2.5/1 Black | Loose | | | |
| 2.6 | | | | | | | | |
| 3.8 | | CL | Clay with sand fine to coarse | Sy 2.5/2 | Firm | | | |

Comments
-Heavy sheen on top of core

Samples: S-1Ø0-CØS9-Ø-1.Ø
S-1Ø0-CØS9-1.Ø-2.Ø
S-1Ø0-CØS9-2.Ø-3.Ø
S-1Ø0-CØS9-3.Ø-4.Ø

K2
S-10N-C013
11/3/10
3.84

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 11/3/10 | Station ID: | K2 | All Measurements are ± 0.1 feet | KGM |
| Logged By: | KGM | Core Sample ID: | S-1ΦN-CΦ13 | Water Depth (A): | ~~0.9~~ KGM 1.1 |
| Collection Mechanism: | pc | Latitude: | 41° 39.436' | Length of Push Core Assembly (B): | ~~10.1~~ 10.2 |
| Time on Station: | 10.32 | Longitude: | 70° 55.135' | Water Surface to Top of Handle (C): | 4.7 |
| Time of Collection: | 10:48 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 3.8 |
| Time Depart Station: | 10:51 | | | Tide Elevation (from tide board) (G): | -1.0 |

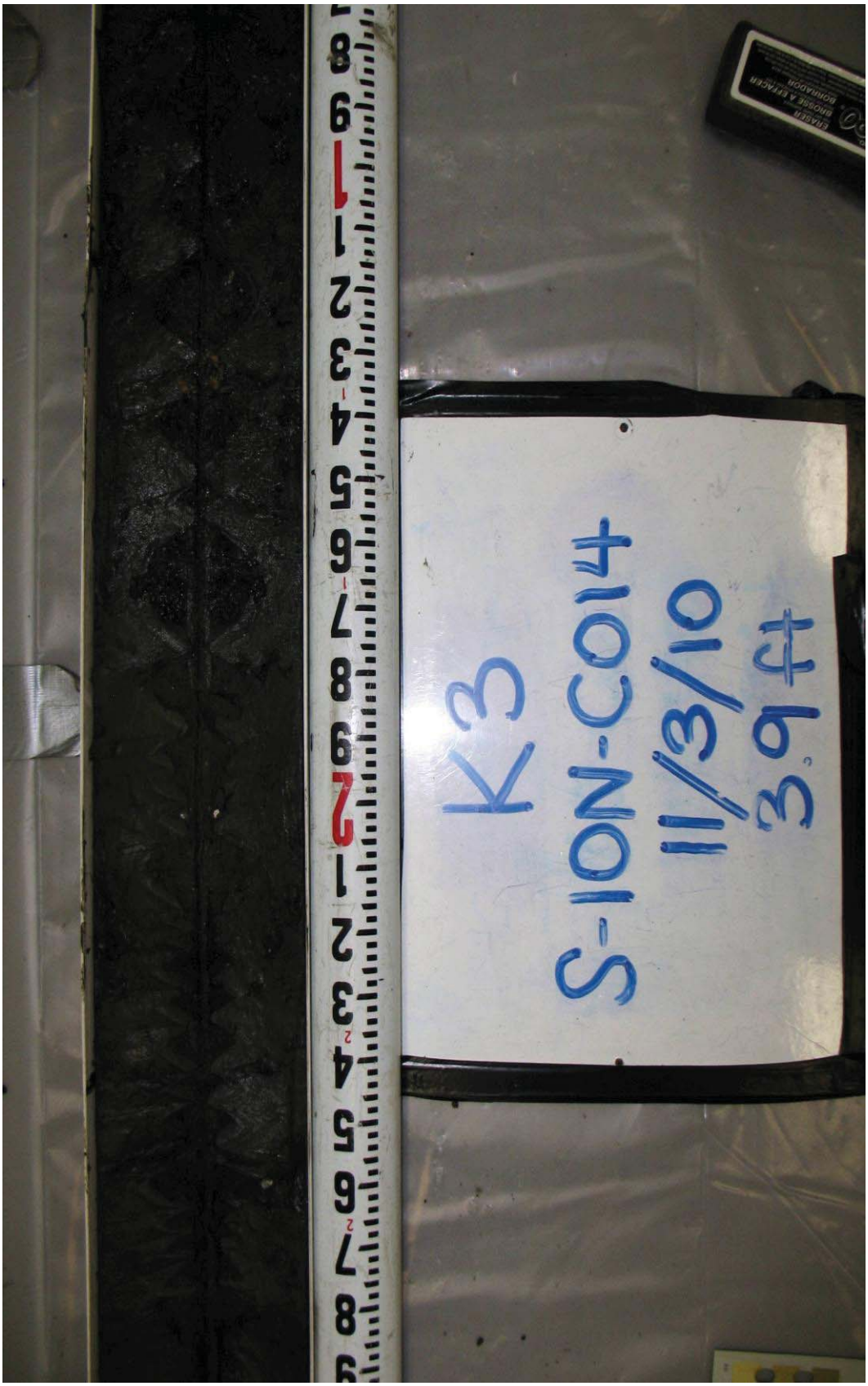
**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -6.5 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -3.3 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -2.7 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | ~~-2.2~~ KGM -2.1 |

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-2.7) | OL | organic silt | black 5y2.5/1 | loose | fine | $H_2S$ | S-1ΦN-CΦ13-Φ-1.Φ |
| 0.6 | (-3.3) | OL/SM | organic silty sand - fine | very dark grey 5y 3/1 | firm | fine | — | S-1ΦN-CΦ13-1.Φ-2.Φ |
| 0.9 | (-3.6) | CL/ML | silty clay fine sand | very dark grey 5y 3/1 | firm | fine | — | |
| 1.4 | (-4.1) | SM/SC | silty clayey well graded fine to coarse sand | 2.5y 3/3 dark olive brown | firm | coarse ~~fine~~ | — | S-1ΦN-CΦ13-2.Φ-3.Φ |
| 2.2 | (-4.9) | CL/ML | silty clay, fine to medium sand in layers throughout | dark grey 5y 4/1 | firm | medium | | S-1ΦN-CΦ13-3.Φ-3.8 |
| 3.8 | (-6.5) | | | 2.5y 4/4 olive brown layers | | | | |

Comments
1st attempt - unsuccessful - compaction
2nd attempt - successful
cut open 11/4/10 at 13:10


K3
S-ION-C014
11/3/10
3.9 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 11/3/10 | Station ID: | K3 | All Measurements are ± 0.1 feet | |
| Logged By: | KGM | Core Sample ID: | S-1ΦN-CΦ14 | Water Depth (A): | 1.2 |
| Collection Mechanism: | pc | Latitude: | 41° 39.437' | Length of Push Core Assembly (B): | 10.1 |
| Time on Station: | 10:59 | Longitude: | 70° 55.123' | Water Surface to Top of Handle (C): | 3.6 |
| Time of Collection: | 11:05 | GPS Accuracy: | 10 ft. | Length of Core (from bottom) (D): | 3.9 |
| Time Depart Station: | 11:12 | | | Tide Elevation (from tide board) (G): | -1.2 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | -1.2 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | ~~-7.6~~ KGM -7.7 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.0 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.8 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | ~~-2.8~~ KGM -2.4 |

(Note If I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.8) | OL | organic silt | black 5Y 2.5/1 | loose | fine | | S-1ΦN-CΦ14-Φ-1.Φ |
| 0.2 | (-4.0) | ~~CL/ML~~ ML/CL | clayey silt with fine sand | v. dk grey 5Y 3/1 | moderately firm | fine | $H_2S$ | |
| 1.0 | (-4.8) | | | | | | | S-1ΦN-CΦ14-1.Φ-2.Φ |
| | | CL/ML | silty clay, fine sand throughout | dark grey 5Y 4/1 | firm | fine | | S-1ΦN-CΦ14-2.Φ-3Φ |
| 3.6 | (-7.4) | | | | | | | S-1ΦN-CΦ14-3.Φ-~~4.Φ~~ 3.9 |
| 3.9 | (-7.7) | SC | clayey sand fine to medium | 5Y 4/2 dark olive grey | firm | medium | | |

Comments
1st attempt - successful, no fingers
cut open 11/4/10 at 13:35

KH
S-100-C077
10/28/10
3.6ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | K4 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ77 | Water Depth (A): | 5.3 |
| Collection Mechanism: | P.C. | Latitude: | 41° 39.437 | Length of Push Core Assembly (B): | 10.25 |
| Time on Station: | 1005 | Longitude: | 70°55.111 | Water Surface to Top of Handle (C): | 0.7 |
| Time of Collection: | 1009 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 3.6 |
| Time Depart Station: | 1016 | | | Tide Elevation (from tide board) (G): | 1.8 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 1.8-(10.25-0.7) | 1.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.75 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.25 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -4.15 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.5 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.1 | - - | OL | Silt w/organics | 2.5/1 Black | Loose | | $H_2S$ | — — |
| 0.5 | - - | SM | Silty Sand, medium to coarse | 5y 2.5/1 Black | Loose | Coarse | $H_2S$ | — — |
| | | ML/CL | Clayey Silt w/shell hash | 5y 2.5/1 Black | Firm | | | |
| 2.55 | - - | - | — | — | — | — | — | — — |
| | | CL/ML | Silty Clay w/shell hash | 5y 3/2 Dark Olive Grey | Firm | | | |
| 3.6 | | | | | | | | |

Comments

Cut open 10/28/10 @ 1316

Samples: S-1Ø0-CØ77-Ø-1.Ø
S-1Ø0-CØ77-1.Ø-2.Ø
S-1Ø0-CØ77-2.Ø-3.Ø
S-1Ø0-CØ77-2Ø-3.Ø-MS/MSD
S-1Ø0-CØ77-3.Ø-4.Ø

L1
S-10U-C060
10-26-10
33cm

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | |
|---|---|---|---|
| Date: 10/25/10 | Station ID: L1 | All Measurements are ± 0.1 feet | |
| Logged By: DB | Core Sample ID: S-1Ø0-CØ6Ø | Water Depth (A): 3.8 | |
| Collection Mechanism: P.C. | Latitude: 41°39.427 | Length of Push Core Assembly (B): 10.15 | |
| Time on Station: 1205 | Longitude: 70° 55.137 | Water Surface to Top of Handle (C): 3.45 | |
| Time of Collection: 1211 | GPS Accuracy: ±9 | Length of Core (from bottom) (D): ~~3.4~~ DB 3.3 | |
| Time Depart Station: 1219 | | Tide Elevation (from tide board) (G): 1.8 | |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.8 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.8-(10.15-3.45) | -4.9 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -1.7 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -1.6 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.0 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 / 0.1 | OL | Silt w/sand/gravel | 5y 2.5/1 Black | Loose | — | — | — — |
| | CL/Mbl | Silty Clay w/fine sand/ gravel | 5y 2.5/1 ↓ 5y 2.5/2 | Loose/ medium | | | |
| 1.55 | - | - | - | - | - | - | — |
| 3.3 | CL | Clay with fine sand | 5y 3/1 Dark Olive Grey | Firm | | $H_2S$ | |

Petroleum odor

Comments
-used fingers

Samples: S-1Ø0-CØ6Ø-Ø-1.Ø
S-1Ø0-CØ6Ø-1.Ø-2.Ø
S-1Ø0-CØ6Ø-2.Ø-3.Ø
S-1Ø0-CØ6Ø-3.Ø-4.Ø

L2
S-ION-C015
11/3/10
3.9 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Logged By: KGM
Collection Mechanism: PC
Time on Station: 09:28
Time of Collection: ~~09:45~~ KGM 09:56
Time Depart Station: 10:05

Station ID: L2
Core Sample ID: S-1ΦN-CΦ1S
Latitude: 41°39.~~424'~~ 4251' KGM
Longitude: 70°55.1291'
GPS Accuracy: 10 ft.

All Measurements are ± 0.1 feet
Water Depth (A): ~~2.6~~ KGM ~~2.4~~ KGM 2.3
Length of Push Core Assembly (B): ~~10.1~~ KGM 10.1
Water Surface to Top of Handle (C): ~~2.2~~ KGM 3.3
Length of Core (from bottom) (D): 3.9
Tide Elevation (from tide board) (G): -0.3

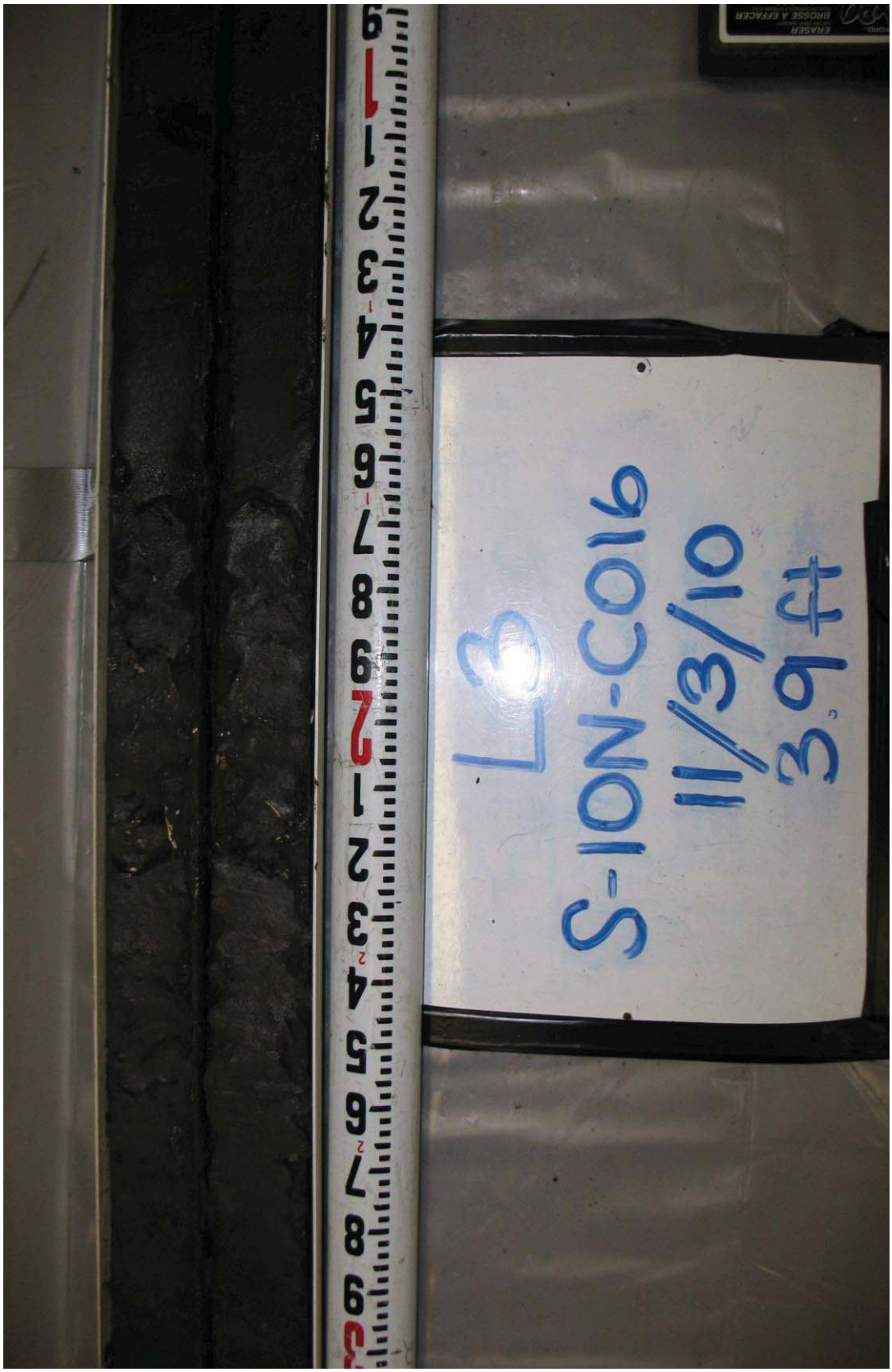
**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.3
(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) ~~-6.5~~ KGM -7.1
(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.2
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -2.6

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.2) | OL | Oily, greasy organic silt | black 5Y 2.5/1 | loose | fine | $H_2S$ | S-1ΦN-CΦ1S-Φ-1.Φ |
| 0.6 | (-3.8) | OL/mL/GM | organic silty gravel | black 5Y 2.5/1 | ~~mod.~~ loose | 1-2cm gravel | | S-1ΦN-CΦ1S-1.Φ-2.Φ |
| 1.1 | (-4.3) | CL/mL | silty clay, some fine sand | dark olive grey 5Y 3/2 | firm | fine | | S-1ΦN-CΦ1S-2.Φ-3.Φ |
| 2.2 | (-5.4) | CL/mL | Silty clay, some fine sand | 5Y 4/2 olive grey | firm | fine | | S-1ΦN-CΦ1S-3.Φ-3.9 |
| 3.9 | (-7.1) | | | | | | | |

Comments
1st attempt - overpenetrated
2nd attempt - unsuccessful, insufficient recovery
3rd attempt - successful Cutopen 11/4/10 at 13:55


L3
S-10N-C016
11/3/10
3.9 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Station ID: L3
All Measurements are ± 0.1 feet
Logged By: KGM
Core Sample ID: S-1ΦN-CΦ16
Water Depth (A): 2.7
Collection Mechanism: PC
Latitude: 41° 39.425'
Length of Push Core Assembly (B): 10.2
Time on Station: 10:13
Longitude: 70° 55.119'
Water Surface to Top of Handle (C): 3.3
Time of Collection: 10:21
GPS Accuracy: 13 ft.
Length of Core (from bottom) (D): 3.9
Time Depart Station: 10:25
Tide Elevation (from tide board) (G): -0.7

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): -0.7

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.6

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.9

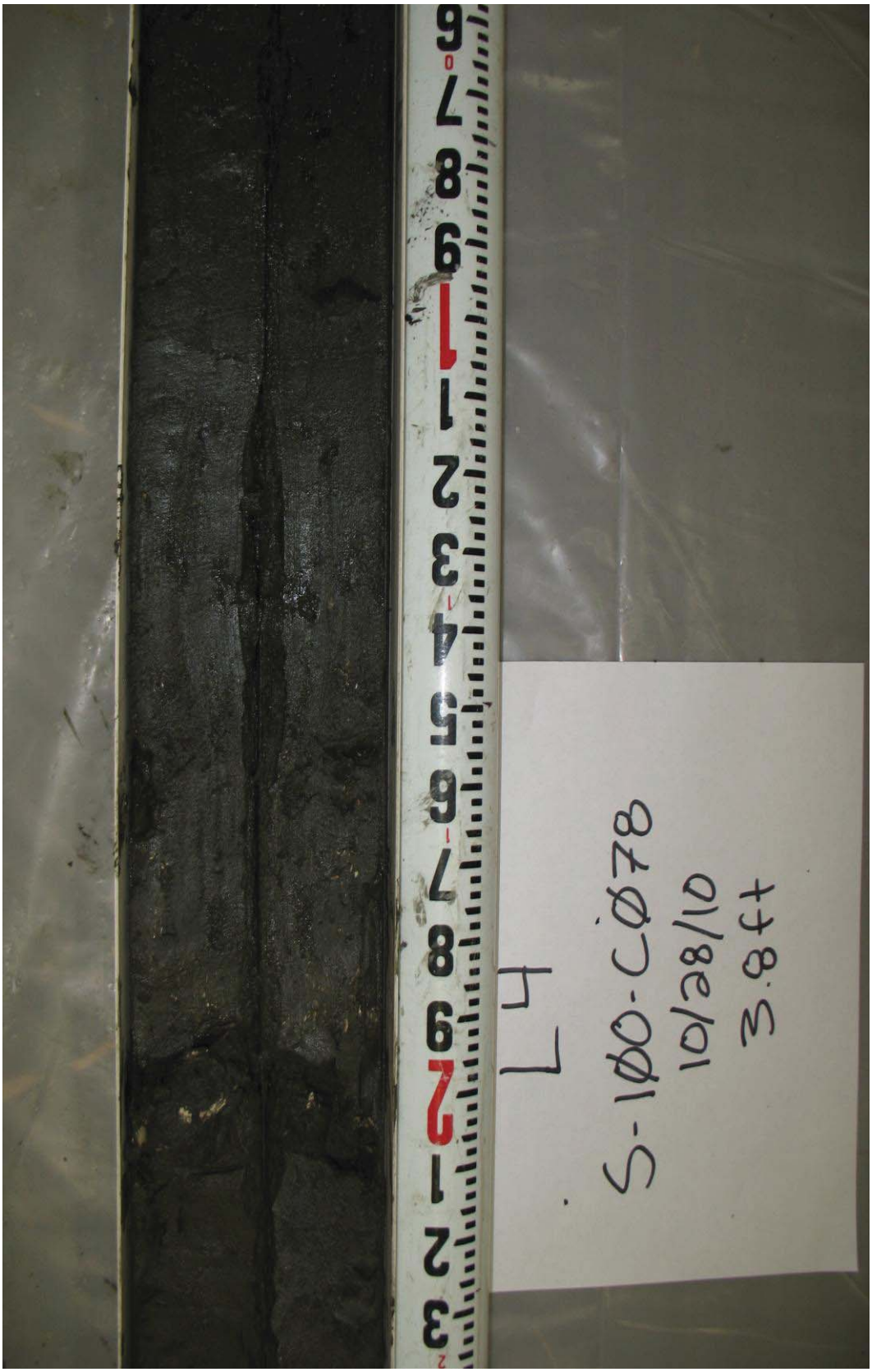
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.7

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.4

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-3.7) | OL | organic silty greasy | black 5y 2.5/1 | loose | fine | $H_2S$ | S-1ΦN-CΦ16-Φ-1.Φ |
| 0.2 | (-3.9) | ML/CL | clayey silt, some fine sand | v. dk. grey 5y 3/1 | moderately firm | fine | | |
| 0.7 | (-4.4) | CL/ML | silty clay, some fine sand | v. dk grey 5y 3/1 | firm | fine | | ~~S-1ΦN-~~ CΦ16-1.Φ-2.Φ |
| 1.7 | (-5.4) | CL/ML | silty clay, poorly sorted, well graded fine to coarse sand in layers throughout | dark grey 5y 4/1 | firm | coarse | | S-1ΦN-CΦ16-2.Φ-3.Φ<br>S-1ΦN-CΦ16-3.Φ-3.9 |
| 3.9 | (-7.6) | | | | | | | |

Comments: 1st attempt successful, no fingers used
cut open 11/4/10 at 14:15


L4
S-100-C078
10/28/10
3.8ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | L4 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ78 | Water Depth (A): | 5.3 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.427 | Length of Push Core Assembly (B): | 10.15 |
| Time on Station: | 1020 | Longitude: | 70°55.107 | Water Surface to Top of Handle (C): | 0.6 |
| Time of Collection: | 1025 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 3.8 |
| Time Depart Station: | 1030 | | | Tide Elevation (from tide board) (G): | 1.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 1.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.9-(10.15-0.6) | -7.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | - 3.95 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.4 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = 1I) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt w/sand | 5y 2.5/ Black | Loose | Coarse | $H_2S$ | |
| 0.1 | ML/CL | Clayey Silt | 5y 3/1 Very Dark Grey | Medium | | | |
| 1.4 | CL/ML | Silty Clay w/shell hash, and gravel chunks throughout | 5y 4/1 Dark Grey | Firm | Gravel | | |
| 3.8 | | | | | | | |

Comments

Samples: S-1Ø0-CØ78-Ø-1.Ø
S-1Ø0-CØ78-1.Ø-2.Ø
S-1Ø0-CØ78-2.Ø-3.Ø
S-1Ø0-CØ78-3.Ø-4.Ø

M1
S-100-C061
10-26-10
3.5ft

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/25/10
Station ID: M1
All Measurements are ± 0.1 feet
Logged By: DB
Core Sample ID: S-1Ø0-CØ61
Water Depth (A): 4.4
Collection Mechanism: P.C.
Latitude: 41° 39. 409
Length of Push Core Assembly (B): 10.15
Time on Station: 1228
Longitude: 70° 55. 119
Water Surface to Top of Handle (C): ~~0.75~~ DB 1.7
Time of Collection: 1236
GPS Accuracy: ± 9
Length of Core (from bottom) (D): 3.5
Time Depart Station: 1242
Tide Elevation (from tide board) (G): 1.3

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board): 1.3

(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 1.3-(10.15-1.7) -7.15

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -3.75

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -3.65

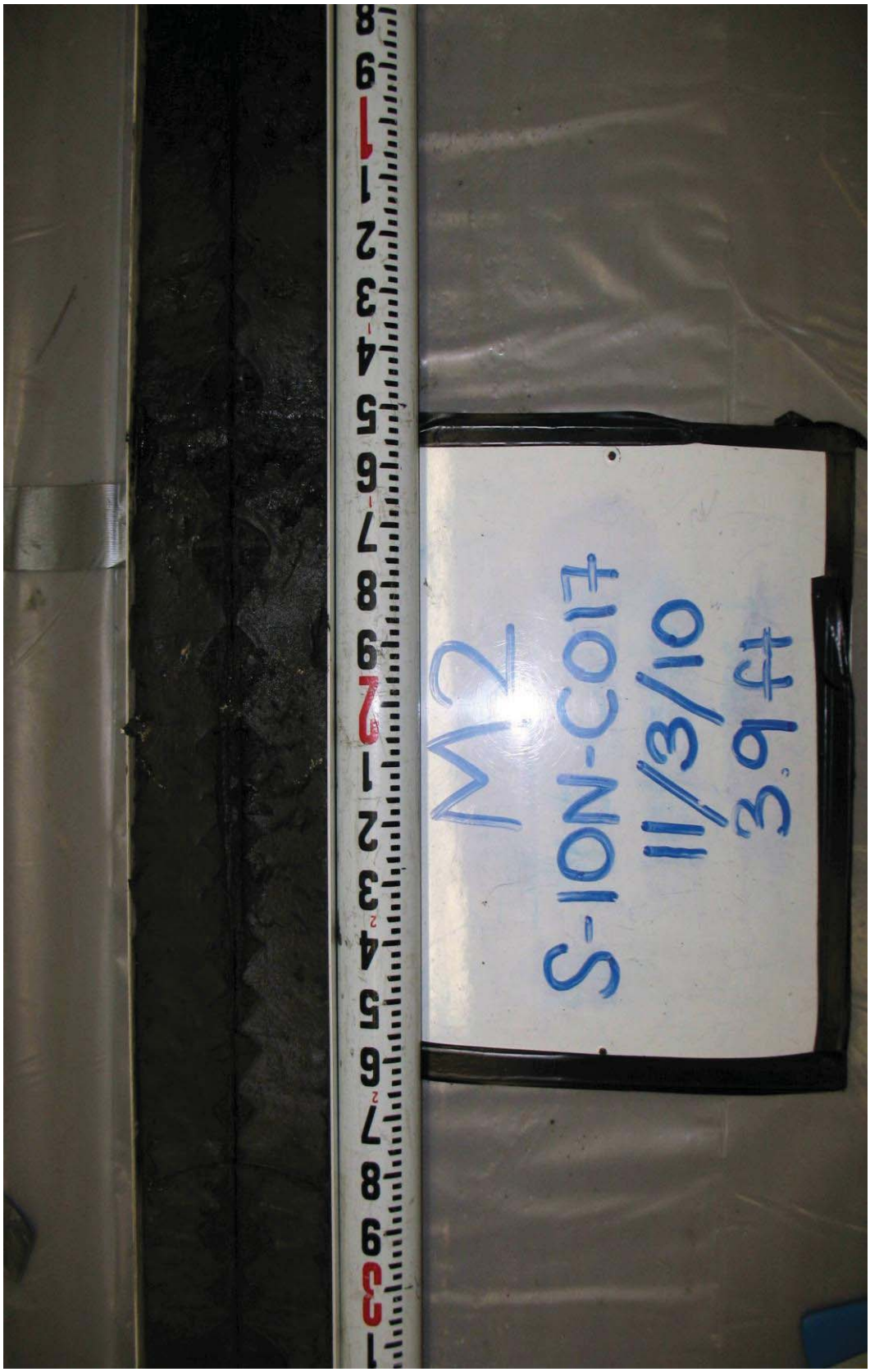
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.1

(Note if I + $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | | 5Y 2.5/1 Black | Loose | | | |
| 0.1 | CL/ML | Silty Clay | 5Y 2.5/2 | Medium | | $H_2S$ | |
| 1.0 | CL/ML | Silty Clay w/ fine to coarse sand | 5Y 2.5/1 | Loose | | $H_2S$ | Detritus |
| 1.3 | CL/ML | Silty Clay | 5Y 3/2 Dark Olive Gray | Firm | | $H_2S$ | Shell hash throughout |
| 3.5 | | | | | | | |

Comments
- 1st attempt unsuccessful, lost core out of bottom
- 2nd attempt used fingers

Samples: S-1Ø0-CØ61-Ø-1.Ø
S-1Ø0-CØ61-1.Ø-2.Ø
S-1Ø0-CØ61-2.Ø-3.Ø
S-1Ø0-CØ61-3.Ø-4.Ø


M2
S-ION-C017
11/3/10
39 ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 11/3/10
Logged By: KGM
Collection Mechanism: pc
Time on Station: 09:03
Time of Collection: 09:12
Time Depart Station: 09:20

Station ID: M2
Core Sample ID: S-1ΦN-CΦ17
Latitude: 41°39.407'
Longitude: 70°55.114'
GPS Accuracy: 11 ft.

All Measurements are ± 0.1 feet
Water Depth (A): 3.8
Length of Push Core Assembly (B): 10.2
Water Surface to Top of Handle (C): 1.8
Length of Core (from bottom) (D): 3.9
Tide Elevation (from tide board) (G): 0.5

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): 0.5
(H) Elevation of the bottom of the core (NGVD): G - ( B - C ) -7.9
(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) -4.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D -4.0
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A -3.3

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0.0 | (-4.0) | OL | greasy oily organic silt | black 5Y 2.5/1 | loose | fine | $H_2S$ | S-1ΦN-CΦ17-Φ-1.Φ |
| 0.6 | (-4.6) | | | | | | | |
| 1.1 | (-5.1) | mL/CL | greasy clayey silt | black 5Y 2.5/1 | moderately firm | fine | | S-1ΦN-CΦ17-1.Φ-2.Φ |
| | | CL/mL | silty clay, layers of well graded fine to coarse sand | olive grey 5Y 4/2 | firm | coarse | | S-1ΦN-CΦ17-2.Φ-3.Φ |
| | | | | | | | | S-1ΦN-CΦ17-3.Φ-3.9 |
| 3.9 | (-7.9) | | | | | | | |

Comments: 1st attempt successful - no finger needed
tide: 1.0 at 08:55
0.3 at 09:23
cut open 11/4/10 at 14:45

M3
S-100-C079
10/28/10
3.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | M3 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-100-C079 | Water Depth (A): | 5.3 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.406 | Length of Push Core Assembly (B): | 10.2 |
| Time on Station: | 1033 | Longitude: | 70° 55.103 | Water Surface to Top of Handle (C): | 0.75 |
| Time of Collection: | 1038 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 3.9 |
| Time Depart Station: | 1040 | | | Tide Elevation (from tide board) (G): | 2.0 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 2.0 - (10.2-0.75) | 2.0 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.45 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.2 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.55 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.3 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | | |
| 0.65 | | OL | Silt w/coarse sands | 5y 2.5/1 Black | Loose | Coarse | $H_2S$ | |
| 1.45 | | ML | Silt | 5y 2.5/1 Black | Medium | | $H_2S$ | |
| 2.4 | | ML/CL | Clayey Silt w/gravel + Shell hash | 5y 3/2 Dark Olive Grey | Firm | | | |
| 3.9 | | CL/ML | Silty Clay w/gravel + Shell hash | 5y 4/2 Olive Grey | Firm | | | |

Comments

Samples: S-100-C079-0-1.0
S-100-C079-1.0-2.0
S-100-C079-1.0-2.0-MS/MSD
S-100-C079-2.0-3.0
S-100-C079-3.0-4.0

S-100-C062
10-26-10
4.0ft

| | | |
|---|---|---|
| Project Name: New Bedford Harbor Environmental Monitoring | | Project #: W912WJ-09-D-0001, Task Order No. 0010 |
| Location: New Bedford, MA | | Vessel: |
| Client: USACE NAE | | Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/25/10 | Station ID: | N2 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ62 | Water Depth (A): | 3.8 |
| Collection Mechanism: | P.C. | Latitude: | 41° 39.399 | Length of Push Core Assembly (B): | 10.15 |
| Time on Station: | 1254 | Longitude: | 70° 55.114 | Water Surface to Top of Handle (C): | 2.0 |
| Time of Collection: | 1300 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 4.0 |
| Time Depart Station: | 1304 | | | Tide Elevation (from tide board) (G): | 0.9 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.9 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 0.9-(10.15-2) | -7.25 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.25 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.25 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -2.9 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt w/organics shell hash, sand, gravel | 5Y 2.5/1 | Loose | | Petroleum | |
| 1.0 | CL/ML | Silty Clay w/ Fine sand | 5Y 2.5/2 | Medium | | | |
| 1.95 | SM | Sand w/silt | 5Y 3/2 | Firm | | | |
| 2.05 | CL/ML | Silty Clay w/Fine Sand | 5Y 3/2 Dark Olive Grey | Firm | | | |
| 4.0 | | | | | | | |

Shell Hash throughout

Comments
- used fingers
- $H_2S$ Odor

Samples: S-1Ø0-CØ62-Ø-1.Ø
S-1Ø0-CØ62-1.Ø-2.Ø
S-1Ø0-CØ62-2Ø-3.Ø
S-1Ø0-CØ62-3.Ø-4.Ø

N3
S-100-C000
10/28/10
3.85ft

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | N3 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ8Ø | Water Depth (A): | 5.3 |
| Collection Mechanism: | P.C | Latitude: | 41° 39.399 | Length of Push Core Assembly (B): | 10.15 |
| Time on Station: | 1047 | Longitude: | 70° 55.099 | Water Surface to Top of Handle (C): | 0.45 |
| Time of Collection: | 1052 | GPS Accuracy: | ± 9 | Length of Core (from bottom) (D): | 3.85 |
| Time Depart Station: | 1100 | | | Tide Elevation (from tide board) (G): | 2.1 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 2.1 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 2.1 - (10.15 - 0.45) | -7.6 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.75 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.2 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL | Silt with chunks of grass | 5Y 2.5/1 Black | Loose | | $H_2S$ | |
| 0.9 | | ML/CL | Clayey Silt | 5Y 3/1 Very Dark Grey | Medium | | $H_2S$ | |
| 1.65 | | CL/ML | Silty Clay w/ shell hash | 5Y 4/1 Dark Grey | Firm | | | |
| 3.85 | | | | | | | | |

Comments

Samples: S-1Ø0-CØ8Ø-Ø-1.Ø
S-1Ø0-CØ8Ø-1.Ø-2.Ø
S-1Ø0-CØ8Ø-2.Ø-3.Ø
S-1Ø0-CØ8Ø-3.Ø-4.Ø

01
S-10J-C063
10-26-10
3.8-11

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

| | | | |
|---|---|---|---|
| Date: 10/25/10 | Station ID: 01 | All Measurements are ± 0.1 feet | |
| Logged By: DB | Core Sample ID: S-100-C063 | Water Depth (A): | 4.2 |
| Collection Mechanism: P.C. | Latitude: 41°39.388 | Length of Push Core Assembly (B): | 9.75 |
| Time on Station: 1309 | Longitude: 70°55.102 | Water Surface to Top of Handle (C): | 1.5 |
| Time of Collection: 1319 | GPS Accuracy: ± 9 | Length of Core (from bottom) (D): | 3.8 |
| Time Depart Station: 1324 | | Tide Elevation (from tide board) (G): | 0.6 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): 0.6-(9.75-1.5) | 0.6 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) | -7.65 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -4.55 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -3.85 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -3.6 |

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | OL | Silt with gravel | 5Y 2.5/1 Black | Loose | | $H_2S$ | |
| 0.7 | | CL/ML | Silty Clay w/fine sand | 5Y 3/1 Very Dark Gray | Medium | | | |
| 1.4 | | SM | Silty Sand | | Firm | | | |
| 1.5 | | CL/ML | Silty Clay w/fine sand | 5Y 3/2 Dark Olive Gray | Firm | | | |
| 3.8 | | | | | | | | |

Shell Hash

Comments

Samples = S-100-C063-0-1.0
S-100-C063-1.0-2.0
S-100-C063-2.0-3.0
S-100-C063-3.0-4.0

P1
S-100-C064
10-26-10
3.0ft

| | | |
|---|---|---|
| WOODS HOLE GROUP | Project Name: New Bedford Harbor Environmental Monitoring<br>Location: New Bedford, MA<br>Client: USACE NAE | Project #: W912WJ-09-D-0001, Task Order No. 0010<br>Vessel:<br>Chief Scientist: |

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10/28/10 | Station ID: | P1 | All Measurements are ± 0.1 feet | |
| Logged By: | DB | Core Sample ID: | S-1Ø0-CØ64 | Water Depth (A): | 8.1 |
| Collection Mechanism: | P.C. | Latitude: | 41°39.388 | Length of Push Core Assembly (B): | 15.35 |
| Time on Station: | 1331 | Longitude: | 70° 55.078 | Water Surface to Top of Handle (C): | 4.0 |
| Time of Collection: | 1338 | GPS Accuracy: | ±9 | Length of Core (from bottom) (D): | 3.0 |
| Time Depart Station: | 1341 | | | Tide Elevation (from tide board) (G): | 0.3 |

**Calculations for Determination of Z* Elevation**

| | |
|---|---|
| (G) Elevation of Water Surface (NVGD) (as read from tide board): | 0.3 |
| (H) Elevation of the bottom of the core (NGVD): G - ( B - C ) 0.3-(15.35-4.0) | -11.05 |
| (z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition ) | -10.65 |
| (I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D | -8.05 |
| ($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A | -7.8 |

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | OL | Silt with organic detritus + fine sand | 5Y 2.5/1 Black | Loose | | Petroleum | |
| 2.6 — 3.0 | CL | Clay with Sand | 5Y 3/1 dark gray | Firm | | | |

Comments

-Heavy sheen
-Used fingers

Samples: S-1Ø0-CØ64-Ø-1.Ø
S-1Ø0-CØ64-1.Ø-2.Ø
S-1Ø0-CØ64-2.Ø-3.Ø

Soil 11
S-100-C064
10/27/10
0-10cm

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/27/10
Station ID: Soil 1
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-1Ø0-CØ65
Water Depth (A):

Collection Mechanism: AUG
Latitude: 41° 39.502
Length of Push Core Assembly (B):

Time on Station: 0839
Longitude: 70° 55.163
Water Surface to Top of Handle (C):

Time of Collection: 0905
GPS Accuracy: ±9
Length of Core (from bottom) (D): 4ft

Time Depart Station: 0910
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

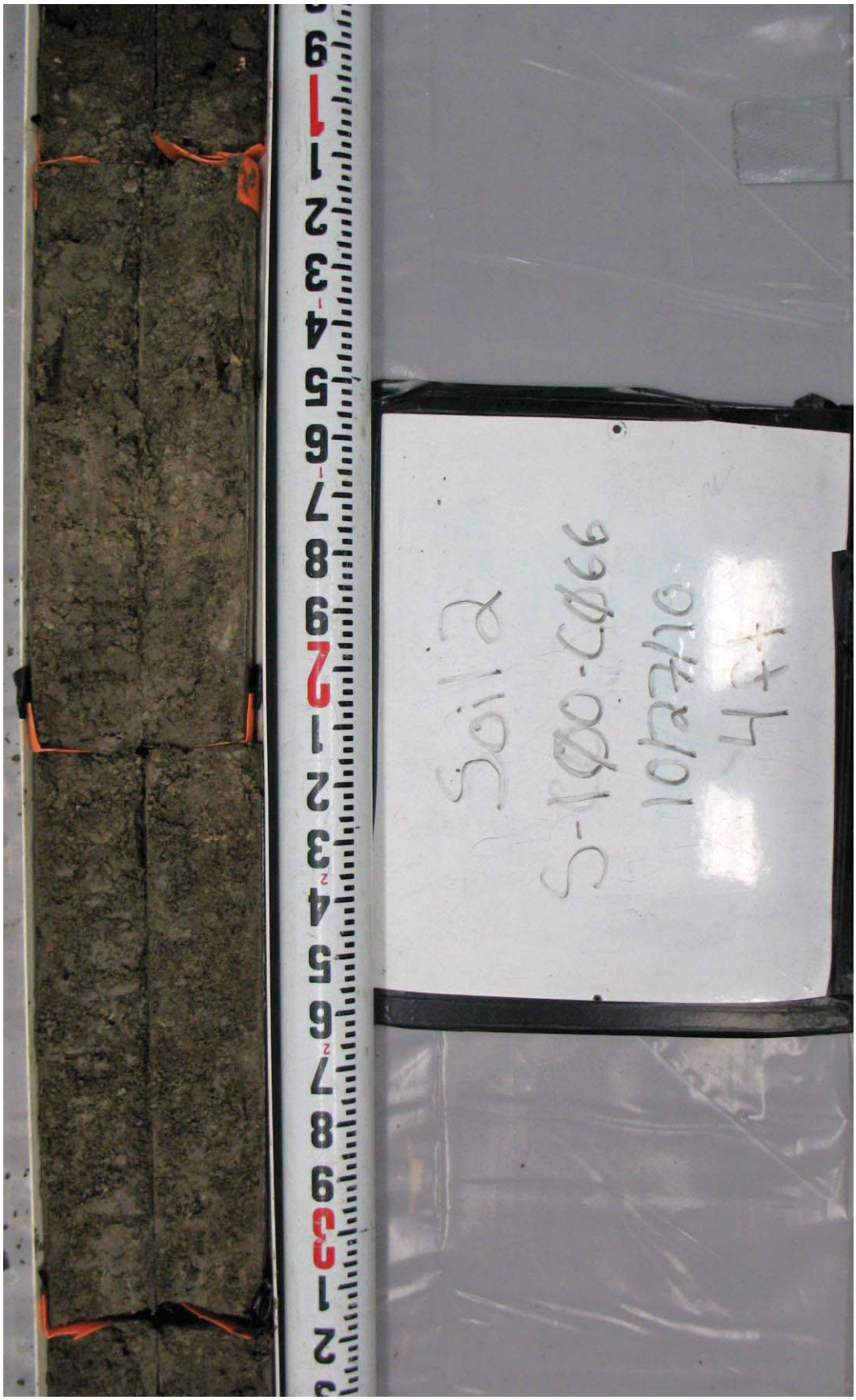
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I • $I_2$ within + 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | ML | Silt w/ fine sand | 10YR 3/2 Very Dark Grayish Brown | | | | organics throughout (roots) |
| 1.2 | ML | Silt w/ fine sands + gravel | 10YR 2/1 Black | | | | |
| 1.4 | ML | Silt w/ fine to coarse sand | 10YR Very Dark Grayish Brown | | | | shell hash |
| 2.1 | ML/CL | Clayey Silt | 10YR 4/2 Dark grayish Brown | | | | |
| 2.6 | CL/ML | Silty Clay w/ fine to medium sand | 10YR 4/2 Dark grayish Brown | | | | |
| 4.0 | | | | | | | |

Comments
- Filled 6 barrels, each barrel 1.5ft of sediment
- Barrel length = 6 ft, actual depth = 4ft

Samples: S-1Ø0-CØ6S-Ø-1.Ø
S-1Ø0-CØ6S-1.Ø-2.Ø
S-1Ø0-CØ6S-2.Ø-3.Ø
S-1Ø0-CØ6S-3.Ø-4.Ø


Soil 2
S-100-C066
10/27/10
4+4

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/27/10
Station ID: Soil2
All Measurements are ± 0.1 feet

Logged By: DB
Core Sample ID: S-1Ø0-CØ66
Water Depth (A):

Collection Mechanism: AUG
Latitude: 41°39.490
Length of Push Core Assembly (B):

Time on Station: 0915
Longitude: 70°55.161
Water Surface to Top of Handle (C):

Time of Collection: 1007
GPS Accuracy: ±9
Length of Core (from bottom) (D): 4.00

Time Depart Station: 1010
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

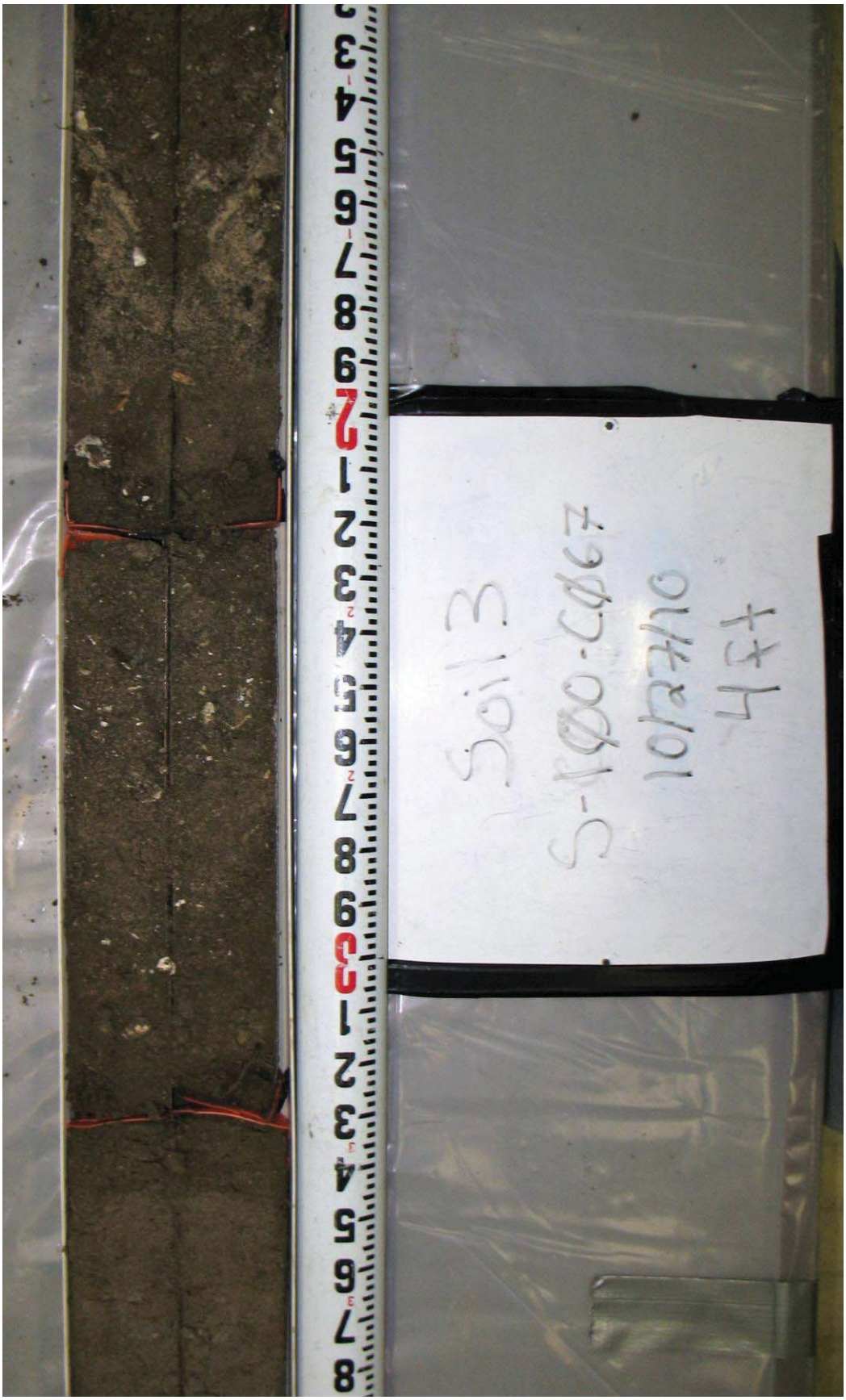
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | ML | Silt w/ Fine, coarse Sand | 10YR 4/4 Dark Yellowish Brown | Loose | | | -Bits of gravel |
| 0.3 | | ML | Silt w/ organics + fine sand | 10YR 3/1 Very Dark Gray | Loose | | | -Shell Hash |
| 0.5 | | ML/CL | Clayey Silt w/ fine sand | 10YR 4/2 Dark Grayish Brown | | | | -Organics |
| 0.75 | | CL/ML | Silty Clay | 10YR 3/2 Very Dark Grayish Brown | Firm | | | |
| 2.5 | | CL | Silty Clay w/ some fine sand | 10YR 3/1 Very Dark Gray | Firm | | | |
| 3.75 | | SM | Sand with some clay | 10YR 3/1 | Firm | Coarse to gravel | | |
| 4.00 | | | | | | | | |

Comments
6 barrels
Barrel length = 6 ft, Core depth = 4 ft

Samples: S-1Ø0-CØ66-Ø-1.Ø
S-1Ø0-CØ66-1.Ø-2.Ø
S-1Ø0-CØ66-2.Ø-3.Ø
S-1Ø0-CØ66-3.Ø-4.Ø


Soil 3
S-1000-0067
10/27/10
454

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/27/10
Logged By: DB
Collection Mechanism: AOG
Time on Station: 1015
Time of Collection: 1035
Time Depart Station: 1040

Station ID: Soil B
Core Sample ID: S-100-C067
Latitude: 41°39.475
Longitude: 70°55.155
GPS Accuracy: ± 9

All Measurements are ± 0.1 feet
Water Depth (A):
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 4.0
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

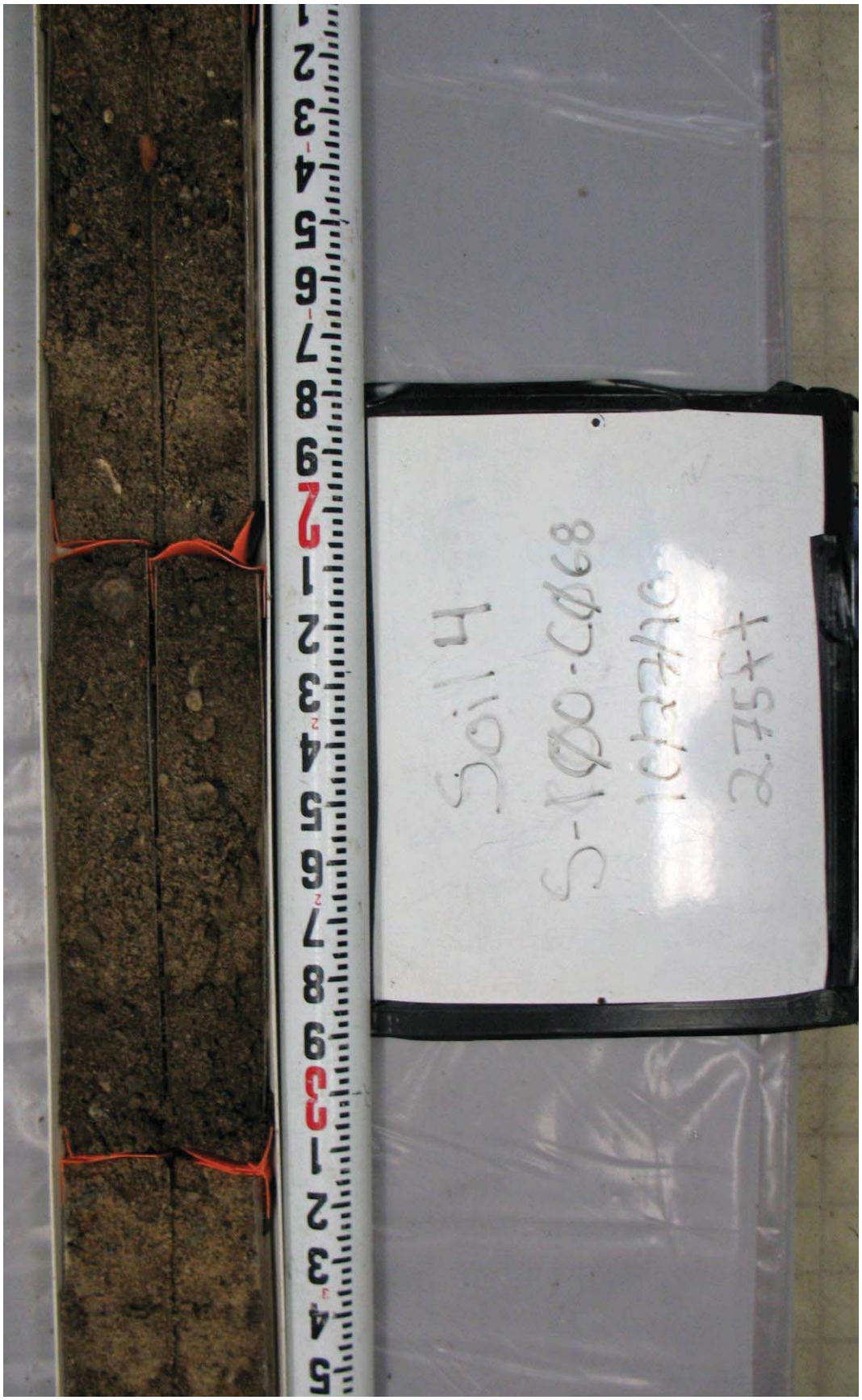
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | ML | Silt w/fine/coarse sand | 10YR 3/3 Dark Brown | Loose | | | Gravel |
| 0.6 | | SM | Sand with silt | 10YR 3/2 | Loose | Fine/Coarse | | Very Dark Grayish Brown |
| 0.8 | | SM | Sand with silt | 10YR 4/2 | Loose | Fine/Coarse | | -Shell hash, Organics - Dark Grey Brown |
| 1.4 | | CL | Silty Clay | 10YR 3/1 | Loose | | | -Little bit of gravel - Very Dark Grey |
| 1.5 | | SM | Sand with silt | 10YR 3/3 Dark Brown | Loose/Medium | Fine/Coarse | | -Shell hash, gravel |
| 2.3 | | ML | Silt w/fine sand | 10YR 4/3 Brown | Firm | Fine | | |
| 3.3 | | CL | Silty Clay w/sand | 10YR 3/1 | Firm | Fine/Coarse | | Very Dark Grey |
| 4.0 | | | | | | | | |

Comments

Samples: S-100-C067-0-1.0
S-100-C067-1.0-2.0
S-100-C067-2.0-3.0
S-100-C067-3.0-4.0


Soil 4
S-1Ø0-CØ68
1Ø/2Ø/2Ø
2.75+

WOODS HOLE GROUP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/27/10
Logged By: DB
Collection Mechanism: AUG
Time on Station: 1048
Time of Collection: 1110
Time Depart Station: 1115

Station ID: Soil 4
Core Sample ID: S-100-C068
Latitude: 41039.462
Longitude: 70° 55.151
GPS Accuracy: ± 9

All Measurements are ± 0.1 feet
Water Depth (A):
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 2.75
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

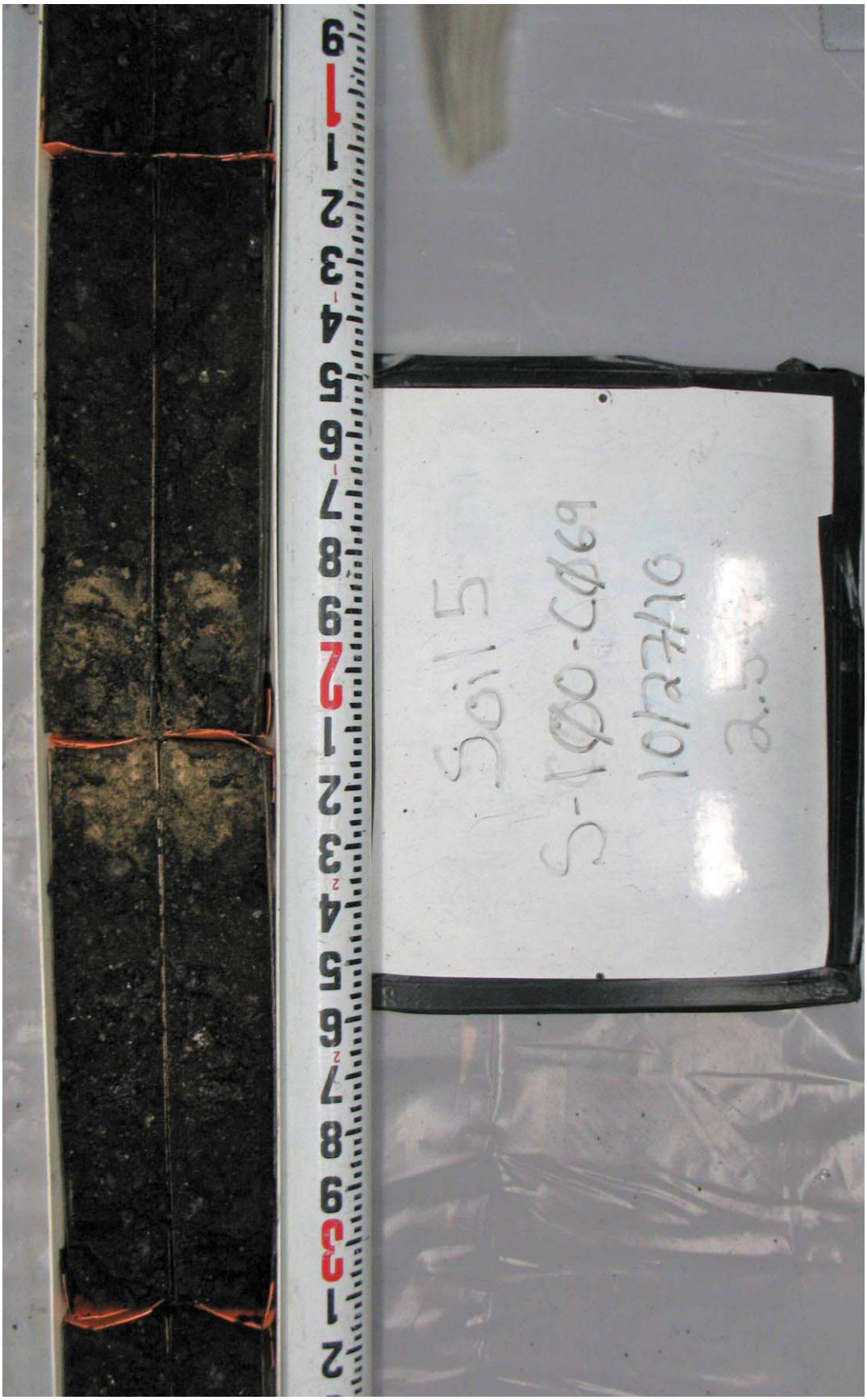
($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 | ML | Silt w/ Fine to coarse sand | 10YR 2/2 Very Dark Brown | | Fine/ Coars | | -Organics |
| 0.4 | SM | Silty Sand Poorly graded Sands Fines to gravel | 10YR 3/3 Dark Brown | | Gravel | | -Chunks of Brick throughout |
| 2.75 | | | | | | | |

Comments
4 barrels
Core depth = 2.75 ft

Samples: S-100-C068-0-1.0
S-100-C068-1.0-2.0
S-100-C068-2.0-3.0


Soil 5
S-1000-C069
10/27/10
2.5

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist:

Date: 10/27/10
Logged By: DB
Collection Mechanism: AUG
Time on Station: 1118
Time of Collection: 1130
Time Depart Station: 1135

Station ID: Soil 5
Core Sample ID: S-1Ø0-CØ69
Latitude: 41° 39.452
Longitude: 70° 55.147
GPS Accuracy: ±9

All Measurements are ± 0.1 feet
Water Depth (A):
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 2.5
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I • $I_2$ within + 1.0 feet, discard and resample)

| | Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|---|
| 0 | | ML | Silt w/sand | 10YR 2/1 Black | Fine/ Coarse | | | -Organics (roots) |
| 0.5 | | SM/ML | Silty Sand | 10YR 2/1 Black | Loose | Fine/ Coarse | | Some Organics |
| 1.2 | | SM | Fine Sand w/ Silt | 10YR 3/6 Dark Yellowish Brown | Loose | Coarse/ Gravel | | |
| 1.55 | | SM | Sand w/ Silt | 10YR 2/1 Black | Loose | Fine/ Coarse | | -Gravel/Brick throughout |
| 2.5 | | | | | | | | |

Comments
3 3/4 Barrels
-Total core length = 2.5

Samples: S-1Ø0-CØ69-Ø-1.Ø
S-1Ø0-CØ69-1.Ø-2.Ø
S-1Ø0-CØ69-2.Ø-3.Ø

# APPENDIX B. ALPHA ANALYTICAL LABORATORIES ANALYTICAL DATA REPORTS (ON CD)

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# APPENDIX B: ALPHA ANALYTICAL LABORATORIES ANALYTICAL DATA REPORTS

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ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1014584 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 10/13/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1014584-01 | S-10S-C001-0-0.5 | NEW BEDFORD, MA | 09/15/10 09:37 |
| L1014584-02 | S-10S-C002-0-0.5 | NEW BEDFORD, MA | 09/15/10 09:50 |
| L1014584-03 | S-10S-C003-0-0.5 | NEW BEDFORD, MA | 09/15/10 10:09 |
| L1014584-04 | S-10S-C004-0-0.5 | NEW BEDFORD, MA | 09/15/10 10:23 |
| L1014584-05 | S-10S-C005-0-0.5 | NEW BEDFORD, MA | 09/15/10 10:34 |
| L1014584-06 | S-10S-C006-0-0.5 | NEW BEDFORD, MA | 09/15/10 10:45 |
| L1014584-07 | S-10S-C007-0-0.5 | NEW BEDFORD, MA | 09/15/10 10:57 |
| L1014584-08 | S-10S-C008-0-0.5 | NEW BEDFORD, MA | 09/15/10 11:11 |
| L1014584-09 | S-10S-C009-0-0.5 | NEW BEDFORD, MA | 09/15/10 11:25 |
| L1014584-10 | S-10S-C010-0-0.5 | NEW BEDFORD, MA | 09/15/10 11:37 |
| L1014584-11 | S-10S-C011-0-0.5 | NEW BEDFORD, MA | 09/15/10 12:36 |
| L1014584-12 | S-10S-C012-0-0.5 | NEW BEDFORD, MA | 09/15/10 12:57 |
| L1014584-13 | S-10S-C013-0-0.5 | NEW BEDFORD, MA | 09/15/10 13:10 |
| L1014584-14 | S-10S-C014-0-0.5 | NEW BEDFORD, MA | 09/15/10 13:21 |
| L1014584-15 | S-10S-C015-0-0.5 | NEW BEDFORD, MA | 09/15/10 13:33 |
| L1014584-16 | S-10S-C016-0-0.5 | NEW BEDFORD, MA | 09/15/10 13:45 |
| L1014584-17 | S-10S-C017-0-0.5 | NEW BEDFORD, MA | 09/15/10 13:57 |
| L1014584-18 | S-10S-C018-0-0.5 | NEW BEDFORD, MA | 09/15/10 14:09 |
| L1014584-19 | S-10S-C019-0-0.5 | NEW BEDFORD, MA | 09/15/10 14:20 |
| L1014584-20 | S-10S-C020-0-0.5 | NEW BEDFORD, MA | 09/15/10 14:33 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on September 16, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on September 26 until September 28, 2010 when they were removed to extract samples for PCB Congener analysis. The original percent solids can be found as an addendum to the report.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1014584-01 through -20 were analyzed at a dilution due to the elevated concentrations of target compounds in the samples.

Several samples were re-analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range. Due to the dilutions required for several samples the surrogates were diluted out.

There is no matrix spike/matrix spike duplicate reported due to the high concentrations of the native sample the spike concentration were effectively diluted out.

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: 10/13/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-01 | Date Collected: | 09/15/10 09:37 |
| Client ID: | S-10S-C001-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 06:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 90% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 646 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#105 | 29.8 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#138 | 131 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#128 | 24.5 | | ug/kg | 14.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.4 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 65 | 30-150 |
| BZ 198 | 117 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-01 | Date Collected: | 09/15/10 09:37 |
| Client ID: | S-10S-C001-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 06:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 90% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 296 | E | ug/kg | 14.4 | -- | 10 |
| Cl3-BZ#28 | 866 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#52 | 1300 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#44 | 405 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#66 | 334 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#101 | 212 | | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#118 | 127 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#153 | 196 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#187 | 44.7 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#180 | 28.4 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#170 | 20.4 | | ug/kg | 14.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 14.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 117 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-01 | D | Date Collected: | 09/15/10 09:37 |
| Client ID: | S-10S-C001-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 01:15 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 90% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 846 | | ug/kg | 144 | -- | 100 |
| Cl4-BZ#66 | 554 | | ug/kg | 144 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-01 | D | Date Collected: | 09/15/10 09:37 |
| Client ID: | S-10S-C001-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 01:15 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 90% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 494 | | ug/kg | 144 | -- | 100 |
| Cl3-BZ#28 | 1340 | | ug/kg | 144 | -- | 100 |
| Cl4-BZ#52 | 2020 | | ug/kg | 144 | -- | 100 |
| Cl4-BZ#44 | 623 | | ug/kg | 144 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-02 | Date Collected: | 09/15/10 09:50 |
| Client ID: | S-10S-C002-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 05:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 282 | | ug/kg | 15.1 | -- | 10 |
| Cl5-BZ#105 | 20.7 | | ug/kg | 15.1 | -- | 10 |
| Cl6-BZ#138 | 83.8 | | ug/kg | 15.1 | -- | 10 |
| Cl6-BZ#128 | 16.9 | | ug/kg | 15.1 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 15.1 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 15.1 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 15.1 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 106 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-02 | Date Collected: | 09/15/10 09:50 |
| Client ID: | S-10S-C002-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 05:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 187 | | ug/kg | 15.1 | -- | 10 |
| Cl3-BZ#28 | 564 | E | ug/kg | 15.1 | -- | 10 |
| Cl4-BZ#52 | 849 | E | ug/kg | 15.1 | -- | 10 |
| Cl4-BZ#44 | 271 | | ug/kg | 15.1 | -- | 10 |
| Cl4-BZ#66 | 217 | | ug/kg | 15.1 | -- | 10 |
| Cl5-BZ#101 | 138 | | ug/kg | 15.1 | -- | 10 |
| Cl5-BZ#118 | 83.6 | | ug/kg | 15.1 | -- | 10 |
| Cl6-BZ#153 | 128 | | ug/kg | 15.1 | -- | 10 |
| Cl7-BZ#187 | 30.3 | | ug/kg | 15.1 | -- | 10 |
| Cl7-BZ#180 | 19.6 | | ug/kg | 15.1 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 15.1 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 106 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-02 | D | Date Collected: | 09/15/10 09:50 |
| Client ID: | S-10S-C002-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 00:34 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 739 | | ug/kg | 75.3 | -- | 50 |
| Cl4-BZ#52 | 1100 | | ug/kg | 75.3 | -- | 50 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-03 | Date Collected: | 09/15/10 10:09 |
| Client ID: | S-10S-C003-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 11:31 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6500 | | ug/kg | 1420 | -- | 1000 |
| Cl3-BZ#18 | 9300 | | ug/kg | 1420 | -- | 1000 |
| Cl4-BZ#52 | 17600 | | ug/kg | 1420 | -- | 1000 |
| Cl4-BZ#66 | 3740 | | ug/kg | 1420 | -- | 1000 |
| Cl5-BZ#118 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1420 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1420 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-03 | Date Collected: | 09/15/10 10:09 |
| Client ID: | S-10S-C003-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 11:31 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9900 | | ug/kg | 1420 | -- | 1000 |
| Cl4-BZ#44 | 4100 | | ug/kg | 1420 | -- | 1000 |
| Cl5-BZ#101 | 1810 | | ug/kg | 1420 | -- | 1000 |
| Cl6-BZ#153 | 1720 | | ug/kg | 1420 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-04 | Date Collected: | 09/15/10 10:23 |
| Client ID: | S-10S-C004-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 07:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5600 | | ug/kg | 1410 | -- | 1000 |
| Cl3-BZ#18 | 8750 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#52 | 18800 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#66 | 4580 | | ug/kg | 1410 | -- | 1000 |
| Cl5-BZ#118 | 1520 | | ug/kg | 1410 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl6-BZ#138 | 1780 | | ug/kg | 1410 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1410 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1410 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-04 | Date Collected: | 09/15/10 10:23 |
| Client ID: | S-10S-C004-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 07:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11800 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#44 | 4930 | | ug/kg | 1410 | -- | 1000 |
| Cl5-BZ#101 | 2360 | | ug/kg | 1410 | -- | 1000 |
| Cl6-BZ#153 | 2420 | | ug/kg | 1410 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-05 | Date Collected: | 09/15/10 10:34 |
| Client ID: | S-10S-C005-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/06/10 23:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1450 | E | ug/kg | 13.7 | -- | 10 |
| Cl3-BZ#18 | 2180 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#52 | 1880 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#44 | 763 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#66 | 1030 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#118 | 438 | E | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#138 | 318 | E | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#187 | 53.0 | | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#128 | 66.2 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#180 | 60.7 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#170 | 46.3 | | ug/kg | 13.7 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.7 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 13.7 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 96 | | 30-150 |
| BZ 198 | 93 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-05 | Date Collected: | 09/15/10 10:34 |
| Client ID: | S-10S-C005-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/06/10 23:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1140 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#101 | 404 | E | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#153 | 228 | | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#105 | 92.5 | | ug/kg | 13.7 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 96 | 30-150 |
| BZ 198 | 93 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-05 | D | Date Collected: | 09/15/10 10:34 |
| Client ID: | S-10S-C005-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 19:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2330 | | ug/kg | 275 | -- | 200 |
| Cl3-BZ#18 | 2890 | | ug/kg | 275 | -- | 200 |
| Cl4-BZ#52 | 3150 | | ug/kg | 275 | -- | 200 |
| Cl4-BZ#66 | 1620 | | ug/kg | 275 | -- | 200 |
| Cl5-BZ#118 | 684 | | ug/kg | 275 | -- | 200 |
| Cl6-BZ#138 | 485 | | ug/kg | 275 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-05 | D | Date Collected: | 09/15/10 10:34 |
| Client ID: | S-10S-C005-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 19:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3110 | | ug/kg | 275 | -- | 200 |
| Cl4-BZ#44 | 1370 | | ug/kg | 275 | -- | 200 |
| Cl5-BZ#101 | 889 | | ug/kg | 275 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-06 | Date Collected: | 09/15/10 10:45 |
| Client ID: | S-10S-C006-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 05:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2020 | E | ug/kg | 15.3 | -- | 10 |
| Cl3-BZ#18 | 3180 | E | ug/kg | 15.3 | -- | 10 |
| Cl4-BZ#52 | 4200 | E | ug/kg | 15.3 | -- | 10 |
| Cl4-BZ#44 | 1060 | E | ug/kg | 15.3 | -- | 10 |
| Cl4-BZ#66 | 1080 | E | ug/kg | 15.3 | -- | 10 |
| Cl5-BZ#118 | 325 | E | ug/kg | 15.3 | -- | 10 |
| Cl6-BZ#138 | 388 | E | ug/kg | 15.3 | -- | 10 |
| Cl7-BZ#187 | 112 | | ug/kg | 15.3 | -- | 10 |
| Cl6-BZ#128 | 70.6 | | ug/kg | 15.3 | -- | 10 |
| Cl7-BZ#180 | 84.3 | | ug/kg | 15.3 | -- | 10 |
| Cl7-BZ#170 | 59.0 | | ug/kg | 15.3 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 15.3 | -- | 10 |
| Cl9-BZ#206 | 15.3 | | ug/kg | 15.3 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 15.3 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 121 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-06 | Date Collected: | 09/15/10 10:45 |
| Client ID: | S-10S-C006-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 05:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1630 | E | ug/kg | 15.3 | -- | 10 |
| Cl5-BZ#101 | 428 | E | ug/kg | 15.3 | -- | 10 |
| Cl6-BZ#153 | 358 | E | ug/kg | 15.3 | -- | 10 |
| Cl5-BZ#105 | 74.6 | | ug/kg | 15.3 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 121 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-06 | D | Date Collected: | 09/15/10 10:45 |
| Client ID: | S-10S-C006-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 03:59 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2620 | | ug/kg | 305 | -- | 200 |
| Cl3-BZ#18 | 4040 | | ug/kg | 305 | -- | 200 |
| Cl4-BZ#52 | 5540 | | ug/kg | 305 | -- | 200 |
| Cl4-BZ#66 | 1420 | | ug/kg | 305 | -- | 200 |
| Cl5-BZ#118 | 429 | | ug/kg | 305 | -- | 200 |
| Cl6-BZ#138 | 502 | | ug/kg | 305 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-06 | D | Date Collected: | 09/15/10 10:45 |
| Client ID: | S-10S-C006-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 03:59 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4170 | | ug/kg | 305 | -- | 200 |
| Cl4-BZ#44 | 1450 | | ug/kg | 305 | -- | 200 |
| Cl5-BZ#101 | 653 | | ug/kg | 305 | -- | 200 |
| Cl6-BZ#153 | 596 | | ug/kg | 305 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-07 | Date Collected: | 09/15/10 10:57 |
| Client ID: | S-10S-C007-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 04:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 945 | E | ug/kg | 13.7 | -- | 10 |
| Cl3-BZ#18 | 1610 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#52 | 2740 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#66 | 668 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#118 | 210 | | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#105 | 39.9 | | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#138 | 250 | | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#128 | 41.0 | | ug/kg | 13.7 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.7 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.7 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 47 | 30-150 |
| BZ 198 | 140 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-07 | Date Collected: | 09/15/10 10:57 |
| Client ID: | S-10S-C007-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 04:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1500 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#44 | 776 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#101 | 380 | E | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#153 | 367 | E | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#187 | 87.2 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#180 | 54.3 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#170 | 38.6 | | ug/kg | 13.7 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 13.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 47 | | 30-150 |
| BZ 198 | 140 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-07 | D | Date Collected: | 09/15/10 10:57 |
| Client ID: | S-10S-C007-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 03:08 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2620 | | ug/kg | 549 | -- | 400 |
| Cl3-BZ#18 | 5200 | | ug/kg | 549 | -- | 400 |
| Cl4-BZ#52 | 7500 | | ug/kg | 549 | -- | 400 |
| Cl4-BZ#66 | 1840 | | ug/kg | 549 | -- | 400 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-07 | D | Date Collected: | 09/15/10 10:57 |
| Client ID: | S-10S-C007-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 03:08 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4830 | | ug/kg | 549 | -- | 400 |
| Cl4-BZ#44 | 1830 | | ug/kg | 549 | -- | 400 |
| Cl5-BZ#101 | 891 | | ug/kg | 549 | -- | 400 |
| Cl6-BZ#153 | 922 | | ug/kg | 549 | -- | 400 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-08 | Date Collected: | 09/15/10 11:11 |
| Client ID: | S-10S-C008-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 03:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3280 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#52 | 4900 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#44 | 1440 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#66 | 1170 | E | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#118 | 241 | | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#138 | 370 | E | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#187 | 118 | | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#128 | 53.4 | | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#180 | 87.8 | | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#170 | 58.8 | | ug/kg | 14.1 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.1 | -- | 10 |
| Cl9-BZ#206 | 15.1 | | ug/kg | 14.1 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.1 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 133 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-08 | Date Collected: | 09/15/10 11:11 |
| Client ID: | S-10S-C008-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 03:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4410 | E | ug/kg | 14.1 | -- | 10 |
| Cl3-BZ#28 | 1640 | E | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#101 | 443 | E | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#153 | 333 | E | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#105 | 52.6 | | ug/kg | 14.1 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 74 | 30-150 |
| BZ 198 | 133 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-08 | D | Date Collected: | 09/15/10 11:11 |
| Client ID: | S-10S-C008-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 03:49 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 11900 | | ug/kg | 1410 | -- | 1000 |
| Cl3-BZ#18 | 18500 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#52 | 18400 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#66 | 4010 | | ug/kg | 1410 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1410 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-08 | D | Date Collected: | 09/15/10 11:11 |
| Client ID: | S-10S-C008-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 03:49 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 16200 | | ug/kg | 1410 | -- | 1000 |
| Cl4-BZ#44 | 5210 | | ug/kg | 1410 | -- | 1000 |
| Cl5-BZ#101 | 1710 | | ug/kg | 1410 | -- | 1000 |
| Cl6-BZ#153 | 1420 | | ug/kg | 1410 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-09 | Date Collected: | 09/15/10 11:25 |
| Client ID: | S-10S-C009-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 01:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 372 | E | ug/kg | 14.4 | -- | 10 |
| Cl3-BZ#18 | 691 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#66 | 246 | | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#105 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#138 | 86.3 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#180 | 18.0 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 96 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-09 | Date Collected: | 09/15/10 11:25 |
| Client ID: | S-10S-C009-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 01:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 780 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#52 | 1120 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#44 | 323 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#101 | 128 | | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#118 | 62.9 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#153 | 125 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#187 | 32.8 | | ug/kg | 14.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 96 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-09 | D | Date Collected: | 09/15/10 11:25 |
| Client ID: | S-10S-C009-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 23:34 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 531 | | ug/kg | 144 | -- | 100 |
| Cl3-BZ#18 | 990 | | ug/kg | 144 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-09 | D | Date Collected: | 09/15/10 11:25 |
| Client ID: | S-10S-C009-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 23:34 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 92% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1040 | | ug/kg | 144 | -- | 100 |
| Cl4-BZ#52 | 1540 | | ug/kg | 144 | -- | 100 |
| Cl4-BZ#44 | 426 | | ug/kg | 144 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-10 | Date Collected: | 09/15/10 11:37 |
| Client ID: | S-10S-C010-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 07:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1800 | E | ug/kg | 14.4 | -- | 10 |
| Cl3-BZ#18 | 3240 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#52 | 4990 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#44 | 1240 | E | ug/kg | 14.4 | -- | 10 |
| Cl4-BZ#66 | 1220 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#118 | 290 | E | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#138 | 405 | E | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#187 | 147 | | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#128 | 60.8 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#180 | 79.1 | | ug/kg | 14.4 | -- | 10 |
| Cl7-BZ#170 | 57.3 | | ug/kg | 14.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.4 | -- | 10 |
| Cl9-BZ#206 | 18.3 | | ug/kg | 14.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 102 | | 30-150 |
| BZ 198 | 130 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-10 | Date Collected: | 09/15/10 11:37 |
| Client ID: | S-10S-C010-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 07:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1670 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#101 | 461 | E | ug/kg | 14.4 | -- | 10 |
| Cl6-BZ#153 | 443 | E | ug/kg | 14.4 | -- | 10 |
| Cl5-BZ#105 | 49.4 | | ug/kg | 14.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 102 | | 30-150 |
| BZ 198 | 130 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-10 | D | Date Collected: | 09/15/10 11:37 |
| Client ID: | S-10S-C010-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 04:30 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6090 | | ug/kg | 1440 | -- | 1000 |
| Cl3-BZ#28 | 12500 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#52 | 17200 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#66 | 4180 | | ug/kg | 1440 | -- | 1000 |
| Cl5-BZ#118 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1440 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-10 | D | Date Collected: | 09/15/10 11:37 |
| Client ID: | S-10S-C010-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 04:30 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 15800 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#44 | 4340 | | ug/kg | 1440 | -- | 1000 |
| Cl5-BZ#101 | 1730 | | ug/kg | 1440 | -- | 1000 |
| Cl6-BZ#153 | 1790 | | ug/kg | 1440 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-11 | Date Collected: | 09/15/10 12:36 |
| Client ID: | S-10S-C011-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 09:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 89% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2530 | E | ug/kg | 14.7 | -- | 10 |
| Cl3-BZ#18 | 3460 | E | ug/kg | 14.7 | -- | 10 |
| Cl4-BZ#52 | 4970 | E | ug/kg | 14.7 | -- | 10 |
| Cl4-BZ#44 | 1140 | E | ug/kg | 14.7 | -- | 10 |
| Cl4-BZ#66 | 1140 | E | ug/kg | 14.7 | -- | 10 |
| Cl5-BZ#118 | 310 | E | ug/kg | 14.7 | -- | 10 |
| Cl6-BZ#138 | 404 | E | ug/kg | 14.7 | -- | 10 |
| Cl7-BZ#187 | 136 | | ug/kg | 14.7 | -- | 10 |
| Cl6-BZ#128 | 60.4 | | ug/kg | 14.7 | -- | 10 |
| Cl7-BZ#180 | 98.0 | | ug/kg | 14.7 | -- | 10 |
| Cl7-BZ#170 | 67.3 | | ug/kg | 14.7 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.7 | -- | 10 |
| Cl9-BZ#206 | 18.2 | | ug/kg | 14.7 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 118 | | 30-150 |
| BZ 198 | 123 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-11 | Date Collected: | 09/15/10 12:36 |
| Client ID: | S-10S-C011-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 09:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 89% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1450 | E | ug/kg | 14.7 | -- | 10 |
| Cl5-BZ#101 | 478 | E | ug/kg | 14.7 | -- | 10 |
| Cl6-BZ#153 | 424 | E | ug/kg | 14.7 | -- | 10 |
| Cl5-BZ#105 | 17.1 | | ug/kg | 14.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 118 | | 30-150 |
| BZ 198 | 123 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-11 | D | Date Collected: | 09/15/10 12:36 |
| Client ID: | S-10S-C011-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 05:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 89% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 9420 | | ug/kg | 1470 | -- | 1000 |
| Cl3-BZ#18 | 16800 | | ug/kg | 1470 | -- | 1000 |
| Cl4-BZ#52 | 18200 | | ug/kg | 1470 | -- | 1000 |
| Cl4-BZ#44 | 4330 | | ug/kg | 1470 | -- | 1000 |
| Cl4-BZ#66 | 3960 | | ug/kg | 1470 | -- | 1000 |
| Cl5-BZ#118 | ND | | ug/kg | 1470 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1470 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-11 | D | Date Collected: | 09/15/10 12:36 |
| Client ID: | S-10S-C011-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 05:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 89% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 13200 | | ug/kg | 1470 | -- | 1000 |
| Cl5-BZ#101 | 1900 | | ug/kg | 1470 | -- | 1000 |
| Cl6-BZ#153 | 1820 | | ug/kg | 1470 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-12 | Date Collected: | 09/15/10 12:57 |
| Client ID: | S-10S-C012-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/06/10 23:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 520 | E | ug/kg | 13.4 | -- | 10 |
| Cl3-BZ#18 | 724 | E | ug/kg | 13.4 | -- | 10 |
| Cl4-BZ#52 | 659 | E | ug/kg | 13.4 | -- | 10 |
| Cl4-BZ#66 | 201 | | ug/kg | 13.4 | -- | 10 |
| Cl5-BZ#118 | 79.1 | | ug/kg | 13.4 | -- | 10 |
| Cl6-BZ#138 | 73.6 | | ug/kg | 13.4 | -- | 10 |
| Cl7-BZ#187 | 19.6 | | ug/kg | 13.4 | -- | 10 |
| Cl6-BZ#128 | 14.6 | | ug/kg | 13.4 | -- | 10 |
| Cl7-BZ#180 | 17.7 | | ug/kg | 13.4 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 13.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 13.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 108 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-12 | Date Collected: | 09/15/10 12:57 |
| Client ID: | S-10S-C012-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/06/10 23:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 536 | E | ug/kg | 13.4 | -- | 10 |
| Cl4-BZ#44 | 191 | | ug/kg | 13.4 | -- | 10 |
| Cl5-BZ#101 | 113 | | ug/kg | 13.4 | -- | 10 |
| Cl6-BZ#153 | 81.0 | | ug/kg | 13.4 | -- | 10 |
| Cl5-BZ#105 | 18.5 | | ug/kg | 13.4 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 80 | 30-150 |
| BZ 198 | 108 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-12 | D | Date Collected: | 09/15/10 12:57 |
| Client ID: | S-10S-C012-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 17:27 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 786 | | ug/kg | 66.8 | -- | 50 |
| Cl3-BZ#18 | 858 | | ug/kg | 66.8 | -- | 50 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-12 | D | Date Collected: | 09/15/10 12:57 |
| Client ID: | S-10S-C012-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 17:27 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 825 | | ug/kg | 66.8 | -- | 50 |
| Cl4-BZ#52 | 940 | | ug/kg | 66.8 | -- | 50 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-13 | Date Collected: | 09/15/10 13:10 |
| Client ID: | S-10S-C013-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 00:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 694 | E | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#138 | 94.3 | | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#187 | 35.6 | | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#180 | 18.8 | | ug/kg | 14.1 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 14.1 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 14.1 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 14.1 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 108 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-13 | Date Collected: | 09/15/10 13:10 |
| Client ID: | S-10S-C013-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 00:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 522 | E | ug/kg | 14.1 | -- | 10 |
| Cl3-BZ#28 | 995 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#52 | 1420 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#44 | 439 | E | ug/kg | 14.1 | -- | 10 |
| Cl4-BZ#66 | 329 | E | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#101 | 161 | | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#118 | 80.6 | | ug/kg | 14.1 | -- | 10 |
| Cl6-BZ#153 | 142 | | ug/kg | 14.1 | -- | 10 |
| Cl5-BZ#105 | 16.2 | | ug/kg | 14.1 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 14.1 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 108 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-13 | D | Date Collected: | 09/15/10 13:10 |
| Client ID: | S-10S-C013-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 19:04 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 954 | | ug/kg | 141 | -- | 100 |
| Cl4-BZ#66 | 440 | | ug/kg | 141 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-13 | D | Date Collected: | 09/15/10 13:10 |
| Client ID: | S-10S-C013-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 19:04 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 93% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 650 | | ug/kg | 141 | -- | 100 |
| Cl3-BZ#28 | 1340 | | ug/kg | 141 | -- | 100 |
| Cl4-BZ#52 | 1820 | | ug/kg | 141 | -- | 100 |
| Cl4-BZ#44 | 550 | | ug/kg | 141 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-14 | Date Collected: | 09/15/10 13:21 |
| Client ID: | S-10S-C014-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 01:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 922 | E | ug/kg | 13.8 | -- | 10 |
| Cl5-BZ#105 | 20.4 | | ug/kg | 13.8 | -- | 10 |
| Cl6-BZ#138 | 131 | | ug/kg | 13.8 | -- | 10 |
| Cl6-BZ#128 | 19.9 | | ug/kg | 13.8 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.8 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 13.8 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.8 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 106 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-14 | Date Collected: | 09/15/10 13:21 |
| Client ID: | S-10S-C014-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 01:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 621 | E | ug/kg | 13.8 | -- | 10 |
| Cl3-BZ#28 | 1230 | E | ug/kg | 13.8 | -- | 10 |
| Cl4-BZ#52 | 1920 | E | ug/kg | 13.8 | -- | 10 |
| Cl4-BZ#44 | 565 | E | ug/kg | 13.8 | -- | 10 |
| Cl4-BZ#66 | 453 | E | ug/kg | 13.8 | -- | 10 |
| Cl5-BZ#101 | 214 | | ug/kg | 13.8 | -- | 10 |
| Cl5-BZ#118 | 105 | | ug/kg | 13.8 | -- | 10 |
| Cl6-BZ#153 | 208 | | ug/kg | 13.8 | -- | 10 |
| Cl7-BZ#187 | 53.9 | | ug/kg | 13.8 | -- | 10 |
| Cl7-BZ#180 | 22.7 | | ug/kg | 13.8 | -- | 10 |
| Cl7-BZ#170 | 16.4 | | ug/kg | 13.8 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 106 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-14 | D | Date Collected: | 09/15/10 13:21 |
| Client ID: | S-10S-C014-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 22:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1700 | | ug/kg | 276 | -- | 200 |
| Cl4-BZ#66 | 714 | | ug/kg | 276 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-14 | D | Date Collected: | 09/15/10 13:21 |
| Client ID: | S-10S-C014-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 22:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 950 | | ug/kg | 276 | -- | 200 |
| Cl3-BZ#28 | 2110 | | ug/kg | 276 | -- | 200 |
| Cl4-BZ#52 | 3050 | | ug/kg | 276 | -- | 200 |
| Cl4-BZ#44 | 849 | | ug/kg | 276 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-15 | Date Collected: | 09/15/10 13:33 |
| Client ID: | S-10S-C015-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 03:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 88% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 741 | E | ug/kg | 15.0 | -- | 10 |
| Cl3-BZ#18 | 1340 | E | ug/kg | 15.0 | -- | 10 |
| Cl4-BZ#52 | 2060 | E | ug/kg | 15.0 | -- | 10 |
| Cl4-BZ#66 | 475 | E | ug/kg | 15.0 | -- | 10 |
| Cl5-BZ#118 | 139 | | ug/kg | 15.0 | -- | 10 |
| Cl6-BZ#138 | 181 | | ug/kg | 15.0 | -- | 10 |
| Cl7-BZ#187 | 63.2 | | ug/kg | 15.0 | -- | 10 |
| Cl6-BZ#128 | 29.3 | | ug/kg | 15.0 | -- | 10 |
| Cl7-BZ#180 | 41.8 | | ug/kg | 15.0 | -- | 10 |
| Cl7-BZ#170 | 28.6 | | ug/kg | 15.0 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 15.0 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 15.0 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 118 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-15 | Date Collected: | 09/15/10 13:33 |
| Client ID: | S-10S-C015-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 03:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 88% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1510 | E | ug/kg | 15.0 | -- | 10 |
| Cl4-BZ#44 | 548 | E | ug/kg | 15.0 | -- | 10 |
| Cl5-BZ#101 | 259 | | ug/kg | 15.0 | -- | 10 |
| Cl6-BZ#153 | 236 | | ug/kg | 15.0 | -- | 10 |
| Cl5-BZ#105 | 29.8 | | ug/kg | 15.0 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 15.0 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 118 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-15 | D | Date Collected: | 09/15/10 13:33 |
| Client ID: | S-10S-C015-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 01:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 88% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1510 | | ug/kg | 301 | -- | 200 |
| Cl3-BZ#18 | 3470 | | ug/kg | 301 | -- | 200 |
| Cl4-BZ#52 | 4600 | | ug/kg | 301 | -- | 200 |
| Cl4-BZ#66 | 1040 | | ug/kg | 301 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-15 | D | Date Collected: | 09/15/10 13:33 |
| Client ID: | S-10S-C015-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 01:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 88% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3100 | | ug/kg | 301 | -- | 200 |
| Cl4-BZ#44 | 1190 | | ug/kg | 301 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-16 | Date Collected: | 09/15/10 13:45 |
| Client ID: | S-10S-C016-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 08:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2000 | E | ug/kg | 13.7 | -- | 10 |
| Cl3-BZ#18 | 2740 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#52 | 5530 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#44 | 1320 | E | ug/kg | 13.7 | -- | 10 |
| Cl4-BZ#66 | 1270 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#118 | 243 | | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#105 | 53.5 | | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#138 | 416 | E | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#187 | 150 | | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#128 | 54.4 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#180 | 83.5 | | ug/kg | 13.7 | -- | 10 |
| Cl7-BZ#170 | 56.4 | | ug/kg | 13.7 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.7 | -- | 10 |
| Cl9-BZ#206 | 17.1 | | ug/kg | 13.7 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 145 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-16 | Date Collected: | 09/15/10 13:45 |
| Client ID: | S-10S-C016-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 08:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1570 | E | ug/kg | 13.7 | -- | 10 |
| Cl5-BZ#101 | 537 | E | ug/kg | 13.7 | -- | 10 |
| Cl6-BZ#153 | 423 | E | ug/kg | 13.7 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 145 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-16 | D | Date Collected: | 09/15/10 13:45 |
| Client ID: | S-10S-C016-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 05:12 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7550 | | ug/kg | 1370 | -- | 1000 |
| Cl3-BZ#18 | 15500 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#52 | 21200 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#44 | 4850 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#66 | 4450 | | ug/kg | 1370 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-16 | D | Date Collected: | 09/15/10 13:45 |
| Client ID: | S-10S-C016-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 05:12 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 12000 | | ug/kg | 1370 | -- | 1000 |
| Cl5-BZ#101 | 1960 | | ug/kg | 1370 | -- | 1000 |
| Cl6-BZ#153 | 1690 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-17 | Date Collected: | 09/15/10 13:57 |
| Client ID: | S-10S-C017-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 12:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 12300 | | ug/kg | 1440 | -- | 1000 |
| Cl3-BZ#18 | 25500 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#52 | 43300 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#66 | 10600 | | ug/kg | 1440 | -- | 1000 |
| Cl5-BZ#118 | 2180 | | ug/kg | 1440 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl6-BZ#138 | 3460 | | ug/kg | 1440 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1440 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1440 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-17 | Date Collected: | 09/15/10 13:57 |
| Client ID: | S-10S-C017-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 12:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 23400 | | ug/kg | 1440 | -- | 1000 |
| Cl4-BZ#44 | 12300 | | ug/kg | 1440 | -- | 1000 |
| Cl5-BZ#101 | 4230 | | ug/kg | 1440 | -- | 1000 |
| Cl6-BZ#153 | 4510 | | ug/kg | 1440 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-18 | Date Collected: | 09/15/10 14:09 |
| Client ID: | S-10S-C018-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 06:34 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 84% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 13400 | | ug/kg | 3910 | -- | 2500 |
| Cl3-BZ#18 | 28200 | | ug/kg | 3910 | -- | 2500 |
| Cl4-BZ#52 | 44900 | | ug/kg | 3910 | -- | 2500 |
| Cl4-BZ#44 | 10600 | | ug/kg | 3910 | -- | 2500 |
| Cl4-BZ#66 | 9490 | | ug/kg | 3910 | -- | 2500 |
| Cl5-BZ#118 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl5-BZ#105 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl6-BZ#138 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl7-BZ#187 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl6-BZ#128 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl7-BZ#180 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl7-BZ#170 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl8-BZ#195 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl9-BZ#206 | ND | | ug/kg | 3910 | -- | 2500 |
| Cl10-BZ#209 | ND | | ug/kg | 3910 | -- | 2500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-18 | Date Collected: | 09/15/10 14:09 |
| Client ID: | S-10S-C018-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/09/10 06:34 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 84% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 23800 | | ug/kg | 3910 | -- | 2500 |
| Cl5-BZ#101 | 4380 | | ug/kg | 3910 | -- | 2500 |
| Cl6-BZ#153 | 4520 | | ug/kg | 3910 | -- | 2500 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-19 | Date Collected: | 09/15/10 14:20 |
| Client ID: | S-10S-C019-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 08:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7260 | | ug/kg | 1490 | -- | 1000 |
| Cl3-BZ#18 | 13200 | | ug/kg | 1490 | -- | 1000 |
| Cl4-BZ#52 | 18200 | | ug/kg | 1490 | -- | 1000 |
| Cl4-BZ#44 | 4520 | | ug/kg | 1490 | -- | 1000 |
| Cl4-BZ#66 | 5080 | | ug/kg | 1490 | -- | 1000 |
| Cl5-BZ#118 | 1650 | | ug/kg | 1490 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl6-BZ#138 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1490 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1490 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-19 | Date Collected: | 09/15/10 14:20 |
| Client ID: | S-10S-C019-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/08/10 08:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11000 | | ug/kg | 1490 | -- | 1000 |
| Cl5-BZ#101 | 2420 | | ug/kg | 1490 | -- | 1000 |
| Cl6-BZ#153 | 1950 | | ug/kg | 1490 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-20 | Date Collected: | 09/15/10 14:33 |
| Client ID: | S-10S-C020-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 02:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 520 | E | ug/kg | 13.6 | -- | 10 |
| Cl3-BZ#18 | 873 | E | ug/kg | 13.6 | -- | 10 |
| Cl4-BZ#52 | 1400 | E | ug/kg | 13.6 | -- | 10 |
| Cl4-BZ#66 | 431 | E | ug/kg | 13.6 | -- | 10 |
| Cl5-BZ#118 | 114 | | ug/kg | 13.6 | -- | 10 |
| Cl6-BZ#138 | 148 | | ug/kg | 13.6 | -- | 10 |
| Cl7-BZ#187 | 44.3 | | ug/kg | 13.6 | -- | 10 |
| Cl6-BZ#128 | 22.6 | | ug/kg | 13.6 | -- | 10 |
| Cl7-BZ#180 | 31.4 | | ug/kg | 13.6 | -- | 10 |
| Cl7-BZ#170 | 21.2 | | ug/kg | 13.6 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 13.6 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 13.6 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 13.6 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 84 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1014584-20 | Date Collected: | 09/15/10 14:33 |
| Client ID: | S-10S-C020-0-0.5 | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 02:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 994 | E | ug/kg | 13.6 | -- | 10 |
| Cl4-BZ#44 | 468 | E | ug/kg | 13.6 | -- | 10 |
| Cl5-BZ#101 | 227 | | ug/kg | 13.6 | -- | 10 |
| Cl6-BZ#153 | 158 | | ug/kg | 13.6 | -- | 10 |
| Cl5-BZ#105 | 27.7 | | ug/kg | 13.6 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 84 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-20 | D | Date Collected: | 09/15/10 14:33 |
| Client ID: | S-10S-C020-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 21:59 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 878 | | ug/kg | 136 | -- | 100 |
| Cl3-BZ#18 | 1260 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 684 | | ug/kg | 136 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1014584-20 | D | Date Collected: | 09/15/10 14:33 |
| Client ID: | S-10S-C020-0-0.5 | | Date Received: | 09/16/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/28/10 08:28 |
| Analytical Date: | 10/07/10 21:59 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/05/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1750 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 2300 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 810 | | ug/kg | 136 | -- | 100 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/06/10 16:09
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/28/10 08:28
Cleanup Method1: EPA 3630
Cleanup Date1: 10/05/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG434380-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 90 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/06/10 16:09
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/28/10 08:28
Cleanup Method1: EPA 3630
Cleanup Date1: 10/05/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG434380-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 90 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1014584
**Report Date:** 10/13/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG434380-2 WG434380-3 | | | | | | | | |
| Cl2-BZ#8 | 61 | | 66 | | 40-140 | 8 | | 30 |
| Cl3-BZ#18 | 70 | | 68 | | 40-140 | 3 | | 30 |
| Cl3-BZ#28 | 78 | | 68 | | 40-140 | 14 | | 30 |
| Cl4-BZ#52 | 80 | | 74 | | 40-140 | 8 | | 30 |
| Cl4-BZ#44 | 75 | | 73 | | 40-140 | 3 | | 30 |
| Cl4-BZ#66 | 76 | | 72 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 77 | | 75 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 81 | | 80 | | 40-140 | 1 | | 30 |
| Cl5-BZ#105 | 76 | | 72 | | 40-140 | 5 | | 30 |
| Cl6-BZ#138 | 80 | | 76 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 77 | | 72 | | 40-140 | 7 | | 30 |
| Cl6-BZ#128 | 81 | | 77 | | 40-140 | 5 | | 30 |
| Cl7-BZ#180 | 81 | | 76 | | 40-140 | 6 | | 30 |
| Cl7-BZ#170 | 81 | | 76 | | 40-140 | 6 | | 30 |
| Cl8-BZ#195 | 80 | | 79 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | 88 | | 83 | | 40-140 | 6 | | 30 |
| Cl10-BZ#209 | 80 | | 77 | | 40-140 | 4 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1014584

**Project Number:** TO-0010-03 **Report Date:** 10/13/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG434380-2 WG434380-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 80 | | 79 | | 30-150 |
| BZ 198 | 83 | | 73 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG434380-2 WG434380-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 78 | | 74 | | 40-140 | 5 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 80 | | 79 | | 30-150 |
| BZ 198 | 83 | | 73 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-01
Client ID: S-10S-C001-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 09:37
Date Received: 09/16/10
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 | 89.9 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-02
Client ID: S-10S-C002-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 09:50
Date Received: 09/16/10
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 | 86.9 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-03
Client ID: S-10S-C003-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 10:09
Date Received: 09/16/10
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 | 92.2 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-04
Client ID: S-10S-C004-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 10:23
Date Received: 09/16/10
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 | 93.0 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-05
Client ID: S-10S-C005-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 10:34
Date Received: 09/16/10
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 | 95.4 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-06
Client ID: S-10S-C006-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 10:45
Date Received: 09/16/10
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 | 86.6 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-07
Client ID: S-10S-C007-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 10:57
Date Received: 09/16/10
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 | 95.4 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-08
Client ID: S-10S-C008-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 11:11
Date Received: 09/16/10
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 | 93.5 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-09
Client ID: S-10S-C009-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 11:25
Date Received: 09/16/10
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 | 91.9 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-10
Client ID: S-10S-C010-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 11:37
Date Received: 09/16/10
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 | 90.6 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-11
Client ID: S-10S-C011-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 12:36
Date Received: 09/16/10
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 | 89.1 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-12
Client ID: S-10S-C012-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 12:57
Date Received: 09/16/10
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 | 98.5 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-13
Client ID: S-10S-C013-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 13:10
Date Received: 09/16/10
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 | 93.1 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-14
Client ID: S-10S-C014-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 13:21
Date Received: 09/16/10
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 | 95.0 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-15
Client ID: S-10S-C015-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 13:33
Date Received: 09/16/10
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 | 87.7 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-16
Client ID: S-10S-C016-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 13:45
Date Received: 09/16/10
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 | 94.9 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-17
Client ID: S-10S-C017-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 13:57
Date Received: 09/16/10
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 | 90.6 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-18
Client ID: S-10S-C018-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 14:09
Date Received: 09/16/10
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 | 83.5 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-19
Client ID: S-10S-C019-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 14:20
Date Received: 09/16/10
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 | 87.4 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

## SAMPLE RESULTS

Lab ID: L1014584-20
Client ID: S-10S-C020-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/15/10 14:33
Date Received: 09/16/10
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 | 95.4 | | % | 0.100 | -- | 1 | - | 09/22/10 09:40 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG433606-1 QC Sample: L1014584-01 Client ID: S-10S-C001-0-0.5 | | | | | | |
| Solids, Total | 89.9 | 87.8 | % | 1 | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

**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 |
| B | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1014584-01A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-02A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-03A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD() |
| L1014584-03B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD() |
| L1014584-04A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-05A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-06A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-07A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-08A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-09A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-10A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-11A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-12A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-13A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-14A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-15A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-16A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-17A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1014584
**Report Date:** 10/13/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1014584-18A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-19A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |
| L1014584-20A | Glass 250ml unpreserved | B | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1014584 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/13/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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.

ALPHA ANALYTICAL LABS

# WET CHEMISTRY DEPARTMENT

PERCENT TOTAL SOLIDS

Last Change 04/09/09 GFF
File A2-TS_S.xlt

Sample Number: _____

Client: _____

Analysis: %TOTAL SOLIDS
in solids

Method: STM 2540-B

Product: A2-TS
Analyte: Solids, Total
Analysis Date: 9/22/2010 9:40
Technician: KB
Work group: WG433606
MDL: 0.10%

| | Sample Number | Tare Weight (gm) | Gross Weight (gm) | 105 degrees C Net Weight(1) (gm) | Net Weight(2) (gm) | Net Weight(3) (gm) | Net Weight(4) (gm) | Net Weight(5) (gm) | RESULT % |
|---|---|---|---|---|---|---|---|---|---|
| DUP | WG433606-1 | 1.34 | 7.85 | 4.49 | 4.49 | | | | 48.39 |
| | L1014584-01 | 1.34 | 7.86 | 4.53 | 4.53 | | | | 48.93 |
| | L1014584-02 | 1.33 | 8.39 | 4.67 | 4.67 | | | | 47.31 |
| | L1014584-03 | 1.33 | 9.47 | 4.96 | 4.96 | | | | 44.59 |
| | L1014584-04 | 1.32 | 7.87 | 4.57 | 4.57 | | | | 49.62 |
| | L1014584-05 | 1.34 | 10.9 | 6.33 | 6.33 | | | | 52.20 |
| | L1014584-06 | 1.33 | 8.49 | 5 | 5 | | | | 51.26 |
| | L1014584-07 | 1.31 | 11.03 | 6.11 | 6.11 | | | | 49.38 |
| | L1014584-08 | 1.32 | 10.17 | 5.65 | 5.65 | | | | 48.93 |
| | L1014584-09 | 1.32 | 9.01 | 4.65 | 4.65 | | | | 43.30 |
| | L1014584-10 | 1.33 | 5.74 | 3.26 | 3.26 | | | | 43.76 |
| | L1014584-11 | 1.33 | 8.89 | 4.47 | 4.47 | | | | 41.53 |
| | L1014584-12 | 1.33 | 9.39 | 7.03 | 7.03 | | | | 70.72 |
| | L1014584-13 | 1.35 | 6.27 | 3.59 | 3.59 | | | | 45.53 |
| | L1014584-14 | 1.34 | 8.03 | 4.43 | 4.43 | | | | 46.19 |
| | L1014584-15 | 1.31 | 8.02 | 4.18 | 4.18 | | | | 42.77 |
| | L1014584-16 | 1.31 | 11.1 | 5.92 | 5.92 | | | | 47.09 |
| | L1014584-17 | 1.35 | 8.65 | 4.27 | 4.27 | | | | 40.00 |
| | L1014584-18 | 1.3 | 8.76 | 4.25 | 4.25 | | | | 39.54 |
| | L1014584-19 | 1.32 | 7.13 | 3.65 | 3.65 | | | | 40.10 |
| | L1014584-20 | 1.34 | 7.82 | 4.45 | 4.45 | | | | 47.99 |
| | | | | | | | | | |

Comments:

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1014584

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: NBH Environ. Monitoring
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD
*please homogenize each sample before analysis

**SAMPLE HANDLING**
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: NOAA 18 PCB Congeners | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| L1014584-1 | S-1ΦS-CΦΦ1-Φ-Φ.5 | 9/15/10 | 09:37 | SE | KGM | X | JM2 | 1 |
| 2 | S-1ΦS-CΦΦ2-Φ-Φ.5 | | 09:50 | | | X | JQ2 | 1 |
| 3 | S-1ΦS-CΦΦ3-Φ-Φ.5 | | 10:09 | | | X | JB3 | 1 |
| 4 | S-1ΦS-CΦΦ3-Φ-Φ.5MSMSD | | 10:10 | | | X | JB3 - MSMSD | 1 |
| 5 | S-1ΦS-CΦΦ4-Φ-Φ.5 | | 10:23 | | | X | JK3 | 1 |
| 6 | S-1ΦS-CΦΦ5-Φ-Φ.5 | | 10:34 | | | X | JE6 | 1 |
| 7 | S-1ΦS-CΦΦ6-Φ-Φ.5 | | 10:45 | | | X | JI6 | 1 |
| 8 | S-1ΦS-CΦΦ7-Φ-Φ.5 | | 10:57 | | | X | JK9 | 1 |
| 9 | S-1ΦS-CΦΦ8-Φ-Φ.5 | | 11:11 | | | X | JG9 | 1 |
| | S-1ΦS-CΦΦ9-Φ-Φ.5 | | 11:25 | | | X | JK11 | 1 |

Container Type: A
Preservative: A

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| P. Gilbert | 9/16/10 13:00 | P. Gilbert | 9/16/10 13:00 |
| P. Gilbert | 9/16/10 17:25 | [illegible] | 9/16/10 1725 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial No:10131011:02

# CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:10131011:02

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: NBH Environ. Monitoring

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 #:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

*please homogenize each sample before analysis

**SAMPLE HANDLING**

Filtration ☐ Done ☐ Not needed ☐ Lab to do

Preservation ☐ Lab to do

(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB congeners | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|
| 10 | S-1ΦS-CΦ1Φ-Φ-Φ.5 | 9/15/10 | 11:37 | SE | KGM | X | JK12 | 1 |
| 11 | S-1ΦS-CΦ11-Φ-Φ.5 | ↓ | 12:36 | ↓ | ↓ | X | JF13 | 1 |
| 12 | S-1ΦS-CΦ12-Φ-Φ.5 | ↓ | 12:57 | ↓ | ↓ | X | JB13 | 1 |
| 13 | S-1ΦS-CΦ13-Φ-Φ.5 | ↓ | 13:10 | ↓ | ↓ | X | JI14 | 1 |
| 14 | S-1ΦS-CΦ14-Φ-Φ.5 | ↓ | 13:21 | ↓ | ↓ | X | JO14 | 1 |
| 15 | S-1ΦS-CΦ15-Φ-Φ.5 | ↓ | 13:33 | ↓ | ↓ | X | JG16 | 1 |
| 16 | S-1ΦS-CΦ16-Φ-Φ.5 | ↓ | 13:45 | ↓ | ↓ | X | JB19 | 1 |
| 17 | S-1ΦS-CΦ17-Φ-Φ.5 | ↓ | 13:57 | ↓ | ↓ | X | JN20 | 1 |
| 18 | S-1ΦS-CΦ18-Φ-Φ.5 | ↓ | 14:09 | ↓ | ↓ | X | JI21 | 1 |
| 19 | S-1ΦS-CΦ19-Φ-Φ.5 | ↓ | 14:20 | ↓ | ↓ | X | JD22 | 1 |

Container Type: A

Preservative: A

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 9/16/10 13:00 | [signature] | 9/16/10 13:00 |
| [signature] | 9/16/10 17:25 | [signature] | 9/16/10 1725 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# CHAIN OF CUSTODY

PAGE 3 OF 3

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:10131011:02

Date Rec'd in Lab:

ALPHA Job #:

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: NBH Environ. monitoring
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDDs
*please homogenize each sample before analysis

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: NOAA18 PCB congeners | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | S-10S-CD20-0-0.5 | 9/15/10 | 14:33 | SE | KGM | X | | | | | | | | | | | | JD24 | 1 |
| | | | | | | | | | | | | | | | | | | | |
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**SAMPLE HANDLING**
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | | | | | | | | | | | | | | |
| Preservative | A | | | | | | | | | | | | | | |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| R. Gillett | 9/16/10 13:00 | R. Gillett | 9/16/10 1300 |
| R. Gillett | 9/16/10 17:25 | [illegible] | 9/16/10 1725 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1017458 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 11/19/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1017458-01 | S-10O-C016-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:12 |
| L1017458-02 | S-10O-C017-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:44 |
| L1017458-03 | S-10O-C018-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:55 |
| L1017458-04 | S-10O-C019-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:33 |
| L1017458-05 | S-10O-C020-0-0.5 | NEW BEDFORD, MA | 10/19/10 11:05 |
| L1017458-06 | S-10O-C021-0-0.5 | NEW BEDFORD, MA | 10/19/10 11:27 |
| L1017458-07 | S-10O-C022-0-0.5 | NEW BEDFORD, MA | 10/19/10 11:15 |
| L1017458-08 | S-10O-C023-0-0.5 | NEW BEDFORD, MA | 10/19/10 09:31 |
| L1017458-09 | S-10O-C024-0-0.5 | NEW BEDFORD, MA | 10/19/10 09:23 |
| L1017458-10 | S-10O-C025-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:20 |
| L1017458-11 | S-10O-C026-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:36 |
| L1017458-12 | S-10O-C027-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:27 |
| L1017458-13 | S-10O-C028-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:52 |
| L1017458-14 | S-10O-C029-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:18 |
| L1017458-15 | S-10O-C030-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:07 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017458 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/19/10 |

## 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

Sediment samples were received intact on October 29, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until November 8, 2010 when they were removed to extract samples for PCB Congener analysis.

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

**Case Narrative (continued)**

whether it was the higher or lower value.

The surrogate recovery for L1017458-01 is outside the individual acceptance criteria for DBOB (261%), but within the overall method allowances. The results of the original analysis are reported; however, all associated compounds are considered to have a potential bias.

L1017458-01 through 15 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1017458-01through 15 were re-analyzed on additional 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 analyses. The re-analyses were performed only for the compounds that exceeded the calibration range.

The WG441774-1 Method Blank, associated with L1017458-01 through -15, has a concentration above the reporting limit for several congeners. Since the associated sample concentrations are greater than 5x the blank concentration for these analytes, no qualification of the results was performed.

The WG441774-3 LCSD recovery, associated with L1017458-01 through -15, is above the individual acceptance criteria for Cl4-BZ#52 (141%), but within the overall method allowances and the LCS recovery was within limits.

In addition, the associated WG441774-3 LCSD RPD(s) are above the acceptance criteria for several congeners. The MS/MSD RPDs are all within QC limits proving extraction precision.

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017458 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/19/10 |

**Case Narrative (continued)**

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: 11/19/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-01 | Date Collected: | 10/19/10 10:12 |
| Client ID: | S-10O-C016-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 14:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4520 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 8160 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 17800 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 3980 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 1170 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 1560 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 599 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 288 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 361 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 273 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **261** | Q | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-01 | Date Collected: | 10/19/10 10:12 |
| Client ID: | S-10O-C016-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 14:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9130 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 4910 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 1960 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 2070 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 233 | | ug/kg | 135 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **261** | Q | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-01 | D | Date Collected: | 10/19/10 10:12 |
| Client ID: | S-10O-C016-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 02:35 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 10500 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#66 | 4060 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-01 | D | Date Collected: | 10/19/10 10:12 |
| Client ID: | S-10O-C016-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 02:35 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4580 | | ug/kg | 1350 | -- | 1000 |
| Cl3-BZ#28 | 11100 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#52 | 19800 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#44 | 5860 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-02 | Date Collected: | 10/19/10 10:44 |
| Client ID: | S-10O-C017-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 15:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3840 | E | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 519 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 141 | 30-150 |
| BZ 198 | 84 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-02 | Date Collected: | 10/19/10 10:44 |
| Client ID: | S-10O-C017-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 15:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1900 | | ug/kg | 132 | -- | 100 |
| Cl3-BZ#28 | 4430 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 7300 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 2260 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 1530 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 802 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 432 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 836 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 219 | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 141 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-02 | D | Date Collected: | 10/19/10 10:44 |
| Client ID: | S-10O-C017-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 03:16 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4210 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-02 | D | Date Collected: | 10/19/10 10:44 |
| Client ID: | S-10O-C017-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 03:16 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4040 | | ug/kg | 1320 | -- | 1000 |
| Cl4-BZ#52 | 7380 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-03 | Date Collected: | 10/19/10 10:55 |
| Client ID: | S-10O-C018-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 16:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3870 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 7570 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 14900 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 2380 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 696 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 880 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 388 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 223 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 169 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 130 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-03 | Date Collected: | 10/19/10 10:55 |
| Client ID: | S-10O-C018-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 16:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 8100 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 3540 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 1200 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 1380 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 136 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 130 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-03 | D | Date Collected: | 10/19/10 10:55 |
| Client ID: | S-10O-C018-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 03:57 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6620 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-03 | D | Date Collected: | 10/19/10 10:55 |
| Client ID: | S-10O-C018-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 03:57 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3680 | | ug/kg | 1340 | -- | 1000 |
| Cl3-BZ#28 | 8000 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 13700 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#44 | 3360 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-04 | Date Collected: | 10/19/10 10:33 |
| Client ID: | S-10O-C019-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 17:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2460 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 416 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 105 | 30-150 |
| BZ 198 | 77 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-04 | Date Collected: | 10/19/10 10:33 |
| Client ID: | S-10O-C019-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 17:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1160 | | ug/kg | 133 | -- | 100 |
| Cl3-BZ#28 | 2980 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 5340 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 1580 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 1110 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 636 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 359 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 663 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 169 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 105 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-04 | D | Date Collected: | 10/19/10 10:33 |
| Client ID: | S-10O-C019-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 04:38 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2780 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#52 | 5460 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-05 | Date Collected: | 10/19/10 11:05 |
| Client ID: | S-10O-C020-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 17:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2360 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 446 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 392 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 106 | 30-150 |
| BZ 198 | 82 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-05 | Date Collected: | 10/19/10 11:05 |
| Client ID: | S-10O-C020-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 17:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1110 | | ug/kg | 132 | -- | 100 |
| Cl3-BZ#28 | 2260 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 4840 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 1090 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 971 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 649 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 634 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 143 | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 106 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-05 | D | Date Collected: | 10/19/10 11:05 |
| Client ID: | S-10O-C020-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 05:20 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4960 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-06 | Date Collected: | 10/19/10 11:27 |
| Client ID: | S-10O-C021-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 19:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7380 | E | ug/kg | 130 | -- | 100 |
| Cl3-BZ#18 | 14100 | E | ug/kg | 130 | -- | 100 |
| Cl4-BZ#52 | 20300 | E | ug/kg | 130 | -- | 100 |
| Cl4-BZ#66 | 4350 | E | ug/kg | 130 | -- | 100 |
| Cl5-BZ#118 | 1900 | | ug/kg | 130 | -- | 100 |
| Cl6-BZ#138 | 1720 | | ug/kg | 130 | -- | 100 |
| Cl7-BZ#187 | 543 | | ug/kg | 130 | -- | 100 |
| Cl6-BZ#128 | 329 | | ug/kg | 130 | -- | 100 |
| Cl7-BZ#180 | 370 | | ug/kg | 130 | -- | 100 |
| Cl7-BZ#170 | 277 | | ug/kg | 130 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 130 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 130 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 130 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-06 | Date Collected: | 10/19/10 11:27 |
| Client ID: | S-10O-C021-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 19:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11400 | E | ug/kg | 130 | -- | 100 |
| Cl4-BZ#44 | 4620 | E | ug/kg | 130 | -- | 100 |
| Cl5-BZ#101 | 2430 | | ug/kg | 130 | -- | 100 |
| Cl6-BZ#153 | 2250 | | ug/kg | 130 | -- | 100 |
| Cl5-BZ#105 | 308 | | ug/kg | 130 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-06 | D | Date Collected: | 10/19/10 11:27 |
| Client ID: | S-10O-C021-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 06:01 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 13400 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#66 | 4380 | | ug/kg | 1300 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-06 | D | Date Collected: | 10/19/10 11:27 |
| Client ID: | S-10O-C021-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 06:01 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7840 | | ug/kg | 1300 | -- | 1000 |
| Cl3-BZ#28 | 14400 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#52 | 22200 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#44 | 5640 | | ug/kg | 1300 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-07 | Date Collected: | 10/19/10 11:15 |
| Client ID: | S-10O-C022-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 19:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 8570 | E | ug/kg | 132 | -- | 100 |
| Cl3-BZ#18 | 17200 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 39600 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 8140 | E | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 2800 | E | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 2960 | E | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 994 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | 456 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | 504 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | 397 | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-07 | Date Collected: | 10/19/10 11:15 |
| Client ID: | S-10O-C022-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 19:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 13500 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 8430 | E | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 4420 | E | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 4320 | E | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | 397 | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 81 | 30-150 |
| BZ 198 | 63 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-07 | D | Date Collected: | 10/19/10 11:15 |
| Client ID: | S-10O-C022-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 15:01 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 11300 | | ug/kg | 5300 | -- | 4000 |
| Cl3-BZ#18 | 22100 | | ug/kg | 5300 | -- | 4000 |
| Cl4-BZ#66 | 10000 | | ug/kg | 5300 | -- | 4000 |
| Cl6-BZ#138 | ND | | ug/kg | 5300 | -- | 4000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-07 | D | Date Collected: | 10/19/10 11:15 |
| Client ID: | S-10O-C022-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 15:01 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 19200 | | ug/kg | 5300 | -- | 4000 |
| Cl4-BZ#52 | 52900 | | ug/kg | 5300 | -- | 4000 |
| Cl4-BZ#44 | 11800 | | ug/kg | 5300 | -- | 4000 |
| Cl5-BZ#101 | 6110 | | ug/kg | 5300 | -- | 4000 |
| Cl5-BZ#118 | ND | | ug/kg | 5300 | -- | 4000 |
| Cl6-BZ#153 | 6060 | | ug/kg | 5300 | -- | 4000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-08 | Date Collected: | 10/19/10 09:31 |
| Client ID: | S-10O-C023-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 20:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 20300 | E | ug/kg | 136 | -- | 100 |
| Cl3-BZ#18 | 34700 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 46100 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 13200 | E | ug/kg | 136 | -- | 100 |
| Cl5-BZ#118 | 2140 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#138 | 3700 | E | ug/kg | 136 | -- | 100 |
| Cl7-BZ#187 | 1410 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#128 | 354 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#180 | 728 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#170 | 475 | | ug/kg | 136 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 136 | -- | 100 |
| Cl9-BZ#206 | 167 | | ug/kg | 136 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 89 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-08 | Date Collected: | 10/19/10 09:31 |
| Client ID: | S-10O-C023-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 20:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 15200 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 14100 | E | ug/kg | 136 | -- | 100 |
| Cl5-BZ#101 | 5280 | E | ug/kg | 136 | -- | 100 |
| Cl6-BZ#153 | 3760 | E | ug/kg | 136 | -- | 100 |
| Cl5-BZ#105 | 404 | | ug/kg | 136 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 89 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-08 | D | Date Collected: | 10/19/10 09:31 |
| Client ID: | S-10O-C023-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 15:43 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 26100 | | ug/kg | 5450 | -- | 4000 |
| Cl3-BZ#18 | 43900 | | ug/kg | 5450 | -- | 4000 |
| Cl6-BZ#138 | ND | | ug/kg | 5450 | -- | 4000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-08 | D | Date Collected: | 10/19/10 09:31 |
| Client ID: | S-10O-C023-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 15:43 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 46000 | | ug/kg | 5450 | -- | 4000 |
| Cl4-BZ#52 | 61800 | | ug/kg | 5450 | -- | 4000 |
| Cl4-BZ#44 | 21900 | | ug/kg | 5450 | -- | 4000 |
| Cl4-BZ#66 | 15900 | | ug/kg | 5450 | -- | 4000 |
| Cl5-BZ#101 | 7690 | | ug/kg | 5450 | -- | 4000 |
| Cl6-BZ#153 | 5640 | | ug/kg | 5450 | -- | 4000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-09 | Date Collected: | 10/19/10 09:23 |
| Client ID: | S-10O-C024-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 21:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 19300 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 20600 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 24100 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 8300 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 2120 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 1480 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 540 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 210 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 380 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 254 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-09 | Date Collected: | 10/19/10 09:23 |
| Client ID: | S-10O-C024-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 21:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 17600 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 6900 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 3180 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 1850 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 313 | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-09 | D | Date Collected: | 10/19/10 09:23 |
| Client ID: | S-10O-C024-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 16:24 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 25500 | | ug/kg | 2690 | -- | 2000 |
| Cl3-BZ#18 | 35300 | | ug/kg | 2690 | -- | 2000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-09 | D | Date Collected: | 10/19/10 09:23 |
| Client ID: | S-10O-C024-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 16:24 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 33200 | | ug/kg | 2690 | -- | 2000 |
| Cl4-BZ#52 | 34200 | | ug/kg | 2690 | -- | 2000 |
| Cl4-BZ#44 | 9670 | | ug/kg | 2690 | -- | 2000 |
| Cl4-BZ#66 | 9570 | | ug/kg | 2690 | -- | 2000 |
| Cl5-BZ#101 | 4310 | | ug/kg | 2690 | -- | 2000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-10 | Date Collected: | 10/19/10 10:20 |
| Client ID: | S-10O-C025-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 21:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2800 | E | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 515 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 84 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-10 | Date Collected: | 10/19/10 10:20 |
| Client ID: | S-10O-C025-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 21:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1190 | | ug/kg | 133 | -- | 100 |
| Cl3-BZ#28 | 3780 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 5760 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 1800 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 1330 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 842 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 502 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 863 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 204 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 84 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-10 | D | Date Collected: | 10/19/10 10:20 |
| Client ID: | S-10O-C025-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 08:46 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2380 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-10 | D | Date Collected: | 10/19/10 10:20 |
| Client ID: | S-10O-C025-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 08:46 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3340 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#52 | 5840 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-11 | Date Collected: | 10/20/10 09:36 |
| Client ID: | S-10O-C026-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 22:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1230 | | ug/kg | 136 | -- | 100 |
| Cl3-BZ#18 | 3420 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 8060 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 1810 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#118 | 765 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#138 | 734 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#187 | 240 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#128 | 139 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#180 | 142 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 136 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 136 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 136 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 103 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-11 | Date Collected: | 10/20/10 09:36 |
| Client ID: | S-10O-C026-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 22:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3060 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 1560 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#101 | 1160 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#153 | 1050 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#105 | 153 | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 103 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-11 | D | Date Collected: | 10/20/10 09:36 |
| Client ID: | S-10O-C026-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 10:08 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3700 | | ug/kg | 1360 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-11 | D | Date Collected: | 10/20/10 09:36 |
| Client ID: | S-10O-C026-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 10:08 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3100 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#52 | 8900 | | ug/kg | 1360 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-12 | Date Collected: | 10/20/10 09:27 |
| Client ID: | S-10O-C027-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 00:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1840 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 408 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 91 | 30-150 |
| BZ 198 | 83 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-12 | Date Collected: | 10/20/10 09:27 |
| Client ID: | S-10O-C027-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 00:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 783 | | ug/kg | 132 | -- | 100 |
| Cl3-BZ#28 | 1920 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 5350 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 1220 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 1230 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 868 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 530 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 730 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 156 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 83 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-12 | D | Date Collected: | 10/20/10 09:27 |
| Client ID: | S-10O-C027-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 12:11 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 6370 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-13 | Date Collected: | 10/20/10 09:52 |
| Client ID: | S-10O-C028-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 01:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5650 | E | ug/kg | 133 | -- | 100 |
| Cl3-BZ#18 | 8280 | E | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 530 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-13 | Date Collected: | 10/20/10 09:52 |
| Client ID: | S-10O-C028-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 01:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9320 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 8890 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 3150 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 2290 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 1120 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 695 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 875 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | 134 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 185 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-13 | D | Date Collected: | 10/20/10 09:52 |
| Client ID: | S-10O-C028-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 12:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 11500 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-13 | D | Date Collected: | 10/20/10 09:52 |
| Client ID: | S-10O-C028-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/12/10 12:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6810 | | ug/kg | 1330 | -- | 1000 |
| Cl3-BZ#28 | 11000 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#52 | 9870 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#44 | 3450 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-14 | Date Collected: | 10/20/10 09:18 |
| Client ID: | S-10O-C029-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 01:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3730 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 8610 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 29600 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 5420 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 1850 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 2130 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 711 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 312 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 376 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 281 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 107 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-14 | Date Collected: | 10/20/10 09:18 |
| Client ID: | S-10O-C029-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 01:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7120 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 5820 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 3370 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 3110 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 297 | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 107 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-14 | D | Date Collected: | 10/20/10 09:18 |
| Client ID: | S-10O-C029-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 17:05 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 13900 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#66 | 7910 | | ug/kg | 2700 | -- | 2000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017458-14 | D | Date Collected: | 10/20/10 09:18 |
| Client ID: | S-10O-C029-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/17/10 17:05 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5200 | | ug/kg | 2700 | -- | 2000 |
| Cl3-BZ#28 | 10200 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#52 | 43400 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#44 | 8250 | | ug/kg | 2700 | -- | 2000 |
| Cl5-BZ#101 | 4760 | | ug/kg | 2700 | -- | 2000 |
| Cl6-BZ#153 | 4350 | | ug/kg | 2700 | -- | 2000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-15 | Date Collected: | 10/20/10 09:07 |
| Client ID: | S-10O-C030-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 02:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 520 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 192 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 112 | 30-150 |
| BZ 198 | 102 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017458-15 | Date Collected: | 10/20/10 09:07 |
| Client ID: | S-10O-C030-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/08/10 10:05 |
| Analytical Date: | 11/13/10 02:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/10/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 263 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#28 | 658 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 2220 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 528 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 543 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 451 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 298 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 363 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 112 | | 30-150 |
| BZ 198 | 102 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/12/10 00:32
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 11/08/10 10:05
Cleanup Method1: EPA 3630
Cleanup Date1: 11/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-15 Batch: WG441774-1 | | | | | |
| Cl3-BZ#18 | 2.98 | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 103 | | 30-150 |
| BZ 198 | 102 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/12/10 00:32
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 11/08/10 10:05
Cleanup Method1: EPA 3630
Cleanup Date1: 11/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-15 Batch: WG441774-1 | | | | | |
| Cl2-BZ#8 | 2.18 | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | 3.95 | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | 6.46 | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | 1.98 | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 103 | | 30-150 |
| BZ 198 | 102 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1017458
**Report Date:** 11/19/10

| 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): 01-15 QC Batch ID: WG441774-4 WG441774-5 QC Sample: L1017458-11 Client ID: S-10O-C026-0-0.5 | | | | | | | | | | | | |
| Cl2-BZ#8 | 1230 | 1690 | 2120 | 53 | | 2140 | 54 | | 40-140 | 1 | | 30 |
| Cl3-BZ#18 | 3700 | 1690 | 4770 | 63 | | 4820 | 67 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 1810 | 1690 | 3060 | 74 | | 3100 | 77 | | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 765 | 1690 | 2050 | 76 | | 2010 | 74 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 734 | 1690 | 1880 | 68 | | 1810 | 64 | | 40-140 | 4 | | 30 |
| Cl7-BZ#187 | 240 | 1690 | 1350 | 66 | | 1310 | 64 | | 40-140 | 3 | | 30 |
| Cl6-BZ#128 | 139 | 1690 | 1390 | 74 | | 1340 | 71 | | 40-140 | 4 | | 30 |
| Cl7-BZ#180 | 142 | 1690 | 1340 | 71 | | 1290 | 68 | | 40-140 | 4 | | 30 |
| Cl7-BZ#170 | ND | 1690 | 1340 | 79 | | 1280 | 76 | | 40-140 | 5 | | 30 |
| Cl8-BZ#195 | ND | 1690 | 1280 | 76 | | 1220 | 73 | | 40-140 | 5 | | 30 |
| Cl9-BZ#206 | ND | 1690 | 1450 | 86 | | 1340 | 80 | | 40-140 | 8 | | 30 |
| Cl10-BZ#209 | ND | 1690 | 1260 | 74 | | 1190 | 71 | | 40-140 | 6 | | 30 |
| Cl3-BZ#28 | 3100 | 1690 | 4700 | 95 | | 4410 | 78 | | 40-140 | 6 | | 30 |
| Cl4-BZ#52 | 8900 | 1690 | 10100 | 71 | | 10000 | 65 | | 40-140 | 1 | | 30 |
| Cl4-BZ#44 | 1560 | 1690 | 2830 | 75 | | 2790 | 73 | | 40-140 | 1 | | 30 |
| Cl5-BZ#101 | 1160 | 1690 | 2540 | 82 | | 2460 | 77 | | 40-140 | 3 | | 30 |
| Cl6-BZ#153 | 1050 | 1690 | 2400 | 80 | | 2220 | 70 | | 40-140 | 8 | | 30 |
| Cl5-BZ#105 | 153 | 1690 | 1640 | 88 | | 1520 | 81 | | 40-140 | 8 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1017458
**Report Date:** 11/19/10

| 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): 01-15 QC Batch ID: WG441774-4 WG441774-5 QC Sample: L1017458-11 Client ID: S-10O-C026-0-0.5 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 89 | | 81 | | 30-150 |
| DBOB | 94 | | 90 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1017458
**Report Date:** 11/19/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-15 Batch: WG441774-2 WG441774-3 | | | | | | | | |
| Cl2-BZ#8 | 43 | | 80 | | 40-140 | **60** | Q | 30 |
| Cl3-BZ#18 | 56 | | 94 | | 40-140 | **51** | Q | 30 |
| Cl3-BZ#28 | 70 | | 126 | | 40-140 | **57** | Q | 30 |
| Cl4-BZ#52 | 66 | | **141** | Q | 40-140 | **72** | Q | 30 |
| Cl4-BZ#44 | 49 | | 91 | | 40-140 | **60** | Q | 30 |
| Cl4-BZ#66 | 52 | | 101 | | 40-140 | **64** | Q | 30 |
| Cl5-BZ#101 | 50 | | 94 | | 40-140 | **61** | Q | 30 |
| Cl5-BZ#118 | 49 | | 87 | | 40-140 | **56** | Q | 30 |
| Cl5-BZ#105 | 44 | | 79 | | 40-140 | **57** | Q | 30 |
| Cl6-BZ#138 | 51 | | 85 | | 40-140 | **50** | Q | 30 |
| Cl7-BZ#187 | 50 | | 75 | | 40-140 | **40** | Q | 30 |
| Cl6-BZ#128 | 47 | | 81 | | 40-140 | **53** | Q | 30 |
| Cl7-BZ#180 | 47 | | 81 | | 40-140 | **53** | Q | 30 |
| Cl7-BZ#170 | 51 | | 82 | | 40-140 | **47** | Q | 30 |
| Cl8-BZ#195 | 47 | | 80 | | 40-140 | **52** | Q | 30 |
| Cl9-BZ#206 | 52 | | 90 | | 40-140 | **54** | Q | 30 |
| Cl10-BZ#209 | 48 | | 81 | | 40-140 | **51** | Q | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017458

**Project Number:** TO-0010-03 **Report Date:** 11/19/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-15 Batch: WG441774-2 WG441774-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 45 | | 78 | | 30-150 |
| BZ 198 | 47 | | 83 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-15 Batch: WG441774-2 WG441774-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 61 | | 86 | | 40-140 | **34** | Q | 30 |

| | | | | | |
|---|---|---|---|---|---|
| DBOB | 45 | | 78 | | 30-150 |
| BZ 198 | 47 | | 83 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-01
Client ID: S-10O-C016-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:12
Date Received: 10/29/10
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 | 97.4 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 36.6 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-02
Client ID: S-10O-C017-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:44
Date Received: 10/29/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.5 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-03
Client ID: S-10O-C018-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:55
Date Received: 10/29/10
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 | 98.3 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.2 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-04
Client ID: S-10O-C019-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:33
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.4 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-05
Client ID: S-10O-C020-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 11:05
Date Received: 10/29/10
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 | 98.5 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.1 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-06
Client ID: S-10O-C021-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 11:27
Date Received: 10/29/10
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 | 98.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 48.9 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-07
Client ID: S-10O-C022-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 11:15
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.6 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-08
Client ID: S-10O-C023-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 09:31
Date Received: 10/29/10
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 | 96.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 31.8 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-09
Client ID: S-10O-C024-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 09:23
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.7 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-10
Client ID: S-10O-C025-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:20
Date Received: 10/29/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.1 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-11
Client ID: S-10O-C026-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:36
Date Received: 10/29/10
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 | 96.7 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.2 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-12
Client ID: S-10O-C027-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:27
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 41.6 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-13
Client ID: S-10O-C028-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:52
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.9 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-14
Client ID: S-10O-C029-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:18
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 35.4 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## SAMPLE RESULTS

Lab ID: L1017458-15
Client ID: S-10O-C030-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:07
Date Received: 10/29/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/08/10 10:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 47.2 | | % | 0.100 | NA | 1 | - | 11/04/10 17:00 | 30,2540G | NR |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG441769-1 QC Sample: L1017458-15 Client ID: S-10O-C030-0-0.5 | | | | | | |
| Solids, Total | 98.0 | 98.0 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017458
**Report Date:** 11/19/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

**Cooler Information**

| Cooler | Custody Seal |
|---|---|
| A | Absent |
| B | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1017458-01A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-02A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-03A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-04A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-05A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-06A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-07A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-08A | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-09A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-10A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-11A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD(),A2-TS-PREDRIED(7) |
| L1017458-11B | Glass 250ml unpreserved | B | NA | -3 | NA | Absent | A2-MS/MSD() |
| L1017458-12A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-13A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-14A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017458-15A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017458 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/19/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017458 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/19/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1017458 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/19/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

L1017458

# CHAIN OF CUSTODY

PAGE 2 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: ~~L1017248~~

## Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. 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: NBH Environmental Monitoring

Project Location: New Bedford, MA

Project #: TO-0010-03

Project Manager: Dave Walsh

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

## 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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

## ANALYSIS

SAMPLE HANDLING

*Filtration*

☐ Done

☒ Not Needed

☐ Lab to do

*Preservation*

☐ Lab to do

*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | S-10O-C011-0-0.5 | 10/18/10 | 11:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII6 | 1 |
| 12 | S-10O-C012-0-0.5 | 10/18/10 | 11:46 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KHH8 | 1 |
| 13 | S-10O-C013-0-0.5 | 10/18/10 | 11:30 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK7 | 1 |
| 14 | S-10O-C014-0-0.5 | 10/19/10 | 09:47 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK9 | 1 |
| 15 | S-10O-C015-0-0.5 | 10/19/10 | 10:02 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KGG11 | 1 |
| 17458-1 16 | S-10O-C016-0-0.5 | 10/19/10 | 10:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII12 | 1 |
| -2 17 | S-10O-C017-0-0.5 | 10/19/10 | 10:44 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII14 | 1 |
| -3 18 | S-10O-C018-0-0.5 | 10/19/10 | 10:55 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KFF15 | 1 |
| -4 19 | S-10O-C019-0-0.5 | 10/19/10 | 10:33 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK15 | 1 |
| -5 20 | S-10O-C020-0-0.5 | 10/19/10 | 11:05 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII17 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 10/29/10 18:00 | | 10/29/10 18:00 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

L1017458

# CHAIN OF CUSTODY

PAGE 3 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:11191011:59

Date Rec'd in Lab:

ALPHA Job #: L1017218

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX ☒ ADEx

**Data Deliverables**

☒ EMAIL ☐ Add'l Deliverables

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| -6 21 | S-10O-C021-0-0.5 | 10/19/10 | 11:27 | SED | KGM | ☒ | KGG19 | 1 |
| -7 22 | S-10O-C022-0-0.5 | 10/19/10 | 11:15 | SED | KGM | ☒ | KJJ19 | 1 |
| -8 23 | S-10O-C023-0-0.5 | 10/19/10 | 09:31 | SED | KGM | ☒ | KCC6 | 1 |
| -9 24 | S-10O-C024-0-0.5 | 10/19/10 | 09:23 | SED | KGM | ☒ | KY7 | 1 |
| -10 25 | S-10O-C025-0-0.5 | 10/19/10 | 10:20 | SED | KGM | ☒ | KKK13 | 1 |
| -11 26 | S-10O-C026-0-0.5 | 10/20/10 | 09:36 | SED | KGM | ☒ | GD30 | 1 |
| -12 27 | S-10O-C027-0-0.5 | 10/20/10 | 09:27 | SED | KGM | ☒ | GD34 | 1 |
| -13 28 | S-10O-C028-0-0.5 | 10/20/10 | 09:52 | SED | KGM | ☒ | GJ29 | 1 |
| -14 29 | S-10O-C029-0-0.5 | 10/20/10 | 09:18 | SED | KGM | ☒ | GH34 | 1 |
| -15 30 | S-10O-C030-0-0.5 | 10/20/10 | 09:07 | SED | KGM | ☒ | GI36 | 1 |
| | Container Type | | | | | A | | |
| | Preservative | | | | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 10/29/10 16:00 | | 10/29/10 18:00 |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

L1017458

# CHAIN OF CUSTODY

PAGE 5 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1017458

## Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. 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: NBH Environmental Monitoring

Project Location: New Bedford, MA

Project #: TO-0010-03

Project Manager: Dave Walsh

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

## Report Information

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

## Data Deliverables

## Billing Information

☒ Same as Client info PO #:

## Regulatory Requirements/Report Limits

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

## ANALYSIS

SAMPLE HANDLING

*Filtration*

☐ Done

☒ Not Needed

☐ Lab to do

*Preservation*

☐ Lab to do

*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | S-10O-C041-0-0.5 | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| 42 | S-10O-C042-0-0.5 | 10/21/10 | 09:44 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB8 | 1 |
| 43 | S-10O-C043-0-0.5 | 10/21/10 | 10:27 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA9 | 1 |
| 44 | S-10O-C044-0-0.5 | 10/21/10 | 09:57 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB11 | 1 |
| 45 | S-10O-C045-0-0.5 | 10/21/10 | 09:11 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ME7 | 1 |
| 46 | S-10O-C046-0-0.5 | 08/18/10 | 08:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | JL24 | 1 |
| 14 | S-10O-C014-0-0.5MSMSD | 10/19/10 | 09:47 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK9 | 1 |
| 26 | S-10O-C026-0-0.5MSMSD | 10/20/10 | 09:36 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GD30 | 1 |
| 41 | S-10O-C041-0-0.5MSMSD | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | 0 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 18:00 | [signature] | 10/29/10 18:00 |
| | | | |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ALPHA ANALYTICAL

L1017458 Sample Delivery Group Form

Laboratory Job No: ~~L1017218~~ L1017458 Client: WHG

Receipt Date/Time: 10/29/10 16:00 SDG Reviewer:

**Samples Delivered By:**

[ ] Alpha Courier [X] Client [ ] UPS [ ] FedEx [ ] Other

Bill of Laden: [ ]Yes [ ] Unavailable Tracking #:

Chain of Custody: [X] Present [ ] Absent:

Custody Seals: [X] Absent [ ] Present/Intact [ ] Present/Broken

**Cooler/Sample Temperature:**

Is Ice/Blue Ice present? [ ] Yes [X] No [ ] N/A

Temp taken from: Temp Blank:(a)____ (b)____ (c)____ (d)____ (e)____

IR Gun: (a) -2°C (b) -3°C (c) 0°C (d) -1°C (e)____

IR Gun SN: 4006201

Was Temp: [ ] 2-6 Celsius

[X] <2 Celsius ... were samples frozen upon receipt? [X] Yes [ ] No

[ ] >6 Celsius ... were samples delivered direct from site? [ ] Yes [ ] No

Containers Received: [ ] Intact

[ ] Broken/Leaking Sample IDs:

Sample IDs:

All Containers Accounted For? [ ] Yes

[ ] No:

Extra Samples Received? [ ] No

[ ] Yes:

Do Sample Labels and COC agree? [ ] Yes

[ ] No:

Are Samples in Appropriate Containers? [ ] Yes

[ ] No:

Are samples rec'd within holding time? [ ] Yes

[ ] No:

* Please note: the analysis of pH will always be performed beyond the regulatory-required holding time of 15 min. from the time of collection.

pH of samples upon receipt: [ ] N/A [ ] <2 [ ] >12 and/or [ ]

Are samples properly preserved? [ ] Yes [ ] No If No then.....

Initial pH= ____ preserved In-House with [ ] HCL [ ] $H_2SO_4$ [ ] $HNO_3$ [ ] NAOH <<Final pH = ____>>

Other Issues:

Chlorine Check: [ ] N/A [ ] Present [ ] Absent

VOA/VPH vials: [ ] Yes [ ] No Preserved? [ ] Yes [ ] No If yes: [ ] HCL, [ ]

Aqueous: vials contain head space? [ ] No [ ] Yes :

Soils: MeOH covering soil? [ ] Yes [ ] No :

Reagent $H_2O$ Preserved vials Frozen @ date/time:

Frozen by Client? [ ] No [ ] Yes @ date/time:

Was Client notified of any discrepancies listed above? [ ] Yes [ ] No [ ] N/A

If Yes: Call Tracker #

Form No.: 01-02 08/11/2010

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1017218 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH |
| Project Number: | TO-0010-03 |
| Report Date: | 11/29/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1017218-01 | S-10O-C001-0-0.5 | NEW BEDFORD, MA | 10/18/10 09:20 |
| L1017218-02 | S-10O-C002-0-0.5 | NEW BEDFORD, MA | 10/18/10 09:38 |
| L1017218-03 | S-10O-C003-0-0.5 | NEW BEDFORD, MA | 10/18/10 09:48 |
| L1017218-04 | S-10O-C004-0-0.5 | NEW BEDFORD, MA | 10/18/10 10:00 |
| L1017218-05 | S-10O-C005-0-0.5 | NEW BEDFORD, MA | 10/18/10 10:16 |
| L1017218-06 | S-10O-C006-0-0.5 | NEW BEDFORD, MA | 10/18/10 10:32 |
| L1017218-07 | S-10O-C007-0-0.5 | NEW BEDFORD, MA | 10/18/10 10:42 |
| L1017218-08 | S-10O-C008-0-0.5 | NEW BEDFORD, MA | 10/18/10 10:55 |
| L1017218-09 | S-10O-C009-0-0.5 | NEW BEDFORD, MA | 10/18/10 11:06 |
| L1017218-10 | S-10O-C010-0-0.5 | NEW BEDFORD, MA | 10/18/10 11:57 |
| L1017218-11 | S-10O-C011-0-0.5 | NEW BEDFORD, MA | 10/18/10 11:20 |
| L1017218-12 | S-10O-C012-0-0.5 | NEW BEDFORD, MA | 10/18/10 11:46 |
| L1017218-13 | S-10O-C013-0-0.5 | NEW BEDFORD, MA | 10/18/10 11:30 |
| L1017218-14 | S-10O-C014-0-0.5 | NEW BEDFORD, MA | 10/19/10 09:47 |
| L1017218-15 | S-10O-C015-0-0.5 | NEW BEDFORD, MA | 10/19/10 10:02 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH | **Lab Number:** | L1017218 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/29/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on October 29, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until November 4, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH | **Lab Number:** | L1017218 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/29/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1017218-01 through 15 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1017218-01 through 15 with the exception of -06, were re-analyzed on additional 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 analyses. The re-analyses were performed only for the compounds that exceeded the calibration range.

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: 11/29/10

# ORGANICS

# PCBS

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-01 | Date Collected: | 10/18/10 09:20 |
| Client ID: | S-10O-C001-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 11:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6410 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 12900 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 17400 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 3820 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 772 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 1250 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 511 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 182 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 269 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 183 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 64 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-01 | Date Collected: | 10/18/10 09:20 |
| Client ID: | S-10O-C001-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 11:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11000 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 5100 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 1780 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 1440 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 173 | | ug/kg | 135 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 70 | 30-150 |
| BZ 198 | 64 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-01 | D | Date Collected: | 10/18/10 09:20 |
| Client ID: | S-10O-C001-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 06:02 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7480 | | ug/kg | 1350 | -- | 1000 |
| Cl3-BZ#18 | 13000 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-01 | D | Date Collected: | 10/18/10 09:20 |
| Client ID: | S-10O-C001-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 06:02 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 15200 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#52 | 20700 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#44 | 6030 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#66 | 4210 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-02 | Date Collected: | 10/18/10 09:38 |
| Client ID: | S-10O-C002-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 12:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 26800 | E | ug/kg | 133 | -- | 100 |
| Cl3-BZ#18 | 46600 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 41000 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 8670 | E | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 1620 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 1970 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 922 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | 186 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | 451 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | 302 | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-02 | Date Collected: | 10/18/10 09:38 |
| Client ID: | S-10O-C002-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 12:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 18700 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 6470 | E | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 2780 | E | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 2140 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | 274 | | ug/kg | 133 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 83 | 30-150 |
| BZ 198 | 78 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-02 | D | Date Collected: | 10/18/10 09:38 |
| Client ID: | S-10O-C002-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 17:47 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 34800 | | ug/kg | 5320 | -- | 4000 |
| Cl3-BZ#18 | 57300 | | ug/kg | 5320 | -- | 4000 |
| Cl4-BZ#66 | 10300 | | ug/kg | 5320 | -- | 4000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-02 | D | Date Collected: | 10/18/10 09:38 |
| Client ID: | S-10O-C002-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 17:47 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 40500 | | ug/kg | 5320 | -- | 4000 |
| Cl4-BZ#52 | 54000 | | ug/kg | 5320 | -- | 4000 |
| Cl4-BZ#44 | 8460 | | ug/kg | 5320 | -- | 4000 |
| Cl5-BZ#101 | ND | | ug/kg | 5320 | -- | 4000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-03 | Date Collected: | 10/18/10 09:48 |
| Client ID: | S-10O-C003-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 12:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 15600 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 25100 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 37800 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 10300 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 2990 | E | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 1140 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 304 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 559 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 383 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-03 | Date Collected: | 10/18/10 09:48 |
| Client ID: | S-10O-C003-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 12:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 17500 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 12500 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 4540 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 1720 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 3350 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 385 | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | 136 | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-03 | D | Date Collected: | 10/18/10 09:48 |
| Client ID: | S-10O-C003-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 18:28 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 27300 | | ug/kg | 5390 | -- | 4000 |
| Cl6-BZ#138 | ND | | ug/kg | 5390 | -- | 4000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-03 | D | Date Collected: | 10/18/10 09:48 |
| Client ID: | S-10O-C003-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 18:28 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 20500 | | ug/kg | 5390 | -- | 4000 |
| Cl3-BZ#28 | 36700 | | ug/kg | 5390 | -- | 4000 |
| Cl4-BZ#52 | 52200 | | ug/kg | 5390 | -- | 4000 |
| Cl4-BZ#44 | 17400 | | ug/kg | 5390 | -- | 4000 |
| Cl4-BZ#66 | 14600 | | ug/kg | 5390 | -- | 4000 |
| Cl5-BZ#101 | 5980 | | ug/kg | 5390 | -- | 4000 |
| Cl6-BZ#153 | ND | | ug/kg | 5390 | -- | 4000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-04 | Date Collected: | 10/18/10 10:00 |
| Client ID: | S-10O-C004-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 13:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2800 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 249 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 88 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-04 | Date Collected: | 10/18/10 10:00 |
| Client ID: | S-10O-C004-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 13:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1760 | | ug/kg | 135 | -- | 100 |
| Cl3-BZ#28 | 3250 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 4980 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 1200 | | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 812 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 458 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 196 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 402 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-04 | D | Date Collected: | 10/18/10 10:00 |
| Client ID: | S-10O-C004-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 08:05 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3870 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#52 | 5060 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-04 | D | Date Collected: | 10/18/10 10:00 |
| Client ID: | S-10O-C004-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 08:05 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3220 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-05 | Date Collected: | 10/18/10 10:16 |
| Client ID: | S-10O-C005-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 14:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7510 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 14700 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 22900 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 5920 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 1710 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 2030 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 764 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 280 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 414 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 305 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-05 | Date Collected: | 10/18/10 10:16 |
| Client ID: | S-10O-C005-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 14:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 12200 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 7280 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 3220 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 2860 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 277 | | ug/kg | 135 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 77 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-05 | D | Date Collected: | 10/18/10 10:16 |
| Client ID: | S-10O-C005-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 19:09 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 14600 | | ug/kg | 2700 | -- | 2000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-05 | D | Date Collected: | 10/18/10 10:16 |
| Client ID: | S-10O-C005-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 19:09 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 9970 | | ug/kg | 2700 | -- | 2000 |
| Cl3-BZ#28 | 20200 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#52 | 28900 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#44 | 9670 | | ug/kg | 2700 | -- | 2000 |
| Cl4-BZ#66 | 8410 | | ug/kg | 2700 | -- | 2000 |
| Cl5-BZ#101 | 4080 | | ug/kg | 2700 | -- | 2000 |
| Cl6-BZ#153 | 3570 | | ug/kg | 2700 | -- | 2000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-06 | Date Collected: | 10/18/10 10:32 |
| Client ID: | S-10O-C006-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 14:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 574 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | ND | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 87 | 30-150 |
| BZ 198 | 82 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-06 | Date Collected: | 10/18/10 10:32 |
| Client ID: | S-10O-C006-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 14:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 303 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#28 | 674 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 1080 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 316 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 233 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 135 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 87 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-07 | Date Collected: | 10/18/10 10:42 |
| Client ID: | S-10O-C007-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 15:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1080 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 2210 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 1040 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 351 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 392 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 154 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-07 | Date Collected: | 10/18/10 10:42 |
| Client ID: | S-10O-C007-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 15:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2600 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 4330 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 1450 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 605 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 604 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-07 | D | Date Collected: | 10/18/10 10:42 |
| Client ID: | S-10O-C007-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/13/10 10:08 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4570 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-08 | Date Collected: | 10/18/10 10:55 |
| Client ID: | S-10O-C008-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 18:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4570 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 7790 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 13500 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 3240 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 869 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 1130 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 449 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | 178 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 251 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 184 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-08 | Date Collected: | 10/18/10 10:55 |
| Client ID: | S-10O-C008-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 18:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 8680 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 4460 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 1720 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 1640 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 161 | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 90 | 30-150 |
| BZ 198 | 80 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-08 | D | Date Collected: | 10/18/10 10:55 |
| Client ID: | S-10O-C008-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 11:03 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 9610 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-08 | D | Date Collected: | 10/18/10 10:55 |
| Client ID: | S-10O-C008-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 11:03 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5640 | | ug/kg | 1340 | -- | 1000 |
| Cl3-BZ#28 | 10600 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 16600 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#44 | 5420 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#66 | 3510 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-09 | Date Collected: | 10/18/10 11:06 |
| Client ID: | S-10O-C009-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 19:17 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7040 | E | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 14300 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 20400 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 4920 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 1150 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 1660 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 655 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | 239 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 354 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | 254 | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-09 | Date Collected: | 10/18/10 11:06 |
| Client ID: | S-10O-C009-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 19:17 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 14600 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 7010 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 2710 | E | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 2350 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | 245 | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-09 | D | Date Collected: | 10/18/10 11:06 |
| Client ID: | S-10O-C009-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 11:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 15200 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-09 | D | Date Collected: | 10/18/10 11:06 |
| Client ID: | S-10O-C009-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 11:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 8800 | | ug/kg | 1350 | -- | 1000 |
| Cl3-BZ#28 | 17700 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#52 | 27000 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#44 | 8800 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#66 | 6570 | | ug/kg | 1350 | -- | 1000 |
| Cl5-BZ#101 | 3270 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-10 | Date Collected: | 10/18/10 11:57 |
| Client ID: | S-10O-C010-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 19:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 10100 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 19100 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 28000 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 6960 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 1440 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 2270 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 910 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | 273 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 472 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 339 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 114 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-10 | Date Collected: | 10/18/10 11:57 |
| Client ID: | S-10O-C010-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/15/10 19:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 13700 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 9190 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 3360 | E | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 2910 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 289 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 114 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-10 | D | Date Collected: | 10/18/10 11:57 |
| Client ID: | S-10O-C010-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 19:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 27000 | | ug/kg | 2670 | -- | 2000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-10 | D | Date Collected: | 10/18/10 11:57 |
| Client ID: | S-10O-C010-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 13:53 |
| Analytical Date: | 11/17/10 19:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 15800 | | ug/kg | 2670 | -- | 2000 |
| Cl3-BZ#28 | 30000 | | ug/kg | 2670 | -- | 2000 |
| Cl4-BZ#52 | 43100 | | ug/kg | 2670 | -- | 2000 |
| Cl4-BZ#44 | 14200 | | ug/kg | 2670 | -- | 2000 |
| Cl4-BZ#66 | 9530 | | ug/kg | 2670 | -- | 2000 |
| Cl5-BZ#101 | 5010 | | ug/kg | 2670 | -- | 2000 |
| Cl6-BZ#153 | 4310 | | ug/kg | 2670 | -- | 2000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-11 | Date Collected: | 10/18/10 11:20 |
| Client ID: | S-10O-C011-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 20:39 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3840 | E | ug/kg | 133 | -- | 100 |
| Cl3-BZ#18 | 8080 | E | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 1260 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | 216 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | 288 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | 214 | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-11 | Date Collected: | 10/18/10 11:20 |
| Client ID: | S-10O-C011-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 20:39 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 8260 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 14700 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 4840 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 3470 | E | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 1970 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 1080 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 2000 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | 212 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 487 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-11 | D | Date Collected: | 10/18/10 11:20 |
| Client ID: | S-10O-C011-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 13:07 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 10100 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-11 | D | Date Collected: | 10/18/10 11:20 |
| Client ID: | S-10O-C011-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 13:07 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5170 | | ug/kg | 1330 | -- | 1000 |
| Cl3-BZ#28 | 11800 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#52 | 19400 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#44 | 6120 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#66 | 4280 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-12 | Date Collected: | 10/18/10 11:46 |
| Client ID: | S-10O-C012-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 21:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5080 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 9260 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 17400 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 4160 | E | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 1520 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 577 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | 244 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 243 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-12 | Date Collected: | 10/18/10 11:46 |
| Client ID: | S-10O-C012-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 21:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 10800 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 5700 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 2330 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 1250 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 2310 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 239 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 336 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-12 | D | Date Collected: | 10/18/10 11:46 |
| Client ID: | S-10O-C012-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 13:48 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 12900 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-12 | D | Date Collected: | 10/18/10 11:46 |
| Client ID: | S-10O-C012-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 13:48 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6270 | | ug/kg | 1340 | -- | 1000 |
| Cl3-BZ#28 | 14500 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 23400 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#44 | 7140 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#66 | 5000 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-13 | Date Collected: | 10/18/10 11:30 |
| Client ID: | S-10O-C013-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 22:02 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4160 | E | ug/kg | 133 | -- | 100 |
| Cl3-BZ#18 | 6040 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 17700 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 4340 | E | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 1700 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | 621 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | 276 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | 269 | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-13 | Date Collected: | 10/18/10 11:30 |
| Client ID: | S-10O-C013-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 22:02 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9940 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 5750 | E | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 2470 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 1410 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 2510 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | 273 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | 360 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-13 | D | Date Collected: | 10/18/10 11:30 |
| Client ID: | S-10O-C013-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 14:29 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5420 | | ug/kg | 1330 | -- | 1000 |
| Cl3-BZ#18 | 12300 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-13 | D | Date Collected: | 10/18/10 11:30 |
| Client ID: | S-10O-C013-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 14:29 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 14500 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#52 | 23400 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#44 | 7430 | | ug/kg | 1330 | -- | 1000 |
| Cl4-BZ#66 | 5290 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-14 | Date Collected: | 10/19/10 09:47 |
| Client ID: | S-10O-C014-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 22:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1540 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 317 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 78 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-14 | Date Collected: | 10/19/10 09:47 |
| Client ID: | S-10O-C014-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 22:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 785 | | ug/kg | 133 | -- | 100 |
| Cl3-BZ#28 | 2170 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 3570 | E | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 1200 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 868 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 549 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 327 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 551 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-14 | D | Date Collected: | 10/19/10 09:47 |
| Client ID: | S-10O-C014-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 15:10 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 3790 | | ug/kg | 1330 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-15 | Date Collected: | 10/19/10 10:02 |
| Client ID: | S-10O-C015-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/16/10 00:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5710 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 10600 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 18400 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 4110 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 1120 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 1500 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 597 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | 227 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 324 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 250 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017218-15 | Date Collected: | 10/19/10 10:02 |
| Client ID: | S-10O-C015-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/16/10 00:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11100 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 5420 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 2080 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 2090 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 219 | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 81 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-15 | D | Date Collected: | 10/19/10 10:02 |
| Client ID: | S-10O-C015-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 17:14 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 6250 | | ug/kg | 1340 | -- | 1000 |
| Cl3-BZ#18 | 13500 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#66 | 4570 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017218-15 | D | Date Collected: | 10/19/10 10:02 |
| Client ID: | S-10O-C015-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/04/10 15:41 |
| Analytical Date: | 11/15/10 17:14 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/09/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 13600 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 21900 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#44 | 6410 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/13/10 03:59
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 11/04/10 13:53
Cleanup Method1: EPA 3630
Cleanup Date1: 11/09/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-15 Batch: WG441250-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/13/10 03:59
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 11/04/10 13:53
Cleanup Method1: EPA 3630
Cleanup Date1: 11/09/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-15 Batch: WG441250-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

| 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): 01-15 QC Batch ID: WG441250-4 WG441250-5 QC Sample: L1017218-14 Client ID: S-10O-C014-0-0.5 | | | | | | | | | | | | |
| Cl3-BZ#18 | 1540 | 1680 | 3200 | 99 | | 3180 | 98 | | 40-140 | 1 | | 30 |
| Cl4-BZ#52 | 3790 | 1680 | 5620 | 109 | | 5600 | 108 | | 40-140 | 9 | | 30 |
| Cl5-BZ#105 | ND | 1680 | 1550 | 92 | | 1520 | 91 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 317 | 1680 | 1770 | 87 | | 1740 | 85 | | 40-140 | 2 | | 30 |
| Cl6-BZ#128 | ND | 1680 | 1500 | 89 | | 1480 | 88 | | 40-140 | 1 | | 30 |
| Cl7-BZ#180 | ND | 1680 | 1520 | 91 | | 1500 | 89 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | ND | 1680 | 1470 | 88 | | 1460 | 87 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | ND | 1680 | 1430 | 85 | | 1420 | 85 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | ND | 1680 | 1580 | 94 | | 1550 | 92 | | 40-140 | 2 | | 30 |
| Cl10-BZ#209 | ND | 1680 | 1370 | 82 | | 1360 | 81 | | 40-140 | 1 | | 30 |
| Cl2-BZ#8 | 785 | 1680 | 2060 | 76 | | 1970 | 71 | | 40-140 | 4 | | 30 |
| Cl3-BZ#28 | 2170 | 1680 | 4120 | 116 | | 4120 | 116 | | 40-140 | 0 | | 30 |
| Cl4-BZ#44 | 1200 | 1680 | 2730 | 91 | | 2620 | 85 | | 40-140 | 4 | | 30 |
| Cl4-BZ#66 | 868 | 1680 | 2490 | 97 | | 2410 | 92 | | 40-140 | 3 | | 30 |
| Cl5-BZ#101 | 549 | 1680 | 2060 | 90 | | 1990 | 86 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 327 | 1680 | 1930 | 96 | | 1870 | 92 | | 40-140 | 3 | | 30 |
| Cl6-BZ#153 | 551 | 1680 | 1940 | 83 | | 1890 | 80 | | 40-140 | 3 | | 30 |
| Cl7-BZ#187 | ND | 1680 | 1470 | 88 | | 1550 | 92 | | 40-140 | 5 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

| 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): 01-15 QC Batch ID: WG441250-4 WG441250-5 QC Sample: L1017218-14 Client ID: S-10O-C014-0-0.5 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 90 | | 88 | | 30-150 |
| BZ 198 | 85 | | 82 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NBH
**Project Number:** TO-0010-03
**Lab Number:** L1017218
**Report Date:** 11/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-15 Batch: WG441250-2 WG441250-3 | | | | | | | | |
| Cl2-BZ#8 | 77 | | 76 | | 40-140 | 1 | | 30 |
| Cl3-BZ#18 | 76 | | 81 | | 40-140 | 6 | | 30 |
| Cl3-BZ#28 | 86 | | 86 | | 40-140 | 0 | | 30 |
| Cl4-BZ#52 | 87 | | 82 | | 40-140 | 6 | | 30 |
| Cl4-BZ#44 | 82 | | 87 | | 40-140 | 6 | | 30 |
| Cl4-BZ#66 | 87 | | 84 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 88 | | 86 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 89 | | 86 | | 40-140 | 3 | | 30 |
| Cl5-BZ#105 | 85 | | 83 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 88 | | 86 | | 40-140 | 2 | | 30 |
| Cl7-BZ#187 | 85 | | 82 | | 40-140 | 4 | | 30 |
| Cl6-BZ#128 | 88 | | 86 | | 40-140 | 2 | | 30 |
| Cl7-BZ#180 | 88 | | 86 | | 40-140 | 2 | | 30 |
| Cl7-BZ#170 | 85 | | 84 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | 83 | | 82 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | 94 | | 91 | | 40-140 | 3 | | 30 |
| Cl10-BZ#209 | 85 | | 85 | | 40-140 | 0 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH **Lab Number:** L1017218

**Project Number:** TO-0010-03 **Report Date:** 11/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-15 Batch: WG441250-2 WG441250-3 | | | | | | | |
| DBOB | 86 | | 87 | | 30-150 | | | |
| BZ 198 | 89 | | 85 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-15 Batch: WG441250-2 WG441250-3 | | | | | | | |
| Cl6-BZ#153 | 82 | | 80 | | 40-140 | 2 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 86 | | 87 | | 30-150 |
| BZ 198 | 89 | | 85 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-01
Client ID: S-10O-C001-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 09:20
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.6 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-02
Client ID: S-10O-C002-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 09:38
Date Received: 10/29/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.2 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-03
Client ID: S-10O-C003-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 09:48
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.2 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-04
Client ID: S-10O-C004-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 10:00
Date Received: 10/29/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.6 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-05
Client ID: S-10O-C005-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 10:16
Date Received: 10/29/10
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 | 96.8 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 36.1 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-06
Client ID: S-10O-C006-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 10:32
Date Received: 10/29/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.6 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-07
Client ID: S-10O-C007-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 10:42
Date Received: 10/29/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 48.6 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-08
Client ID: S-10O-C008-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 10:55
Date Received: 10/29/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 39.3 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-09
Client ID: S-10O-C009-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 11:06
Date Received: 10/29/10
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 | 97.3 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 34.0 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-10
Client ID: S-10O-C010-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 11:57
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 34.7 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-11
Client ID: S-10O-C011-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 11:20
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.0 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-12
Client ID: S-10O-C012-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 11:46
Date Received: 10/29/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.7 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-13
Client ID: S-10O-C013-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/18/10 11:30
Date Received: 10/29/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.1 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-14
Client ID: S-10O-C014-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 09:47
Date Received: 10/29/10
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 | 98.3 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.8 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## SAMPLE RESULTS

Lab ID: L1017218-15
Client ID: S-10O-C015-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/19/10 10:02
Date Received: 10/29/10
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 | 97.9 | | % | 0.100 | -- | 1 | - | 11/04/10 13:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.4 | | % | 0.100 | NA | 1 | - | 11/02/10 07:26 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG441179-1 QC Sample: L1017218-01 Client ID: S-10O-C001-0-0.5 | | | | | | |
| Solids, Total | 97.8 | 98.2 | % | 0 | | 20 |

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

## 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 |
| B | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1017218-01A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-02A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-03A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-04A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-05A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-06A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-07A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-08A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-09A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-10A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-11A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-12A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-13A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-14A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-14B | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-MS/MSD() |
| L1017218-15A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017218-16A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-17A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-18A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |

*Values in parentheses indicate holding time in days

**Project Name:** NBH
**Project Number:** TO-0010-03

**Lab Number:** L1017218
**Report Date:** 11/29/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1017218-19A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-20A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-21A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-22A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-23A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-24A | Glass 250ml unpreserved | B | N/A | -3 | Y | Absent | - |
| L1017218-25A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-26A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-26B | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-27A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-28A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-29A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-30A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-31A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-32A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-33A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-34A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-35A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-36A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-37A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-38A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-39A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-40A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-41A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-41B | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-42A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-43A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-44A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-45A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |
| L1017218-46A | Glass 250ml unpreserved | A | N/A | -2 | Y | Absent | - |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH | **Lab Number:** | L1017218 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/29/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH | **Lab Number:** | L1017218 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/29/10 |

***Data Qualifiers***

**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:** | NBH | **Lab Number:** | L1017218 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/29/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No. 91022:02

Date Rec'd in Lab:

ALPHA Job #: L1017218

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX ☒ ADEx

**Data Deliverables**

☒ EMAIL ☐ Add'l Deliverables

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1017218-1 | S-10O-C001-0-0.5 | 10/18/10 | 09:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KZ2 | 1 |
| 2 | S-10O-C002-0-0.5 | 10/18/10 | 09:38 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KY5 | 1 |
| 3 | S-10O-C003-0-0.5 | 10/18/10 | 09:48 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KBB4 | 1 |
| 4 | S-10O-C004-0-0.5 | 10/18/10 | 10:00 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KDD2 | 1 |
| 5 | S-10O-C005-0-0.5 | 10/18/10 | 10:16 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KHH2 | 1 |
| 6 | S-10O-C006-0-0.5 | 10/18/10 | 10:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK2 | 1 |
| 7 | S-10O-C007-0-0.5 | 10/18/10 | 10:42 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK4 | 1 |
| 8 | S-10O-C008-0-0.5 | 10/18/10 | 10:55 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KHH4 | 1 |
| 9 | S-10O-C009-0-0.5 | 10/18/10 | 11:06 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KFF4 | 1 |
| 10 | S-10O-C010-0-0.5 | 10/18/10 | 11:57 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KFF8 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 10/29/10 18:00 | | 10/29/10 18:00 |

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

# CHAIN OF CUSTODY



ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:20101022:02

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Date Rec'd in Lab:
ALPHA Job #: L1017218

**Report Information** ☐ FAX ☒ ADEx
**Data Deliverables** ☒ EMAIL ☐ Add'l Deliverables
**Billing Information** ☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | S-10O-C011-0-0.5 | 10/18/10 | 11:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII6 | 1 |
| 12 | S-10O-C012-0-0.5 | 10/18/10 | 11:46 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KHH8 | 1 |
| 13 | S-10O-C013-0-0.5 | 10/18/10 | 11:30 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK7 | 1 |
| 14 | S-10O-C014-0-0.5 | 10/19/10 | 09:47 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK9 | 1 |
| 15 | S-10O-C015-0-0.5 | 10/19/10 | 10:02 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KGG11 | 1 |
| 16 | S-10O-C016-0-0.5 | 10/19/10 | 10:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII12 | 1 |
| 17 | S-10O-C017-0-0.5 | 10/19/10 | 10:44 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII14 | 1 |
| 18 | S-10O-C018-0-0.5 | 10/19/10 | 10:55 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KFF15 | 1 |
| 19 | S-10O-C019-0-0.5 | 10/19/10 | 10:33 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK15 | 1 |
| 20 | S-10O-C020-0-0.5 | 10/19/10 | 11:05 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KII17 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
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| | 10/29/10 18:00 | | 10/29/10 18:00 |

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FORM NO: 01-01(I-NJ)
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# CHAIN OF CUSTODY

PAGE 3 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1017218

**Client Information**

Client: Woods Hole Group
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E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: dwalsh@whgrp.com

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**Project Information**

Project Name: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX ☒ EMAIL
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**Data Deliverables**

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | S-10O-C021-0-0.5 | 10/19/10 | 11:27 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KGG19 | 1 |
| 22 | S-10O-C022-0-0.5 | 10/19/10 | 11:15 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KJJ19 | 1 |
| 23 | S-10O-C023-0-0.5 | 10/19/10 | 09:31 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KCC6 | 1 |
| 24 | S-10O-C024-0-0.5 | 10/19/10 | 09:23 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KY7 | 1 |
| 25 | S-10O-C025-0-0.5 | 10/19/10 | 10:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK13 | 1 |
| 26 | S-10O-C026-0-0.5 | 10/20/10 | 09:36 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GD30 | 1 |
| 27 | S-10O-C027-0-0.5 | 10/20/10 | 09:27 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GD34 | 1 |
| 28 | S-10O-C028-0-0.5 | 10/20/10 | 09:52 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GJ29 | 1 |
| 29 | S-10O-C029-0-0.5 | 10/20/10 | 09:18 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GH34 | 1 |
| 30 | S-10O-C030-0-0.5 | 10/20/10 | 09:07 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GI36 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 16:00 | [signature] | 10/29/10 18:00 |

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)



Serial No 291022:02

# CHAIN OF CUSTODY



ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1017218

## Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
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Phone: 508-540-8080
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Email: dwalsh@whgrp.com

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Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

## Turn-Around Time

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Due Date: Time:

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☐ FAX ☒ EMAIL
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## Billing Information

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## Regulatory Requirements/Report Limits

| State/Fed Program | Criteria |
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Level III data report & Project-specific EDD

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## ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
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|---|---|---|---|---|---|---|---|---|
| 31 | S-10O-C031-0-0.5 | 10/20/10 | 09:56 | SED | KGM | ☒ | GN32 | 1 |
| 32 | S-10O-C032-0-0.5 | 10/20/10 | 11:03 | SED | KGM | ☒ | GM37 | 1 |
| 33 | S-10O-C033-0-0.5 | 10/20/10 | 10:09 | SED | KGM | ☒ | GS29 | 1 |
| 34 | S-10O-C034-0-0.5 | 10/20/10 | 10:51 | SED | KGM | ☒ | GR35 | 1 |
| 35 | S-10O-C035-0-0.5 | 10/20/10 | 10:31 | SED | KGM | ☒ | GV32 | 1 |
| 36 | S-10O-C036-0-0.5 | 10/20/10 | 10:19 | SED | KGM | ☒ | GY29 | 1 |
| 37 | S-10O-C037-0-0.5 | 10/20/10 | 10:39 | SED | KGM | ☒ | GW36 | 1 |
| 38 | S-10O-C038-0-0.5 | 10/20/10 | 08:58 | SED | KGM | ☒ | MB3 | 1 |
| 39 | S-10O-C039-0-0.5 | 10/21/10 | 10:41 | SED | KGM | ☒ | MA4 | 1 |
| 40 | S-10O-C040-0-0.5 | 10/21/10 | 09:22 | SED | KGM | ☒ | MB5 | 1 |
| | | | | | Container Type | A | | |
| | | | | | Preservative | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 18:00 | [signature] | 10/29/10 18:00 |

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)





Serial No 9102202

# CHAIN OF CUSTODY

PAGE 5 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:20101022:02

**Client Information**

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Email: dwalsh@whgrp.com

☐ These samples have been Previously analyzed by Alpha

**Project Information**

Project Name: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Date Rec'd in Lab:

ALPHA Job #: L1017218

**Report Information**

☐ FAX
☒ ADEx

**Data Deliverables**

☒ EMAIL
☐ Add'l Deliverables

**Billing Information**

☒ Same as Client info
PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | S-10O-C041-0-0.5 | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| 42 | S-10O-C042-0-0.5 | 10/21/10 | 09:44 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB8 | 1 |
| 43 | S-10O-C043-0-0.5 | 10/21/10 | 10:27 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA9 | 1 |
| 44 | S-10O-C044-0-0.5 | 10/21/10 | 09:57 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB11 | 1 |
| 45 | S-10O-C045-0-0.5 | 10/21/10 | 09:11 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ME7 | 1 |
| 46 | S-10O-C046-0-0.5 | 08/18/10 | 08:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | JL24 | 1 |
| ~14 | S-10O-C014-0-0.5MSMSD | 10/19/10 | 09:47 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK9 | 1 |
| ~26 | S-10O-C026-0-0.5MSMSD | 10/20/10 | 09:36 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GD30 | 1 |
| ~41 | S-10O-C041-0-0.5MSMSD | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | 0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | - | - | - | - | - | - | - | - | - | - | - |
| Preservative | A | - | - | - | - | - | - | - | - | - | - | - |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 18:00 | [signature] | 10/29/10 18:00 |
| | | | |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1017460 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 11/30/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1017460-01 | S-10O-C031-0-0.5 | NEW BEDFORD, MA | 10/20/10 09:56 |
| L1017460-02 | S-10O-C032-0-0.5 | NEW BEDFORD, MA | 10/20/10 11:03 |
| L1017460-03 | S-10O-C033-0-0.5 | NEW BEDFORD, MA | 10/20/10 10:09 |
| L1017460-04 | S-10O-C034-0-0.5 | NEW BEDFORD, MA | 10/20/10 10:51 |
| L1017460-05 | S-10O-C035-0-0.5 | NEW BEDFORD, MA | 10/20/10 10:31 |
| L1017460-06 | S-10O-C036-0-0.5 | NEW BEDFORD, MA | 10/20/10 10:19 |
| L1017460-07 | S-10O-C037-0-0.5 | NEW BEDFORD, MA | 10/20/10 10:39 |
| L1017460-08 | S-10O-C038-0-0.5 | NEW BEDFORD, MA | 10/20/10 08:58 |
| L1017460-09 | S-10O-C039-0-0.5 | NEW BEDFORD, MA | 10/21/10 10:41 |
| L1017460-10 | S-10O-C040-0-0.5 | NEW BEDFORD, MA | 10/21/10 09:22 |
| L1017460-11 | S-10O-C041-0-0.5 | NEW BEDFORD, MA | 10/21/10 09:32 |
| L1017460-12 | S-10O-C042-0-0.5 | NEW BEDFORD, MA | 10/21/10 09:44 |
| L1017460-13 | S-10O-C043-0-0.5 | NEW BEDFORD, MA | 10/21/10 10:27 |
| L1017460-14 | S-10O-C044-0-0.5 | NEW BEDFORD, MA | 10/21/10 09:57 |
| L1017460-15 | S-10O-C045-0-0.5 | NEW BEDFORD, MA | 10/21/10 09:11 |
| L1017460-16 | S-10O-C046-0-0.5 | NEW BEDFORD, MA | 08/18/10 08:20 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017460 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/30/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on October 29, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on November 4 until they were removed and placed in refrigerated storage November 8 until November 11, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017460 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/30/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1017460-01 through 16 were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

L1017460-01 through 16 (except for 07 & 10) were re-analyzed on further dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

The WG442523-4 MS recoveries, performed on L1017460-11, are outside the acceptance criteria for Cl3-BZ#18 (32%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD.

The WG442523-5 MSD recoveries, performed on L1017460-11, are outside the acceptance criteria for Cl2-BZ#8 (19%), Cl3-BZ#18 (0%), Cl3-BZ#28 (6%), Cl4-BZ#52(0%), Cl2-BZ#138 (38%), Cl4-BZ#44 (20%), Cl4-BZ#66 (29%) and Cl6-BZ#153 (35%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the sample utilized for the MS/MSD.

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: 11/30/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-01 | Date Collected: | 10/20/10 09:56 |
| Client ID: | S-10O-C031-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 12:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3010 | E | ug/kg | 136 | -- | 100 |
| Cl3-BZ#18 | 5570 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 8920 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 2060 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#118 | 736 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#138 | 771 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#187 | 278 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#128 | 148 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#180 | 169 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#170 | 147 | | ug/kg | 136 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 136 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 136 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 63 | | 30-150 |
| BZ 198 | 58 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-01 | Date Collected: | 10/20/10 09:56 |
| Client ID: | S-10O-C031-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 12:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6070 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 2440 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#101 | 1200 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#153 | 1190 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#105 | 163 | | ug/kg | 136 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 63 | 30-150 |
| BZ 198 | 58 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-01 | D | Date Collected: | 10/20/10 09:56 |
| Client ID: | S-10O-C031-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/17/10 23:15 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3540 | | ug/kg | 1360 | -- | 1000 |
| Cl3-BZ#18 | 7390 | | ug/kg | 1360 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-01 | D | Date Collected: | 10/20/10 09:56 |
| Client ID: | S-10O-C031-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/17/10 23:15 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7990 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#52 | 11100 | | ug/kg | 1360 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-02 | Date Collected: | 10/20/10 11:03 |
| Client ID: | S-10O-C032-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 13:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2660 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#138 | 390 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 137 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 137 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 137 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 137 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 53 | | 30-150 |
| BZ 198 | 49 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-02 | Date Collected: | 10/20/10 11:03 |
| Client ID: | S-10O-C032-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 13:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1400 | | ug/kg | 137 | -- | 100 |
| Cl3-BZ#28 | 3600 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#52 | 4620 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#44 | 1220 | | ug/kg | 137 | -- | 100 |
| Cl4-BZ#66 | 994 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#101 | 637 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#118 | 386 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#153 | 594 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#187 | 143 | | ug/kg | 137 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 53 | | 30-150 |
| BZ 198 | 49 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-02 | D | Date Collected: | 10/20/10 11:03 |
| Client ID: | S-10O-C032-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/17/10 23:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 6190 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-02 | D | Date Collected: | 10/20/10 11:03 |
| Client ID: | S-10O-C032-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/17/10 23:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4440 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-03 | Date Collected: | 10/20/10 10:09 |
| Client ID: | S-10O-C033-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 14:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 730 | | ug/kg | 132 | -- | 100 |
| Cl3-BZ#18 | 1670 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 872 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 397 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 446 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 141 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-03 | Date Collected: | 10/20/10 10:09 |
| Client ID: | S-10O-C033-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 14:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1970 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 3540 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 1060 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 615 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 581 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-03 | D | Date Collected: | 10/20/10 10:09 |
| Client ID: | S-10O-C033-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 00:37 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4280 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-04 | Date Collected: | 10/20/10 10:51 |
| Client ID: | S-10O-C034-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 14:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2860 | E | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 543 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 603 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | 142 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-04 | Date Collected: | 10/20/10 10:51 |
| Client ID: | S-10O-C034-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 14:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1550 | | ug/kg | 135 | -- | 100 |
| Cl3-BZ#28 | 3770 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 6420 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 1940 | | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 1580 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 1010 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 934 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 218 | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-04 | D | Date Collected: | 10/20/10 10:51 |
| Client ID: | S-10O-C034-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 01:19 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3650 | | ug/kg | 1350 | -- | 1000 |
| Cl4-BZ#52 | 7160 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-04 | D | Date Collected: | 10/20/10 10:51 |
| Client ID: | S-10O-C034-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 01:19 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4100 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-05 | Date Collected: | 10/20/10 10:31 |
| Client ID: | S-10O-C035-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 15:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 643 | | ug/kg | 135 | -- | 100 |
| Cl3-BZ#18 | 1050 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#138 | 470 | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#187 | 150 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 135 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 135 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 135 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 135 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 74 | 30-150 |
| BZ 198 | 70 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-05 | Date Collected: | 10/20/10 10:31 |
| Client ID: | S-10O-C035-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 15:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2150 | | ug/kg | 135 | -- | 100 |
| Cl4-BZ#52 | 3660 | E | ug/kg | 135 | -- | 100 |
| Cl4-BZ#44 | 1120 | | ug/kg | 135 | -- | 100 |
| Cl4-BZ#66 | 996 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#101 | 698 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#118 | 459 | | ug/kg | 135 | -- | 100 |
| Cl6-BZ#153 | 653 | | ug/kg | 135 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 135 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 135 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-05 | D | Date Collected: | 10/20/10 10:31 |
| Client ID: | S-10O-C035-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 02:00 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4840 | | ug/kg | 1350 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-06 | Date Collected: | 10/20/10 10:19 |
| Client ID: | S-10O-C036-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 16:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1520 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#138 | 342 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 136 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 136 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 136 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 136 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 77 | 30-150 |
| BZ 198 | 65 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-06 | Date Collected: | 10/20/10 10:19 |
| Client ID: | S-10O-C036-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 16:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2240 | | ug/kg | 136 | -- | 100 |
| Cl3-BZ#28 | 2210 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 4100 | E | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 1090 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 706 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#101 | 532 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#118 | 259 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#153 | 442 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-06 | D | Date Collected: | 10/20/10 10:19 |
| Client ID: | S-10O-C036-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 02:41 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4660 | | ug/kg | 1360 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-07 | Date Collected: | 10/20/10 10:39 |
| Client ID: | S-10O-C037-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 17:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 746 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 216 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 226 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 74 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-07 | Date Collected: | 10/20/10 10:39 |
| Client ID: | S-10O-C037-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 17:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 357 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#28 | 1110 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 1860 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 554 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 486 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 340 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 302 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 74 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-08 | Date Collected: | 10/20/10 08:58 |
| Client ID: | S-10O-C038-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 17:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1370 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 88 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-08 | Date Collected: | 10/20/10 08:58 |
| Client ID: | S-10O-C038-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 17:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1120 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#28 | 1850 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 2820 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 557 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 508 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 234 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 251 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-08 | D | Date Collected: | 10/20/10 08:58 |
| Client ID: | S-10O-C038-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 04:03 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 2810 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-09 | Date Collected: | 10/21/10 10:41 |
| Client ID: | S-10O-C039-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 19:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 250 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 1230 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 3120 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 1480 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 1020 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 848 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 187 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 152 | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-09 | Date Collected: | 10/21/10 10:41 |
| Client ID: | S-10O-C039-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 19:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1980 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 822 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 899 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 803 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 309 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 188 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | 162 | | ug/kg | 134 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 64 | 30-150 |
| BZ 198 | 59 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-09 | D | Date Collected: | 10/21/10 10:41 |
| Client ID: | S-10O-C039-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 05:25 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 3530 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-10 | Date Collected: | 10/21/10 09:22 |
| Client ID: | S-10O-C040-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 19:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 676 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 76 | 30-150 |
| BZ 198 | 69 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-10 | Date Collected: | 10/21/10 09:22 |
| Client ID: | S-10O-C040-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 10:22 |
| Analytical Date: | 11/18/10 19:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 402 | | ug/kg | 132 | -- | 100 |
| Cl3-BZ#28 | 823 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 2060 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 357 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 380 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 177 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | ND | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 198 | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-11 | Date Collected: | 10/21/10 09:32 |
| Client ID: | S-10O-C041-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 20:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3020 | E | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 6010 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 585 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 255 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-11 | Date Collected: | 10/21/10 09:32 |
| Client ID: | S-10O-C041-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 20:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5940 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 9490 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 2210 | | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 1920 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 936 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 501 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 1050 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-11 D | Date Collected: | 10/21/10 09:32 |
| Client ID: | S-10O-C041-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 06:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6570 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-11 | D | Date Collected: | 10/21/10 09:32 |
| Client ID: | S-10O-C041-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 06:47 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3040 | | ug/kg | 1340 | -- | 1000 |
| Cl3-BZ#28 | 5420 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 9880 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-12 | Date Collected: | 10/21/10 09:44 |
| Client ID: | S-10O-C042-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 22:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5170 | E | ug/kg | 131 | -- | 100 |
| Cl6-BZ#138 | 443 | | ug/kg | 131 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 131 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 131 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 131 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 131 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 66 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-12 | Date Collected: | 10/21/10 09:44 |
| Client ID: | S-10O-C042-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 22:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3340 | E | ug/kg | 131 | -- | 100 |
| Cl3-BZ#28 | 6360 | E | ug/kg | 131 | -- | 100 |
| Cl4-BZ#52 | 8480 | E | ug/kg | 131 | -- | 100 |
| Cl4-BZ#44 | 1830 | | ug/kg | 131 | -- | 100 |
| Cl4-BZ#66 | 1620 | | ug/kg | 131 | -- | 100 |
| Cl5-BZ#101 | 869 | | ug/kg | 131 | -- | 100 |
| Cl5-BZ#118 | 585 | | ug/kg | 131 | -- | 100 |
| Cl6-BZ#153 | 920 | | ug/kg | 131 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 131 | -- | 100 |
| Cl7-BZ#187 | 210 | | ug/kg | 131 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 131 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 131 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 66 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-12 | D | Date Collected: | 10/21/10 09:44 |
| Client ID: | S-10O-C042-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 08:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6980 | | ug/kg | 1310 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-12 | D | Date Collected: | 10/21/10 09:44 |
| Client ID: | S-10O-C042-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 08:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3210 | | ug/kg | 1310 | -- | 1000 |
| Cl3-BZ#28 | 5510 | | ug/kg | 1310 | -- | 1000 |
| Cl4-BZ#52 | 8460 | | ug/kg | 1310 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-13 | Date Collected: | 10/21/10 10:27 |
| Client ID: | S-10O-C043-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 23:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1750 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#18 | 24700 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 107000 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 1960 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 1180 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 2160 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 131 | | 30-150 |
| BZ 198 | 120 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-13 | Date Collected: | 10/21/10 10:27 |
| Client ID: | S-10O-C043-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 23:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3430 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 5550 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 4520 | E | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 5760 | E | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | 304 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | 1570 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | 164 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | 166 | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | 149 | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 131 | | 30-150 |
| BZ 198 | 120 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-13 | D2 | Date Collected: | 10/21/10 10:27 |
| Client ID: | S-10O-C043-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/19/10 23:04 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 169000 | | ug/kg | 13400 | -- | 10000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-13 | D | Date Collected: | 10/21/10 10:27 |
| Client ID: | S-10O-C043-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 09:31 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 25800 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-13 | D | Date Collected: | 10/21/10 10:27 |
| Client ID: | S-10O-C043-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 09:31 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3420 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#66 | 5280 | | ug/kg | 1340 | -- | 1000 |
| Cl5-BZ#101 | 4570 | | ug/kg | 1340 | -- | 1000 |
| Cl6-BZ#153 | 5850 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-14 | Date Collected: | 10/21/10 09:57 |
| Client ID: | S-10O-C044-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 23:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4840 | E | ug/kg | 132 | -- | 100 |
| Cl6-BZ#138 | 300 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 132 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 132 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 132 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 132 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 72 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-14 | Date Collected: | 10/21/10 09:57 |
| Client ID: | S-10O-C044-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 23:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3340 | E | ug/kg | 132 | -- | 100 |
| Cl3-BZ#28 | 6970 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#52 | 7590 | E | ug/kg | 132 | -- | 100 |
| Cl4-BZ#44 | 1240 | | ug/kg | 132 | -- | 100 |
| Cl4-BZ#66 | 1050 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#101 | 682 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#118 | 410 | | ug/kg | 132 | -- | 100 |
| Cl6-BZ#153 | 638 | | ug/kg | 132 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#187 | 142 | | ug/kg | 132 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 132 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 72 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-14 | D | Date Collected: | 10/21/10 09:57 |
| Client ID: | S-10O-C044-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 10:12 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5800 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-14 | D | Date Collected: | 10/21/10 09:57 |
| Client ID: | S-10O-C044-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 10:12 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3420 | | ug/kg | 1320 | -- | 1000 |
| Cl3-BZ#28 | 6020 | | ug/kg | 1320 | -- | 1000 |
| Cl4-BZ#52 | 7620 | | ug/kg | 1320 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-15 | Date Collected: | 10/21/10 09:11 |
| Client ID: | S-10O-C045-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/19/10 00:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3280 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#66 | 903 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#101 | 805 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#138 | 296 | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 134 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 134 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 134 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 134 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 62 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-15 | Date Collected: | 10/21/10 09:11 |
| Client ID: | S-10O-C045-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/19/10 00:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1990 | | ug/kg | 134 | -- | 100 |
| Cl3-BZ#28 | 3890 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#52 | 4760 | E | ug/kg | 134 | -- | 100 |
| Cl4-BZ#44 | 1230 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#118 | 334 | | ug/kg | 134 | -- | 100 |
| Cl6-BZ#153 | 548 | | ug/kg | 134 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 134 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 62 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-15 | D | Date Collected: | 10/21/10 09:11 |
| Client ID: | S-10O-C045-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 10:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4470 | | ug/kg | 1340 | -- | 1000 |
| Cl4-BZ#52 | 4850 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-15 | D | Date Collected: | 10/21/10 09:11 |
| Client ID: | S-10O-C045-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 10:53 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3590 | | ug/kg | 1340 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-16 | Date Collected: | 08/18/10 08:20 |
| Client ID: | S-10O-C046-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/19/10 01:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6510 | E | ug/kg | 137 | -- | 100 |
| Cl6-BZ#138 | 898 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 137 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 137 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 137 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 137 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 58 | 30-150 |
| BZ 198 | 59 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1017460-16 | Date Collected: | 08/18/10 08:20 |
| Client ID: | S-10O-C046-0-0.5 | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/19/10 01:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3830 | E | ug/kg | 137 | -- | 100 |
| Cl3-BZ#28 | 7930 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#52 | 12600 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#44 | 4220 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#66 | 2980 | E | ug/kg | 137 | -- | 100 |
| Cl5-BZ#101 | 1640 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#118 | 651 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#153 | 1500 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#105 | 158 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#187 | 409 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#180 | 195 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#170 | 139 | | ug/kg | 137 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 58 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-16 | D | Date Collected: | 08/18/10 08:20 |
| Client ID: | S-10O-C046-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 11:34 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 8250 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1017460-16 | D | Date Collected: | 08/18/10 08:20 |
| Client ID: | S-10O-C046-0-0.5 | | Date Received: | 10/29/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/11/10 16:25 |
| Analytical Date: | 11/18/10 11:34 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/16/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4540 | | ug/kg | 1370 | -- | 1000 |
| Cl3-BZ#28 | 9600 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#52 | 15200 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#44 | 4620 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#66 | 3310 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/17/10 21:12
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 11/11/10 10:22
Cleanup Method1: EPA 3630
Cleanup Date1: 11/16/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-16 Batch: WG442523-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/17/10 21:12
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 11/11/10 10:22
Cleanup Method1: EPA 3630
Cleanup Date1: 11/16/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-16 Batch: WG442523-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

| 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): 01-16 QC Batch ID: WG442523-4 WG442523-5 QC Sample: L1017460-11 Client ID: S-10O-C041-0-0.5 | | | | | | | | | | | | |
| Cl3-BZ#18 | 6570 | 1660 | 7100 | **32** | Q | 6270 | **0** | Q | 40-140 | 12 | | 30 |
| Cl6-BZ#138 | 585 | 1660 | 1580 | 60 | | 1220 | **38** | Q | 40-140 | 26 | | 30 |
| Cl7-BZ#187 | 255 | 1660 | 1300 | 63 | | 976 | 43 | | 40-140 | 28 | | 30 |
| Cl6-BZ#128 | ND | 1660 | 1140 | 69 | | 882 | 53 | | 40-140 | 26 | | 30 |
| Cl7-BZ#180 | ND | 1660 | 1150 | 69 | | 874 | 53 | | 40-140 | 27 | | 30 |
| Cl7-BZ#170 | ND | 1660 | 1130 | 68 | | 861 | 52 | | 40-140 | 27 | | 30 |
| Cl8-BZ#195 | ND | 1660 | 1140 | 69 | | 891 | 54 | | 40-140 | 25 | | 30 |
| Cl9-BZ#206 | ND | 1660 | 1240 | 75 | | 940 | 56 | | 40-140 | 28 | | 30 |
| Cl10-BZ#209 | ND | 1660 | 1120 | 68 | | 832 | 50 | | 40-140 | 30 | | 30 |
| Cl2-BZ#8 | 3040 | 1660 | 4100 | 64 | | 3350 | **19** | Q | 40-140 | 20 | | 30 |
| Cl3-BZ#28 | 5420 | 1660 | 6440 | 62 | | 5520 | **6** | Q | 40-140 | 15 | | 30 |
| Cl4-BZ#52 | 9880 | 1660 | 10800 | 56 | | 8910 | **0** | Q | 40-140 | 19 | | 30 |
| Cl4-BZ#44 | 2210 | 1660 | 3150 | 57 | | 2540 | **20** | Q | 40-140 | 21 | | 30 |
| Cl4-BZ#66 | 1920 | 1660 | 2960 | 63 | | 2410 | **29** | Q | 40-140 | 20 | | 30 |
| Cl5-BZ#101 | 936 | 1660 | 2010 | 65 | | 1600 | **40** | | 40-140 | 23 | | 30 |
| Cl5-BZ#118 | 501 | 1660 | 1600 | 66 | | 1320 | 49 | | 40-140 | 19 | | 30 |
| Cl6-BZ#153 | 1050 | 1660 | 2060 | 61 | | 1640 | **35** | Q | 40-140 | 23 | | 30 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 77 | | 58 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1017460
**Report Date:** 11/30/10

| 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): 01-16 QC Batch ID: WG442523-4 WG442523-5 QC Sample: L1017460-11 Client ID: S-10O-C041-0-0.5 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 72 | | 54 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1017460
**Report Date:** 11/30/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-16 Batch: WG442523-2 WG442523-3 | | | | | | | | |
| Cl2-BZ#8 | 80 | | 79 | | 40-140 | 1 | | 30 |
| Cl3-BZ#18 | 74 | | 86 | | 40-140 | 15 | | 30 |
| Cl3-BZ#28 | 79 | | 92 | | 40-140 | 15 | | 30 |
| Cl4-BZ#52 | 82 | | 88 | | 40-140 | 7 | | 30 |
| Cl4-BZ#44 | 80 | | 82 | | 40-140 | 2 | | 30 |
| Cl4-BZ#66 | 80 | | 84 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 83 | | 85 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 84 | | 86 | | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 80 | | 81 | | 40-140 | 1 | | 30 |
| Cl6-BZ#138 | 85 | | 84 | | 40-140 | 1 | | 30 |
| Cl7-BZ#187 | 85 | | 86 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 86 | | 85 | | 40-140 | 1 | | 30 |
| Cl7-BZ#180 | 87 | | 85 | | 40-140 | 2 | | 30 |
| Cl7-BZ#170 | 86 | | 86 | | 40-140 | 0 | | 30 |
| Cl8-BZ#195 | 83 | | 88 | | 40-140 | 6 | | 30 |
| Cl9-BZ#206 | 95 | | 100 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 89 | | 92 | | 40-140 | 3 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1017460

**Project Number:** TO-0010-03 **Report Date:** 11/30/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-16 Batch: WG442523-2 WG442523-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 88 | | 92 | | 30-150 |
| DBOB | 82 | | 93 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-16 Batch: WG442523-2 WG442523-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 79 | | 82 | | 40-140 | 4 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 88 | | 92 | | 30-150 |
| DBOB | 82 | | 93 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-01
Client ID: S-10O-C031-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 09:56
Date Received: 10/29/10
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 | 96.7 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.7 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-02
Client ID: S-10O-C032-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 11:03
Date Received: 10/29/10
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 | 96.7 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.5 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-03
Client ID: S-10O-C033-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 10:09
Date Received: 10/29/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.5 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-04
Client ID: S-10O-C034-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 10:51
Date Received: 10/29/10
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 | 96.6 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 37.6 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-05
Client ID: S-10O-C035-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 10:31
Date Received: 10/29/10
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 | 97.7 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.4 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-06
Client ID: S-10O-C036-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 10:19
Date Received: 10/29/10
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 | 97.2 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.6 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-07
Client ID: S-10O-C037-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 10:39
Date Received: 10/29/10
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 | 97.2 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.8 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-08
Client ID: S-10O-C038-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/20/10 08:58
Date Received: 10/29/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 55.2 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-09
Client ID: S-10O-C039-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 10:41
Date Received: 10/29/10
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 | 97.7 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.8 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-10
Client ID: S-10O-C040-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 09:22
Date Received: 10/29/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 72.6 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-11
Client ID: S-10O-C041-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 09:32
Date Received: 10/29/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.7 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-12
Client ID: S-10O-C042-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 09:44
Date Received: 10/29/10
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 | 99.2 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 71.0 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-13
Client ID: S-10O-C043-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 10:27
Date Received: 10/29/10
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 | 97.1 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.6 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-14
Client ID: S-10O-C044-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 09:57
Date Received: 10/29/10
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 | 99.3 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 72.2 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-15
Client ID: S-10O-C045-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/21/10 09:11
Date Received: 10/29/10
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 | 97.3 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.6 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## SAMPLE RESULTS

Lab ID: L1017460-16
Client ID: S-10O-C046-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/18/10 08:20
Date Received: 10/29/10
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 | 95.6 | | % | 0.100 | -- | 1 | - | 11/10/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 41.2 | | % | 0.100 | NA | 1 | - | 11/08/10 14:30 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG442282-1 QC Sample: L1017460-01 Client ID: S-10O-C031-0-0.5 | | | | | | |
| Solids, Total | 96.7 | 96.8 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1017460
**Report Date:** 11/30/10

## 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(*) |
|---|---|---|---|---|---|---|---|
| L1017460-01A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-02A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-03A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-04A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-05A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-06A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-07A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-08A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-09A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-10A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-11A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD(),A2-TS-PREDRIED(7) |
| L1017460-11B | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-MS/MSD() |
| L1017460-12A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-13A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-14A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-15A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1017460-16A | Glass 250ml unpreserved | A | NA | -2 | NA | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017460 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/30/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1017460 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/30/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1017460 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/30/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 4 OF 5

L1017460

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No 20101558

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
SE. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Date Rec'd in Lab:

ALPHA Job #: L1017460

**Report Information**

☐ FAX
☒ ADEx

**Data Deliverables**

☒ EMAIL
☐ Add'l Deliverables

**Billing Information**

☒ Same as Client info
PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| L1017460-1 31 | S-10O-C031-0-0.5 | 10/20/10 | 09:56 | SED | KGM | ☒ | GN32 | 1 |
| -2 32 | S-10O-C032-0-0.5 | 10/20/10 | 11:03 | SED | KGM | ☒ | GM37 | 1 |
| -3 33 | S-10O-C033-0-0.5 | 10/20/10 | 10:09 | SED | KGM | ☒ | GS29 | 1 |
| -4 34 | S-10O-C034-0-0.5 | 10/20/10 | 10:51 | SED | KGM | ☒ | GR35 | 1 |
| -5 35 | S-10O-C035-0-0.5 | 10/20/10 | 10:31 | SED | KGM | ☒ | GV32 | 1 |
| -6 36 | S-10O-C036-0-0.5 | 10/20/10 | 10:19 | SED | KGM | ☒ | GY29 | 1 |
| -7 37 | S-10O-C037-0-0.5 | 10/20/10 | 10:39 | SED | KGM | ☒ | GW36 | 1 |
| -8 38 | S-10O-C038-0-0.5 | 10/20/10 | 08:58 | SED | KGM | ☒ | MB3 | 1 |
| -9 39 | S-10O-C039-0-0.5 | 10/21/10 | 10:41 | SED | KGM | ☒ | MA4 | 1 |
| -10 40 | S-10O-C040-0-0.5 | 10/21/10 | 09:22 | SED | KGM | ☒ | MB5 | 1 |
| | | | | | Container Type | A | | |
| | | | | | Preservative | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 16:00 | [signature] | 10/29/10 18:[illegible] |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

L1017460

# CHAIN OF CUSTODY

PAGE 5 OF 5

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1017460

## Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

## 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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -11 41 | S-10O-C041-0-0.5 | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| -12 42 | S-10O-C042-0-0.5 | 10/21/10 | 09:44 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB8 | 1 |
| -13 43 | S-10O-C043-0-0.5 | 10/21/10 | 10:27 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA9 | 1 |
| 14 44 | S-10O-C044-0-0.5 | 10/21/10 | 09:57 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MB11 | 1 |
| 15 45 | S-10O-C045-0-0.5 | 10/21/10 | 09:11 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ME7 | 1 |
| -16 46 | S-10O-C046-0-0.5 | 08/18/10 | 08:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | JL24 | 1 |
| - 14 | S-10O-C014-0-0.5MSMSD | 10/19/10 | 09:47 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | KKK9 | 1 |
| - 26 | S-10O-C026-0-0.5MSMSD | 10/20/10 | 09:36 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | GD30 | 1 |
| -11 - 41 | S-10O-C041-0-0.5MSMSD | 10/21/10 | 09:32 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MA7 | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | 0 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/29/10 18:00 | [signature] | 10/29/10 18:00 |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 20-APR-09)



Serial No: 20101015:58

ALPHA ANALYTICAL

L1017460 Sample Delivery Group Form

Laboratory Job No: ~~L1017218~~ Tus  Client: WHG

Receipt Date/Time: 10/29/10 18:00  SDG Reviewer:

**Samples Delivered By:**

[ ] Alpha Courier [X] Client  [ ] UPS  [ ] FedEx  [ ] Other

Bill of Laden: [ ]Yes [ ] Unavailable  Tracking #:

Chain of Custody: [X] Present  [ ] Absent:

Custody Seals: [X] Absent  [ ] Present/Intact  [ ] Present/Broken

**Cooler/Sample Temperature:**

Is Ice/Blue Ice present? [ ] Yes  [X] No  [ ] N/A

Temp taken from:  Temp Blank:(a)____ (b)____ (c)____ (d)____ (e)____

IR Gun: (a) -2°C (b) -3°C (c) 0°C (d) -1°C (e)____

IR Gun SN: 4006201

Was Temp: [ ] 2-6 Celsius

[X] <2 Celsius ... were samples frozen upon receipt? [X] Yes [ ] No

[ ] >6 Celsius ... were samples delivered direct from site? [ ] Yes [ ] No

Containers Received: [ ] Intact

[ ] Broken/Leaking  Sample IDs:

Sample IDs:

All Containers Accounted For? [ ] Yes

[ ] No:

Extra Samples Received? [ ] No

[ ] Yes:

Do Sample Labels and COC agree? [ ] Yes

[ ] No:

Are Samples in Appropriate Containers? [ ] Yes

[ ] No:

Are samples rec'd within holding time? [ ] Yes

[ ] No:

* Please note: the analysis of pH will always be performed beyond the regulatory-required holding time of 15 min. from the time of collection.

pH of samples upon receipt: [ ] N/A [ ] <2 [ ] >12 and/or [ ]

Are samples properly preserved? [ ] Yes [ ] No  If No then.....

Initial pH= ____ preserved In-House with [ ] HCL [ ] $H_2SO_4$ [ ] $HNO_3$ [ ] NAOH <<Final pH = ____>>

Other Issues:

Chlorine Check: [ ] N/A [ ] Present [ ] Absent

VOA/VPH vials: [ ] Yes [ ] No  Preserved? [ ] Yes [ ] No  If yes: [ ] HCL, [ ]

Aqueous: vials contain head space? [ ] No [ ] Yes :

Soils: MeOH covering soil? [ ] Yes [ ] No :

Reagent $H_2O$ Preserved vials Frozen @ date/time:

Frozen by Client? [ ] No [ ] Yes @ date/time:

Was Client notified of any discrepancies listed above? [ ] Yes [ ] No [ ] N/A

If Yes: Call Tracker #

Form No.: 01-02  08/11/2010

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018124 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/08/10 |

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-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018124-01 | S-10N-C001-0-1.0 | NEW BEDFORD, MA | 11/03/10 13:43 |
| L1018124-02 | S-10N-C012-0-1.0 | NEW BEDFORD, MA | 11/03/10 14:51 |
| L1018124-03 | S-10N-C012-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 14:51 |
| L1018124-04 | S-10N-C013-0-1.0 | NEW BEDFORD, MA | 11/03/10 10:48 |
| L1018124-05 | S-10N-C013-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 10:48 |
| L1018124-06 | S-10N-C014-0-1.0 | NEW BEDFORD, MA | 11/03/10 11:05 |
| L1018124-07 | S-10N-C014-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 11:05 |
| L1018124-08 | S-10N-C015-0-1.0 | NEW BEDFORD, MA | 11/03/10 09:56 |
| L1018124-09 | S-10N-C015-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 09:56 |
| L1018124-10 | S-10N-C016-0-1.0 | NEW BEDFORD, MA | 11/03/10 10:21 |
| L1018124-11 | S-10N-C016-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 10:21 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 05, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until they were removed November 19, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

The majority of samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

L1018124-01, 04, 06, 08, 10 were re-analyzed on further dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compounds that exceeded the calibration range.

The WG444040-4 MS recoveries, performed on L1018124-01, are outside the acceptance criteria for Cl5-BZ#138 (39%), Cl5-BZ#101 (37%) and Cl6-BZ#153 (39%); however, the associated LCS recoveries are within criteria. No further action was required.

The WG444040-2/3 LCS/LCSD RPD(s), associated with L1018124, are above the acceptance criteria for Cl4-BZ#52 (44%); however, the individual LCS/LCSD recoveries are within method limits.

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: 12/08/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-01 | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 15:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 157 | | ug/kg | 16.6 | -- | 10 |
| Cl3-BZ#18 | 259 | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#52 | 630 | E | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#44 | 400 | E | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#66 | 763 | E | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#118 | 406 | E | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#138 | 184 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#128 | 46.7 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#180 | 36.0 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#170 | 24.0 | | ug/kg | 16.6 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.6 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-01 | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 15:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 716 | E | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#101 | 317 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#153 | 156 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#105 | 104 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#187 | 29.2 | | ug/kg | 16.6 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-01 D | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 13:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#66 | 698 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 371 | | ug/kg | 166 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 76 | 30-150 |
| BZ 198 | 65 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-01 D | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 13:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 800 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 608 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 435 | | ug/kg | 166 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-02 | Date Collected: | 11/03/10 14:51 |
| Client ID: | S-10N-C012-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 17:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 210 | | ug/kg | 33.1 | -- | 20 |
| Cl3-BZ#28 | 425 | | ug/kg | 33.1 | -- | 20 |
| Cl6-BZ#138 | 151 | | ug/kg | 33.1 | -- | 20 |
| Cl6-BZ#128 | 40.8 | | ug/kg | 33.1 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 33.1 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 33.1 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 33.1 | -- | 20 |

| | | |
|---|---|---|
| DBOB | 66 | 30-150 |
| BZ 198 | 56 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-02 | Date Collected: | 11/03/10 14:51 |
| Client ID: | S-10N-C012-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 17:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 101 | | ug/kg | 33.1 | -- | 20 |
| Cl4-BZ#52 | 562 | | ug/kg | 33.1 | -- | 20 |
| Cl4-BZ#44 | 278 | | ug/kg | 33.1 | -- | 20 |
| Cl4-BZ#66 | 372 | | ug/kg | 33.1 | -- | 20 |
| Cl5-BZ#101 | 301 | | ug/kg | 33.1 | -- | 20 |
| Cl5-BZ#118 | 274 | | ug/kg | 33.1 | -- | 20 |
| Cl6-BZ#153 | 203 | | ug/kg | 33.1 | -- | 20 |
| Cl5-BZ#105 | 79.1 | | ug/kg | 33.1 | -- | 20 |
| Cl7-BZ#187 | 39.2 | | ug/kg | 33.1 | -- | 20 |
| Cl7-BZ#180 | 38.8 | | ug/kg | 33.1 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 33.1 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 66 | | 30-150 |
| BZ 198 | 56 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-03 | Date Collected: | 11/03/10 14:51 |
| Client ID: | S-10N-C012-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 20:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.68 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 91 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-03 | Date Collected: | 11/03/10 14:51 |
| Client ID: | S-10N-C012-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 20:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.68 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 91 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-04 | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 17:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3140 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#18 | 5250 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 4100 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 1700 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 1180 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 278 | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-04 | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 17:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 8880 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 7530 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 4650 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 2000 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 1320 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 574 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 287 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 299 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | 224 | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-04 D | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 11/29/10 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 9200 | | ug/kg | 1660 | -- | 1000 |
| Cl4-BZ#52 | 10700 | | ug/kg | 1660 | -- | 1000 |
| Cl4-BZ#66 | 5780 | | ug/kg | 1660 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-04 D | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 11/29/10 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9950 | | ug/kg | 1660 | -- | 1000 |
| Cl4-BZ#44 | 6310 | | ug/kg | 1660 | -- | 1000 |

| | | |
|---|---|---|
| DBOB | 80 | 30-150 |
| BZ 198 | 84 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-05 | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4.37 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#66 | 3.28 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.65 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 87 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-05 | Date Collected: | 11/03/10 10:48 |
| Client ID: | S-10N-C013-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2.81 | | ug/kg | 1.65 | -- | 1 |
| Cl3-BZ#28 | 5.49 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#52 | 5.35 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#44 | 3.12 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.65 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 70 | 30-150 |
| BZ 198 | 87 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-06 | Date Collected: | 11/03/10 11:05 |
| Client ID: | S-10N-C014-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 18:39 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 107 | | ug/kg | 16.8 | -- | 10 |
| Cl3-BZ#18 | 223 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#52 | 769 | E | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#44 | 327 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#66 | 539 | E | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#118 | 461 | E | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#138 | 306 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#128 | 75.3 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#180 | 62.5 | | ug/kg | 16.8 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.8 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-06 | Date Collected: | 11/03/10 11:05 |
| Client ID: | S-10N-C014-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 18:39 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 434 | E | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#101 | 416 | E | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#153 | 289 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#105 | 97.8 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#187 | 49.7 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#170 | 49.3 | | ug/kg | 16.8 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018124-06 | D | Date Collected: | 11/03/10 11:05 |
| Client ID: | S-10N-C014-0-1.0 | | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 18:29 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 970 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#52 | 1370 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#66 | 878 | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#101 | 883 | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#118 | 744 | | ug/kg | 168 | -- | 100 |
| Cl6-BZ#153 | 595 | | ug/kg | 168 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-07 | Date Collected: | 11/03/10 11:05 |
| Client ID: | S-10N-C014-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 21:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 60 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-07 | Date Collected: | 11/03/10 11:05 |
| Client ID: | S-10N-C014-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 21:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 60 | 30-150 |
| BZ 198 | 78 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-08 | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 17:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2830 | | ug/kg | 167 | -- | 100 |
| Cl3-BZ#18 | 4280 | E | ug/kg | 167 | -- | 100 |
| Cl4-BZ#52 | 7270 | E | ug/kg | 167 | -- | 100 |
| Cl4-BZ#44 | 3660 | E | ug/kg | 167 | -- | 100 |
| Cl4-BZ#66 | 5820 | E | ug/kg | 167 | -- | 100 |
| Cl5-BZ#118 | 2120 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#138 | 1330 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#128 | 320 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#180 | 297 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#170 | 217 | | ug/kg | 167 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 167 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 167 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 167 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-08 | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 17:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6540 | E | ug/kg | 167 | -- | 100 |
| Cl5-BZ#101 | 2020 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#153 | 1070 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#105 | 800 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#187 | 275 | | ug/kg | 167 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-08 D | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 16:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5230 | | ug/kg | 833 | -- | 500 |
| Cl4-BZ#52 | 7660 | | ug/kg | 833 | -- | 500 |
| Cl4-BZ#66 | 5920 | | ug/kg | 833 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-08 D | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 16:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7600 | | ug/kg | 833 | -- | 500 |
| Cl4-BZ#44 | 4100 | | ug/kg | 833 | -- | 500 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-09 | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 22:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 13.3 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#66 | 16.8 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#101 | 9.14 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#105 | 2.04 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#138 | 3.12 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-09 | Date Collected: | 11/03/10 09:56 |
| Client ID: | S-10N-C015-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 22:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7.01 | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#28 | 20.2 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#52 | 17.8 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#44 | 9.77 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#118 | 5.17 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#153 | 3.14 | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 64 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-10 | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 19:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 210 | | ug/kg | 16.6 | -- | 10 |
| Cl3-BZ#28 | 1230 | E | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#52 | 1060 | E | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#44 | 539 | E | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#66 | 911 | E | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#118 | 665 | E | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#138 | 409 | E | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#187 | 67.3 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#128 | 102 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#180 | 113 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#170 | 62.8 | | ug/kg | 16.6 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl9-BZ#206 | 19.8 | | ug/kg | 16.6 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.6 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-10 | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/03/10 19:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 552 | E | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#101 | 478 | E | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#153 | 314 | E | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#105 | 123 | | ug/kg | 16.6 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-10 D | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 19:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 570 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 458 | | ug/kg | 166 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 68 | 30-150 |
| BZ 198 | 62 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-10 D | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:19 |
| Analytical Date: | 12/02/10 19:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1440 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 1450 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 822 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 1140 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 955 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 833 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 613 | | ug/kg | 166 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 62 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-11 | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/03/10 22:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1.67 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.66 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018124-11 | Date Collected: | 11/03/10 10:21 |
| Client ID: | S-10N-C016-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/03/10 22:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl3-BZ#28 | 1.94 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#52 | 2.65 | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.66 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/29/10 14:55
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 11/19/10 16:19
Cleanup Method1: EPA 3630
Cleanup Date1: 11/23/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-11 Batch: WG444040-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/29/10 14:55
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 11/19/10 16:19
Cleanup Method1: EPA 3630
Cleanup Date1: 11/23/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-11 Batch: WG444040-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018124
**Report Date:** 12/08/10

| 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): 01-11 QC Batch ID: WG444040-4 WG444040-5 QC Sample: L1018124-01 Client ID: S-10N-C001-0-1.0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 157 | 1660 | 848 | 42 | | 944 | 48 | | 40-140 | 11 | | 30 |
| Cl3-BZ#18 | 259 | 1660 | 1130 | 53 | | 1330 | 65 | | 40-140 | 16 | | 30 |
| Cl4-BZ#66 | 698 | 1660 | 1670 | 59 | | 1880 | 71 | | 40-140 | 12 | | 30 |
| Cl5-BZ#118 | 371 | 1660 | 1400 | 62 | | 1500 | 68 | | 40-140 | 7 | | 30 |
| Cl6-BZ#138 | 184 | 1660 | 829 | **39** | Q | 978 | 48 | | 40-140 | 16 | | 30 |
| Cl6-BZ#128 | 46.7 | 1660 | 751 | 43 | | 865 | 49 | | 40-140 | 14 | | 30 |
| Cl7-BZ#180 | 36.0 | 1660 | 724 | 42 | | 831 | 48 | | 40-140 | 14 | | 30 |
| Cl7-BZ#170 | 24.0 | 1660 | 720 | 42 | | 830 | 49 | | 40-140 | 14 | | 30 |
| Cl8-BZ#195 | ND | 1660 | 722 | 44 | | 834 | 50 | | 40-140 | 14 | | 30 |
| Cl9-BZ#206 | ND | 1660 | 776 | 47 | | 901 | 54 | | 40-140 | 15 | | 30 |
| Cl10-BZ#209 | ND | 1660 | 689 | 42 | | 801 | 48 | | 40-140 | 15 | | 30 |
| Cl3-BZ#28 | 800 | 1660 | 1870 | 65 | | 2090 | 78 | | 40-140 | 11 | | 30 |
| Cl4-BZ#52 | 608 | 1660 | 1610 | 60 | | 1740 | 68 | | 40-140 | 8 | | 30 |
| Cl4-BZ#44 | 435 | 1660 | 1420 | 59 | | 1520 | 65 | | 40-140 | 7 | | 30 |
| Cl5-BZ#101 | 317 | 1660 | 926 | **37** | Q | 1050 | 44 | | 40-140 | 13 | | 30 |
| Cl6-BZ#153 | 156 | 1660 | 796 | **39** | Q | 864 | 43 | | 40-140 | 8 | | 30 |
| Cl5-BZ#105 | 104 | 1660 | 908 | 49 | | 976 | 53 | | 40-140 | 7 | | 30 |
| Cl7-BZ#187 | 29.2 | 1660 | 769 | 45 | | 789 | 46 | | 40-140 | 3 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018124
**Report Date:** 12/08/10

| 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): 01-11 QC Batch ID: WG444040-4 WG444040-5 QC Sample: L1018124-01 Client ID: S-10N-C001-0-1.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 69 | | 64 | | 30-150 |
| DBOB | 65 | | 66 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING

**Project Number:** TO-0010-03

**Lab Number:** L1018124

**Report Date:** 12/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-11 Batch: WG444040-2 WG444040-3 | | | | | | | | |
| Cl2-BZ#8 | 64 | | 57 | | 40-140 | 12 | | 30 |
| Cl3-BZ#18 | 78 | | 62 | | 40-140 | 23 | | 30 |
| Cl3-BZ#28 | 74 | | 68 | | 40-140 | 8 | | 30 |
| Cl4-BZ#52 | 106 | | 68 | | 40-140 | **44** | Q | 30 |
| Cl4-BZ#44 | 74 | | 68 | | 40-140 | 8 | | 30 |
| Cl4-BZ#66 | 77 | | 72 | | 40-140 | 7 | | 30 |
| Cl5-BZ#101 | 80 | | 76 | | 40-140 | 5 | | 30 |
| Cl5-BZ#118 | 82 | | 77 | | 40-140 | 6 | | 30 |
| Cl5-BZ#105 | 75 | | 71 | | 40-140 | 5 | | 30 |
| Cl6-BZ#138 | 79 | | 76 | | 40-140 | 4 | | 30 |
| Cl7-BZ#187 | 77 | | 78 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 80 | | 78 | | 40-140 | 3 | | 30 |
| Cl7-BZ#180 | 88 | | 78 | | 40-140 | 12 | | 30 |
| Cl7-BZ#170 | 81 | | 76 | | 40-140 | 6 | | 30 |
| Cl8-BZ#195 | 81 | | 79 | | 40-140 | 3 | | 30 |
| Cl9-BZ#206 | 98 | | 96 | | 40-140 | 2 | | 30 |
| Cl10-BZ#209 | 86 | | 83 | | 40-140 | 4 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018124

**Project Number:** TO-0010-03 **Report Date:** 12/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-11 Batch: WG444040-2 WG444040-3 | | | | | | | |
| DBOB | 76 | | 68 | | 30-150 | | | |
| BZ 198 | 86 | | 82 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-11 Batch: WG444040-2 WG444040-3 | | | | | | | |
| Cl6-BZ#153 | 78 | | 72 | | 40-140 | 8 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 76 | | 68 | | 30-150 |
| BZ 198 | 86 | | 82 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-01
Client ID: S-10N-C001-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:43
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 79.1 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-02
Client ID: S-10N-C012-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:51
Date Received: 11/05/10
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 | 98.9 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 59.5 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-03
Client ID: S-10N-C012-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:51
Date Received: 11/05/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 48.6 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-04
Client ID: S-10N-C013-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 10:48
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 59.1 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-05
Client ID: S-10N-C013-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 10:48
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 62.4 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-06
Client ID: S-10N-C014-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:05
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.1 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-07
Client ID: S-10N-C014-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:05
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 56.4 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-08
Client ID: S-10N-C015-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 09:56
Date Received: 11/05/10
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 | 98.3 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.0 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-09
Client ID: S-10N-C015-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 09:56
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.0 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-10
Client ID: S-10N-C016-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 10:21
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.7 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## SAMPLE RESULTS

Lab ID: L1018124-11
Client ID: S-10N-C016-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 10:21
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/19/10 10:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.9 | | % | 0.100 | NA | 1 | - | 11/17/10 14:05 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-11 QC Batch ID: WG443522-1 QC Sample: L1018124-01 Client ID: S-10N-C001-0-1.0 | | | | | | |
| Solids, Total (Pre-Dried) | 79.1 | 78.7 | % | 1 | | 20 |
| General Chemistry - Mansfield Lab Associated sample(s): 01-11 QC Batch ID: WG443985-1 QC Sample: L1018124-01 Client ID: S-10N-C001-0-1.0 | | | | | | |
| Solids, Total | 99.1 | 99.2 | % | 0 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018124
**Report Date:** 12/08/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018124-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-01B | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018124-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018124 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/08/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 7 OF 11

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018124

Westborough, 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 Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX
☒ ADEx

**Data Deliverables**

☒ EMAIL
☐ Add'l Deliverables

**Billing Information**

☒ Same as Client Info
PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-10O-C077-0-1.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| | S-10O-C077-1.0-2.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| | S-10O-C078-0-1.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| | S-10O-C078-1.0-2.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| | S-10O-C079-0-1.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| | S-10O-C079-1.0-2.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| | S-10O-C080-0-1.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| | S-10O-C080-1.0-2.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| 18124.1 | S-10N-C001-0-1.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| | S-10N-C001-1.0-2.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |
| | | | |

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 Payment Terms.

FORM NO: 01-03(I-NJ)
(rev. 20-APR-09)



Serial_No:12081015:58

# CHAIN OF CUSTODY

PAGE 11 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018124

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| L8124 | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | CSO MS/MSD | 1 |
| | S-10O-C071-0-1.0MS/MSD | 10/29/10 | 08:33 | SED | MW | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 19:00 |

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 Payment Terms.

FORM NO: 01-01(I)-NJ (rev. 29-APR-09)



Serial_No:12081015:58

# CHAIN OF CUSTODY

PAGE 10 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 ALPHA Job #: L1081124

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

**Data Deliverables**

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| L1081124-2 | S-10N-C012-0-1.0 | 11/03/10 | 14:51 | SED | KGM | ☒ | BH-I2 | 1 |
| 3 | S-10N-C012-1.0-2.0 | 11/03/10 | 14:51 | SED | KGM | ☒ | BH-I2 | 1 |
| 4 | S-10N-C013-0-1.0 | 11/03/10 | 10:48 | SED | KGM | ☒ | BH-K2 | 1 |
| 5 | S-10N-C013-1.0-2.0 | 11/03/10 | 10:48 | SED | KGM | ☒ | BH-K2 | 1 |
| 6 | S-10N-C014-0-1.0 | 11/03/10 | 11:05 | SED | KGM | ☒ | BH-K3 | 1 |
| 7 | S-10N-C014-1.0-2.0 | 11/03/10 | 11:05 | SED | KGM | ☒ | BH-K3 | 1 |
| 8 | S-10N-C015-0-1.0 | 11/03/10 | 09:56 | SED | KGM | ☒ | BH-L2 | 1 |
| 9 | S-10N-C015-1.0-2.0 | 11/03/10 | 09:56 | SED | KGM | ☒ | BH-L2 | 1 |
| 10 | S-10N-C016-0-1.0 | 11/03/10 | 10:21 | SED | KGM | ☒ | BH-L3 | 1 |
| 11 | S-10N-C016-1.0-2.0 | 11/03/10 | 10:21 | SED | KGM | ☒ | BH-L3 | 1 |
| | Container Type | | | | | A | | |
| | Preservative | | | | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] 11/5/10 | 19:00 | [signature] | 11/5/10 1500 |

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 Payment Terms.

FORM NO: 01-06(I-NJ) (rev. 29-APR-09)



Serial_No:12081015:58

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018125 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/13/10 |

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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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018125-01 | S-10O-C047-0-1.0 | NEW BEDFORD, MA | 10/25/10 09:17 |
| L1018125-02 | S-10O-C047-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 09:17 |
| L1018125-03 | S-10O-C048-0-1.0 | NEW BEDFORD, MA | 10/25/10 09:05 |
| L1018125-04 | S-10O-C048-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 09:05 |
| L1018125-05 | S-10O-C049-0-1.0 | NEW BEDFORD, MA | 10/25/10 14:50 |
| L1018125-06 | S-10O-C049-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 14:50 |
| L1018125-07 | S-10O-C050-0-1.0 | NEW BEDFORD, MA | 10/25/10 14:32 |
| L1018125-08 | S-10O-C050-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 14:32 |
| L1018125-09 | S-10O-C051-0-1.0 | NEW BEDFORD, MA | 10/25/10 09:37 |
| L1018125-10 | S-10O-C051-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 09:37 |
| L1018125-11 | S-10O-C052-0-1.0 | NEW BEDFORD, MA | 10/25/10 14:20 |
| L1018125-12 | S-10O-C052-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 14:20 |
| L1018125-13 | S-10O-C053-0-1.0 | NEW BEDFORD, MA | 10/25/10 09:55 |
| L1018125-14 | S-10O-C053-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 09:55 |
| L1018125-15 | S-10O-C054-0-1.0 | NEW BEDFORD, MA | 10/25/10 13:53 |
| L1018125-16 | S-10O-C054-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 13:53 |
| L1018125-17 | S-10O-C055-0-1.0 | NEW BEDFORD, MA | 10/25/10 14:04 |
| L1018125-18 | S-10O-C055-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 14:04 |
| L1018125-19 | S-10O-C070-0-1.0 | NEW BEDFORD, MA | 10/27/10 15:18 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 05, 2010 and placed in frozen storage until November 12, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until they were removed November 19, 2010 to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

The majority of samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

L1018125-01, -02, -03, -04, -10, -13 were re-analyzed on further dilution in order to quantitate the samples 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.

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: 12/13/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-01 | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 15:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3940 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 26900 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 11400 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 18600 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 12700 | E | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 6050 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 1510 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 1040 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 1370 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | 1050 | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | 200 | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | 207 | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-01 | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 15:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 8720 | E | ug/kg | 166 | -- | 100 |
| Cl3-BZ#28 | 10400 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 9120 | E | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 6710 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 731 | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018125-01 | D | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-0-1.0 | | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/08/10 12:54 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4230 | | ug/kg | 3330 | -- | 2000 |
| Cl3-BZ#18 | 10700 | | ug/kg | 3330 | -- | 2000 |
| Cl4-BZ#52 | 32200 | | ug/kg | 3330 | -- | 2000 |
| Cl4-BZ#66 | 20200 | | ug/kg | 3330 | -- | 2000 |
| Cl5-BZ#118 | 14500 | | ug/kg | 3330 | -- | 2000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 102 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-01 D | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/08/10 12:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 19500 | | ug/kg | 3330 | -- | 2000 |
| Cl4-BZ#44 | 16200 | | ug/kg | 3330 | -- | 2000 |
| Cl5-BZ#101 | 17300 | | ug/kg | 3330 | -- | 2000 |
| Cl6-BZ#153 | 12200 | | ug/kg | 3330 | -- | 2000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 102 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-02 | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 16:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#52 | 5540 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#66 | 3900 | E | ug/kg | 171 | -- | 100 |
| Cl5-BZ#118 | 4020 | E | ug/kg | 171 | -- | 100 |
| Cl6-BZ#138 | 2720 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#128 | 651 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#180 | 553 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#170 | 381 | | ug/kg | 171 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 171 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 171 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 171 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-02 | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 16:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 570 | | ug/kg | 171 | -- | 100 |
| Cl3-BZ#28 | 334 | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#44 | 1820 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#101 | 3670 | E | ug/kg | 171 | -- | 100 |
| Cl6-BZ#153 | 2480 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#105 | 871 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#187 | 410 | | ug/kg | 171 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-02 D | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 13:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 6840 | | ug/kg | 1710 | -- | 1000 |
| Cl4-BZ#66 | 4650 | | ug/kg | 1710 | -- | 1000 |
| Cl5-BZ#118 | 5020 | | ug/kg | 1710 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-02 D | Date Collected: | 10/25/10 09:17 |
| Client ID: | S-10O-C047-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 13:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#101 | 5600 | | ug/kg | 1710 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-03 | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 17:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1390 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#18 | 2960 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 5100 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 3360 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 8410 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 6200 | E | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 3020 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 397 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 714 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 639 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | 443 | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-03 | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 17:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4290 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 4660 | E | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 2490 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 1000 | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-03 D | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 14:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 6140 | | ug/kg | 1660 | -- | 1000 |
| Cl5-BZ#118 | 7260 | | ug/kg | 1660 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-03 D | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 14:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6770 | | ug/kg | 1660 | -- | 1000 |
| Cl4-BZ#44 | 3980 | | ug/kg | 1660 | -- | 1000 |
| Cl4-BZ#66 | 9080 | | ug/kg | 1660 | -- | 1000 |
| Cl5-BZ#101 | 7570 | | ug/kg | 1660 | -- | 1000 |

| | | |
|---|---|---|
| DBOB | 85 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-04 | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 17:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 168 | -- | 100 |
| Cl3-BZ#18 | 514 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#52 | 1740 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#44 | 771 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#66 | 2620 | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#118 | 3680 | E | ug/kg | 168 | -- | 100 |
| Cl6-BZ#138 | 2820 | | ug/kg | 168 | -- | 100 |
| Cl6-BZ#128 | 723 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#180 | 450 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#170 | 327 | | ug/kg | 168 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 168 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-04 | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 17:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#101 | 2670 | | ug/kg | 168 | -- | 100 |
| Cl6-BZ#153 | 1470 | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#105 | 1120 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#187 | 294 | | ug/kg | 168 | -- | 100 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-04 D | Date Collected: | 10/25/10 09:05 |
| Client ID: | S-10O-C048-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 15:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#118 | 4370 | | ug/kg | 1680 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-05 | Date Collected: | 10/25/10 14:50 |
| Client ID: | S-10O-C049-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 18:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 478 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#18 | 954 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 1920 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 2590 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 2150 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 1160 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 295 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 240 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 87 | | 30-150 |
| BZ 198 | 56 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-05 | Date Collected: | 10/25/10 14:50 |
| Client ID: | S-10O-C049-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/04/10 18:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1900 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 1110 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 2110 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 1150 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 482 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 197 | | ug/kg | 166 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 87 | 30-150 |
| BZ 198 | 56 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-06 | Date Collected: | 10/25/10 14:50 |
| Client ID: | S-10O-C049-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/09/10 16:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#52 | 2.67 | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.66 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 75 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-06 | Date Collected: | 10/25/10 14:50 |
| Client ID: | S-10O-C049-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/09/10 16:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#66 | 2.17 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#101 | 2.01 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#118 | 1.88 | | ug/kg | 1.66 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-07 | Date Collected: | 10/25/10 14:32 |
| Client ID: | S-10O-C050-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/01/10 14:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1080 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#52 | 1920 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#66 | 2110 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#118 | 1490 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#138 | 822 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#128 | 212 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 165 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 165 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 165 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-07 | Date Collected: | 10/25/10 14:32 |
| Client ID: | S-10O-C050-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/01/10 14:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 480 | | ug/kg | 165 | -- | 100 |
| Cl3-BZ#28 | 2400 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#44 | 1220 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#101 | 1570 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#153 | 850 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#105 | 421 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-08 | Date Collected: | 10/25/10 14:32 |
| Client ID: | S-10O-C050-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 23:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.65 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 75 | 30-150 |
| BZ 198 | 79 | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-08 | Date Collected: | 10/25/10 14:32 |
| Client ID: | S-10O-C050-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 23:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.65 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-09 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 21:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 115 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#138 | 38.2 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#180 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.4 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 73 | 30-150 |
| BZ 198 | 80 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-09 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 21:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 59.4 | | ug/kg | 16.4 | -- | 10 |
| Cl3-BZ#28 | 188 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#52 | 226 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#44 | 131 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#66 | 211 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#101 | 102 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#118 | 93.9 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#153 | 45.9 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#105 | 31.8 | | ug/kg | 16.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-10 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 19:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 888 | | ug/kg | 165 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 81 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-10 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 19:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1200 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#52 | 1010 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#44 | 925 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#66 | 1280 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#101 | 590 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#118 | 531 | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-10 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 20:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 270 | | ug/kg | 16.5 | -- | 10 |
| Cl3-BZ#18 | 811 | E | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#52 | 873 | E | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#44 | 759 | E | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#66 | 1150 | E | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#118 | 482 | E | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#138 | 219 | | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#128 | 56.3 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#180 | 41.2 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#170 | 31.6 | | ug/kg | 16.5 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.5 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-10 | Date Collected: | 10/25/10 09:37 |
| Client ID: | S-10O-C051-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:21 |
| Analytical Date: | 12/06/10 20:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 777 | E | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#101 | 386 | E | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#153 | 152 | | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#105 | 159 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#187 | 32.9 | | ug/kg | 16.5 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-11 | Date Collected: | 10/25/10 14:20 |
| Client ID: | S-10O-C052-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 22:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 46.0 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#66 | 89.5 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#138 | 35.8 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.8 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-11 | Date Collected: | 10/25/10 14:20 |
| Client ID: | S-10O-C052-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 22:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 29.2 | | ug/kg | 16.8 | -- | 10 |
| Cl3-BZ#28 | 126 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#52 | 123 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#44 | 62.2 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#101 | 75.0 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#118 | 66.9 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#153 | 47.4 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#105 | 20.8 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#180 | ND | | ug/kg | 16.8 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 92 | 30-150 |
| BZ 198 | 84 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-12 | Date Collected: | 10/25/10 14:20 |
| Client ID: | S-10O-C052-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/07/10 00:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.68 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.68 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-12 | Date Collected: | 10/25/10 14:20 |
| Client ID: | S-10O-C052-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/07/10 00:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.68 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 69 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-13 | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/04/10 19:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 625 | | ug/kg | 171 | -- | 100 |
| Cl3-BZ#18 | 1660 | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#66 | 2470 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#118 | 1880 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#138 | 1240 | | ug/kg | 171 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 171 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 171 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 171 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-13 | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/04/10 19:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3530 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#52 | 3680 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#44 | 1570 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#101 | 2020 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#153 | 1610 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#105 | 446 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#187 | 297 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#128 | 225 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#180 | 281 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#170 | 189 | | ug/kg | 171 | -- | 100 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-13 D | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/01/10 03:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4640 | | ug/kg | 1710 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 96 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-13 D | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/01/10 03:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4380 | | ug/kg | 1710 | -- | 1000 |

| | | |
|---|---|---|
| DBOB | 96 | 30-150 |
| BZ 198 | 88 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-14 | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/04/10 19:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 476 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#66 | 823 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#138 | 316 | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 164 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 164 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 164 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 164 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-14 | Date Collected: | 10/25/10 09:55 |
| Client ID: | S-10O-C053-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/04/10 19:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 196 | | ug/kg | 164 | -- | 100 |
| Cl3-BZ#28 | 1070 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#52 | 1560 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#44 | 658 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#101 | 630 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#118 | 525 | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#153 | 428 | | ug/kg | 164 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-15 | Date Collected: | 10/25/10 13:53 |
| Client ID: | S-10O-C054-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 23:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 41.8 | | ug/kg | 16.4 | -- | 10 |
| Cl3-BZ#18 | 87.7 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#66 | 151 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#118 | 90.0 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#138 | 49.7 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.4 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 71 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-15 | Date Collected: | 10/25/10 13:53 |
| Client ID: | S-10O-C054-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 23:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 197 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#52 | 160 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#44 | 95.8 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#101 | 101 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#153 | 56.9 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#105 | 23.5 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#180 | ND | | ug/kg | 16.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-16 | Date Collected: | 10/25/10 13:53 |
| Client ID: | S-10O-C054-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/07/10 01:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.69 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.69 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 85 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-16 | Date Collected: | 10/25/10 13:53 |
| Client ID: | S-10O-C054-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/07/10 01:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.69 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 85 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-17 | Date Collected: | 10/25/10 14:04 |
| Client ID: | S-10O-C055-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 21:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 173 | | ug/kg | 65.9 | -- | 40 |
| Cl3-BZ#18 | 336 | | ug/kg | 65.9 | -- | 40 |
| Cl4-BZ#52 | 608 | | ug/kg | 65.9 | -- | 40 |
| Cl4-BZ#66 | 655 | | ug/kg | 65.9 | -- | 40 |
| Cl5-BZ#118 | 428 | | ug/kg | 65.9 | -- | 40 |
| Cl6-BZ#138 | 246 | | ug/kg | 65.9 | -- | 40 |
| Cl6-BZ#128 | ND | | ug/kg | 65.9 | -- | 40 |
| Cl7-BZ#180 | ND | | ug/kg | 65.9 | -- | 40 |
| Cl7-BZ#170 | ND | | ug/kg | 65.9 | -- | 40 |
| Cl8-BZ#195 | ND | | ug/kg | 65.9 | -- | 40 |
| Cl9-BZ#206 | ND | | ug/kg | 65.9 | -- | 40 |
| Cl10-BZ#209 | ND | | ug/kg | 65.9 | -- | 40 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-17 | Date Collected: | 10/25/10 14:04 |
| Client ID: | S-10O-C055-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:23 |
| Analytical Date: | 12/06/10 21:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 702 | | ug/kg | 65.9 | -- | 40 |
| Cl4-BZ#44 | 376 | | ug/kg | 65.9 | -- | 40 |
| Cl5-BZ#101 | 456 | | ug/kg | 65.9 | -- | 40 |
| Cl6-BZ#153 | 237 | | ug/kg | 65.9 | -- | 40 |
| Cl5-BZ#105 | 118 | | ug/kg | 65.9 | -- | 40 |
| Cl7-BZ#187 | ND | | ug/kg | 65.9 | -- | 40 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-18 | Date Collected: | 10/25/10 14:04 |
| Client ID: | S-10O-C055-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:24 |
| Analytical Date: | 12/07/10 01:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl3-BZ#18 | 2.30 | | ug/kg | 1.72 | -- | 1 |
| Cl4-BZ#66 | 2.43 | | ug/kg | 1.72 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.72 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 66 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-18 | Date Collected: | 10/25/10 14:04 |
| Client ID: | S-10O-C055-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:24 |
| Analytical Date: | 12/07/10 01:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3.20 | | ug/kg | 1.72 | -- | 1 |
| Cl4-BZ#52 | 3.95 | | ug/kg | 1.72 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.72 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.72 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 66 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-19 | Date Collected: | 10/27/10 15:18 |
| Client ID: | S-10O-C070-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:24 |
| Analytical Date: | 12/06/10 17:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 20.4 | | ug/kg | 16.8 | -- | 10 |
| Cl3-BZ#18 | 59.7 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#52 | 150 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#44 | 72.7 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#66 | 155 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#118 | 123 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#138 | 101 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#128 | 29.6 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#180 | 19.7 | | ug/kg | 16.8 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.8 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018125-19 | Date Collected: | 10/27/10 15:18 |
| Client ID: | S-10O-C070-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/19/10 16:24 |
| Analytical Date: | 12/06/10 17:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 11/23/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 101 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#101 | 116 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#153 | 85.1 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#105 | 43.6 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 16.8 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 68 | 30-150 |
| BZ 198 | 68 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/04/10 10:58
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/19/10 16:21
Cleanup Method1: EPA 3630
Cleanup Date1: 11/23/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-19 Batch: WG444052-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/04/10 10:58
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/19/10 16:21
Cleanup Method1: EPA 3630
Cleanup Date1: 11/23/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-19 Batch: WG444052-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018125
**Report Date:** 12/13/10

| 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): 01-19 QC Batch ID: WG444052-4 WG444052-5 QC Sample: L1018125-19 Client ID: S-10O-C070-0-1.0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 20.4 | 1690 | 908 | 52 | | 980 | 57 | | 40-140 | 8 | | 30 |
| Cl3-BZ#18 | 59.7 | 1690 | 979 | 54 | | 1030 | 57 | | 40-140 | 5 | | 30 |
| Cl4-BZ#52 | 150 | 1690 | 1020 | 51 | | 1130 | 58 | | 40-140 | 10 | | 30 |
| Cl4-BZ#44 | 72.7 | 1690 | 971 | 53 | | 1030 | 57 | | 40-140 | 6 | | 30 |
| Cl4-BZ#66 | 155 | 1690 | 1110 | 56 | | 1130 | 58 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 123 | 1690 | 1110 | 58 | | 1130 | 60 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 101 | 1690 | 1060 | 57 | | 1130 | 61 | | 40-140 | 6 | | 30 |
| Cl6-BZ#128 | 29.6 | 1690 | 1010 | 58 | | 1010 | 58 | | 40-140 | 0 | | 30 |
| Cl7-BZ#180 | 19.7 | 1690 | 1050 | 61 | | 1010 | 59 | | 40-140 | 4 | | 30 |
| Cl8-BZ#195 | ND | 1690 | 981 | 58 | | 995 | 59 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | ND | 1690 | 1080 | 64 | | 1060 | 63 | | 40-140 | 2 | | 30 |
| Cl10-BZ#209 | ND | 1690 | 978 | 58 | | 977 | 58 | | 40-140 | 0 | | 30 |
| Cl3-BZ#28 | 101 | 1690 | 1340 | 73 | | 1420 | 78 | | 40-140 | 6 | | 30 |
| Cl5-BZ#101 | 116 | 1690 | 1240 | 66 | | 1300 | 70 | | 40-140 | 5 | | 30 |
| Cl6-BZ#153 | 85.1 | 1690 | 1190 | 65 | | 1250 | 69 | | 40-140 | 5 | | 30 |
| Cl5-BZ#105 | 43.6 | 1690 | 1280 | 73 | | 1290 | 74 | | 40-140 | 1 | | 30 |
| Cl7-BZ#187 | ND | 1690 | 1140 | 67 | | 1130 | 67 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | ND | 1690 | 1210 | 71 | | 1230 | 73 | | 40-140 | 2 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018125
**Report Date:** 12/13/10

| 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): 01-19 QC Batch ID: WG444052-4 WG444052-5 QC Sample: L1018125-19 Client ID: S-10O-C070-0-1.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 59 | | 59 | | 30-150 |
| DBOB | 61 | | 64 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-19 Batch: WG444052-2 WG444052-3 | | | | | | | | |
| Cl2-BZ#8 | 83 | | 78 | | 40-140 | 6 | | 30 |
| Cl3-BZ#18 | 86 | | 80 | | 40-140 | 7 | | 30 |
| Cl3-BZ#28 | 91 | | 85 | | 40-140 | 7 | | 30 |
| Cl4-BZ#52 | 88 | | 82 | | 40-140 | 7 | | 30 |
| Cl4-BZ#44 | 92 | | 88 | | 40-140 | 4 | | 30 |
| Cl4-BZ#66 | 94 | | 89 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 96 | | 90 | | 40-140 | 6 | | 30 |
| Cl5-BZ#118 | 98 | | 92 | | 40-140 | 6 | | 30 |
| Cl5-BZ#105 | 90 | | 87 | | 40-140 | 3 | | 30 |
| Cl6-BZ#138 | 94 | | 90 | | 40-140 | 4 | | 30 |
| Cl7-BZ#187 | 92 | | 87 | | 40-140 | 6 | | 30 |
| Cl6-BZ#128 | 92 | | 88 | | 40-140 | 4 | | 30 |
| Cl7-BZ#180 | 91 | | 87 | | 40-140 | 4 | | 30 |
| Cl7-BZ#170 | 79 | | 78 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | 80 | | 79 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | 93 | | 89 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | 85 | | 84 | | 40-140 | 1 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018125

**Project Number:** TO-0010-03 **Report Date:** 12/13/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-19 Batch: WG444052-2 WG444052-3 | | | | | | | |
| DBOB | 104 | | 87 | | 30-150 | | | |
| BZ 198 | 81 | | 80 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-19 Batch: WG444052-2 WG444052-3 | | | | | | | |
| Cl6-BZ#153 | 87 | | 82 | | 40-140 | 6 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 104 | | 87 | | 30-150 |
| BZ 198 | 81 | | 80 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-01
Client ID: S-10O-C047-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:17
Date Received: 11/05/10
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 | 99.0 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 40.8 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-02
Client ID: S-10O-C047-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:17
Date Received: 11/05/10
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 | 95.9 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 42.9 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-03
Client ID: S-10O-C048-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:05
Date Received: 11/05/10
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 | 98.3 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 42.6 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-04
Client ID: S-10O-C048-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:05
Date Received: 11/05/10
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 | 97.4 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.2 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-05
Client ID: S-10O-C049-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:50
Date Received: 11/05/10
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 | 99.2 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.1 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-06
Client ID: S-10O-C049-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:50
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.8 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-07
Client ID: S-10O-C050-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:32
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.2 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-08
Client ID: S-10O-C050-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:32
Date Received: 11/05/10
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 | 98.9 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 41.6 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-09
Client ID: S-10O-C051-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:37
Date Received: 11/05/10
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 | 99.8 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 88.2 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-10
Client ID: S-10O-C051-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:37
Date Received: 11/05/10
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 | 99.3 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 59.4 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-11
Client ID: S-10O-C052-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:20
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.7 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-12
Client ID: S-10O-C052-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:20
Date Received: 11/05/10
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 | 97.3 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.5 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-13
Client ID: S-10O-C053-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:55
Date Received: 11/05/10
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 | 96.3 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.3 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-14
Client ID: S-10O-C053-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 09:55
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.0 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-15
Client ID: S-10O-C054-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:53
Date Received: 11/05/10
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 | 99.3 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.7 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-16
Client ID: S-10O-C054-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:53
Date Received: 11/05/10
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 | 96.6 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 55.5 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-17
Client ID: S-10O-C055-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:04
Date Received: 11/05/10
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 | 99.6 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.1 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-18
Client ID: S-10O-C055-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 14:04
Date Received: 11/05/10
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 | 95.4 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 57.8 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## SAMPLE RESULTS

Lab ID: L1018125-19
Client ID: S-10O-C070-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 15:18
Date Received: 11/05/10
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 | 96.7 | | % | 0.100 | -- | 1 | - | 11/19/10 11:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 72.4 | | % | 0.100 | NA | 1 | - | 11/17/10 15:20 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG444008-1 QC Sample: L1018125-01 Client ID: S-10O-C047-0-1.0 | | | | | | |
| Solids, Total | 99.0 | 98.4 | % | 1 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018125-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-12A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-13A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-14A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-15A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018125
**Report Date:** 12/13/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018125-16A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-17A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-18A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-19A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018125-19B | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018125 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/13/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 11

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018125

ALPHA ANALYTICAL
Westborough, 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 Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1018125-1 | S-10O-C047-0-1.0 | 10/25/10 | 09:17 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A1 | 1 |
| -2 | S-10O-C047-1.0-2.0 | 10/25/10 | 09:17 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A1 | 1 |
| -3 | S-10O-C048-0-1.0 | 10/25/10 | 09:05 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A3 | 1 |
| -4 | S-10O-C048-1.0-2.0 | 10/25/10 | 09:05 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A3 | 1 |
| -5 | S-10O-C049-0-1.0 | 10/25/10 | 14:50 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-B1 | 1 |
| -6 | S-10O-C049-1.0-2.0 | 10/25/10 | 14:50 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-B1 | 1 |
| -7 | S-10O-C050-0-1.0 | 10/25/10 | 14:32 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-B2 | 1 |
| -8 | S-10O-C050-1.0-2.0 | 10/25/10 | 14:32 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-B2 | 1 |
| -9 | S-10O-C051-0-1.0 | 10/25/10 | 09:37 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C1 | 1 |
| -10 | S-10O-C051-1.0-2.0 | 10/25/10 | 09:37 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C1 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10, 19:00 | [signature] | 11/5/10 1900 |
| | | | |

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 Payment Terms.

FORM NO: 01-01(I-N,I)
(rev. 29-APR-00)

Serial_No:12131016:11

# CHAIN OF CUSTODY

PAGE 2 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 ALPHA Job #: L1018125

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**Report Information** ☐ FAX ☒ ADEx

**Data Deliverables** ☒ EMAIL ☐ Add'l Deliverables

**Billing Information** ☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| 18125-11 | S-10O-C052-0-1.0 | 10/25/10 | 14:20 | SED | MW | ☒ | BH-C4 | 1 |
| -12 | S-10O-C052-1.0-2.0 | 10/25/10 | 14:20 | SED | MW | ☒ | BH-C4 | 1 |
| -13 | S-10O-C053-0-1.0 | 10/25/10 | 09:55 | SED | MW | ☒ | BH-D1 | 1 |
| -14 | S-10O-C053-1.0-2.0 | 10/25/10 | 09:55 | SED | MW | ☒ | BH-D1 | 1 |
| -15 | S-10O-C054-0-1.0 | 10/25/10 | 13:53 | SED | MW | ☒ | BH-D4 | 1 |
| -16 | S-10O-C054-1.0-2.0 | 10/25/10 | 13:53 | SED | MW | ☒ | BH-D4 | 1 |
| -17 | S-10O-C055-0-1.0 | 10/25/10 | 14:04 | SED | MW | ☒ | BH-E5 | 1 |
| -18 | S-10O-C055-1.0-2.0 | 10/25/10 | 14:04 | SED | MW | ☒ | BH-E5 | 1 |
| | S-10O-C056-0-1.0 | 10/25/10 | 10:36 | SED | MW | ☒ | BH-F1 | 1 |
| | S-10O-C056-1.0-2.0 | 10/25/10 | 10:36 | SED | MW | ☒ | BH-F1 | 1 |
| | | | | | Container Type | A | | |
| | | | | | Preservative | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:10 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Serial_No:12131016:11

# CHAIN OF CUSTODY

PAGE 5 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018125

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information - Data Deliverables**

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

**Billing Information**

☒ Same as Client Info PO #:

**Regulatory Requirements/Report Limits**

State/Fed Program: FED
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10O-C067-0-1.0 | 10/27/10 | 10:25 | SED | MW | ☒ | BH-SOIL3 | 1 |
| | S-10O-C067-1.0-2.0 | 10/27/10 | 10:25 | SED | MW | ☒ | BH-SOIL3 | 1 |
| | S-10O-C068-0-1.0 | 10/27/10 | 11:10 | SED | MW | ☒ | BH-SOIL4 | 1 |
| | S-10O-C068-1.0-2.0 | 10/27/10 | 11:10 | SED | MW | ☒ | BH-SOIL4 | 1 |
| | S-10O-C069-0-1.0 | 10/27/10 | 11:30 | SED | MW | ☒ | BH-SOIL5 | 1 |
| | S-10O-C069-1.0-2.0 | 10/27/10 | 11:30 | SED | MW | ☒ | BH-SOIL5 | 1 |
| 1018125 19 | S-10O-C070-0-1.0 | 10/27/10 | 15:18 | SED | DB | ☒ | BH-CSO | 1 |
| | S-10O-C071-0-1.0 | 10/28/10 | 08:33 | SED | MW | ☒ | BH-A2 | 1 |
| | S-10O-C071-1.0-2.0 | 10/28/10 | 08:33 | SED | MW | ☒ | BH-A2 | 1 |
| | | | | | | ☐ | | |
| | | | | Container Type | | A - - - - - - - - - - - | | |
| | | | | Preservative | | A - - - - - - - - - - - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

# CHAIN OF CUSTODY

PAGE 11 OF 11

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018125

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| 1812-5.19 | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | CSO MS/MSD | 1 |
| | S-10O-C071-0-1.0MS/MSD | 10/28/10 | 0833 | SED | MW | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 12:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018126 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/17/10 |

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Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018126-01 | S-10O-C056-0-1.0 | NEW BEDFORD, MA | 10/25/10 10:36 |
| L1018126-02 | S-10O-C056-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 10:36 |
| L1018126-03 | S-10O-C057-0-1.0 | NEW BEDFORD, MA | 10/25/10 11:00 |
| L1018126-04 | S-10O-C057-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 11:00 |
| L1018126-05 | S-10O-C058-0-1.0 | NEW BEDFORD, MA | 10/25/10 11:32 |
| L1018126-06 | S-10O-C058-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 11:32 |
| L1018126-07 | S-10O-C059-0-1.0 | NEW BEDFORD, MA | 10/25/10 11:54 |
| L1018126-08 | S-10O-C059-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 11:54 |
| L1018126-09 | S-10O-C060-0-1.0 | NEW BEDFORD, MA | 10/25/10 12:11 |
| L1018126-10 | S-10O-C060-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 12:11 |
| L1018126-11 | S-10O-C061-0-1.0 | NEW BEDFORD, MA | 10/25/10 12:36 |
| L1018126-12 | S-10O-C061-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 12:36 |
| L1018126-13 | S-10O-C062-0-1.0 | NEW BEDFORD, MA | 10/25/10 13:00 |
| L1018126-14 | S-10O-C062-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 13:00 |
| L1018126-15 | S-10O-C063-0-1.0 | NEW BEDFORD, MA | 10/25/10 13:19 |
| L1018126-16 | S-10O-C063-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 13:19 |
| L1018126-17 | S-10O-C064-0-1.0 | NEW BEDFORD, MA | 10/25/10 13:38 |
| L1018126-18 | S-10O-C064-1.0-2.0 | NEW BEDFORD, MA | 10/25/10 13:38 |
| L1018126-19 | S-10O-C065-0-1.0 | NEW BEDFORD, MA | 10/27/10 09:05 |
| L1018126-20 | S-10O-C071-0-1.0 | NEW BEDFORD, MA | 10/28/10 08:33 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 05, 2010 and placed in frozen storage until November 19, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until they were removed November 22, 2010 to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

The majority of samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

Samples L1018126-03, -09, -11, -13, -14, -18, -19 and -20 were re-analyzed on dilution in order to quantitate the samples 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 analyses. The re-analyses were performed only for the compounds that exceeded the calibration range.

The WG444316-3 LCS/LCSD RPD(s), associated with L1018126-01 through -20, are above the acceptance criteria for Cl2-BZ#8 (38%) and Cl3-BZ#28 (36%); however, the individual LCS/LCSD recoveries are within method limits.

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: 12/17/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-01 | Date Collected: | 10/25/10 10:36 |
| Client ID: | S-10O-C056-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 15:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 395 | | ug/kg | 163 | -- | 100 |
| Cl3-BZ#18 | 848 | | ug/kg | 163 | -- | 100 |
| Cl4-BZ#52 | 1300 | | ug/kg | 163 | -- | 100 |
| Cl4-BZ#44 | 791 | | ug/kg | 163 | -- | 100 |
| Cl4-BZ#66 | 1510 | | ug/kg | 163 | -- | 100 |
| Cl5-BZ#118 | 931 | | ug/kg | 163 | -- | 100 |
| Cl6-BZ#138 | 536 | | ug/kg | 163 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 163 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 163 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 163 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 163 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 163 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 163 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 66 | | 30-150 |
| BZ 198 | 55 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-01 | Date Collected: | 10/25/10 10:36 |
| Client ID: | S-10O-C056-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 15:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1180 | | ug/kg | 163 | -- | 100 |
| Cl5-BZ#101 | 924 | | ug/kg | 163 | -- | 100 |
| Cl6-BZ#153 | 523 | | ug/kg | 163 | -- | 100 |
| Cl5-BZ#105 | 253 | | ug/kg | 163 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 163 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 66 | 30-150 |
| BZ 198 | 55 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-02 | Date Collected: | 10/25/10 10:36 |
| Client ID: | S-10O-C056-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 18:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1.91 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#52 | 6.43 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#44 | 2.32 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#187 | 3.17 | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.66 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-02 | Date Collected: | 10/25/10 10:36 |
| Client ID: | S-10O-C056-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 18:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl3-BZ#28 | 1.97 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#101 | 2.03 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#118 | 2.05 | | ug/kg | 1.66 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 75 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-03 | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 16:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2070 | | ug/kg | 168 | -- | 100 |
| Cl3-BZ#18 | 4660 | E | ug/kg | 168 | -- | 100 |
| Cl4-BZ#52 | 6620 | E | ug/kg | 168 | -- | 100 |
| Cl4-BZ#44 | 5190 | E | ug/kg | 168 | -- | 100 |
| Cl4-BZ#66 | 8590 | E | ug/kg | 168 | -- | 100 |
| Cl5-BZ#118 | 4420 | E | ug/kg | 168 | -- | 100 |
| Cl6-BZ#138 | 2030 | | ug/kg | 168 | -- | 100 |
| Cl6-BZ#128 | 511 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#180 | 412 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#170 | 296 | | ug/kg | 168 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 168 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-03 | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 16:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5060 | E | ug/kg | 168 | -- | 100 |
| Cl5-BZ#101 | 3470 | E | ug/kg | 168 | -- | 100 |
| Cl6-BZ#153 | 1610 | | ug/kg | 168 | -- | 100 |
| Cl5-BZ#105 | 1100 | | ug/kg | 168 | -- | 100 |
| Cl7-BZ#187 | 303 | | ug/kg | 168 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018126-03 | D | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-0-1.0 | | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 14:09 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4510 | | ug/kg | 838 | -- | 500 |
| Cl4-BZ#52 | 7350 | | ug/kg | 838 | -- | 500 |
| Cl4-BZ#44 | 5560 | | ug/kg | 838 | -- | 500 |
| Cl4-BZ#66 | 9850 | | ug/kg | 838 | -- | 500 |
| Cl5-BZ#118 | 5000 | | ug/kg | 838 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-03 D | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 14:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6390 | | ug/kg | 838 | -- | 500 |
| Cl5-BZ#101 | 4960 | | ug/kg | 838 | -- | 500 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-04 | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 17:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#18 | 1.71 | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#52 | 2.19 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#187 | 3.48 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 91 | 30-150 |
| BZ 198 | 79 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-04 | Date Collected: | 10/25/10 11:00 |
| Client ID: | S-10O-C057-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 17:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-05 | Date Collected: | 10/25/10 11:32 |
| Client ID: | S-10O-C058-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 18:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 295 | | ug/kg | 165 | -- | 100 |
| Cl3-BZ#18 | 656 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#52 | 1250 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#66 | 766 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#118 | 513 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#138 | 305 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 165 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 165 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 165 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-05 | Date Collected: | 10/25/10 11:32 |
| Client ID: | S-10O-C058-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 18:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1120 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#44 | 618 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#101 | 526 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#153 | 373 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-06 | Date Collected: | 10/25/10 11:32 |
| Client ID: | S-10O-C058-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 16:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2.29 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#66 | 2.81 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.65 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 76 | 30-150 |
| BZ 198 | 68 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-06 | Date Collected: | 10/25/10 11:32 |
| Client ID: | S-10O-C058-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 16:13 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl3-BZ#28 | 3.77 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#52 | 5.12 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#44 | 2.16 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#101 | 1.71 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.65 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-07 | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 19:31 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 508 | | ug/kg | 167 | -- | 100 |
| Cl3-BZ#18 | 1280 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#52 | 1810 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#44 | 1040 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#66 | 1260 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#118 | 807 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#138 | 538 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 167 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 167 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 167 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 167 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 51 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-07 | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 19:31 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2000 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#101 | 824 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#153 | 522 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#105 | 266 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 167 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 51 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-08 | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 20:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1800 | | ug/kg | 164 | -- | 100 |
| Cl3-BZ#18 | 4960 | E | ug/kg | 164 | -- | 100 |
| Cl4-BZ#52 | 7900 | E | ug/kg | 164 | -- | 100 |
| Cl4-BZ#44 | 3690 | E | ug/kg | 164 | -- | 100 |
| Cl4-BZ#66 | 3160 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#118 | 1460 | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#138 | 1720 | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#187 | 299 | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#128 | 445 | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#180 | 430 | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#170 | 309 | | ug/kg | 164 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 164 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 164 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 164 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-08 | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 20:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3860 | E | ug/kg | 164 | -- | 100 |
| Cl5-BZ#101 | 1480 | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#153 | 1150 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#105 | 583 | | ug/kg | 164 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-08 D | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 14:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5100 | | ug/kg | 820 | -- | 500 |
| Cl4-BZ#52 | 8960 | | ug/kg | 820 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-08 D | Date Collected: | 10/25/10 11:54 |
| Client ID: | S-10O-C059-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 14:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5120 | | ug/kg | 820 | -- | 500 |
| Cl4-BZ#44 | 3980 | | ug/kg | 820 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-09 | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 20:53 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2920 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#18 | 5820 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 6600 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 4350 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 7320 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 3240 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 1520 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 385 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 327 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | 224 | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-09 | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/07/10 20:53 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6050 | E | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 2720 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 1340 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 863 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 260 | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-09 D | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 15:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5780 | | ug/kg | 832 | -- | 500 |
| Cl4-BZ#66 | 7910 | | ug/kg | 832 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-09 D | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/14/10 15:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7740 | | ug/kg | 832 | -- | 500 |
| Cl4-BZ#52 | 6730 | | ug/kg | 832 | -- | 500 |
| Cl4-BZ#44 | 4780 | | ug/kg | 832 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-10 | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/16/10 12:17 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4.13 | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#18 | 6.74 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#52 | 11.8 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#44 | 5.41 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#118 | 4.44 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#138 | 2.41 | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 90 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-10 | Date Collected: | 10/25/10 12:11 |
| Client ID: | S-10O-C060-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:38 |
| Analytical Date: | 12/16/10 12:17 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 10.2 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#66 | 6.45 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#101 | 3.93 | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#153 | 2.43 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-11 | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 21:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 100 | | ug/kg | 16.8 | -- | 10 |
| Cl3-BZ#18 | 255 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#52 | 625 | E | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#44 | 243 | | ug/kg | 16.8 | -- | 10 |
| Cl4-BZ#66 | 487 | E | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#118 | 325 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#138 | 195 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#180 | 33.6 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#170 | 28.4 | | ug/kg | 16.8 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.8 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.8 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-11 | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 21:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 448 | E | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#101 | 271 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#153 | 176 | | ug/kg | 16.8 | -- | 10 |
| Cl5-BZ#105 | 62.7 | | ug/kg | 16.8 | -- | 10 |
| Cl7-BZ#187 | 33.2 | | ug/kg | 16.8 | -- | 10 |
| Cl6-BZ#128 | 28.1 | | ug/kg | 16.8 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-11 D | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 14:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 568 | | ug/kg | 168 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 67 | 30-150 |
| BZ 198 | 62 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-11 D | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 14:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 533 | | ug/kg | 168 | -- | 100 |
| Cl4-BZ#66 | 437 | | ug/kg | 168 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 62 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-12 | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 23:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#52 | 2.31 | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl4-BZ#66 | 2.15 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 71 | 30-150 |
| BZ 198 | 69 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-12 | Date Collected: | 10/25/10 12:36 |
| Client ID: | S-10O-C061-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 23:45 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2.26 | | ug/kg | 1.67 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-13 | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 15:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1470 | | ug/kg | 167 | -- | 100 |
| Cl3-BZ#18 | 3080 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#52 | 5280 | E | ug/kg | 167 | -- | 100 |
| Cl4-BZ#44 | 2950 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#66 | 5710 | E | ug/kg | 167 | -- | 100 |
| Cl5-BZ#118 | 3990 | E | ug/kg | 167 | -- | 100 |
| Cl6-BZ#138 | 2060 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#187 | 322 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#128 | 514 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#180 | 432 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#170 | 322 | | ug/kg | 167 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 167 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 167 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 167 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-13 | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 15:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4350 | E | ug/kg | 167 | -- | 100 |
| Cl5-BZ#101 | 3240 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#153 | 1940 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#105 | 678 | | ug/kg | 167 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 63 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018126-13 | D | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-0-1.0 | | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 21:01 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 8260 | | ug/kg | 667 | -- | 400 |
| Cl4-BZ#66 | 8910 | | ug/kg | 667 | -- | 400 |
| Cl5-BZ#118 | 5700 | | ug/kg | 667 | -- | 400 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-13 D | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 21:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6750 | | ug/kg | 667 | -- | 400 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-14 | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/15/10 01:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 10.8 | | ug/kg | 1.66 | -- | 1 |
| Cl3-BZ#18 | 20.5 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#52 | 43.3 | E | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#44 | 24.4 | | ug/kg | 1.66 | -- | 1 |
| Cl4-BZ#66 | 55.4 | E | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#138 | 19.3 | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#187 | 3.12 | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl7-BZ#170 | 3.34 | | ug/kg | 1.66 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.66 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.66 | -- | 1 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-14 | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/15/10 01:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 32.4 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#101 | 25.0 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#118 | 27.4 | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#153 | 16.6 | | ug/kg | 1.66 | -- | 1 |
| Cl5-BZ#105 | 1.97 | | ug/kg | 1.66 | -- | 1 |
| Cl6-BZ#128 | 3.25 | | ug/kg | 1.66 | -- | 1 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-14 D | Date Collected: | 10/25/10 13:00 |
| Client ID: | S-10O-C062-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/16/10 11:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 43.2 | | ug/kg | 8.32 | -- | 5 |
| Cl4-BZ#66 | 42.2 | | ug/kg | 8.32 | -- | 5 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-15 | Date Collected: | 10/25/10 13:19 |
| Client ID: | S-10O-C063-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 17:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 535 | | ug/kg | 165 | -- | 100 |
| Cl3-BZ#18 | 1410 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#52 | 2420 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#44 | 1260 | | ug/kg | 165 | -- | 100 |
| Cl4-BZ#66 | 3220 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#118 | 2750 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#138 | 1360 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#128 | 338 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#180 | 284 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#170 | 202 | | ug/kg | 165 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 165 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 165 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 52 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-15 | Date Collected: | 10/25/10 13:19 |
| Client ID: | S-10O-C063-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 17:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2320 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#101 | 2600 | | ug/kg | 165 | -- | 100 |
| Cl6-BZ#153 | 1510 | | ug/kg | 165 | -- | 100 |
| Cl5-BZ#105 | 461 | | ug/kg | 165 | -- | 100 |
| Cl7-BZ#187 | 241 | | ug/kg | 165 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 52 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-16 | Date Collected: | 10/25/10 13:19 |
| Client ID: | S-10O-C063-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/15/10 00:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4.31 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#52 | 8.62 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#44 | 3.73 | | ug/kg | 1.65 | -- | 1 |
| Cl4-BZ#66 | 9.12 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#118 | 6.04 | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#138 | 3.25 | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.65 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 77 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-16 | Date Collected: | 10/25/10 13:19 |
| Client ID: | S-10O-C063-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/15/10 00:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.65 | -- | 1 |
| Cl3-BZ#28 | 5.70 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#101 | 5.47 | | ug/kg | 1.65 | -- | 1 |
| Cl6-BZ#153 | 3.12 | | ug/kg | 1.65 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.65 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-17 | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 19:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 544 | | ug/kg | 167 | -- | 100 |
| Cl3-BZ#18 | 1150 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#52 | 3150 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#44 | 1400 | | ug/kg | 167 | -- | 100 |
| Cl4-BZ#66 | 3110 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#118 | 2250 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#138 | 1380 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#128 | 365 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#180 | 295 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#170 | 213 | | ug/kg | 167 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 167 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 167 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 167 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 72 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-17 | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 19:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2850 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#101 | 2050 | | ug/kg | 167 | -- | 100 |
| Cl6-BZ#153 | 1420 | | ug/kg | 167 | -- | 100 |
| Cl5-BZ#105 | 527 | | ug/kg | 167 | -- | 100 |
| Cl7-BZ#187 | 262 | | ug/kg | 167 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 72 | 30-150 |
| BZ 198 | 59 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-18 | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 20:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1720 | | ug/kg | 169 | -- | 100 |
| Cl3-BZ#18 | 3440 | E | ug/kg | 169 | -- | 100 |
| Cl4-BZ#52 | 7090 | E | ug/kg | 169 | -- | 100 |
| Cl4-BZ#44 | 4810 | E | ug/kg | 169 | -- | 100 |
| Cl4-BZ#66 | 8210 | E | ug/kg | 169 | -- | 100 |
| Cl5-BZ#118 | 4900 | E | ug/kg | 169 | -- | 100 |
| Cl6-BZ#138 | 2870 | | ug/kg | 169 | -- | 100 |
| Cl6-BZ#128 | 743 | | ug/kg | 169 | -- | 100 |
| Cl7-BZ#180 | 561 | | ug/kg | 169 | -- | 100 |
| Cl7-BZ#170 | 406 | | ug/kg | 169 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 169 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 169 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 169 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-18 | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 20:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7670 | E | ug/kg | 169 | -- | 100 |
| Cl5-BZ#101 | 3960 | E | ug/kg | 169 | -- | 100 |
| Cl6-BZ#153 | 2150 | | ug/kg | 169 | -- | 100 |
| Cl5-BZ#105 | 1390 | | ug/kg | 169 | -- | 100 |
| Cl7-BZ#187 | 431 | | ug/kg | 169 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 85 | 30-150 |
| BZ 198 | 69 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-18 D | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 20:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6670 | | ug/kg | 845 | -- | 500 |
| Cl4-BZ#52 | 12800 | | ug/kg | 845 | -- | 500 |
| Cl4-BZ#44 | 8480 | | ug/kg | 845 | -- | 500 |
| Cl4-BZ#66 | 15300 | | ug/kg | 845 | -- | 500 |
| Cl5-BZ#118 | 7690 | | ug/kg | 845 | -- | 500 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-18 D | Date Collected: | 10/25/10 13:38 |
| Client ID: | S-10O-C064-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 20:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 15900 | | ug/kg | 845 | -- | 500 |
| Cl5-BZ#101 | 7940 | | ug/kg | 845 | -- | 500 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-19 | Date Collected: | 10/27/10 09:05 |
| Client ID: | S-10O-C065-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 22:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl3-BZ#18 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#52 | 288 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#44 | 203 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#66 | 367 | E | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#118 | 194 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#128 | 36.8 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#180 | 41.2 | | ug/kg | 16.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.4 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-19 | Date Collected: | 10/27/10 09:05 |
| Client ID: | S-10O-C065-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 22:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 32.8 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#101 | 228 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#153 | 90.1 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#105 | 88.9 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#138 | 162 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#187 | 20.3 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#170 | 18.7 | | ug/kg | 16.4 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-19 D | Date Collected: | 10/27/10 09:05 |
| Client ID: | S-10O-C065-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 21:17 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#66 | 352 | | ug/kg | 164 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-20 | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 21:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1050 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#18 | 1900 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 3210 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 3580 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 2010 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 1120 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | 285 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | 228 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-20 | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/08/10 21:58 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4000 | E | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 2160 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 2060 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 1140 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | 626 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | 214 | | ug/kg | 166 | -- | 100 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018126-20 D | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/22/10 15:46 |
| Analytical Date: | 12/14/10 23:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/01/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5240 | | ug/kg | 333 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 58 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/07/10 13:22
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/22/10 15:38
Cleanup Method1: EPA 3630
Cleanup Date1: 12/01/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG444316-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/07/10 13:22
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/22/10 15:38
Cleanup Method1: EPA 3630
Cleanup Date1: 12/01/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG444316-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

| 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): 01-20 QC Batch ID: WG444316-4 WG444316-5 QC Sample: L1018126-16 Client ID: S-10O-C063-1.0-2.0 | | | | | | | | | | | | |
| Cl2-BZ#8 | ND | 1660 | 1040 | 63 | | 1230 | 74 | | 40-140 | 17 | | 30 |
| Cl3-BZ#18 | 4.31 | 1660 | 1050 | 63 | | 1240 | 74 | | 40-140 | 17 | | 30 |
| Cl4-BZ#52 | 8.62 | 1660 | 1050 | 63 | | 1270 | 76 | | 40-140 | 19 | | 30 |
| Cl4-BZ#44 | 3.73 | 1660 | 1050 | 63 | | 1240 | 74 | | 40-140 | 17 | | 30 |
| Cl4-BZ#66 | 9.12 | 1660 | 1010 | 60 | | 1180 | 70 | | 40-140 | 16 | | 30 |
| Cl5-BZ#118 | 6.04 | 1660 | 1030 | 62 | | 1240 | 74 | | 40-140 | 19 | | 30 |
| Cl6-BZ#138 | 3.25 | 1660 | 1020 | 61 | | 1180 | 71 | | 40-140 | 15 | | 30 |
| Cl7-BZ#187 | ND | 1660 | 978 | 59 | | 1130 | 68 | | 40-140 | 14 | | 30 |
| Cl6-BZ#128 | ND | 1660 | 1030 | 62 | | 1210 | 73 | | 40-140 | 16 | | 30 |
| Cl7-BZ#180 | ND | 1660 | 984 | 59 | | 1170 | 70 | | 40-140 | 17 | | 30 |
| Cl7-BZ#170 | ND | 1660 | 934 | 56 | | 1100 | 66 | | 40-140 | 16 | | 30 |
| Cl8-BZ#195 | ND | 1660 | 956 | 58 | | 1100 | 66 | | 40-140 | 14 | | 30 |
| Cl9-BZ#206 | ND | 1660 | 1070 | 65 | | 1220 | 73 | | 40-140 | 13 | | 30 |
| Cl10-BZ#209 | ND | 1660 | 929 | 56 | | 1070 | 64 | | 40-140 | 14 | | 30 |
| Cl3-BZ#28 | 5.70 | 1660 | 1100 | 66 | | 1240 | 74 | | 40-140 | 12 | | 30 |
| Cl5-BZ#101 | 5.47 | 1660 | 1060 | 64 | | 1180 | 71 | | 40-140 | 11 | | 30 |
| Cl6-BZ#153 | 3.12 | 1660 | 1010 | 61 | | 1120 | 67 | | 40-140 | 10 | | 30 |
| Cl5-BZ#105 | ND | 1660 | 1090 | 66 | | 1240 | 75 | | 40-140 | 13 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

| 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): 01-20 QC Batch ID: WG444316-4 WG444316-5 QC Sample: L1018126-16 Client ID: S-10O-C063-1.0-2.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 64 | | 70 | | 30-150 |
| DBOB | 71 | | 81 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING

**Project Number:** TO-0010-03

**Lab Number:** L1018126

**Report Date:** 12/17/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG444316-2 WG444316-3 | | | | | | | | |
| Cl2-BZ#8 | 66 | | 97 | | 40-140 | **38** | Q | 30 |
| Cl3-BZ#18 | 71 | | 94 | | 40-140 | 28 | | 30 |
| Cl3-BZ#28 | 66 | | 95 | | 40-140 | **36** | Q | 30 |
| Cl4-BZ#52 | 74 | | 95 | | 40-140 | 25 | | 30 |
| Cl4-BZ#44 | 75 | | 93 | | 40-140 | 21 | | 30 |
| Cl4-BZ#66 | 74 | | 93 | | 40-140 | 23 | | 30 |
| Cl5-BZ#101 | 79 | | 96 | | 40-140 | 19 | | 30 |
| Cl5-BZ#118 | 78 | | 93 | | 40-140 | 18 | | 30 |
| Cl5-BZ#105 | 68 | | 87 | | 40-140 | 25 | | 30 |
| Cl6-BZ#138 | 78 | | 92 | | 40-140 | 16 | | 30 |
| Cl7-BZ#187 | 81 | | 90 | | 40-140 | 11 | | 30 |
| Cl6-BZ#128 | 78 | | 90 | | 40-140 | 14 | | 30 |
| Cl7-BZ#180 | 86 | | 91 | | 40-140 | 6 | | 30 |
| Cl7-BZ#170 | 97 | | 82 | | 40-140 | 17 | | 30 |
| Cl8-BZ#195 | 90 | | 83 | | 40-140 | 8 | | 30 |
| Cl9-BZ#206 | 94 | | 99 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 104 | | 93 | | 40-140 | 11 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018126

**Project Number:** TO-0010-03 **Report Date:** 12/17/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG444316-2 WG444316-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 75 | | 95 | | 30-150 |
| BZ 198 | 96 | | 87 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG444316-2 WG444316-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 66 | | 87 | | 40-140 | 27 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 75 | | 95 | | 30-150 |
| BZ 198 | 96 | | 87 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-01
Client ID: S-10O-C056-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 10:36
Date Received: 11/05/10
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 | 99.5 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 74.9 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-02
Client ID: S-10O-C056-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 10:36
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.2 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-03
Client ID: S-10O-C057-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:00
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.0 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-04
Client ID: S-10O-C057-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:00
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.7 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-05
Client ID: S-10O-C058-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:32
Date Received: 11/05/10
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 | 99.4 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 72.4 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-06
Client ID: S-10O-C058-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:32
Date Received: 11/05/10
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 | 99.8 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 79.4 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-07
Client ID: S-10O-C059-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:54
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.3 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-08
Client ID: S-10O-C059-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 11:54
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 61.3 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-09
Client ID: S-10O-C060-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 12:11
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 62.0 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-10
Client ID: S-10O-C060-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 12:11
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.8 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-11
Client ID: S-10O-C061-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 12:36
Date Received: 11/05/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.2 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-12
Client ID: S-10O-C061-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 12:36
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 55.4 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-13
Client ID: S-10O-C062-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:00
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.9 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-14
Client ID: S-10O-C062-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:00
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.9 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-15
Client ID: S-10O-C063-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:19
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 47.6 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-16
Client ID: S-10O-C063-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:19
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.9 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-17
Client ID: S-10O-C064-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:38
Date Received: 11/05/10
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 | 97.8 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 42.6 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-18
Client ID: S-10O-C064-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/25/10 13:38
Date Received: 11/05/10
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 | 97.2 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 37.5 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-19
Client ID: S-10O-C065-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 09:05
Date Received: 11/05/10
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 | 99.5 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 91.0 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## SAMPLE RESULTS

Lab ID: L1018126-20
Client ID: S-10O-C071-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 08:33
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 11/22/10 12:35 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 43.3 | | % | 0.100 | NA | 1 | - | 11/19/10 16:09 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG444350-1 QC Sample: L1018126-16 Client ID: S-10O-C063-1.0-2.0 | | | | | | |
| Solids, Total | 98.6 | 98.3 | % | 0 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018126-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-12A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-13A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-14A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-15A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018126-16A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-16B | Glass 500ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-17A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-18A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-19A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-20A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018126-20B | Glass 500ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

**Container Comments**

| | |
|---|---|
| L1018126-01A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-02A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-03A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-04A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-05A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-06A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-07A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-08A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-09A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-10A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-11A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-12A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-13A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-14A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-15A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-16A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-17A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-18A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-19A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018126-20A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018126
**Report Date:** 12/17/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|

**Container Comments**

L1018126-20B SAMPLES FROZEN UPON RECEIPT 11/5/10

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018126 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/17/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 2 OF 11

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018126

ALPHA ANALYTICAL
Westborough, 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 Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

**Data Deliverables**

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S-10O-C052-0-1.0 | 10/25/10 | 14:20 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C4 | 1 |
| 2 | S-10O-C052-1.0-2.0 | 10/25/10 | 14:20 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C4 | 1 |
| 3 | S-10O-C053-0-1.0 | 10/25/10 | 09:55 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D1 | 1 |
| 4 | S-10O-C053-1.0-2.0 | 10/25/10 | 09:55 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D1 | 1 |
| 5 | S-10O-C054-0-1.0 | 10/25/10 | 13:53 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D4 | 1 |
| 6 | S-10O-C054-1.0-2.0 | 10/25/10 | 13:53 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D4 | 1 |
| 7 | S-10O-C055-0-1.0 | 10/25/10 | 14:04 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E5 | 1 |
| 8 | S-10O-C055-1.0-2.0 | 10/25/10 | 14:04 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E5 | 1 |
| 1 | S-10O-C056-0-1.0 | 10/25/10 | 10:36 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-F1 | 1 |
| 2 | S-10O-C056-1.0-2.0 | 10/25/10 | 10:36 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-F1 | 1 |
| | | | | Container Type | | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | Preservative | | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 11/5/10 19:10 | | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-MJ)
(rev. 29-APR-09)

Serial_No:12171013:56

# CHAIN OF CUSTODY

PAGE 3 OF 11

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018126

**Project Information**

Project Name: NBH Environmental Monitoring

Project Location: New Bedford, MA

Project #: TO-0010-03

Project Manager: Dave Walsh

ALPHA Quote #:

**Client Information**

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: dwalsh@whgrp.com

☐ These samples have been Previously analyzed by Alpha

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18126 3 | S-10O-C057-0-1.0 | 10/25/10 | 11:00 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-G1 | 1 |
| 4 | S-10O-C057-1.0-2.0 | 10/25/10 | 11:00 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-G1 | 1 |
| 5 | S-10O-C058-0-1.0 | 10/25/10 | 11:32 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-I1 | 1 |
| 6 | S-10O-C058-1.0-2.0 | 10/26/10 | 11:32 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-I1 | 1 |
| 7 | S-10O-C059-0-1.0 | 10/25/10 | 11:54 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K1 | 1 |
| 8 | S-10O-C059-1.0-2.0 | 10/25/10 | 11:54 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K1 | 1 |
| 9 | S-10O-C060-0-1.0 | 10/25/10 | 12:11 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L1 | 1 |
| 10 | S-10O-C060-1.0-2.0 | 10/25/10 | 12:11 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L1 | 1 |
| 11 | S-10O-C061-0-1.0 | 10/25/10 | 12:36 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M1 | 1 |
| 12 | S-10O-C061-1.0-2.0 | 10/25/10 | 12:36 | SED | | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M1 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 11/5/10, 19:10 | [illegible] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-N4) (rev. 29-APR-09)



Serial_No:12171013:56

# CHAIN OF CUSTODY

PAGE 4 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018126

**Project Information**

Project Name: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: dwalsh@whgrp.com

☐ These samples have been Previously analyzed by Alpha

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information** — ☐ FAX ☒ ADEx

**Data Deliverables** — ☒ EMAIL ☐ Add'l Deliverables

**Billing Information** — ☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

State/Fed Program: FED
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18126-13 | S-10O-C062-0-1.0 | 10/25/10 | 13:00 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N2 | 1 |
| 14 | S-10O-C062-1.0-2.0 | 10/25/10 | 13:00 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N2 | 1 |
| 15 | S-10O-C063-0-1.0 | 10/25/10 | 13:19 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-O1 | 1 |
| 16 | S-10O-C063-1.0-2.0 | 10/25/10 | 13:19 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-O1 | 1 |
| 17 | S-10O-C064-0-1.0 | 10/25/10 | 13:38 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-P1 | 1 |
| 18 | S-10O-C064-1.0-2.0 | 10/25/10 | 13:38 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-P1 | 1 |
| 19 | S-10O-C065-0-1.0 | 10/27/10 | 09:05 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL1 | 1 |
| | S-10O-C065-1.0-2.0 | 10/27/10 | 09:05 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL1 | 1 |
| | S-10O-C066-0-1.0 | 10/27/10 | 10:07 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL2 | 1 |
| | S-10O-C066-1.0-2.0 | 10/27/10 | 10:07 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL2 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-03(I-N,I)
(rev. 29-APR-09)

# CHAIN OF CUSTODY

PAGE 5 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018126

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10O-C067-0-1.0 | 10/27/10 | 10:25 | SED | MW | ☒ | BH-SOIL3 | 1 |
| | S-10O-C067-1.0-2.0 | 10/27/10 | 10:25 | SED | MW | ☒ | BH-SOIL3 | 1 |
| | S-10O-C068-0-1.0 | 10/27/10 | 11:10 | SED | MW | ☒ | BH-SOIL4 | 1 |
| | S-10O-C068-1.0-2.0 | 10/27/10 | 11:10 | SED | MW | ☒ | BH-SOIL4 | 1 |
| | S-10O-C069-0-1.0 | 10/27/10 | 11:30 | SED | MW | ☒ | BH-SOIL5 | 1 |
| | S-10O-C069-1.0-2.0 | 10/27/10 | 11:30 | SED | MW | ☒ | BH-SOIL5 | 1 |
| | S-10O-C070-0-1.0 | 10/27/10 | 15:18 | SED | DB | ☒ | BH-CSO | 1 |
| 1812620 | S-10O-C071-0-1.0 | 10/28/10 | 08:33 | SED | MW | ☒ | BH-A2 | 1 |
| | S-10O-C071-1.0-2.0 | 10/28/10 | 08:33 | SED | MW | ☒ | BH-A2 | 1 |
| | | | | | | ☐ | | |
| | | | | Container Type | | A | | |
| | | | | Preservative | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-N,J) (rev. 20-APR-09)

4018126

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 | ALPHA Job #:

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M2 | 1 |
| | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | CSO MS/MSD | 1 |
| 1812626.00 | S-10O-C071-0-1.0MS/MSD | 10/28/10 | 08:33 | SED | MW | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | Container Type | | | | | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | Preservative | | | | | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh | 11/5/10 19:00 | [illegible] | 11/5/10 1908 |

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 Payment Terms.

FORM NO: 01-01(D-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018129 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/22/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018129-01 | S-10O-C065-1.0-2.0 | NEW BEDFORD, MA | 10/27/10 09:05 |
| L1018129-02 | S-10O-C066-0-1.0 | NEW BEDFORD, MA | 10/27/10 10:07 |
| L1018129-03 | S-10O-C066-1.0-2.0 | NEW BEDFORD, MA | 10/27/10 10:07 |
| L1018129-04 | S-10O-C067-0-1.0 | NEW BEDFORD, MA | 10/27/10 10:25 |
| L1018129-05 | S-10O-C067-1.0-2.0 | NEW BEDFORD, MA | 10/27/10 10:25 |
| L1018129-06 | S-10O-C068-0-1.0 | NEW BEDFORD, MA | 10/27/10 11:10 |
| L1018129-07 | S-10O-C068-1.0-2.0 | NEW BEDFORD, MA | 10/27/10 11:10 |
| L1018129-08 | S-10O-C069-0-1.0 | NEW BEDFORD, MA | 10/27/10 11:30 |
| L1018129-09 | S-10O-C069-1.0-2.0 | NEW BEDFORD, MA | 10/27/10 11:30 |
| L1018129-10 | S-10O-C071-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 08:33 |
| L1018129-11 | S-10O-C072-0-1.0 | NEW BEDFORD, MA | 10/28/10 09:09 |
| L1018129-12 | S-10O-C072-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 09:09 |
| L1018129-13 | S-10O-C073-0-1.0 | NEW BEDFORD, MA | 10/28/10 08:55 |
| L1018129-14 | S-10O-C073-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 08:55 |
| L1018129-15 | S-10O-C074-0-1.0 | NEW BEDFORD, MA | 10/28/10 09:20 |
| L1018129-16 | S-10O-C074-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 09:20 |
| L1018129-17 | S-10O-C075-0-1.0 | NEW BEDFORD, MA | 10/28/10 09:35 |
| L1018129-18 | S-10O-C075-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 09:35 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 05, 2010 and placed in frozen storage until November 22, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage until they were removed November 30, 2010 to extract samples for PCB Congener analysis and analyze for air-dried percent solids.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

The majority of samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

L1018129-10, -12 were re-analyzed on further dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is 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 WG445388-3 LCSD recoveries were above the acceptance criteria for Cl3-BZ#28(155%). In addition, the associated WG445388-3 LCS/LCSD RPD(s) are above the acceptance criteria for Cl3-BZ#18 (34%) and Cl3-BZ#28 (35%).

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: 12/22/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-01 | Date Collected: | 10/27/10 09:05 |
| Client ID: | S-10O-C065-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 10:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl3-BZ#18 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#52 | 75.3 | | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#44 | 39.9 | | ug/kg | 16.5 | -- | 10 |
| Cl4-BZ#66 | 133 | | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#118 | 142 | | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#138 | 154 | | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#128 | 41.4 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#180 | 25.3 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#170 | 19.6 | | ug/kg | 16.5 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.5 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.5 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 81 | 30-150 |
| BZ 198 | 78 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-01 | Date Collected: | 10/27/10 09:05 |
| Client ID: | S-10O-C065-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 10:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 19.6 | | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#101 | 127 | | ug/kg | 16.5 | -- | 10 |
| Cl6-BZ#153 | 88.7 | | ug/kg | 16.5 | -- | 10 |
| Cl5-BZ#105 | 69.8 | | ug/kg | 16.5 | -- | 10 |
| Cl7-BZ#187 | 20.1 | | ug/kg | 16.5 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-02 | Date Collected: | 10/27/10 10:07 |
| Client ID: | S-10O-C066-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 11:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl3-BZ#18 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#52 | 65.7 | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#44 | 27.6 | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#66 | 147 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#118 | 194 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#138 | 190 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#187 | 22.2 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#128 | 51.6 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#180 | 25.5 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#170 | 20.2 | | ug/kg | 16.6 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.6 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 85 | 30-150 |
| BZ 198 | 88 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-02 | Date Collected: | 10/27/10 10:07 |
| Client ID: | S-10O-C066-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 11:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#101 | 166 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#153 | 110 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#105 | 79.1 | | ug/kg | 16.6 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 88 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-03 | Date Collected: | 10/27/10 10:07 |
| Client ID: | S-10O-C066-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 12:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 33.3 | -- | 20 |
| Cl3-BZ#18 | ND | | ug/kg | 33.3 | -- | 20 |
| Cl4-BZ#52 | 111 | | ug/kg | 33.3 | -- | 20 |
| Cl4-BZ#44 | 51.8 | | ug/kg | 33.3 | -- | 20 |
| Cl4-BZ#66 | 302 | | ug/kg | 33.3 | -- | 20 |
| Cl5-BZ#118 | 331 | | ug/kg | 33.3 | -- | 20 |
| Cl6-BZ#138 | 224 | | ug/kg | 33.3 | -- | 20 |
| Cl6-BZ#128 | 58.2 | | ug/kg | 33.3 | -- | 20 |
| Cl7-BZ#180 | 33.9 | | ug/kg | 33.3 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 33.3 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 33.3 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 33.3 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 33.3 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 53 | | 30-150 |
| BZ 198 | 57 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-03 | Date Collected: | 10/27/10 10:07 |
| Client ID: | S-10O-C066-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 12:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 76.1 | | ug/kg | 33.3 | -- | 20 |
| Cl5-BZ#101 | 316 | | ug/kg | 33.3 | -- | 20 |
| Cl6-BZ#153 | 187 | | ug/kg | 33.3 | -- | 20 |
| Cl5-BZ#105 | 98.6 | | ug/kg | 33.3 | -- | 20 |
| Cl7-BZ#187 | ND | | ug/kg | 33.3 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 53 | | 30-150 |
| BZ 198 | 57 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-04 | Date Collected: | 10/27/10 10:25 |
| Client ID: | S-10O-C067-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 12:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl3-BZ#18 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#52 | 55.6 | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#44 | 25.1 | | ug/kg | 16.6 | -- | 10 |
| Cl4-BZ#66 | 119 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#118 | 172 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#138 | 166 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#128 | 43.9 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#180 | 26.2 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#170 | 21.1 | | ug/kg | 16.6 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.6 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.6 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 84 | 30-150 |
| BZ 198 | 85 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-04 | Date Collected: | 10/27/10 10:25 |
| Client ID: | S-10O-C067-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 12:49 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 26.3 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#101 | 118 | | ug/kg | 16.6 | -- | 10 |
| Cl6-BZ#153 | 95.5 | | ug/kg | 16.6 | -- | 10 |
| Cl5-BZ#105 | 73.4 | | ug/kg | 16.6 | -- | 10 |
| Cl7-BZ#187 | 22.0 | | ug/kg | 16.6 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 84 | | 30-150 |
| BZ 198 | 85 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-05 | Date Collected: | 10/27/10 10:25 |
| Client ID: | S-10O-C067-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 13:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 8.22 | -- | 5 |
| Cl3-BZ#18 | 18.7 | | ug/kg | 8.22 | -- | 5 |
| Cl4-BZ#52 | 48.0 | | ug/kg | 8.22 | -- | 5 |
| Cl4-BZ#44 | 23.5 | | ug/kg | 8.22 | -- | 5 |
| Cl4-BZ#66 | 78.7 | | ug/kg | 8.22 | -- | 5 |
| Cl5-BZ#118 | 86.0 | | ug/kg | 8.22 | -- | 5 |
| Cl6-BZ#138 | 69.6 | | ug/kg | 8.22 | -- | 5 |
| Cl7-BZ#187 | 8.96 | | ug/kg | 8.22 | -- | 5 |
| Cl6-BZ#128 | 17.6 | | ug/kg | 8.22 | -- | 5 |
| Cl7-BZ#180 | 9.34 | | ug/kg | 8.22 | -- | 5 |
| Cl7-BZ#170 | ND | | ug/kg | 8.22 | -- | 5 |
| Cl8-BZ#195 | ND | | ug/kg | 8.22 | -- | 5 |
| Cl9-BZ#206 | ND | | ug/kg | 8.22 | -- | 5 |
| Cl10-BZ#209 | ND | | ug/kg | 8.22 | -- | 5 |

| | | |
|---|---|---|
| DBOB | 69 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-05 | Date Collected: | 10/27/10 10:25 |
| Client ID: | S-10O-C067-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 13:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 21.4 | | ug/kg | 8.22 | -- | 5 |
| Cl5-BZ#101 | 77.4 | | ug/kg | 8.22 | -- | 5 |
| Cl6-BZ#153 | 49.1 | | ug/kg | 8.22 | -- | 5 |
| Cl5-BZ#105 | 30.7 | | ug/kg | 8.22 | -- | 5 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-06 | Date Collected: | 10/27/10 11:10 |
| Client ID: | S-10O-C068-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 14:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 32.9 | -- | 20 |
| Cl3-BZ#18 | 42.3 | | ug/kg | 32.9 | -- | 20 |
| Cl4-BZ#52 | 198 | | ug/kg | 32.9 | -- | 20 |
| Cl4-BZ#44 | 106 | | ug/kg | 32.9 | -- | 20 |
| Cl4-BZ#66 | 349 | | ug/kg | 32.9 | -- | 20 |
| Cl5-BZ#118 | 328 | | ug/kg | 32.9 | -- | 20 |
| Cl6-BZ#138 | 270 | | ug/kg | 32.9 | -- | 20 |
| Cl6-BZ#128 | 69.6 | | ug/kg | 32.9 | -- | 20 |
| Cl7-BZ#180 | 38.0 | | ug/kg | 32.9 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 32.9 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 32.9 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 32.9 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 32.9 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-06 | Date Collected: | 10/27/10 11:10 |
| Client ID: | S-10O-C068-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 14:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 129 | | ug/kg | 32.9 | -- | 20 |
| Cl5-BZ#101 | 306 | | ug/kg | 32.9 | -- | 20 |
| Cl6-BZ#153 | 185 | | ug/kg | 32.9 | -- | 20 |
| Cl5-BZ#105 | 132 | | ug/kg | 32.9 | -- | 20 |
| Cl7-BZ#187 | 34.2 | | ug/kg | 32.9 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-07 | Date Collected: | 10/27/10 11:10 |
| Client ID: | S-10O-C068-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 14:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 32.8 | -- | 20 |
| Cl3-BZ#18 | ND | | ug/kg | 32.8 | -- | 20 |
| Cl4-BZ#52 | 221 | | ug/kg | 32.8 | -- | 20 |
| Cl4-BZ#44 | 114 | | ug/kg | 32.8 | -- | 20 |
| Cl4-BZ#66 | 364 | | ug/kg | 32.8 | -- | 20 |
| Cl5-BZ#118 | 340 | | ug/kg | 32.8 | -- | 20 |
| Cl6-BZ#138 | 249 | | ug/kg | 32.8 | -- | 20 |
| Cl6-BZ#128 | 62.9 | | ug/kg | 32.8 | -- | 20 |
| Cl7-BZ#180 | 35.1 | | ug/kg | 32.8 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 32.8 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 32.8 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 32.8 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 32.8 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 63 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-07 | Date Collected: | 10/27/10 11:10 |
| Client ID: | S-10O-C068-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 14:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 112 | | ug/kg | 32.8 | -- | 20 |
| Cl5-BZ#101 | 330 | | ug/kg | 32.8 | -- | 20 |
| Cl6-BZ#153 | 176 | | ug/kg | 32.8 | -- | 20 |
| Cl5-BZ#105 | 121 | | ug/kg | 32.8 | -- | 20 |
| Cl7-BZ#187 | ND | | ug/kg | 32.8 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 63 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-08 | Date Collected: | 10/27/10 11:30 |
| Client ID: | S-10O-C069-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 18:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl3-BZ#18 | 9.03 | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#52 | 19.2 | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#44 | 12.4 | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#66 | 27.1 | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#118 | 16.3 | | ug/kg | 3.28 | -- | 2 |
| Cl6-BZ#138 | 16.4 | | ug/kg | 3.28 | -- | 2 |
| Cl6-BZ#128 | 4.66 | | ug/kg | 3.28 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.28 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 38 | | 30-150 |
| BZ 198 | 36 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-08 | Date Collected: | 10/27/10 11:30 |
| Client ID: | S-10O-C069-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 18:18 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 12.5 | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#101 | 9.31 | | ug/kg | 3.28 | -- | 2 |
| Cl6-BZ#153 | 8.72 | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#105 | 9.10 | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#180 | 3.34 | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.28 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 38 | | 30-150 |
| BZ 198 | 36 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-09 | Date Collected: | 10/27/10 11:30 |
| Client ID: | S-10O-C069-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 18:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.28 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.28 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 65 | 30-150 |
| BZ 198 | 61 | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-09 | Date Collected: | 10/27/10 11:30 |
| Client ID: | S-10O-C069-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 18:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.28 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-10 | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/18/10 10:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3420 | | ug/kg | 171 | -- | 100 |
| Cl3-BZ#18 | 6830 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#52 | 23100 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#44 | 5690 | E | ug/kg | 171 | -- | 100 |
| Cl4-BZ#66 | 9500 | E | ug/kg | 171 | -- | 100 |
| Cl5-BZ#118 | 3840 | E | ug/kg | 171 | -- | 100 |
| Cl6-BZ#138 | 3250 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#187 | 1000 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#128 | 554 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#180 | 714 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#170 | 585 | | ug/kg | 171 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 171 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 171 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 171 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-10 | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/18/10 10:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 7810 | E | ug/kg | 171 | -- | 100 |
| Cl5-BZ#101 | 4300 | E | ug/kg | 171 | -- | 100 |
| Cl6-BZ#153 | 3770 | E | ug/kg | 171 | -- | 100 |
| Cl5-BZ#105 | 416 | | ug/kg | 171 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-10 D | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 15:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 10300 | | ug/kg | 1710 | -- | 1000 |
| Cl4-BZ#66 | 10700 | | ug/kg | 1710 | -- | 1000 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-10 D | Date Collected: | 10/28/10 08:33 |
| Client ID: | S-10O-C071-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:50 |
| Analytical Date: | 12/20/10 15:33 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 10500 | | ug/kg | 1710 | -- | 1000 |
| Cl4-BZ#52 | 27000 | | ug/kg | 1710 | -- | 1000 |
| Cl4-BZ#44 | 8090 | | ug/kg | 1710 | -- | 1000 |
| Cl5-BZ#101 | 6380 | | ug/kg | 1710 | -- | 1000 |
| Cl5-BZ#118 | 4490 | | ug/kg | 1710 | -- | 1000 |
| Cl6-BZ#153 | 5410 | | ug/kg | 1710 | -- | 1000 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-11 | Date Collected: | 10/28/10 09:09 |
| Client ID: | S-10O-C072-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 19:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 7.71 | | ug/kg | 3.35 | -- | 2 |
| Cl4-BZ#66 | 6.25 | | ug/kg | 3.35 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.35 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 71 | 30-150 |
| BZ 198 | 80 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-11 | Date Collected: | 10/28/10 09:09 |
| Client ID: | S-10O-C072-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 19:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.35 | -- | 2 |
| Cl3-BZ#28 | 6.30 | | ug/kg | 3.35 | -- | 2 |
| Cl4-BZ#52 | 16.2 | | ug/kg | 3.35 | -- | 2 |
| Cl4-BZ#44 | 4.94 | | ug/kg | 3.35 | -- | 2 |
| Cl5-BZ#101 | 3.84 | | ug/kg | 3.35 | -- | 2 |
| Cl6-BZ#153 | ND | | ug/kg | 3.35 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 71 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-12 | Date Collected: | 10/28/10 09:09 |
| Client ID: | S-10O-C072-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 16:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 71.1 | | ug/kg | 17.3 | -- | 10 |
| Cl3-BZ#18 | 216 | | ug/kg | 17.3 | -- | 10 |
| Cl4-BZ#44 | 166 | | ug/kg | 17.3 | -- | 10 |
| Cl4-BZ#66 | 310 | | ug/kg | 17.3 | -- | 10 |
| Cl5-BZ#118 | 220 | | ug/kg | 17.3 | -- | 10 |
| Cl6-BZ#138 | 141 | | ug/kg | 17.3 | -- | 10 |
| Cl6-BZ#128 | 36.7 | | ug/kg | 17.3 | -- | 10 |
| Cl7-BZ#180 | 26.4 | | ug/kg | 17.3 | -- | 10 |
| Cl7-BZ#170 | 20.9 | | ug/kg | 17.3 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 17.3 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 17.3 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 17.3 | -- | 10 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-12 | Date Collected: | 10/28/10 09:09 |
| Client ID: | S-10O-C072-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 16:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 329 | | ug/kg | 17.3 | -- | 10 |
| Cl5-BZ#101 | 183 | | ug/kg | 17.3 | -- | 10 |
| Cl6-BZ#153 | 135 | | ug/kg | 17.3 | -- | 10 |
| Cl5-BZ#105 | 50.2 | | ug/kg | 17.3 | -- | 10 |
| Cl7-BZ#187 | 25.4 | | ug/kg | 17.3 | -- | 10 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-12 D | Date Collected: | 10/28/10 09:09 |
| Client ID: | S-10O-C072-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/18/10 11:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 549 | | ug/kg | 173 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 61 | 30-150 |
| BZ 198 | 63 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-13 | Date Collected: | 10/28/10 08:55 |
| Client ID: | S-10O-C073-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/18/10 13:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 384 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#52 | 706 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#66 | 667 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#118 | 455 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#138 | 269 | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 166 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 166 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-13 | Date Collected: | 10/28/10 08:55 |
| Client ID: | S-10O-C073-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/18/10 13:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 190 | | ug/kg | 166 | -- | 100 |
| Cl3-BZ#28 | 822 | | ug/kg | 166 | -- | 100 |
| Cl4-BZ#44 | 375 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#101 | 444 | | ug/kg | 166 | -- | 100 |
| Cl6-BZ#153 | 278 | | ug/kg | 166 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 166 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-14 | Date Collected: | 10/28/10 08:55 |
| Client ID: | S-10O-C073-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 20:21 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.36 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 70 | 30-150 |
| BZ 198 | 66 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-14 | Date Collected: | 10/28/10 08:55 |
| Client ID: | S-10O-C073-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 20:21 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.36 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 70 | | 30-150 |
| BZ 198 | 66 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-15 | Date Collected: | 10/28/10 09:20 |
| Client ID: | S-10O-C074-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/18/10 14:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 164 | -- | 100 |
| Cl3-BZ#18 | 304 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#52 | 593 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#66 | 420 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#118 | 305 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#138 | 194 | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 164 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 164 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 164 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 164 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 164 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-15 | Date Collected: | 10/28/10 09:20 |
| Client ID: | S-10O-C074-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/18/10 14:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 592 | | ug/kg | 164 | -- | 100 |
| Cl4-BZ#44 | 252 | | ug/kg | 164 | -- | 100 |
| Cl5-BZ#101 | 296 | | ug/kg | 164 | -- | 100 |
| Cl6-BZ#153 | 215 | | ug/kg | 164 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-16 | Date Collected: | 10/28/10 09:20 |
| Client ID: | S-10O-C074-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 21:02 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.36 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 62 | 30-150 |
| BZ 198 | 70 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-16 | Date Collected: | 10/28/10 09:20 |
| Client ID: | S-10O-C074-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 21:02 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.36 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 62 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-17 | Date Collected: | 10/28/10 09:35 |
| Client ID: | S-10O-C075-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 16:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 59.7 | | ug/kg | 16.4 | -- | 10 |
| Cl3-BZ#18 | 159 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#52 | 303 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#66 | 202 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#118 | 143 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#138 | 95.0 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#128 | 23.0 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 16.4 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 16.4 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 65 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-17 | Date Collected: | 10/28/10 09:35 |
| Client ID: | S-10O-C075-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 16:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 258 | | ug/kg | 16.4 | -- | 10 |
| Cl4-BZ#44 | 124 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#101 | 134 | | ug/kg | 16.4 | -- | 10 |
| Cl6-BZ#153 | 99.9 | | ug/kg | 16.4 | -- | 10 |
| Cl5-BZ#105 | 35.0 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#187 | 19.2 | | ug/kg | 16.4 | -- | 10 |
| Cl7-BZ#180 | 18.8 | | ug/kg | 16.4 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-18 | Date Collected: | 10/28/10 09:35 |
| Client ID: | S-10O-C075-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 21:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.34 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.34 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 77 | 30-150 |
| BZ 198 | 86 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018129-18 | Date Collected: | 10/28/10 09:35 |
| Client ID: | S-10O-C075-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:52 |
| Analytical Date: | 12/20/10 21:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.34 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 86 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/18/10 01:11
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/30/10 14:50
Cleanup Method1: EPA 3630
Cleanup Date1: 12/07/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-18 Batch: WG445388-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.67 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.67 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.67 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.67 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.67 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.67 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.67 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.67 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 94 | | 30-150 |
| BZ 198 | 109 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/18/10 01:11
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/30/10 14:50
Cleanup Method1: EPA 3630
Cleanup Date1: 12/07/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-18 Batch: WG445388-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.67 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 94 | | 30-150 |
| BZ 198 | 109 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

| 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): 01-18 QC Batch ID: WG445388-4 WG445388-5 QC Sample: L1018129-12 Client ID: S-10O-C072-1.0-2.0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 71.1 | 1720 | 1230 | 68 | | 1020 | 55 | | 40-140 | 19 | | 30 |
| Cl3-BZ#18 | 216 | 1720 | 1580 | 80 | | 1360 | 67 | | 40-140 | 15 | | 30 |
| Cl4-BZ#52 | 549 | 1720 | 1660 | 65 | | 1520 | 56 | | 40-140 | 9 | | 30 |
| Cl4-BZ#44 | 166 | 1720 | 1320 | 67 | | 1220 | 61 | | 40-140 | 8 | | 30 |
| Cl4-BZ#66 | 310 | 1720 | 1550 | 72 | | 1420 | 65 | | 40-140 | 9 | | 30 |
| Cl5-BZ#118 | 220 | 1720 | 1480 | 74 | | 1380 | 68 | | 40-140 | 7 | | 30 |
| Cl6-BZ#138 | 141 | 1720 | 1340 | 70 | | 1260 | 65 | | 40-140 | 6 | | 30 |
| Cl6-BZ#128 | 36.7 | 1720 | 1200 | 68 | | 1120 | 63 | | 40-140 | 7 | | 30 |
| Cl7-BZ#180 | 26.4 | 1720 | 1170 | 67 | | 1100 | 62 | | 40-140 | 6 | | 30 |
| Cl7-BZ#170 | 20.9 | 1720 | 1230 | 71 | | 1160 | 66 | | 40-140 | 6 | | 30 |
| Cl8-BZ#195 | ND | 1720 | 1230 | 72 | | 1150 | 67 | | 40-140 | 7 | | 30 |
| Cl9-BZ#206 | ND | 1720 | 1370 | 80 | | 1320 | 77 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | ND | 1720 | 1200 | 70 | | 1130 | 66 | | 40-140 | 6 | | 30 |
| Cl3-BZ#28 | 329 | 1720 | 2140 | 106 | | 1900 | 91 | | 40-140 | 12 | | 30 |
| Cl5-BZ#101 | 183 | 1720 | 1390 | 70 | | 1280 | 64 | | 40-140 | 8 | | 30 |
| Cl6-BZ#153 | 135 | 1720 | 1260 | 66 | | 1180 | 61 | | 40-140 | 7 | | 30 |
| Cl5-BZ#105 | 50.2 | 1720 | 1300 | 73 | | 1240 | 69 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 25.4 | 1720 | 1190 | 68 | | 1110 | 63 | | 40-140 | 7 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018129
**Report Date:** 12/22/10

| 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): 01-18 QC Batch ID: WG445388-4 WG445388-5 QC Sample: L1018129-12 Client ID: S-10O-C072-1.0-2.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 72 | | 66 | | 30-150 |
| DBOB | 74 | | 61 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-18 Batch: WG445388-2 WG445388-3 | | | | | | | | |
| Cl2-BZ#8 | 89 | | 97 | | 40-140 | 9 | | 30 |
| Cl3-BZ#18 | 96 | | 136 | | 40-140 | **34** | Q | 30 |
| Cl3-BZ#28 | 109 | | **155** | Q | 40-140 | **35** | Q | 30 |
| Cl4-BZ#52 | 101 | | 133 | | 40-140 | 27 | | 30 |
| Cl4-BZ#44 | 103 | | 106 | | 40-140 | 3 | | 30 |
| Cl4-BZ#66 | 108 | | 115 | | 40-140 | 6 | | 30 |
| Cl5-BZ#101 | 109 | | 112 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 112 | | 109 | | 40-140 | 3 | | 30 |
| Cl5-BZ#105 | 104 | | 100 | | 40-140 | 4 | | 30 |
| Cl6-BZ#138 | 109 | | 107 | | 40-140 | 2 | | 30 |
| Cl7-BZ#187 | 110 | | 101 | | 40-140 | 9 | | 30 |
| Cl6-BZ#128 | 104 | | 100 | | 40-140 | 4 | | 30 |
| Cl7-BZ#180 | 106 | | 100 | | 40-140 | 6 | | 30 |
| Cl7-BZ#170 | 110 | | 110 | | 40-140 | 0 | | 30 |
| Cl8-BZ#195 | 109 | | 104 | | 40-140 | 5 | | 30 |
| Cl9-BZ#206 | 125 | | 120 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | 112 | | 106 | | 40-140 | 6 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018129

**Project Number:** TO-0010-03 **Report Date:** 12/22/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-18 Batch: WG445388-2 WG445388-3 | | | | | | | |
| DBOB | 112 | | 112 | | 30-150 | | | |
| BZ 198 | 117 | | 117 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 01-18 Batch: WG445388-2 WG445388-3 | | | | | | | |
| Cl6-BZ#153 | 105 | | 109 | | 40-140 | 4 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 112 | | 112 | | 30-150 |
| BZ 198 | 117 | | 117 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-01
Client ID: S-10O-C065-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 09:05
Date Received: 11/05/10
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 | 99.4 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 88.0 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-02
Client ID: S-10O-C066-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 10:07
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 82.6 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-03
Client ID: S-10O-C066-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 10:07
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 71.2 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-04
Client ID: S-10O-C067-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 10:25
Date Received: 11/05/10
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 | 99.3 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 89.9 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-05
Client ID: S-10O-C067-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 10:25
Date Received: 11/05/10
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 | 99.4 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 88.0 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-06
Client ID: S-10O-C068-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 11:10
Date Received: 11/05/10
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 | 99.8 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 93.5 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-07
Client ID: S-10O-C068-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 11:10
Date Received: 11/05/10
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 | 99.8 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 94.9 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-08
Client ID: S-10O-C069-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 11:30
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 83.9 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-09
Client ID: S-10O-C069-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/27/10 11:30
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 91.0 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-10
Client ID: S-10O-C071-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 08:33
Date Received: 11/05/10
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 | 95.4 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 38.6 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-11
Client ID: S-10O-C072-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:09
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.5 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-12
Client ID: S-10O-C072-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:09
Date Received: 11/05/10
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 | 95.2 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.2 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-13
Client ID: S-10O-C073-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 08:55
Date Received: 11/05/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 65.6 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-14
Client ID: S-10O-C073-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 08:55
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.5 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-15
Client ID: S-10O-C074-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:20
Date Received: 11/05/10
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 | 98.9 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 62.0 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-16
Client ID: S-10O-C074-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:20
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.3 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-17
Client ID: S-10O-C075-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:35
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 72.5 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## SAMPLE RESULTS

Lab ID: L1018129-18
Client ID: S-10O-C075-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 09:35
Date Received: 11/05/10
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 | 98.9 | | % | 0.100 | -- | 1 | - | 12/01/10 14:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 63.1 | | % | 0.100 | NA | 1 | - | 11/22/10 16:20 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG445689-1 QC Sample: L1018129-01 Client ID: S-10O-C065-1.0-2.0 | | | | | | |
| Solids, Total | 99.4 | 99.4 | % | 0 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018129-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-11B | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-12A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-13A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-14A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018129
**Report Date:** 12/22/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018129-15A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-16A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-17A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018129-18A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

**Container Comments**

| | |
|---|---|
| L1018129-01A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-02A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-03A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-04A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-05A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-06A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-07A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-08A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-09A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-10A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-11A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-12A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-13A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-14A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-15A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-16A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-17A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018129-18A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/22/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

Serial_No:12221015:02

# CHAIN OF CUSTODY

PAGE 4 OF 11

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018129

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information - Data Deliverables**

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

**Billing Information**

☒ Same as Client info PO #:

**Regulatory Requirements/Report Limits**

State/Fed Program: FED
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10O-C062-0-1.0 | 10/25/10 | 13:00 | SED | MW | ☒ | BH-N2 | 1 |
| | S-10O-C062-1.0-2.0 | 10/25/10 | 13:00 | SED | MW | ☒ | BH-N2 | 1 |
| | S-10O-C063-0-1.0 | 10/25/10 | 13:19 | SED | MW | ☒ | BH-O1 | 1 |
| | S-10O-C063-1.0-2.0 | 10/25/10 | 13:19 | SED | MW | ☒ | BH-O1 | 1 |
| | S-10O-C064-0-1.0 | 10/25/10 | 13:38 | SED | MW | ☒ | BH-P1 | 1 |
| | S-10O-C064-1.0-2.0 | 10/25/10 | 13:38 | SED | MW | ☒ | BH-P1 | 1 |
| | S-10O-C065-0-1.0 | 10/27/10 | 09:05 | SED | MW | ☒ | BH-SOIL1 | 1 |
| L1018129 1 | S-10O-C065-1.0-2.0 | 10/27/10 | 09:05 | SED | MW | ☒ | BH-SOIL1 | 1 |
| 2 | S-10O-C066-0-1.0 | 10/27/10 | 10:07 | SED | MW | ☒ | BH-SOIL2 | 1 |
| 3 | S-10O-C066-1.0-2.0 | 10/27/10 | 10:07 | SED | MW | ☒ | BH-SOIL2 | 1 |
| | | | | | Container Type | A | | |
| | | | | | Preservative | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

# CHAIN OF CUSTODY

PAGE 5 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018129

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18128 4 | S-10O-C067-0-1.0 | 10/27/10 | 10:25 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL3 | 1 |
| 5 | S-10O-C067-1.0-2.0 | 10/27/10 | 10:25 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL3 | 1 |
| 6 | S-10O-C068-0-1.0 | 10/27/10 | 11:10 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL4 | 1 |
| 7 | S-10O-C068-1.0-2.0 | 10/27/10 | 11:10 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL4 | 1 |
| 8 | S-10O-C069-0-1.0 | 10/27/10 | 11:30 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL5 | 1 |
| 9 | S-10O-C069-1.0-2.0 | 10/27/10 | 11:30 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-SOIL5 | 1 |
| | S-10O-C070-0-1.0 | 10/27/10 | 15:18 | SED | DB | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-CSO | 1 |
| | S-10O-C071-0-1.0 | 10/28/10 | 08:33 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A2 | 1 |
| 10 | S-10O-C071-1.0-2.0 | 10/28/10 | 08:33 | SED | MW | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-A2 | 1 |
| | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | |
| | | | | Container Type | | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | Preservative | | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 11/5/10 19:00 | | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(G-N/I) (rev. 29-APR-09)

# CHAIN OF CUSTODY

PAGE 6 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 ALPHA Job #: L1018129

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| 1 8129. 11 | S-10O-C072-0-1.0 | 10/28/10 | 09:09 | SED | MW | ☒ | BH-G4 | 1 |
| 12 | S-10O-C072-1.0-2.0 | 10/28/10 | 09:09 | SED | MW | ☒ | BH-G4 | 1 |
| 13 | S-10O-C073-0-1.0 | 10/28/10 | 08:55 | SED | MW | ☒ | BH-F4 | 1 |
| 14 | S-10O-C073-1.0-2.0 | 10/28/10 | 08:55 | SED | MW | ☒ | BH-F4 | 1 |
| 15 | S-10O-C074-0-1.0 | 10/28/10 | 09:20 | SED | DR | ☒ | BH-H1 | 1 |
| 16 | S-10O-C074-1.0-2.0 | 10/28/10 | 09:20 | SED | DR | ☒ | BH-H1 | 1 |
| 17 | S-10O-C075-0-1.0 | 10/28/10 | 09:35 | SED | DR | ☒ | BH-I3 | 1 |
| 18 | S-10O-C075-1.0-2.0 | 10/28/10 | 09:35 | SED | DR | ☒ | BH-I3 | 1 |
| | S-10O-C076-0-1.0 | 10/28/10 | 10:00 | SED | DR | ☒ | BH-J1 | 1 |
| | S-10O-C076-1.0-2.0 | 10/28/10 | 10:00 | SED | DR | ☒ | BH-J1 | 1 |
| | Container Type | | | | | A | | |
| | Preservative | | | | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

# CHAIN OF CUSTODY

PAGE 11 OF 11

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018129

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| 18172.12 | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | MS/MSD | 1 |
| | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | MS/MSD | 1 |
| | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | MS/MSD | 1 |
| | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | MS/MSD | 1 |
| | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | CSO MS/MSD | 1 |
| | S-10O-C071-0-1.0MS/MSD | 10/28/10 | 08:33 | SED | MW | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | | |
| | | | | | | ☐ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | - | - | - | - | - | - | - | - | - | - | - |
| Preservative | A | - | - | - | - | - | - | - | - | - | - | - |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh | 11/5/10 19:00 | [illegible] | 11/5/10 1900 |
| | | | |
| | | | |

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 Payment Terms.

FORM NO: 01-01(0-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018130 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/29/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018130-01 | S-10O-C076-0-1.0 | NEW BEDFORD, MA | 10/28/10 10:00 |
| L1018130-02 | S-10O-C076-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 10:00 |
| L1018130-03 | S-10O-C077-0-1.0 | NEW BEDFORD, MA | 10/28/10 10:09 |
| L1018130-04 | S-10O-C077-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 10:09 |
| L1018130-05 | S-10O-C078-0-1.0 | NEW BEDFORD, MA | 10/28/10 10:25 |
| L1018130-06 | S-10O-C078-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 10:25 |
| L1018130-07 | S-10O-C079-0-1.0 | NEW BEDFORD, MA | 10/28/10 10:38 |
| L1018130-08 | S-10O-C080-0-1.0 | NEW BEDFORD, MA | 10/28/10 10:52 |
| L1018130-09 | S-10O-C080-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 10:52 |
| L1018130-10 | S-10N-C001-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 13:43 |
| L1018130-11 | S-10N-C002-0-1.0 | NEW BEDFORD, MA | 11/03/10 13:20 |
| L1018130-12 | S-10N-C002-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 13:20 |
| L1018130-13 | S-10N-C003-0-1.0 | NEW BEDFORD, MA | 11/03/10 14:02 |
| L1018130-14 | S-10N-C003-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 14:02 |
| L1018130-15 | S-10N-C004-0-1.0 | NEW BEDFORD, MA | 11/03/10 13:03 |
| L1018130-16 | S-10N-C004-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 13:03 |
| L1018130-17 | S-10N-C005-0-1.0 | NEW BEDFORD, MA | 11/03/10 15:10 |
| L1018130-18 | S-10N-C005-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 15:10 |
| L1018130-19 | S-10N-C006-0-1.0 | NEW BEDFORD, MA | 11/03/10 12:46 |
| L1018130-20 | S-10N-C006-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 12:46 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 05, 2010 and placed in frozen storage until November 29, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until they were removed December 02, 2010 to extract samples for PCB Congener analysis and analyze for air-dried percent solids.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

The majority of samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

The WG445831-4/-5 MS/MSD recoveries, performed on L1018130-01, are outside the acceptance criteria for several congeners. The unacceptable percent recoveries are attributed to the high concentrations of the same compounds present in the sample utilized for the MS/MSD.

Sample L1018130-02 was analyzed via GC/MS-SIM to confirm the presence of Cl9-BZ#206 and Cl10-BZ#209 as these congeners are not usually detected in samples from this location.

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: 12/29/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-01 | Date Collected: | 10/28/10 10:00 |
| Client ID: | S-10O-C076-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 13:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1570 | | ug/kg | 695 | -- | 200 |
| Cl3-BZ#18 | 3050 | | ug/kg | 695 | -- | 200 |
| Cl4-BZ#52 | 6070 | | ug/kg | 695 | -- | 200 |
| Cl4-BZ#44 | 3850 | | ug/kg | 695 | -- | 200 |
| Cl4-BZ#66 | 10600 | | ug/kg | 695 | -- | 200 |
| Cl5-BZ#118 | 10900 | | ug/kg | 695 | -- | 200 |
| Cl6-BZ#138 | 5470 | | ug/kg | 695 | -- | 200 |
| Cl6-BZ#128 | 1320 | | ug/kg | 695 | -- | 200 |
| Cl7-BZ#180 | 1090 | | ug/kg | 695 | -- | 200 |
| Cl7-BZ#170 | 804 | | ug/kg | 695 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 695 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 695 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 695 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-01 | Date Collected: | 10/28/10 10:00 |
| Client ID: | S-10O-C076-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 13:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5300 | | ug/kg | 695 | -- | 200 |
| Cl5-BZ#101 | 8950 | | ug/kg | 695 | -- | 200 |
| Cl6-BZ#153 | 4960 | | ug/kg | 695 | -- | 200 |
| Cl5-BZ#105 | 1920 | | ug/kg | 695 | -- | 200 |
| Cl7-BZ#187 | 788 | | ug/kg | 695 | -- | 200 |

| | | |
|---|---|---|
| DBOB | 81 | 30-150 |
| BZ 198 | 77 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-02 | Date Collected: | 10/28/10 10:00 |
| Client ID: | S-10O-C076-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/22/10 18:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#66 | 11.9 | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.36 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-02 | Date Collected: | 10/28/10 10:00 |
| Client ID: | S-10O-C076-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/22/10 18:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#101 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#153 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl9-BZ#206 | 39.4 | | ug/kg | 3.36 | -- | 2 |
| Cl10-BZ#209 | 57.3 | | ug/kg | 3.36 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-03 | Date Collected: | 10/28/10 10:09 |
| Client ID: | S-10O-C077-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 04:34 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 183 | | ug/kg | 171 | -- | 100 |
| Cl3-BZ#18 | 435 | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#52 | 1210 | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#66 | 880 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#118 | 737 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#138 | 525 | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 171 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 171 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 171 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 171 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 171 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-03 | Date Collected: | 10/28/10 10:09 |
| Client ID: | S-10O-C077-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 04:34 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 939 | | ug/kg | 171 | -- | 100 |
| Cl4-BZ#44 | 566 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#101 | 703 | | ug/kg | 171 | -- | 100 |
| Cl6-BZ#153 | 482 | | ug/kg | 171 | -- | 100 |
| Cl5-BZ#105 | 210 | | ug/kg | 171 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-04 | Date Collected: | 10/28/10 10:09 |
| Client ID: | S-10O-C077-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 19:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.38 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 82 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-04 | Date Collected: | 10/28/10 10:09 |
| Client ID: | S-10O-C077-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 19:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.38 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-05 | Date Collected: | 10/28/10 10:25 |
| Client ID: | S-10O-C078-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/18/10 22:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 293 | | ug/kg | 170 | -- | 50 |
| Cl3-BZ#18 | 690 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#52 | 1310 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#66 | 1020 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#118 | 560 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#138 | 328 | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 170 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 170 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 170 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 170 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-05 | Date Collected: | 10/28/10 10:25 |
| Client ID: | S-10O-C078-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/18/10 22:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1190 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#44 | 626 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#101 | 545 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#153 | 338 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#105 | ND | | ug/kg | 170 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 65 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-06 | Date Collected: | 10/28/10 10:25 |
| Client ID: | S-10O-C078-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 20:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 46.5 | | ug/kg | 17.2 | -- | 10 |
| Cl3-BZ#18 | 96.2 | | ug/kg | 17.2 | -- | 10 |
| Cl4-BZ#52 | 253 | | ug/kg | 17.2 | -- | 10 |
| Cl4-BZ#44 | 94.3 | | ug/kg | 17.2 | -- | 10 |
| Cl4-BZ#66 | 174 | | ug/kg | 17.2 | -- | 10 |
| Cl5-BZ#118 | 139 | | ug/kg | 17.2 | -- | 10 |
| Cl6-BZ#138 | 92.6 | | ug/kg | 17.2 | -- | 10 |
| Cl6-BZ#128 | 23.7 | | ug/kg | 17.2 | -- | 10 |
| Cl7-BZ#180 | ND | | ug/kg | 17.2 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 17.2 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 17.2 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 17.2 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 17.2 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-06 | Date Collected: | 10/28/10 10:25 |
| Client ID: | S-10O-C078-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 20:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 155 | | ug/kg | 17.2 | -- | 10 |
| Cl5-BZ#101 | 118 | | ug/kg | 17.2 | -- | 10 |
| Cl6-BZ#153 | 79.8 | | ug/kg | 17.2 | -- | 10 |
| Cl5-BZ#105 | 30.5 | | ug/kg | 17.2 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 17.2 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-07 | Date Collected: | 10/28/10 10:38 |
| Client ID: | S-10O-C079-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 06:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 347 | | ug/kg | 176 | -- | 100 |
| Cl3-BZ#18 | 866 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#52 | 2100 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#66 | 1610 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#118 | 1290 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#138 | 812 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#128 | 211 | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 176 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 176 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 176 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 176 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-07 | Date Collected: | 10/28/10 10:38 |
| Client ID: | S-10O-C079-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 06:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 93% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1870 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#44 | 981 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#101 | 1210 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#153 | 828 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#105 | 313 | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 176 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-08 | Date Collected: | 10/28/10 10:52 |
| Client ID: | S-10O-C080-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 07:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 315 | | ug/kg | 176 | -- | 100 |
| Cl3-BZ#18 | 790 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#52 | 2070 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#44 | 870 | | ug/kg | 176 | -- | 100 |
| Cl4-BZ#66 | 1710 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#118 | 1440 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#138 | 886 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#128 | 236 | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 176 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 176 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 176 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 176 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 64 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-08 | Date Collected: | 10/28/10 10:52 |
| Client ID: | S-10O-C080-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/19/10 07:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1720 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#101 | 1340 | | ug/kg | 176 | -- | 100 |
| Cl6-BZ#153 | 895 | | ug/kg | 176 | -- | 100 |
| Cl5-BZ#105 | 325 | | ug/kg | 176 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 176 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 64 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-09 | Date Collected: | 10/28/10 10:52 |
| Client ID: | S-10O-C080-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 18:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl3-BZ#28 | 11.3 | | ug/kg | 3.41 | -- | 1 |
| Cl4-BZ#52 | 9.08 | | ug/kg | 3.41 | -- | 1 |
| Cl4-BZ#44 | 4.10 | | ug/kg | 3.41 | -- | 1 |
| Cl4-BZ#66 | 13.5 | | ug/kg | 3.41 | -- | 1 |
| Cl5-BZ#101 | 12.2 | | ug/kg | 3.41 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl6-BZ#138 | 5.16 | | ug/kg | 3.41 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.41 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.41 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 78 | 30-150 |
| BZ 198 | 77 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-09 | Date Collected: | 10/28/10 10:52 |
| Client ID: | S-10O-C080-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 18:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#118 | 6.78 | | ug/kg | 3.41 | -- | 1 |
| Cl6-BZ#153 | 4.62 | | ug/kg | 3.41 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 77 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-10 | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 15:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1270 | | ug/kg | 847 | -- | 250 |
| Cl3-BZ#18 | 5490 | | ug/kg | 847 | -- | 250 |
| Cl5-BZ#118 | 2800 | | ug/kg | 847 | -- | 250 |
| Cl6-BZ#138 | 979 | | ug/kg | 847 | -- | 250 |
| Cl7-BZ#187 | ND | | ug/kg | 847 | -- | 250 |
| Cl6-BZ#128 | ND | | ug/kg | 847 | -- | 250 |
| Cl7-BZ#180 | ND | | ug/kg | 847 | -- | 250 |
| Cl7-BZ#170 | ND | | ug/kg | 847 | -- | 250 |
| Cl8-BZ#195 | ND | | ug/kg | 847 | -- | 250 |
| Cl9-BZ#206 | ND | | ug/kg | 847 | -- | 250 |
| Cl10-BZ#209 | ND | | ug/kg | 847 | -- | 250 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-10 | Date Collected: | 11/03/10 13:43 |
| Client ID: | S-10N-C001-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:03 |
| Analytical Date: | 12/21/10 15:10 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6140 | | ug/kg | 847 | -- | 250 |
| Cl4-BZ#52 | 7580 | | ug/kg | 847 | -- | 250 |
| Cl4-BZ#44 | 6540 | | ug/kg | 847 | -- | 250 |
| Cl4-BZ#66 | 8240 | | ug/kg | 847 | -- | 250 |
| Cl5-BZ#101 | 2970 | | ug/kg | 847 | -- | 250 |
| Cl6-BZ#153 | 923 | | ug/kg | 847 | -- | 250 |
| Cl5-BZ#105 | 1250 | | ug/kg | 847 | -- | 250 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-11 | Date Collected: | 11/03/10 13:20 |
| Client ID: | S-10N-C002-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/22/10 18:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 22.0 | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#52 | 53.9 | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#44 | 29.8 | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#66 | 46.6 | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#118 | 23.0 | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#138 | 12.4 | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.38 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 67 | 30-150 |
| BZ 198 | 71 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-11 | Date Collected: | 11/03/10 13:20 |
| Client ID: | S-10N-C002-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/22/10 18:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 12.6 | | ug/kg | 3.38 | -- | 2 |
| Cl3-BZ#28 | 42.7 | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#101 | 19.8 | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#153 | 11.6 | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#105 | 5.80 | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#170 | 3.40 | | ug/kg | 3.38 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 71 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-12 | Date Collected: | 11/03/10 13:20 |
| Client ID: | S-10N-C002-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 21:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.38 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.38 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 69 | 30-150 |
| BZ 198 | 79 | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-12 | Date Collected: | 11/03/10 13:20 |
| Client ID: | S-10N-C002-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 21:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.38 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-13 | Date Collected: | 11/03/10 14:02 |
| Client ID: | S-10N-C003-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/19/10 00:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 378 | | ug/kg | 167 | -- | 50 |
| Cl3-BZ#18 | 1140 | | ug/kg | 167 | -- | 50 |
| Cl4-BZ#52 | 1820 | | ug/kg | 167 | -- | 50 |
| Cl4-BZ#66 | 1680 | | ug/kg | 167 | -- | 50 |
| Cl5-BZ#118 | 1220 | | ug/kg | 167 | -- | 50 |
| Cl6-BZ#138 | 734 | | ug/kg | 167 | -- | 50 |
| Cl6-BZ#128 | 191 | | ug/kg | 167 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 167 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 167 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 167 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 167 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-13 | Date Collected: | 11/03/10 14:02 |
| Client ID: | S-10N-C003-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/19/10 00:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1960 | | ug/kg | 167 | -- | 50 |
| Cl4-BZ#44 | 841 | | ug/kg | 167 | -- | 50 |
| Cl5-BZ#101 | 1160 | | ug/kg | 167 | -- | 50 |
| Cl6-BZ#153 | 786 | | ug/kg | 167 | -- | 50 |
| Cl5-BZ#105 | 252 | | ug/kg | 167 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 167 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 167 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-14 | Date Collected: | 11/03/10 14:02 |
| Client ID: | S-10N-C003-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 22:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl3-BZ#18 | 15.0 | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#52 | 13.3 | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#44 | 5.89 | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#118 | 8.36 | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#138 | 5.09 | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.29 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 92 | 30-150 |
| BZ 198 | 76 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-14 | Date Collected: | 11/03/10 14:02 |
| Client ID: | S-10N-C003-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 22:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11.6 | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#66 | 7.50 | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#101 | 7.40 | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#153 | 5.01 | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.29 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-15 | Date Collected: | 11/03/10 13:03 |
| Client ID: | S-10N-C004-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/19/10 01:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 732 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#52 | 1440 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#66 | 1070 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#118 | 624 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#138 | 358 | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 170 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 170 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 170 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 170 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-15 | Date Collected: | 11/03/10 13:03 |
| Client ID: | S-10N-C004-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/19/10 01:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 292 | | ug/kg | 170 | -- | 50 |
| Cl3-BZ#28 | 1160 | | ug/kg | 170 | -- | 50 |
| Cl4-BZ#44 | 674 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#101 | 592 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#153 | 362 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#105 | 175 | | ug/kg | 170 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 76 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-16 | Date Collected: | 11/03/10 13:03 |
| Client ID: | S-10N-C004-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 22:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl3-BZ#28 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.36 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.36 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 79 | 30-150 |
| BZ 198 | 81 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-16 | Date Collected: | 11/03/10 13:03 |
| Client ID: | S-10N-C004-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 22:47 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.36 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 79 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-17 | Date Collected: | 11/03/10 15:10 |
| Client ID: | S-10N-C005-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 15:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 911 | | ug/kg | 327 | -- | 100 |
| Cl3-BZ#18 | 3230 | | ug/kg | 327 | -- | 100 |
| Cl4-BZ#52 | 4860 | | ug/kg | 327 | -- | 100 |
| Cl4-BZ#66 | 3860 | | ug/kg | 327 | -- | 100 |
| Cl5-BZ#118 | 1670 | | ug/kg | 327 | -- | 100 |
| Cl6-BZ#138 | 570 | | ug/kg | 327 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 327 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 327 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 327 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 327 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 327 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 327 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 327 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-17 | Date Collected: | 11/03/10 15:10 |
| Client ID: | S-10N-C005-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:07 |
| Analytical Date: | 12/21/10 15:51 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4000 | | ug/kg | 327 | -- | 100 |
| Cl4-BZ#44 | 3370 | | ug/kg | 327 | -- | 100 |
| Cl5-BZ#101 | 1610 | | ug/kg | 327 | -- | 100 |
| Cl6-BZ#153 | 560 | | ug/kg | 327 | -- | 100 |
| Cl5-BZ#105 | 543 | | ug/kg | 327 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-18 | Date Collected: | 11/03/10 15:10 |
| Client ID: | S-10N-C005-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/21/10 23:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl3-BZ#18 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#52 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#44 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl4-BZ#66 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#101 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#118 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#138 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 3.29 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 73 | 30-150 |
| BZ 198 | 67 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-18 | Date Collected: | 11/03/10 15:10 |
| Client ID: | S-10N-C005-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/21/10 23:28 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 3.29 | -- | 2 |
| Cl6-BZ#153 | ND | | ug/kg | 3.29 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-19 | Date Collected: | 11/03/10 12:46 |
| Client ID: | S-10N-C006-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/21/10 16:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 905 | | ug/kg | 349 | -- | 100 |
| Cl3-BZ#18 | 1760 | | ug/kg | 349 | -- | 100 |
| Cl4-BZ#52 | 3250 | | ug/kg | 349 | -- | 100 |
| Cl4-BZ#44 | 2310 | | ug/kg | 349 | -- | 100 |
| Cl4-BZ#66 | 4100 | | ug/kg | 349 | -- | 100 |
| Cl5-BZ#118 | 1980 | | ug/kg | 349 | -- | 100 |
| Cl6-BZ#138 | 846 | | ug/kg | 349 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 349 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 349 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 349 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 349 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 349 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 349 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 349 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-19 | Date Collected: | 11/03/10 12:46 |
| Client ID: | S-10N-C006-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/21/10 16:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3860 | | ug/kg | 349 | -- | 100 |
| Cl5-BZ#101 | 1990 | | ug/kg | 349 | -- | 100 |
| Cl6-BZ#153 | 837 | | ug/kg | 349 | -- | 100 |
| Cl5-BZ#105 | 593 | | ug/kg | 349 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 75 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-20 | Date Collected: | 11/03/10 12:46 |
| Client ID: | S-10N-C006-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/22/10 19:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl3-BZ#18 | 114 | | ug/kg | 81.8 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 81.8 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 81.8 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 67 | 30-150 |
| BZ 198 | 70 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018130-20 | Date Collected: | 11/03/10 12:46 |
| Client ID: | S-10N-C006-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/02/10 11:08 |
| Analytical Date: | 12/22/10 19:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 106 | | ug/kg | 81.8 | -- | 50 |
| Cl4-BZ#52 | 405 | | ug/kg | 81.8 | -- | 50 |
| Cl4-BZ#44 | 177 | | ug/kg | 81.8 | -- | 50 |
| Cl4-BZ#66 | 396 | | ug/kg | 81.8 | -- | 50 |
| Cl5-BZ#101 | 435 | | ug/kg | 81.8 | -- | 50 |
| Cl5-BZ#118 | 345 | | ug/kg | 81.8 | -- | 50 |
| Cl6-BZ#153 | 201 | | ug/kg | 81.8 | -- | 50 |
| Cl5-BZ#105 | 105 | | ug/kg | 81.8 | -- | 50 |
| Cl6-BZ#138 | 188 | | ug/kg | 81.8 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/18/10 18:19
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/02/10 11:03
Cleanup Method1: EPA 3630
Cleanup Date1: 12/08/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG445831-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 100 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/18/10 18:19
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/02/10 11:03
Cleanup Method1: EPA 3630
Cleanup Date1: 12/08/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-20 Batch: WG445831-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 100 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018130
**Report Date:** 12/29/10

| 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): 01-20 QC Batch ID: WG445831-4 WG445831-5 QC Sample: L1018130-01 Client ID: S-10O-C076-0-1.0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 1570 | 1720 | 2470 | 52 | | 2610 | 60 | | 40-140 | 6 | | 30 |
| Cl3-BZ#18 | 3050 | 1720 | 4490 | 84 | | 4890 | 107 | | 40-140 | 9 | | 30 |
| Cl4-BZ#52 | 6070 | 1720 | 6510 | **26** | Q | 6640 | **33** | Q | 40-140 | 2 | | 30 |
| Cl4-BZ#44 | 3850 | 1720 | 4400 | **32** | Q | 4640 | 46 | | 40-140 | 5 | | 30 |
| Cl4-BZ#66 | 10600 | 1720 | 10400 | **0** | Q | 10500 | **0** | Q | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 10900 | 1720 | 10600 | **0** | Q | 10900 | **0** | Q | 40-140 | 3 | | 30 |
| Cl6-BZ#138 | 5470 | 1720 | 5820 | **20** | Q | 5970 | **29** | Q | 40-140 | 3 | | 30 |
| Cl6-BZ#128 | 1320 | 1720 | 2290 | 57 | | 2300 | 57 | | 40-140 | 0 | | 30 |
| Cl7-BZ#180 | 1090 | 1720 | 2070 | 57 | | 2090 | 58 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 804 | 1720 | 1910 | 64 | | 1880 | 62 | | 40-140 | 2 | | 30 |
| Cl8-BZ#195 | ND | 1720 | 1360 | 79 | | 1310 | 76 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | ND | 1720 | 1410 | 82 | | 1430 | 83 | | 40-140 | 1 | | 30 |
| Cl10-BZ#209 | ND | 1720 | 1250 | 73 | | 1260 | 73 | | 40-140 | 1 | | 30 |
| Cl3-BZ#28 | 5300 | 1720 | 6100 | 47 | | 6440 | 66 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 8950 | 1720 | 8770 | **0** | Q | 8870 | **0** | Q | 40-140 | 1 | | 30 |
| Cl6-BZ#153 | 4960 | 1720 | 5180 | **13** | Q | 5250 | **17** | Q | 40-140 | 1 | | 30 |
| Cl5-BZ#105 | 1920 | 1720 | 2650 | 43 | | 2730 | 47 | | 40-140 | 3 | | 30 |
| Cl7-BZ#187 | 788 | 1720 | 1590 | 47 | | 1610 | 48 | | 40-140 | 1 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018130
**Report Date:** 12/29/10

| 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): 01-20 QC Batch ID: WG445831-4 WG445831-5 QC Sample: L1018130-01 Client ID: S-10O-C076-0-1.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 68 | | 67 | | 30-150 |
| DBOB | 74 | | 76 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING

**Project Number:** TO-0010-03

**Lab Number:** L1018130

**Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG445831-2 WG445831-3 | | | | | | | | |
| Cl2-BZ#8 | 76 | | 69 | | 40-140 | 10 | | 30 |
| Cl3-BZ#18 | 85 | | 74 | | 40-140 | 14 | | 30 |
| Cl3-BZ#28 | 93 | | 88 | | 40-140 | 6 | | 30 |
| Cl4-BZ#52 | 105 | | 84 | | 40-140 | 22 | | 30 |
| Cl4-BZ#44 | 94 | | 84 | | 40-140 | 11 | | 30 |
| Cl4-BZ#66 | 92 | | 88 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 92 | | 87 | | 40-140 | 6 | | 30 |
| Cl5-BZ#118 | 97 | | 92 | | 40-140 | 5 | | 30 |
| Cl5-BZ#105 | 91 | | 86 | | 40-140 | 6 | | 30 |
| Cl6-BZ#138 | 95 | | 90 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 94 | | 86 | | 40-140 | 9 | | 30 |
| Cl6-BZ#128 | 90 | | 87 | | 40-140 | 3 | | 30 |
| Cl7-BZ#180 | 92 | | 89 | | 40-140 | 3 | | 30 |
| Cl7-BZ#170 | 93 | | 98 | | 40-140 | 5 | | 30 |
| Cl8-BZ#195 | 90 | | 95 | | 40-140 | 5 | | 30 |
| Cl9-BZ#206 | 104 | | 101 | | 40-140 | 3 | | 30 |
| Cl10-BZ#209 | 90 | | 91 | | 40-140 | 1 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018130

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-20 Batch: WG445831-2 WG445831-3 | | | | | | | | |
| DBOB | 90 | | 82 | | 30-150 | | | |
| BZ 198 | 94 | | 92 | | 30-150 | | | |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-01
Client ID: S-10O-C076-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:00
Date Received: 11/05/10
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 | 95.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.1 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-02
Client ID: S-10O-C076-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:00
Date Received: 11/05/10
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 | 97.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.9 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-03
Client ID: S-10O-C077-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:09
Date Received: 11/05/10
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 | 95.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 59.4 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-04
Client ID: S-10O-C077-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:09
Date Received: 11/05/10
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 | 96.9 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.7 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-05
Client ID: S-10O-C078-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:25
Date Received: 11/05/10
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 | 97.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.6 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-06
Client ID: S-10O-C078-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:25
Date Received: 11/05/10
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 | 95.9 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 44.5 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-07
Client ID: S-10O-C079-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:38
Date Received: 11/05/10
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 | 93.1 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.4 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-08
Client ID: S-10O-C080-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:52
Date Received: 11/05/10
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 | 93.8 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 53.0 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-09
Client ID: S-10O-C080-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:52
Date Received: 11/05/10
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 | 96.3 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.3 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-10
Client ID: S-10N-C001-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:43
Date Received: 11/05/10
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 | 97.2 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.2 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-11
Client ID: S-10N-C002-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:20
Date Received: 11/05/10
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 | 96.4 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.6 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-12
Client ID: S-10N-C002-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:20
Date Received: 11/05/10
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 | 97.7 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 51.8 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-13
Client ID: S-10N-C003-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:02
Date Received: 11/05/10
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 | 98.2 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 53.8 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-14
Client ID: S-10N-C003-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:02
Date Received: 11/05/10
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 | 99.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 71.1 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-15
Client ID: S-10N-C004-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:03
Date Received: 11/05/10
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 | 97.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.9 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-16
Client ID: S-10N-C004-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 13:03
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 55.6 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-17
Client ID: S-10N-C005-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 15:10
Date Received: 11/05/10
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 | 99.3 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 76.1 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-18
Client ID: S-10N-C005-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 15:10
Date Received: 11/05/10
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 | 99.5 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 82.3 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-19
Client ID: S-10N-C006-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:46
Date Received: 11/05/10
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 | 94.2 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 68.6 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018130-20
Client ID: S-10N-C006-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:46
Date Received: 11/05/10
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 | 99.2 | | % | 0.100 | -- | 1 | - | 12/01/10 14:45 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 76.9 | | % | 0.100 | NA | 1 | - | 11/29/10 12:25 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG445698-1 QC Sample: L1018130-01 Client ID: S-10O-C076-0-1.0 | | | | | | |
| Solids, Total | 95.1 | 94.5 | % | 1 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018130-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-01B | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-12A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-13A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-14A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018130
**Report Date:** 12/29/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018130-15A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-16A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-17A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-18A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-19A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018130-20A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

**Container Comments**

| | |
|---|---|
| L1018130-01A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-01B | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-02A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-03A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-04A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-05A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-06A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-07A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-08A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-09A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-10A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-11A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-12A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-13A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-14A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-15A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-16A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-17A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-18A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-19A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018130-20A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018130 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 8 OF 11

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018150

ALPHA ANALYTICAL
Westborough, 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 Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18150, 11 | S-10N-C002-0-1.0 | 11/03/10 | 13:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C3 | 1 |
| 12 | S-10N-C002-1.0-2.0 | 11/03/10 | 13:20 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C3 | 1 |
| 13 | S-10N-C003-0-1.0 | 11/03/10 | 14:02 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D2 | 1 |
| 14 | S-10N-C003-1.0-2.0 | 11/03/10 | 14:02 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D2 | 1 |
| 15 | S-10N-C004-0-1.0 | 11/03/10 | 13:03 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D3 | 1 |
| 16 | S-10N-C004-1.0-2.0 | 11/03/10 | 13:03 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-D3 | 1 |
| 17 | S-10N-C005-0-1.0 | 11/03/10 | 15:10 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E2 | 1 |
| 18 | S-10N-C005-1.0-2.0 | 11/03/10 | 15:10 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E2 | 1 |
| 19 | S-10N-C006-0-1.0 | 11/03/10 | 12:46 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E3 | 1 |
| 20 | S-10N-C006-1.0-2.0 | 11/03/10 | 12:46 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-E3 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)





Serial_No:12291014:24

# CHAIN OF CUSTODY

PAGE 7 OF 11

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018130

Westborough, 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 Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**Report Information**

☐ FAX
☒ ADEx

**Data Deliverables**

☒ EMAIL
☐ Add'l Deliverables

**Billing Information**

☒ Same as Client Info
PO #:

**Regulatory Requirements/Report Limits**

| State/Fed Program | Criteria |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

**ANALYSIS**

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18130-3 | S-10O-C077-0-1.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| 4 | S-10O-C077-1.0-2.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| 5 | S-10O-C078-0-1.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| 6 | S-10O-C078-1.0-2.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| 7 | S-10O-C079-0-1.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| | S-10O-C079-1.0-2.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| 8 | S-10O-C080-0-1.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| 9 | S-10O-C080-1.0-2.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| | S-10N-C001-0-1.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| 10 | S-10N-C001-1.0-2.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 11/5/10 19:00 | [illegible] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I)-NJ
(rev. 29-APR-05)



Serial_No:12291014:24

Serial_No:12291014:24

# CHAIN OF CUSTODY

PAGE 11 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018130

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS: PCB congeners - NOAA 18

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | MS/MSD | 1 |
| 18130 1 | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | MS/MSD | 1 |
| | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | MS/MSD | 1 |
| | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | MS/MSD | 1 |
| | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | CSO MS/MSD | 1 |
| | S-10O-C071-0-1.0MS/MSD | 10/29/10 | 08:33 | SED | MW | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | | |
| | | | | | | ☐ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | - | - | - | - | - | - | - | - | - | - | - |
| Preservative | A | - | - | - | - | - | - | - | - | - | - | - |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 19:00 | [signature] | 11/5/10 1900 |
| | | | |

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 Payment Terms.

FORM NO: 01-01(HN)
(rev. 29-APR-09)

Serial_No:12291014:24

# CHAIN OF CUSTODY

PAGE 6 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018130

**Project Information**

Project Name: NBH Environmental Monitoring

Project Location: New Bedford, MA

Project #: TO-0010-03

Project Manager: Dave Walsh

ALPHA Quote #:

**Client Information**

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: dwalsh@whgrp.com

☐ These samples have been Previously analyzed by Alpha

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10O-C072-0-1.0 | 10/28/10 | 09:09 | SED | MW | ☒ | BH-G4 | 1 |
| | S-10O-C072-1.0-2.0 | 10/28/10 | 09:09 | SED | MW | ☒ | BH-G4 | 1 |
| | S-10O-C073-0-1.0 | 10/28/10 | 08:55 | SED | MW | ☒ | BH-F4 | 1 |
| | S-10O-C073-1.0-2.0 | 10/28/10 | 08:55 | SED | MW | ☒ | BH-F4 | 1 |
| | S-10O-C074-0-1.0 | 10/28/10 | 09:20 | SED | DR | ☒ | BH-H1 | 1 |
| | S-10O-C074-1.0-2.0 | 10/28/10 | 09:20 | SED | DR | ☒ | BH-H1 | 1 |
| | S-10O-C075-0-1.0 | 10/28/10 | 09:35 | SED | DR | ☒ | BH-I3 | 1 |
| | S-10O-C075-1.0-2.0 | 10/28/10 | 09:35 | SED | DR | ☒ | BH-I3 | 1 |
| 18130 1 | S-10O-C076-0-1.0 | 10/28/10 | 10:00 | SED | DR | ☒ | BH-J1 | 1 |
| 2 | S-10O-C076-1.0-2.0 | 10/28/10 | 10:00 | SED | DR | ☒ | BH-J1 | 1 |
| | | | | Container Type | | A | | |
| | | | | Preservative | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 18:00 | [signature] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-018-H,I (rev. 29-APR-09)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018133 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NBH ENVIRONMENTAL MONITORING |
| Project Number: | TO-0010-03 |
| Report Date: | 12/29/10 |

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-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018133-01 | S-10O-C079-1.0-2.0 | NEW BEDFORD, MA | 10/28/10 10:38 |
| L1018133-02 | S-10N-C007-0-1.0 | NEW BEDFORD, MA | 11/03/10 12:34 |
| L1018133-03 | S-10N-C007-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 12:34 |
| L1018133-04 | S-10N-C008-0-1.0 | NEW BEDFORD, MA | 11/03/10 14:22 |
| L1018133-05 | S-10N-C008-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 14:22 |
| L1018133-06 | S-10N-C009-0-1.0 | NEW BEDFORD, MA | 11/03/10 12:16 |
| L1018133-07 | S-10N-C009-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 12:16 |
| L1018133-08 | S-10N-C010-0-1.0 | NEW BEDFORD, MA | 11/03/10 11:42 |
| L1018133-09 | S-10N-C010-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 11:42 |
| L1018133-10 | S-10N-C011-0-1.0 | NEW BEDFORD, MA | 11/03/10 11:56 |
| L1018133-11 | S-10N-C011-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 11:56 |
| L1018133-12 | S-10N-C017-0-1.0 | NEW BEDFORD, MA | 11/03/10 09:12 |
| L1018133-13 | S-10N-C017-1.0-2.0 | NEW BEDFORD, MA | 11/03/10 09:12 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## 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

Sediment samples were received intact on November 05, 2010 and placed in frozen storage until November 19, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage until they were removed November 30, 2010 to extract samples for PCB Congener analysis and analyze for air-dried percent solids. samples were placed back in frozen storage December 1, 2010. Sample L1018133-09 was removed from frozen storage on December 7, 2010 to re-extract this sample due to a laboratory accident.

PCB Congeners by 8082

The PCB Congener analysis was performed utilizing dual column confirmation with the higher of the two values

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

**Case Narrative (continued)**

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.

Several samples were analyzed at the dilution required by the elevated concentrations of target compounds in the sample.

Sample L1018133-05 was analyzed via GC/MS-SIM to confirm the presence of Cl10-BZ#209 as this congener is not usually detected in samples from this location.

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: 12/29/10

# ORGANICS

# PCBS

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-01 | Date Collected: | 10/28/10 10:38 |
| Client ID: | S-10O-C079-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/24/10 11:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 9.35 | | ug/kg | 3.36 | -- | 1 |
| Cl4-BZ#52 | 16.8 | | ug/kg | 3.36 | -- | 1 |
| Cl4-BZ#44 | 8.68 | | ug/kg | 3.36 | -- | 1 |
| Cl5-BZ#118 | 9.68 | | ug/kg | 3.36 | -- | 1 |
| Cl6-BZ#138 | 6.10 | | ug/kg | 3.36 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.36 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.36 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-01 | Date Collected: | 10/28/10 10:38 |
| Client ID: | S-10O-C079-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/24/10 11:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3.86 | | ug/kg | 3.36 | -- | 1 |
| Cl3-BZ#28 | 14.5 | | ug/kg | 3.36 | -- | 1 |
| Cl4-BZ#66 | 9.97 | | ug/kg | 3.36 | -- | 1 |
| Cl5-BZ#101 | 8.23 | | ug/kg | 3.36 | -- | 1 |
| Cl6-BZ#153 | 5.67 | | ug/kg | 3.36 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.36 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 77 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-02 | Date Collected: | 11/03/10 12:34 |
| Client ID: | S-10N-C007-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 22:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 65.3 | | ug/kg | 32.9 | -- | 10 |
| Cl3-BZ#18 | 158 | | ug/kg | 32.9 | -- | 10 |
| Cl4-BZ#52 | 263 | | ug/kg | 32.9 | -- | 10 |
| Cl4-BZ#44 | 153 | | ug/kg | 32.9 | -- | 10 |
| Cl4-BZ#66 | 281 | | ug/kg | 32.9 | -- | 10 |
| Cl5-BZ#118 | 158 | | ug/kg | 32.9 | -- | 10 |
| Cl6-BZ#138 | 84.1 | | ug/kg | 32.9 | -- | 10 |
| Cl7-BZ#187 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl6-BZ#128 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl7-BZ#180 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl7-BZ#170 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl8-BZ#195 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl9-BZ#206 | ND | | ug/kg | 32.9 | -- | 10 |
| Cl10-BZ#209 | ND | | ug/kg | 32.9 | -- | 10 |

| | | |
|---|---|---|
| DBOB | 65 | 30-150 |
| BZ 198 | 63 | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-02 | Date Collected: | 11/03/10 12:34 |
| Client ID: | S-10N-C007-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 22:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 266 | | ug/kg | 32.9 | -- | 10 |
| Cl5-BZ#101 | 159 | | ug/kg | 32.9 | -- | 10 |
| Cl6-BZ#153 | 74.6 | | ug/kg | 32.9 | -- | 10 |
| Cl5-BZ#105 | 47.7 | | ug/kg | 32.9 | -- | 10 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 65 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-03 | Date Collected: | 11/03/10 12:34 |
| Client ID: | S-10N-C007-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 19:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.32 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.32 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 90 | 30-150 |
| BZ 198 | 78 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-03 | Date Collected: | 11/03/10 12:34 |
| Client ID: | S-10N-C007-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 19:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 3.35 | | ug/kg | 3.32 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 3.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 90 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-04 | Date Collected: | 11/03/10 14:22 |
| Client ID: | S-10N-C008-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 16:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1270 | | ug/kg | 332 | -- | 100 |
| Cl3-BZ#18 | 2560 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#52 | 4480 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#66 | 4330 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#118 | 2190 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#138 | 1130 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 332 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 332 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 332 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 332 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 56 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-04 | Date Collected: | 11/03/10 14:22 |
| Client ID: | S-10N-C008-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 16:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4870 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#44 | 3050 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#101 | 2340 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#153 | 1160 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#105 | 564 | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 332 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 78 | | 30-150 |
| BZ 198 | 56 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-05 | Date Collected: | 11/03/10 14:22 |
| Client ID: | S-10N-C008-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/22/10 22:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 376 | | ug/kg | 166 | -- | 50 |
| Cl3-BZ#18 | 1090 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#52 | 2640 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#44 | 1120 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#66 | 2240 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#118 | 1680 | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#138 | 838 | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#128 | 220 | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 166 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 64 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-05 | Date Collected: | 11/03/10 14:22 |
| Client ID: | S-10N-C008-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/22/10 22:54 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1270 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#101 | 1770 | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#153 | 985 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#105 | 259 | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 166 | -- | 50 |
| Cl10-BZ#209 | 563 | | ug/kg | 166 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 64 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-06 | Date Collected: | 11/03/10 12:16 |
| Client ID: | S-10N-C009-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 17:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1000 | | ug/kg | 331 | -- | 100 |
| Cl3-BZ#18 | 2160 | | ug/kg | 331 | -- | 100 |
| Cl4-BZ#52 | 3280 | | ug/kg | 331 | -- | 100 |
| Cl4-BZ#44 | 2260 | | ug/kg | 331 | -- | 100 |
| Cl4-BZ#66 | 4940 | | ug/kg | 331 | -- | 100 |
| Cl5-BZ#118 | 3480 | | ug/kg | 331 | -- | 100 |
| Cl6-BZ#138 | 1610 | | ug/kg | 331 | -- | 100 |
| Cl6-BZ#128 | 416 | | ug/kg | 331 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 331 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 331 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 331 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 331 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 331 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-06 | Date Collected: | 11/03/10 12:16 |
| Client ID: | S-10N-C009-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 17:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3720 | | ug/kg | 331 | -- | 100 |
| Cl5-BZ#101 | 3280 | | ug/kg | 331 | -- | 100 |
| Cl6-BZ#153 | 1660 | | ug/kg | 331 | -- | 100 |
| Cl5-BZ#105 | 774 | | ug/kg | 331 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 331 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 63 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-07 | Date Collected: | 11/03/10 12:16 |
| Client ID: | S-10N-C009-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/24/10 11:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.34 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 97 | 30-150 |
| BZ 198 | 70 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-07 | Date Collected: | 11/03/10 12:16 |
| Client ID: | S-10N-C009-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/24/10 11:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 3.34 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 70 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-08 | Date Collected: | 11/03/10 11:42 |
| Client ID: | S-10N-C010-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 17:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 666 | | ug/kg | 332 | -- | 100 |
| Cl3-BZ#18 | 1520 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#52 | 2980 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#44 | 1800 | | ug/kg | 332 | -- | 100 |
| Cl4-BZ#66 | 3830 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#118 | 2820 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#138 | 1310 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#128 | 359 | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 332 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 332 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 332 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 332 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-08 | Date Collected: | 11/03/10 11:42 |
| Client ID: | S-10N-C010-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 17:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2930 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#101 | 2810 | | ug/kg | 332 | -- | 100 |
| Cl6-BZ#153 | 1440 | | ug/kg | 332 | -- | 100 |
| Cl5-BZ#105 | 575 | | ug/kg | 332 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 332 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 59 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-09 | Date Collected: | 11/03/10 11:42 |
| Client ID: | S-10N-C010-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/07/10 11:20 |
| Analytical Date: | 12/23/10 20:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 111 | 30-150 |
| BZ 198 | 94 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-09 | Date Collected: | 11/03/10 11:42 |
| Client ID: | S-10N-C010-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/07/10 11:20 |
| Analytical Date: | 12/23/10 20:26 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/08/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 111 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-10 | Date Collected: | 11/03/10 11:56 |
| Client ID: | S-10N-C011-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 02:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 314 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#52 | 815 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#66 | 638 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#118 | 471 | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#138 | 287 | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 166 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 166 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 166 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 166 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 166 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 73 | 30-150 |
| BZ 198 | 61 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-10 | Date Collected: | 11/03/10 11:56 |
| Client ID: | S-10N-C011-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:51 |
| Analytical Date: | 12/23/10 02:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 166 | -- | 50 |
| Cl3-BZ#28 | 805 | | ug/kg | 166 | -- | 50 |
| Cl4-BZ#44 | 387 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#101 | 478 | | ug/kg | 166 | -- | 50 |
| Cl6-BZ#153 | 310 | | ug/kg | 166 | -- | 50 |
| Cl5-BZ#105 | ND | | ug/kg | 166 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 73 | | 30-150 |
| BZ 198 | 61 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-11 | Date Collected: | 11/03/10 11:56 |
| Client ID: | S-10N-C011-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 21:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.34 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.34 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 95 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-11 | Date Collected: | 11/03/10 11:56 |
| Client ID: | S-10N-C011-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 21:07 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 3.34 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 95 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-12 | Date Collected: | 11/03/10 09:12 |
| Client ID: | S-10N-C017-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 03:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 530 | | ug/kg | 168 | -- | 50 |
| Cl3-BZ#18 | 1210 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#52 | 2560 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#44 | 1350 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#66 | 2740 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#118 | 2360 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#138 | 1310 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#128 | 331 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#180 | 246 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#170 | 183 | | ug/kg | 168 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 168 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 82 | | 30-150 |
| BZ 198 | 66 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-12 | Date Collected: | 11/03/10 09:12 |
| Client ID: | S-10N-C017-0-1.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 03:41 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2190 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#101 | 2090 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#153 | 1240 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#105 | 477 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#187 | 208 | | ug/kg | 168 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 82 | 30-150 |
| BZ 198 | 66 | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-13 | Date Collected: | 11/03/10 09:12 |
| Client ID: | S-10N-C017-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 21:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 3.33 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 88 | 30-150 |
| BZ 198 | 72 | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018133-13 | Date Collected: | 11/03/10 09:12 |
| Client ID: | S-10N-C017-1.0-2.0 | Date Received: | 11/05/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 11/30/10 14:55 |
| Analytical Date: | 12/23/10 21:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/07/10 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/kg | 3.33 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 3.33 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/22/10 11:16
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/30/10 14:51
Cleanup Method1: EPA 3630
Cleanup Date1: 12/07/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-08,10-13 Batch: WG445393-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 102 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/22/10 11:16
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 11/30/10 14:51
Cleanup Method1: EPA 3630
Cleanup Date1: 12/07/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-08,10-13 Batch: WG445393-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 102 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/22/10 11:57
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/07/10 11:20
Cleanup Method1: EPA 3630
Cleanup Date1: 12/08/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 09 Batch: WG446518-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/22/10 11:57
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/07/10 11:20
Cleanup Method1: EPA 3630
Cleanup Date1: 12/08/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 09 Batch: WG446518-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018133
**Report Date:** 12/29/10

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-08,10-13 QC Batch ID: WG445393-4 WG445393-5 QC Sample: L1018133-01
Client ID: S-10O-C079-1.0-2.0

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cl3-BZ#18 | 9.35 | 1680 | 1470 | 87 | | 1510 | 89 | | 40-140 | 3 | | 30 |
| Cl4-BZ#52 | 16.8 | 1680 | 1500 | 88 | | 1580 | 93 | | 40-140 | 5 | | 30 |
| Cl4-BZ#44 | 8.68 | 1680 | 1520 | 90 | | 1550 | 92 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 9.68 | 1680 | 1500 | 89 | | 1640 | 97 | | 40-140 | 9 | | 30 |
| Cl6-BZ#138 | 6.10 | 1680 | 1370 | 81 | | 1510 | 90 | | 40-140 | 10 | | 30 |
| Cl7-BZ#187 | ND | 1680 | 1250 | 74 | | 1380 | 82 | | 40-140 | 10 | | 30 |
| Cl6-BZ#128 | ND | 1680 | 1310 | 78 | | 1420 | 85 | | 40-140 | 8 | | 30 |
| Cl7-BZ#180 | ND | 1680 | 1250 | 74 | | 1390 | 83 | | 40-140 | 11 | | 30 |
| Cl7-BZ#170 | ND | 1680 | 1250 | 74 | | 1430 | 85 | | 40-140 | 13 | | 30 |
| Cl8-BZ#195 | ND | 1680 | 1230 | 73 | | 1370 | 82 | | 40-140 | 11 | | 30 |
| Cl9-BZ#206 | ND | 1680 | 1550 | 92 | | 1550 | 92 | | 40-140 | 0 | | 30 |
| Cl10-BZ#209 | ND | 1680 | 1210 | 72 | | 1350 | 80 | | 40-140 | 11 | | 30 |
| Cl2-BZ#8 | 3.86 | 1680 | 1500 | 89 | | 1570 | 93 | | 40-140 | 5 | | 30 |
| Cl3-BZ#28 | 14.5 | 1680 | 1640 | 97 | | 1720 | 101 | | 40-140 | 5 | | 30 |
| Cl4-BZ#66 | 9.97 | 1680 | 1530 | 90 | | 1610 | 95 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 8.23 | 1680 | 1460 | 86 | | 1540 | 91 | | 40-140 | 5 | | 30 |
| Cl6-BZ#153 | 5.67 | 1680 | 1240 | 73 | | 1380 | 82 | | 40-140 | 11 | | 30 |
| Cl5-BZ#105 | ND | 1680 | 1410 | 84 | | 1570 | 93 | | 40-140 | 11 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03
**Lab Number:** L1018133
**Report Date:** 12/29/10

| 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): 01-08,10-13 QC Batch ID: WG445393-4 WG445393-5 QC Sample: L1018133-01 Client ID: S-10O-C079-1.0-2.0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 94 | | 98 | | 30-150 |
| BZ 198 | 79 | | 88 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-08,10-13 Batch: WG445393-2 WG445393-3 | | | | | | | | |
| Cl2-BZ#8 | 65 | | 74 | | 40-140 | 13 | | 30 |
| Cl3-BZ#18 | 78 | | 87 | | 40-140 | 11 | | 30 |
| Cl3-BZ#28 | 89 | | 100 | | 40-140 | 12 | | 30 |
| Cl4-BZ#52 | 89 | | 92 | | 40-140 | 3 | | 30 |
| Cl4-BZ#44 | 89 | | 90 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 95 | | 97 | | 40-140 | 2 | | 30 |
| Cl5-BZ#101 | 92 | | 95 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 95 | | 97 | | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 86 | | 89 | | 40-140 | 3 | | 30 |
| Cl6-BZ#138 | 88 | | 91 | | 40-140 | 3 | | 30 |
| Cl7-BZ#187 | 82 | | 86 | | 40-140 | 5 | | 30 |
| Cl6-BZ#128 | 82 | | 86 | | 40-140 | 5 | | 30 |
| Cl7-BZ#180 | 78 | | 82 | | 40-140 | 5 | | 30 |
| Cl7-BZ#170 | 76 | | 81 | | 40-140 | 6 | | 30 |
| Cl8-BZ#195 | 75 | | 79 | | 40-140 | 5 | | 30 |
| Cl9-BZ#206 | 84 | | 88 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 81 | | 78 | | 40-140 | 4 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-08,10-13 | Batch: | WG445393-2 | WG445393-3 | | | |
| DBOB | 92 | | 99 | | 30-150 | | | |
| BZ 198 | 79 | | 84 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-08,10-13 | Batch: | WG445393-2 | WG445393-3 | | | |
| Cl6-BZ#153 | 83 | | 86 | | 40-140 | 4 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 92 | | 99 | | 30-150 |
| BZ 198 | 79 | | 84 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING

**Project Number:** TO-0010-03

**Lab Number:** L1018133

**Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 09 Batch: WG446518-2 WG446518-3 | | | | | | | | |
| Cl2-BZ#8 | 77 | | 81 | | 40-140 | 5 | | 30 |
| Cl3-BZ#18 | 83 | | 82 | | 40-140 | 1 | | 30 |
| Cl3-BZ#28 | 93 | | 84 | | 40-140 | 10 | | 30 |
| Cl4-BZ#52 | 90 | | 87 | | 40-140 | 3 | | 30 |
| Cl4-BZ#44 | 86 | | 86 | | 40-140 | 0 | | 30 |
| Cl4-BZ#66 | 90 | | 87 | | 40-140 | 3 | | 30 |
| Cl5-BZ#101 | 89 | | 87 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 93 | | 90 | | 40-140 | 3 | | 30 |
| Cl5-BZ#105 | 86 | | 83 | | 40-140 | 4 | | 30 |
| Cl6-BZ#138 | 87 | | 84 | | 40-140 | 4 | | 30 |
| Cl7-BZ#187 | 81 | | 80 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 80 | | 80 | | 40-140 | 0 | | 30 |
| Cl7-BZ#180 | 76 | | 75 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 77 | | 75 | | 40-140 | 3 | | 30 |
| Cl8-BZ#195 | 75 | | 75 | | 40-140 | 0 | | 30 |
| Cl9-BZ#206 | 86 | | 82 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 76 | | 74 | | 40-140 | 3 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NBH ENVIRONMENTAL MONITORING **Lab Number:** L1018133

**Project Number:** TO-0010-03 **Report Date:** 12/29/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 09 | | Batch: WG446518-2 | | WG446518-3 | | | |
| DBOB | 91 | | 91 | | 30-150 | | | |
| BZ 198 | 77 | | 75 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): 09 | | Batch: WG446518-2 | | WG446518-3 | | | |
| Cl6-BZ#153 | 80 | | 76 | | 40-140 | 5 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 91 | | 91 | | 30-150 |
| BZ 198 | 77 | | 75 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-01
Client ID: S-10O-C079-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/28/10 10:38
Date Received: 11/05/10
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 | 98.0 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 45.8 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-02
Client ID: S-10N-C007-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:34
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 52.6 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-03
Client ID: S-10N-C007-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:34
Date Received: 11/05/10
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 | 98.5 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 46.7 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-04
Client ID: S-10N-C008-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:22
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 66.7 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-05
Client ID: S-10N-C008-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 14:22
Date Received: 11/05/10
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 | 99.0 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 63.6 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-06
Client ID: S-10N-C009-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:16
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 61.1 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-07
Client ID: S-10N-C009-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 12:16
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.3 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-08
Client ID: S-10N-C010-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:42
Date Received: 11/05/10
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 | 98.8 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 54.8 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-09
Client ID: S-10N-C010-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:42
Date Received: 11/05/10
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 | 98.7 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.4 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-10
Client ID: S-10N-C011-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:56
Date Received: 11/05/10
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 | 99.1 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 56.4 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-11
Client ID: S-10N-C011-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 11:56
Date Received: 11/05/10
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 | 98.4 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 50.3 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-12
Client ID: S-10N-C017-0-1.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 09:12
Date Received: 11/05/10
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 | 98.1 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 49.5 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## SAMPLE RESULTS

Lab ID: L1018133-13
Client ID: S-10N-C017-1.0-2.0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/03/10 09:12
Date Received: 11/05/10
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 | 98.6 | | % | 0.100 | -- | 1 | - | 12/01/10 15:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 47.3 | | % | 0.100 | NA | 1 | - | 11/19/10 15:20 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG444343-1 QC Sample: L1018133-01 Client ID: S-10O-C079-1.0-2.0 | | | | | | |
| Solids, Total | 98.0 | 97.7 | % | 0 | | 20 |

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| D | Absent |
| ABCD | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018133-01A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-01B | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-02A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-03A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-04A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-05A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-06A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-07A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-08A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-09A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-10A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-11A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-12A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1018133-13A | Glass 250ml unpreserved | ABCD | N/A | 3,3,2,3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

**Container Comments**

*Values in parentheses indicate holding time in days

**Project Name:** NBH ENVIRONMENTAL MONITORING
**Project Number:** TO-0010-03

**Lab Number:** L1018133
**Report Date:** 12/29/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|

**Container Comments**

| | |
|---|---|
| L1018133-01A | SAMPLES FROZEN UPON RECEIPT 11/5/10<br>OPREP EMPTIED SAMPLE CONTAINER |
| L1018133-01B | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-02A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-03A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-04A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-05A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-06A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-07A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-08A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-09A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-10A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-12A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |
| L1018133-13A | SAMPLES FROZEN UPON RECEIPT 11/5/10 |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

***Data Qualifiers***

**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:** | NBH ENVIRONMENTAL MONITORING | **Lab Number:** | L1018133 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 12/29/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY



ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018133

**Project Information**
Project Name: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Client Information**
Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: dwalsh@whgrp.com
☐ These samples have been Previously analyzed by Alpha

**Turn-Around Time**
☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | | | | | | | | | | | | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-10O-C077-0-1.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| | S-10O-C077-1.0-2.0 | 10/28/10 | 10:09 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-K4 | 1 |
| | S-10O-C078-0-1.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| | S-10O-C078-1.0-2.0 | 10/28/10 | 10:25 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-L4 | 1 |
| | S-10O-C079-0-1.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| 18133 1 | S-10O-C079-1.0-2.0 | 10/28/10 | 10:38 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-M3 | 1 |
| | S-10O-C080-0-1.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| | S-10O-C080-1.0-2.0 | 10/28/10 | 10:52 | SED | DR | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-N3 | 1 |
| | S-10N-C001-0-1.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| | S-10N-C001-1.0-2.0 | 11/03/10 | 13:43 | SED | KGM | ☒ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | BH-C2 | 1 |
| | | | | | Container Type | A | - | - | - | - | - | - | - | - | - | - | - | | |
| | | | | | Preservative | A | - | - | - | - | - | - | - | - | - | - | - | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 11/5/10 19:00 | [illegible] | 11/5/10 1900 |

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 Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Serial_No:12291014:31

# CHAIN OF CUSTODY

PAGE 11 OF 11

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10 | ALPHA Job #: L1018133

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS: PCB congeners - NOAA 18

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| | S-10N-C017-0-1.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| | S-10N-C017-1.0-2.0 | 11/03/10 | 09:12 | SED | KGM | ☒ | BH-M2 | 1 |
| | S-10O-C072-1.0-2.0MSMSD | 10/28/10 | 09:09 | SED | MW | ☒ | MS/MSD | 1 |
| | S-10O-C076-0-1.0MSMSD | 10/28/10 | 10:00 | SED | DR | ☒ | MS/MSD | 1 |
| 18133.1 | S-10O-C079-1.0-2.0MSMSD | 10/28/10 | 10:38 | SED | DR | ☒ | MS/MSD | 1 |
| | S-10N-C001-0-1.0MSMSD | 11/03/10 | 13:43 | SED | KGM | ☒ | MS/MSD | 1 |
| | S-10O-C070-0-1.0MS/MSD | 10/27/10 | 15:18 | SED | DB | ☐ | CSO MS/MSD | 1 |
| | S-10O-C071-0-1.0MS/MSD | 10/20/10 | 0833 | SED | MW | ☐ | MS/MSD | 1 |
| | | | | | | ☐ | | |
| | | | | | | ☐ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | - | - | - | - | - | - | - | - | - | - | - |
| Preservative | A | - | - | - | - | - | - | - | - | - | - | - |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11/5/10 17:00 | [signature] | 11/5/10 1900 |
| | | | |

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

# CHAIN OF CUSTODY



ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/5/10

ALPHA Job #: L1018133

**Project Information**

Project Name: NBH Environmental Monitoring

Project Location: New Bedford, MA

Project #: TO-0010-03

Project Manager: Dave Walsh

ALPHA Quote #:

**Client Information**

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: dwalsh@whgrp.com

☐ These samples have been Previously analyzed by Alpha

**Turn-Around Time**

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

**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 |
|---|---|
| FED | |

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report & Project-specific EDD

PLEASE HOMOGENIZE SEDIMENTS BEFORE ANALYSIS

BOATHOUSE CORES

ANALYSIS

SAMPLE HANDLING
*Filtration*
☐ Done
☒ Not Needed
☐ Lab to do
*Preservation*
☐ Lab to do
*(Please specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB congeners - NOAA 18 | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| 1813 3.2 | S-10N-C007-0-1.0 | 11/03/10 | 12:34 | SED | KGM | ☒ | BH-E4 | 1 |
| 3 | S-10N-C007-1.0-2.0 | 11/03/10 | 12:34 | SED | KGM | ☒ | BH-E4 | 1 |
| 4 | S-10N-C008-0-1.0 | 11/03/10 | 14:22 | SED | KGM | ☒ | BH-F2 | 1 |
| 5 | S-10N-C008-1.0-2.0 | 11/03/10 | 14:22 | SED | KGM | ☒ | BH-F2 | 1 |
| 6 | S-10N-C009-0-1.0 | 11/03/10 | 12:16 | SED | KGM | ☒ | BH-F3 | 1 |
| 7 | S-10N-C009-1.0-2.0 | 11/03/10 | 12:16 | SED | KGM | ☒ | BH-F3 | 1 |
| 8 | S-10N-C010-0-1.0 | 11/03/10 | 11:42 | SED | KGM | ☒ | BH-G2 | 1 |
| 9 | S-10N-C010-1.0-2.0 | 11/03/10 | 11:42 | SED | KGM | ☒ | BH-G2 | 1 |
| 10 | S-10N-C011-0-1.0 | 11/03/10 | 11:56 | SED | KGM | ☒ | BH-G3 | 1 |
| 11 | S-10N-C011-1.0-2.0 | 11/03/10 | 11:56 | SED | KGM | ☒ | BH-G3 | 1 |
| | | | | Container Type | | A | | |
| | | | | Preservative | | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh | 11/5/10 19:00 | [illegible signature] | 11/5/10 19:00 |

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 Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-05)

# APPENDIX C. NEW ENVIRONMENTAL HORIZONS, INC. DATA VALIDATION REPORTS (ON CD)

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# APPENDIX C: NEW ENVIRONMENTAL HORIZONS, INC. DATA VALIDATION REPORTS

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# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1014584 |
| **Date(s) of Collection:** | August 17, 2010 – August 18, 2010 |
| **Number / Type Samples & Analyses** | 20 post-dredge sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | November 23, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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.

*34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474*
*Phone: (908) 874-5686 ◊ (781) 643-4294*
*Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net*
*www.neh-inc.com*

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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10S-C001-0-0.5 | L1014584-01 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C002-0-0.5 | L1014584-02 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C003-0-0.5 | L1014584-03 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C004-0-0.5 | L1014584-04 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C005-0-0.5 | L1014584-05 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C006-0-0.5 | L1014584-06 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C007-0-0.5 | L1014584-07 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C008-0-0.5 | L1014584-08 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C009-0-0.5 | L1014584-09 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C010-0-0.5 | L1014584-10 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C011-0-0.5 | L1014584-11 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10S-C012-0-0.5 | L1014584-12 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C013-0-0.5 | L1014584-13 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C014-0-0.5 | L1014584-14 | 8/17/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C015-0-0.5 | L1014584-15 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C016-0-0.5 | L1014584-16 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C017-0-0.5 | L1014584-17 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C018-0-0.5 | L1014584-18 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C019-0-0.5 | L1014584-19 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-C020-0-0.5 | L1014584-20 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 requirements. The database was unchanged as a consequence of this review (i.e., there were no DV qualifiers added to the data). 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The post-dredge sediment cores were collected on August 17, 2010 and August 18, 2010 and frozen to arrest holding times. Cores were thawed and aliquots of the cores were generated by Dave Walsh, WHG, on September 15, 2010 for PCB Congener analysis. The post-dredge sediment core samples were received at the laboratory intact at 3°C on the day of after sample aliquoting, September 16, 2010. Aliquots of the "as received" samples were analyzed for percent solids. All samples had percent solids content of 39.5 to 70.7%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 83.5%. These air-dried samples were frozen on September 26, 2010, to arrest the holding time for sample extraction. As a consequence of the freezing (both prior to aliquoting and after air-drying), these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all 18 NOAA Congeners and there was no Equipment Blank required to be collected these core samples. Therefore, blank action to negate sample data was not required.

LCS/LCSD recoveries were acceptable for all 18 NOAA Congeners, indicating that the method of analysis was accurate for these Congeners.

MS/MSD analysis was not reported, according the narrative, since the level of Congeners in the unspiked sample was too high for recovery results to be applicable to the levels in the samples. Therefore, there was no accuracy information for the site matrix available for the reported Congeners.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

There were no MS/MSD or field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

All samples were analyzed with various dilutions to report all Congeners within the instrument calibration range. For these samples, all reporting limits (RLs), reported as DETECT_LIMIT in the validated EDD, were increased as a consequence of the dilutions made (RLs were 2 to 780 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) for these samples were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a “D” qualifier. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1017458 |
| **Date(s) of Collection:** | October 19, 2010 – October 20, 2010 |
| **Number / Type Samples & Analyses** | 15 post-dredge sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | December 16, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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.

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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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C016-0-0.5 | L1017458-01 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C017-0-0.5 | L1017458-02 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C018-0-0.5 | L1017458-03 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C019-0-0.5 | L1017458-04 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C020-0-0.5 | L1017458-05 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C021-0-0.5 | L1017458-06 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C022-0-0.5 | L1017458-07 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C023-0-0.5 | L1017458-08 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C024-0-0.5 | L1017458-09 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C025-0-0.5 | L1017458-10 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C026-0-0.5 | L1017458-11 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C027-0-0.5 | L1017458-12 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C028-0-0.5 | L1017458-13 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C029-0-0.5 | L1017458-14 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C030-0-0.5 | L1017458-15 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The post-dredge sediment cores were collected on October 19, 2010 and October 20, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The cores and aliquots were frozen by WHG to arrest holding time prior to shipment to the laboratory. The post-dredge sediment core samples were received intact frozen at -2°C and -3°C on October 29, 2010. Aliquots of the "as received" samples were analyzed for percent solids. All samples had percent solids content of 31 to 49%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 96%. These air-dried samples were refrigerated until extraction of the samples on November 8, 2010. As a consequence of the freezing of the aliquots by WHG, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

The Method Blank reported low-level detects for five Congeners. All samples reported levels of these Congeners greater than five times Method Blank levels; therefore, blank action to negate sample data was not required. There was no Equipment Blank required to be collected these core samples.

One surrogate was recovered high compared to criteria in sample S-10O-C016-0-0.5; therefore, all detected Congeners (15 total) were estimated (DJ) with a possible high bias due to high surrogate recovery. The three non-detect Congeners in this sample were unaffected by the surrogate recovery.

LCS/LCSD recoveries were acceptable for all 18 NOAA Congeners except 2,2',5,5'-Tetrachlorobiphenyl (BZ 52), which was recovered high in the LCSD. Since the LCS recovery and LCS/LCSD precision were acceptable, professional judgment was used to accept sample data without qualification.

MS/MSD analysis was performed on sample S-10O-C026-0-0.5. MS/MSD accuracy was acceptable for all 18 NOAA Congeners.

All of the samples required multiple dilutions to report results within the calibration range. Three results (2,3',4,4',5-Pentachlorobiphenyl (BZ 18) in sample S-10O-C022-0-0.5 and 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ138) in samples S-10O-C022-0-0.5 and S-10O-C023-0-0.5) were initially reported over the instrument calibration range (qualified "DE" by the laboratory) but were non-detect in the dilution analysis of the sample (qualified "DU"). Professional judgment was used to accept these three over-calibration range results as estimated data (DJ) rather than to report the data as non-detect. The affected results are shown in Table 2.

**Precision**

LCS/LCSD and MS/MSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

All samples were analyzed with various dilutions to report all Congeners within the instrument calibration range. For these samples, all reporting limits (RLs), reported as DETECT_LIMIT in the validated EDD, were increased as a consequence of the dilutions made (RLs were 27 to over 1000 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) for these samples were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C022-0-0.5 | 2,3',4,4',5-Pentachlorobiphenyl | DJ | I | Result uncertain at a level above the calibration range |
| S-10O-C022-0-0.5 & S-10O-C023-0-0.5 | 2,2',3,4,4',5'-Hexachlorobiphenyl | DJ | I | Result uncertain at a level above the calibration range |
| S-10O-C016-0-0.5 | 2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3,3',4,4'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, 2,2',4,4',5,5'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, & 2,2',3,4',5,5',6-Heptachlorobiphenyl | DJ | H | High Surrogate 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1017218 |
| **Date(s) of Collection:** | October 18, 2010 – October 19, 2010 |
| **Number / Type Samples & Analyses** | 15 post-dredge sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | December 16, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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.

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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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C001-0-0.5 | L1017218-01 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C002-0-0.5 | L1017218-02 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C003-0-0.5 | L1017218-03 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C004-0-0.5 | L1017218-04 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C005-0-0.5 | L1017218-05 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C006-0-0.5 | L1017218-06 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C007-0-0.5 | L1017218-07 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C008-0-0.5 | L1017218-08 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C009-0-0.5 | L1017218-09 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C010-0-0.5 | L1017218-10 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C011-0-0.5 | L1017218-11 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C012-0-0.5 | L1017218-12 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C013-0-0.5 | L1017218-13 | 10/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C014-0-0.5 | L1017218-14 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10O-C015-0-0.5 | L1017218-15 | 10/19/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The post-dredge sediment cores were collected on October 18, 2010 and October 19, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The cores and aliquots were frozen by WHG to arrest holding time prior to shipment to the laboratory. The post-dredge sediment core samples were received intact frozen at -2°C and -3°C on October 29, 2010. Aliquots of the "as received" samples were analyzed for percent solids. All samples had percent solids content of 33 to 55%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 96%. These air-dried samples were refrigerated until extraction of the samples on November 4, 2010. As a consequence of the freezing of the aliquots by WHG, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all 18 NOAA Congeners and there was no Equipment Blank required to be collected these core samples. Therefore, blank action to negate sample data was not required.

LCS/LCSD recoveries were acceptable for all 18 NOAA Congeners, indicating that the method of analysis was accurate for these Congeners.

MS/MSD analysis was performed on sample S-10O-C014-0-0.5. MS/MSD accuracy was acceptable for all 18 NOAA Congeners.

All of the samples required multiple dilutions to report results within the calibration range. Three results (2,2',4,5,5'-Pentachlorobiphenyl (BZ 101) in S-10O-C002-0-0.5 and 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ 138) and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ 153) in sample S-10O-C003-

0-0.5 ) were initially reported over the instrument calibration range (qualified "DE" by the laboratory) but were non-detect in the dilution analysis of the sample (qualified "DU"). Professional judgment was used to accept these three over-calibration range results as estimated data (DJ) rather than to report the data as non-detect. The affected results are shown in Table 2.

**Precision**

LCS/LCSD and MS/MSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

All samples were analyzed with various dilutions to report all Congeners within the instrument calibration range. For these samples, all reporting limits (RLs), reported as DETECT_LIMIT in the validated EDD, were increased as a consequence of the dilutions made (RLs were 27 to over 1000 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) for these samples were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C002-0-0.5 | 2,2',4,5,5'-Pentachlorobiphenyl | DJ | I | Result uncertain at a level above the calibration range |
| S-10O-C003-0-0.5 | 2,2',3,4,4',5'-Hexachlorobiphenyl & 2,2',4,4',5,5'-Hexachlorobiphenyl | DJ | I | Result uncertain at a level above the calibration range |

*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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1017460 |
| **Date(s) of Collection:** | August 18, 2020, October 20, 2010 – October 21, 2010 |
| **Number / Type Samples & Analyses** | 16 post-dredge sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | December 16, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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.

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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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C031-0-0.5 | L1017460-01 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C032-0-0.5 | L1017460-02 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C033-0-0.5 | L1017460-03 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C034-0-0.5 | L1017460-04 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C035-0-0.5 | L1017460-05 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C036-0-0.5 | L1017460-06 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C037-0-0.5 | L1017460-07 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C038-0-0.5 | L1017460-08 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C039-0-0.5 | L1017460-09 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C040-0-0.5 | L1017460-10 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C041-0-0.5 | L1017460-11 | 10/20/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C042-0-0.5 | L1017460-12 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C043-0-0.5 | L1017460-13 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C044-0-0.5 | L1017460-14 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C045-0-0.5 | L1017460-15 | 10/21/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C046-0-0.5 | L1017460-16 | 8/18/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

All of the post-dredge sediment cores, except S-10O-C046-0-0.5, were collected on October 20, 2010 and October 21, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. Sample S-10O-C046-0-0.5 was collected on August 18,2010. All sample aliquots were frozen by WHG to arrest holding time prior to shipment to the laboratory. The post-dredge sediment core samples were received intact frozen at -2°C and -3°C on October 29, 2010. Aliquots of the "as received" samples were analyzed for percent solids. All samples had percent solids content of 31 to 49%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 96%. These air-dried samples were refrigerated until extraction of the samples on November 8, 2010. As a consequence of the freezing of the aliquots by WHG, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

The Method Blank reported low-level detects for five Congeners. All samples reported levels of these Congeners greater than five times Method Blank levels; therefore, blank action to negate sample data was not required. There was no Equipment Blank required to be collected these core samples.

LCS/LCSD recoveries were acceptable for all 18 NOAA Congeners, indicating that the method of analysis was accurate for these Congeners.

MS/MSD analysis was performed on sample S-10O-C041-0-0.5. MS/MSD accuracy was acceptable for all 18 NOAA Congeners except the MSD recovery was low for six Congeners, as shown in Table 2. Two other Congeners reported low MS and/or MSD recovery; however, no action was required

because the spike level was too low relative to the level of these Congeners in the unspiked samples and therefore the MS/MSD results were not relevant. See the DV Checklist for further details.

**Precision**

LCS/LCSD and MS/MSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

All samples were analyzed with various dilutions to report all Congeners within the instrument calibration range. For these samples, all reporting limits (RLs), reported as DETECT_LIMIT in the validated EDD, were increased as a consequence of the dilutions made (RLs were 27 to over 2500 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) for these samples were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C041-0-0.5 | 2,4'-Dichlorobiphenyl,<br>2,4,4'-Trichlorobiphenyl,<br>2,2',3,5'-Tetrachlorobiphenyl,<br>2,3',4,4'-Tetrachlorobiphenyl,<br>2,2',3,4,4',5'-Hexachlorobiphenyl, &<br>2,2',4,4',5,5'-Hexachlorobiphenyl | 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018124 |
| **Date(s) of Collection:** | November 3, 2010 |
| **Number / Type Samples & Analyses** | 11 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 4, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10N-C001-0-1.0 | L1018124-01 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10N-C012-0-1.0 | L1018124-02 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C012-1.0-2.0 | L1018124-03 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C013-0-1.0 | L1018124-04 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C013-1.0-2.0 | L1018124-05 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C014-0-1.0 | L1018124-06 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C014-1.0-2.0 | L1018124-07 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C015-0-1.0 | L1018124-08 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C015-1.0-2.0 | L1018124-09 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C016-0-1.0 | L1018124-10 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C016-1.0-2.0 | L1018124-11 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

## Sample Receipt and Holding Time

The Boathouse sediment cores were collected on November 3, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were shipped to Alpha Analytical where they were received intact at 4°C on November 5, 2010. Alpha froze the samples upon receipt and on November 17, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 44 to 79%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 98%. These air-dried samples were refrigerated until extraction of the samples on November 19, 2010. As a consequence of the freezing of the aliquots by Alpha, these samples were considered to have been extracted and analyzed within holding time.

## Accuracy

There was no Equipment Blank required to be collected these core samples.

MS/MSD analysis was performed on sample S-10N-C001-0-1.0. MS/MSD accuracy was acceptable for all 18 NOAA Congeners except 2,2',4,5,5'-Pentachlorobiphenyl, (BZ#101), 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ#138), and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153), which were recovered below criteria in the MS. These three Congeners were estimated (DJ) with possible low bias in the unspiked sample, as shown in Table 2.

## Precision

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,2',5,5'-Tetrachlorobiphenyl (BZ#52). All results for this Congener were estimated (DJ, J, or UJ), as shown in Table 2, with indeterminate bias.

Sample S-10N-C014-0-1.0 was analyzed initially at dilution factor (DF)=10 and five Congeners were reported over the instrument calibration range (flagged "DE" by the lab). The sample extract was reanalyzed at DF=100 and the lab reported results for six Congeners: the five Congeners over-range in DF=10 and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153), which was within criteria in the DF=10 analysis. A comparison of the DF=10 and DF=100 data for this sample indicated poor replicate precision (RPD > 30%) between the results for these six Congeners. Therefore, all six Congeners from the DF=100 analysis, which were accepted for reporting, were estimated (DJ), as shown in Table 2.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10N-C012-1.0-2.0, S-10N-C013-1.0-2.0, S-10N-C014-1.0-2.0, S-10N-C015-1.0-2.0, and S-10N-C016-1.0-2.0 were analyzed at DF=1. For these samples, the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NBH OU1 QAPP Addendum 2010. The other six samples were analyzed at various dilutions (some with multiple analyses) to report all Congeners within the instrument calibration range. For these samples with multiple dilutions, the RLs were increased as a consequence of the dilutions made. However, the sum of all detected congener results in these diluted samples exceeded the Project Action Limit (PAL) for Total PCBs; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10N-C001-0-1.0, S-10N-C012-0-1.0, S-10N-C013-0-1.0, S-10N-C013-1.0-2.0, S-10N-C015-0-1.0, S-10N-C015-1.0-2.0, S-10N-C016-0-1.0, & S-10N-C016-1.0-2.0 | 2,2',5,5'-Tetrachlorobiphenyl | J / DJ | I | LCS/LCSD imprecision |
| S-10N-C012-1.0-2.0 & S-10N-C014-1.0-2.0 | 2,2',5,5'-Tetrachlorobiphenyl | UJ | I | LCS/LCSD imprecision |
| S-10N-C014-0-1.0 | 2,2',5,5'-Tetrachlorobiphenyl | DJ | I | LCS/LCSD imprecision + Replicate imprecision |
| S-10N-C001-0-1.0 | 2,2',4,5,5'-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl | DJ | L | Low MS recovery |
| S-10N-C014-0-1.0 | 2,4,4'-Trichlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl | DJ | I | Replicate 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018125 |
| **Date(s) of Collection:** | October 25, 2010 and October 27, 2010 |
| **Number / Type Samples & Analyses** | 19 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 4, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C047-0-1.0 | L1018125-01 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C047-1.0-2.0 | L1018125-02 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C048-0-1.0 | L1018125-03 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C048-1.0-2.0 | L1018125-04 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C049-0-1.0 | L1018125-05 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C049-1.0-2.0 | L1018125-06 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C050-0-1.0 | L1018125-07 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C050-1.0-2.0 | L1018125-08 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C051-0-1.0 | L1018125-09 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C051-1.0-2.0 | L1018125-10 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C052-0-1.0 | L1018125-11 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C052-1.0-2.0 | L1018125-12 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C053-0-1.0 | L1018125-13 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C053-1.0-2.0 | L1018125-14 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C054-0-1.0 | L1018125-15 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C054-1.0-2.0 | L1018125-16 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C055-0-1.0 | L1018125-17 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C055-1.0-2.0 | L1018125-18 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C070-0-1.0 | L1018125-19 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 requirements. No additional data qualification was required as a consequence of this review. 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The Boathouse sediment cores were collected on October 25, 2010 and October 27, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were frozen by WHG until shipment to Alpha Analytical where they were received intact at 4°C on November 5, 2010. Alpha froze the samples upon receipt and on November 12, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 33 to 88%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 95%. These air-dried samples were refrigerated until extraction of the samples on November 19, 2010. As a consequence of the freezing of the aliquots by WHG and Alpha, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

There was no Equipment Blank required to be collected with these core samples.

The LCS/LCSD and MS/MSD analysis, performed on sample S-10O-C070-0-1.0, demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners.

**Precision**

LCS/LCSD and MS/MSD precision were acceptable for all 18 NOAA Congeners.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10O-C049-1.0-2.0, S-10O-C050-1.0-2.0, S-10O-C052-1.0-2.0, S-10O-C054-1.0-2.0, and S-10O-C055-1.0-2.0 were analyzed at DF=1. For these samples the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010. The other fourteen samples were analyzed at various dilutions (some with multiple analyses) to report all Congeners within the instrument calibration range. For these samples, all reporting limits (RLs), reported as DETECT_LIMIT in the validated EDD, were increased as a consequence of the dilutions made. However, Total PCBs (as the sum of all detected Congener results) for these samples were at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018126 |
| **Date(s) of Collection:** | October 25, 2010, October 27, 2010, & October 28, 2010 |
| **Number / Type Samples & Analyses** | 20 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 4, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C056-0-1.0 | L1018126-01 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C056-1.0-2.0 | L1018126-02 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C057-0-1.0 | L1018126-03 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C057-1.0-2.0 | L1018126-04 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C058-0-1.0 | L1018126-05 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C058-1.0-2.0 | L1018126-06 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C059-0-1.0 | L1018126-07 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C059-1.0-2.0 | L1018126-08 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C060-0-1.0 | L1018126-09 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C060-1.0-2.0 | L1018126-10 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C061-0-1.0 | L1018126-11 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C061-1.0-2.0 | L1018126-12 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C062-0-1.0 | L1018126-13 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C062-1.0-2.0 | L1018126-14 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C063-0-1.0 | L1018126-15 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C063-1.0-2.0 | L1018126-16 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10O-C064-0-1.0 | L1018126-17 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C064-1.0-2.0 | L1018126-18 | 10/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C065-0-1.0 | L1018126-19 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C071-0-1.0 | L1018126-20 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The Boathouse sediment cores were collected on October 25, 2010 through October 28, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were frozen by WHG until shipment to Alpha Analytical where they were received intact at 4°C on November 5, 2010. Alpha froze the samples upon receipt and on November 19, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 37 to 79%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 97%. These air-dried samples were refrigerated until extraction of the samples on November 22, 2010. As a consequence of the freezing of the aliquots by Alpha, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

There was no Equipment Blank required to be collected these core samples.
The LCS/LCSD and MS/MSD analysis, performed on sample S-10O-C063-1.0-2.0, demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,4'-Dichlorobiphenyl (BZ#8) and 2,4,4'-Trichlorobiphenyl (BZ#28). All results for these two Congeners, except for those associated with sample S-10O-C063-1.0-2.0, were estimated (DJ, J, UJ, or DUJ), as shown in Table 2, with indeterminate bias. Sample S-10O-C063-1.0-2.0 was used for the MS/MSD analysis and acceptable precision was demonstrated for all 18 NOAA Congeners. Therefore, professional judgment was used to accept the results for 2,4'-Dichlorobiphenyl (BZ#8) and 2,4,4'-Trichlorobiphenyl (BZ#28) unqualified in this sample based on acceptable precision in the MS/MSD.

Sample S-10O-C062-0-1.0 was analyzed initially at dilution factor (DF)=100 and four Congeners were reported over the instrument calibration range (flagged "DE" by the lab). The sample extract was reanalyzed at DF=400 and a comparison of the DF=100 and DF=400 data for this sample indicated poor replicate precision (RPD > 30%) between the results for the four Congeners reported from the dilution analysis. Therefore, all four Congeners from the DF=400 analysis, which were accepted for reporting, were estimated (DJ) with indeterminate bias as shown in Table 2.

Sample S-10O-C064-1.0-2.0 was analyzed initially at dilution factor (DF)=100 and seven Congeners were reported over the instrument calibration range (flagged "DE" by the lab). The sample extract was reanalyzed at DF=500 and a comparison of the DF=100 and DF=500 data for this sample indicated poor replicate precision (RPD > 30%) between the results for the seven Congeners reported from the dilution analysis. Therefore, all seven Congeners from the DF=500 analysis, which were accepted for reporting, were estimated (DJ) with indeterminate bias as shown in Table 2.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10O-C056-1.0-2.0, S-10O-C057-1.0-2.0, S-10O-C058-1.0-2.0, S-10O-C060-1.0-2.0, S-10O-C061-1.0-2.0, S-10O-C062-1.0-2.0, and S-10O-C063-1.0-2.0 were analyzed at DF=1. For these samples, the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NBH OU1 QAPP Addendum 2010. The other thirteen samples were analyzed at various dilutions (some with multiple analyses) to report all Congeners within the instrument calibration range. For these samples with multiple dilutions, the RLs were increased as a consequence of the dilutions made. However, the sum of all detected congener results in these diluted samples exceeded the Project Action Limit (PAL) for Total PCBs; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a “D” qualifier. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C062-0-1.0 | 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, & 2,3',4,4',5-Pentachlorobiphenyl | DJ | I | Replicate imprecision |
| S-10O-C064-1.0-2.0 | 2,2',5-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, & 2,3',4,4',5-Pentachlorobiphenyl | DJ | I | Replicate imprecision |
| S-10O-C062-0-1.0 & S-10O-C064-1.0-2.0 | 2,4,4'-Trichlorobiphenyl | DJ | I | LCS/LCSD imprecision + Replicate imprecision |
| All samples except: S-10O-C063-1.0-2.0, S-10O-C062-0-1.0 & S-10O-C064-1.0-2.0 | 2,4,4'-Trichlorobiphenyl | DJ / J / UJ | I | LCS/LCSD imprecision |
| All samples except: S-10O-C063-1.0-2.0 | 2,4'-Dichlorobiphenyl | DJ / J / UJ / DUJ | I | LCS/LCSD 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018129 |
| **Date(s) of Collection:** | October 27, 2010 & October 28, 2010 |
| **Number / Type Samples & Analyses** | 18 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 20, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C065-1.0-2.0 | L1018129-01 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C066-0-1.0 | L1018129-02 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C066-1.0-2.0 | L1018129-03 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C067-0-1.0 | L1018129-04 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C067-1.0-2.0 | L1018129-05 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C068-0-1.0 | L1018129-06 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C068-1.0-2.0 | L1018129-07 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C069-0-1.0 | L1018129-08 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C069-1.0-2.0 | L1018129-09 | 10/27/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C071-1.0-2.0 | L1018129-10 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C072-0-1.0 | L1018129-11 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10O-C072-1.0-2.0 | L1018129-12 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10O-C073-0-1.0 | L1018129-13 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C073-1.0-2.0 | L1018129-14 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C074-0-1.0 | L1018129-15 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C074-1.0-2.0 | L1018129-16 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C075-0-1.0 | L1018129-17 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C075-1.0-2.0 | L1018129-18 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The Boathouse sediment cores were collected on October 27, 2010 and October 28, 2010 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were frozen by WHG until shipment to Alpha Analytical where they were received intact at 2 to 3°C on November 5, 2010. Alpha froze the samples upon receipt and on November 22, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 38 to 94%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 95%. These air-dried samples were frozen until extraction of the samples on November 30, 2010. As a consequence of the freezing of the aliquots by WHG and Alpha, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

There was no Equipment Blank required to be collected these core samples.

The LCS/LCSD and MS/MSD analysis, performed on sample S-10O-C072-1.0-2.0, demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners except for high recovery in the LCSD for 2,4,4'-Trichlorobiphenyl (BZ#28). All detected results for 2,4,4'-Trichlorobiphenyl (BZ#28), except for sample S-10O-C072-1.0-2.0, were estimated (DJ), as shown in Table 2. Non-detects for this Congener were unaffected by the high LCSD recovery results and professional judgment was used to accept this Congener result in sample S-10O-C072-1.0-2.0 based on acceptable accuracy in the MS/MSD.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,2',5-Trichlorobiphenyl (BZ#18) and 2,4,4'-Trichlorobiphenyl (BZ#28). All results for these two Congeners, except for those associated with sample S-10O-C072-1.0-2.0, were estimated (DJ or DUJ), as shown in Table 2, with indeterminate bias. Sample S-10O-C072-1.0-2.0 was used for the MS/MSD analysis and acceptable precision was demonstrated for all 18 NOAA Congeners. Therefore, professional judgment was used to accept the results for 2,2',5-Trichlorobiphenyl (BZ#18) and 2,4,4'-Trichlorobiphenyl (BZ#28) unqualified in this sample based on acceptable precision in the MS/MSD.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10O-C069-0-1.0, S-10O-C069-1.0-2.0, S-10O-C072-0-1.0, S-10O-C073-1.0-2.0, S-10O-C074-1.0-2.0, and S-10O-C075-1.0-2.0 were analyzed with a dilution factor (DF) of 2. For these samples, the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NBH OU1 QAPP Addendum 2010. The other twelve samples were analyzed at various dilutions (some with multiple analyses) to report all Congeners within the instrument calibration range. For these samples with multiple dilutions, the RLs were increased as a consequence of the dilutions made. However, the sum of all detected congener results in these diluted samples exceeded the Project Action Limit (PAL) for Total PCBs; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| All samples except: S-10O-C072-1.0-2.0 | 2,2',5-Trichlorobiphenyl | DJ / DUJ | I | LCS/LCSD imprecision |
| S-10O-C066-0-1.0, S-10O-C069-1.0-2.0, S-10O-C073-1.0-2.0, S-10O-C074-1.0-2.0, & S-10O-C075-1.0-2.0 | 2,4,4'-Trichlorobiphenyl | DUJ | I | LCS/LCSD imprecision |

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C065-1.0-2.0,<br>S-10O-C066-1.0-2.0,<br>S-10O-C067-0-1.0,<br>S-10O-C067-1.0-2.0,<br>S-10O-C068-0-1.0,<br>S-10O-C068-1.0-2.0,<br>S-10O-C069-0-1.0,<br>S-10O-C071-1.0-2.0,<br>S-10O-C072-0-1.0,<br>S-10O-C073-0-1.0,<br>S-10O-C074-0-1.0, &<br>S-10O-C075-0-1.0 | 2,4,4'-Trichlorobiphenyl | DJ | I | High LCS + LCS/LCSD 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018130 |
| **Date(s) of Collection:** | October 28, 2010 & November 3, 2010 |
| **Number / Type Samples & Analyses** | 20 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 20, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C076-0-1.0 | L1018130-01 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10O-C076-1.0-2.0 | L1018130-02 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C077-0-1.0 | L1018130-03 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C077-1.0-2.0 | L1018130-04 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C078-0-1.0 | L1018130-05 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C078-1.0-2.0 | L1018130-06 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C079-0-1.0 | L1018130-07 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C080-0-1.0 | L1018130-08 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10O-C080-1.0-2.0 | L1018130-09 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C001-1.0-2.0 | L1018130-10 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C002-0-1.0 | L1018130-11 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10N-C002-1.0-2.0 | L1018130-12 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C003-0-1.0 | L1018130-13 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C003-1.0-2.0 | L1018130-14 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C004-0-1.0 | L1018130-15 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C004-1.0-2.0 | L1018130-16 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C005-0-1.0 | L1018130-17 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C005-1.0-2.0 | L1018130-18 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C006-0-1.0 | L1018130-19 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C006-1.0-2.0 | L1018130-20 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The Boathouse sediment cores were collected on October 28, 2010 and November 3, 2101 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were frozen by WHG until shipment to Alpha Analytical where they were received intact at 2 to 3°C on November 5, 2010. Alpha froze the samples upon receipt and on November 29, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 44 to 82%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 93%. These air-dried samples were refrigerated until extraction of the samples on December 2, 2010. As a consequence of the freezing of the aliquots by WHG and Alpha, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

There was no Equipment Blank required to be collected these core samples.

The LCS/LCSD demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners. The MS/MSD analysis, performed on sample S-10O-C076-0-1.0, demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners except 2,3',4,4'-Tetrachlorobiphenyl (BZ#66), 2,3',4,4',5-

Pentachlorobiphenyl (BZ#118), and 2,2',4,5,5'-Pentachlorobiphenyl (BZ#101) were not recovered in the MS and MSD (0% recoveries); 2,2',5,5'-Tetrachlorobiphenyl (BZ #52), 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ#138), and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153) recovered low, but above 10%, in both the MS and MSD; and 2,2',3,5'-Tetrachlorobiphenyl (BZ#44) recovered low, but above 10%, in the MS analysis. For the three Congeners that reported zero recoveries in the MS/ MSD, no action was required because the spike level was too low relative to the level of these Congeners in the unspiked samples and therefore the MS/MSD results were not relevant. The other four Congeners were estimated (DJ) with possible low bias due to low MS recovery results, as shown in Table 2.

The project narrative indicated that the detected results for 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206) and Decachlorobiphenyl (BZ#209) reported for sample S-10O-C076-1.0-2.0 (L1018130-02) were confirmed by a GC/MS-SIM analysis of the sample extract since these Congeners have not previously been detected in the core samples.

**Precision**

LCS/LCSD and MS/MSD precision was acceptable for all 18 NOAA Congeners.

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10O-C080-1.0-2.0, S-10N-C002-0-1.0, S-10N-C002-1.0-2.0, S-10N-C003-1.0-2.0, S-10N-C004-1.0-2.0, S-10N-C004-1.0-2.0, S-10O-C076-1.0-2.0, and S-10O-C077-1.0-2.0 were analyzed with dilution factors (DF) less than or equal to 2. For these samples, the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NBH OU1 QAPP Addendum 2010. The other twelve samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. For these samples with multiple dilutions, the RLs were increased as a consequence of the dilutions made. However, the sum of all detected congener results in these diluted samples exceeded the Project Action Limit (PAL) for Total PCBs; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a “D” qualifier. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10O-C076-0-1.0 | 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl | 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.*

*Bias: L = Low; H = High; I = Indeterminate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018133 |
| **Date(s) of Collection:** | October 28, 2010 & November 3, 2010 |
| **Number / Type Samples & Analyses** | 13 Boathouse sediment core samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 20, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-10O-C079-1.0-2.0 | L1018133-01 | 10/28/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD analysis] |
| S-10N-C007-0-1.0 | L1018133-02 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C007-1.0-2.0 | L1018133-03 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C008-0-1.0 | L1018133-04 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C008-1.0-2.0 | L1018133-05 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C009-0-1.0 | L1018133-06 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C009-1.0-2.0 | L1018133-07 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C010-0-1.0 | L1018133-08 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C010-1.0-2.0 | L1018133-09 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C011-0-1.0 | L1018133-10 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C011-1.0-2.0 | L1018133-11 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-10N-C017-0-1.0 | L1018133-12 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-C017-1.0-2.0 | L1018133-13 | 11/3/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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 2010 requirements. No additional data qualification was required as a consequence of this review. 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The Boathouse sediment cores were collected on October 28, 2010 and November 3, 2101 and aliquots of the cores were generated by Dave Walsh, WHG, for PCB Congener analysis. The samples were frozen by WHG until shipment to Alpha Analytical where they were received intact at 2 to 3°C on November 5, 2010. Alpha froze the samples upon receipt and on November 19, 2010, the samples were thawed and the "as received" samples were analyzed for percent solids. All samples had percent solids content of 45 to 67%; therefore, these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 98%. These air-dried samples were frozen until extraction of the samples on November 30, 2010. Sample S-10N-C010-1.0-2.0 required re-extraction on December 7, 2010 due to a mishap in the laboratory. As a consequence of the freezing of the aliquots by WHG and Alpha, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

There was no Equipment Blank required to be collected these core samples.

The LCS/LCSD and MS/MSD analysis, performed on sample S-10O-C079-1.0-2.0, demonstrated acceptable accuracy for recovery of the 18 NOAA Congeners.

The project narrative indicated that the detected result for Decachlorobiphenyl (BZ#209) reported for sample S-10N-C008-1.0-2.0 (L1018133-05) was confirmed by a GC/MS-SIM analysis of the sample extract since this Congener has not often been detected in the core samples.

**Precision**

LCS/LCSD and MS/MSD precision was acceptable for all 18 NOAA Congeners .

There were no field duplicate (FD) samples associated with the samples in this SDG. Therefore, precision and representativeness from sample collection thorough analysis could not be evaluated.

**Sensitivity & Reporting**

Samples S-10N-C007-1.0-2.0, S-10N-C009-1.0-2.0, S-10N-C010-1.0-2.0, S-10N-C011-1.0-2.0, S-10N-C017-1.0-2.0, and S-10O-C079-1.0-2.0 were analyzed with dilution factors (DF) of 1. For these samples, the RLs were all less than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NBH OU1

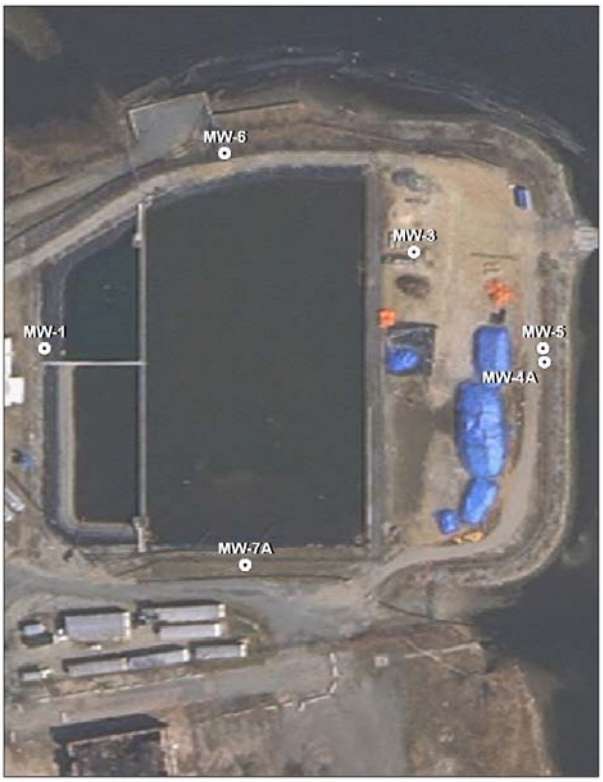
QAPP Addendum 2010. The other seven samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. For these samples with multiple dilutions, the RLs were increased as a consequence of the dilutions made. However, the sum of all detected congener results in these diluted samples exceeded the Project Action Limit (PAL) for Total PCBs; therefore, sensitivity was considered acceptable.

The laboratory reported many results with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

# 2010 Biannual Groundwater Monitoring
# Sawyer Street Pilot Study Confined Disposal Facility

## New Bedford, Massachusetts

## Contract No. W912WJ-09-D-0001-0010-03




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

Prepared By:
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth, MA 02536

April 2011

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# 2010 Biannual Groundwater Monitoring
# Sawyer Street Pilot Study Confined Disposal Facility

## New Bedford, Massachusetts

## Contract No. W912WJ-09-D-0001-0010-03

**April 2011**

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**April 22, 2011**

Mark Anderson
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

**Subject: July and October 2010 Groundwater Sampling Event**
**New Bedford Harbor Superfund Site**
**Sawyer Street Pilot Study Confined Disposal Facility (CDF)**

Dear Mr. Anderson,

This Draft Technical Memorandum presents a summary of the groundwater monitoring activities conducted at the Sawyer Street pilot study Confined Disposal Facility (CDF) in New Bedford, Massachusetts during the 2010 biannual monitoring period. The 2010 monitoring study is a continuation of a multi-year program developed to sample six groundwater wells located on the perimeter of the CDF.

This monitoring program provides data that can be used to evaluate the integrity of the CDF, as well assess trends in groundwater concentrations of polychlorinated biphenyls (PCBs) as Aroclors, selected metals (cadmium, chromium, copper, and lead), volatile organic compounds (VOCs), and total suspended solids (TSS).

## Groundwater Sampling

Woods Hole Group (WHG) collected groundwater samples, in accordance with the Field Sampling Plan (FSP) (Woods Hole Group, 2010a) on two events: 1) July 7-8, 2010 and, 2) October 10$^{th}$ and 20$^{th}$, 2010. Groundwater samples were collected following the United States Environmental Protection Agency (USEPA) Low Flow Groundwater procedures with documentation of water quality parameters. Documented water quality parameters included dissolved oxygen (DO), acidity or basicity (pH), turbidity, oxidation reduction potential (ORP), temperature, and specific conductivity. Please refer to Table 1 for a summary of the water quality parameters recorded prior to sampling during both events and Appendix A for complete field data records.

Groundwater samples were collected from the following six monitoring wells at the Sawyer Street pilot study CDF (Figure 1):

- MW-1
- MW-3
- MW-4A
- MW-5
- MW-6
- MW-7A

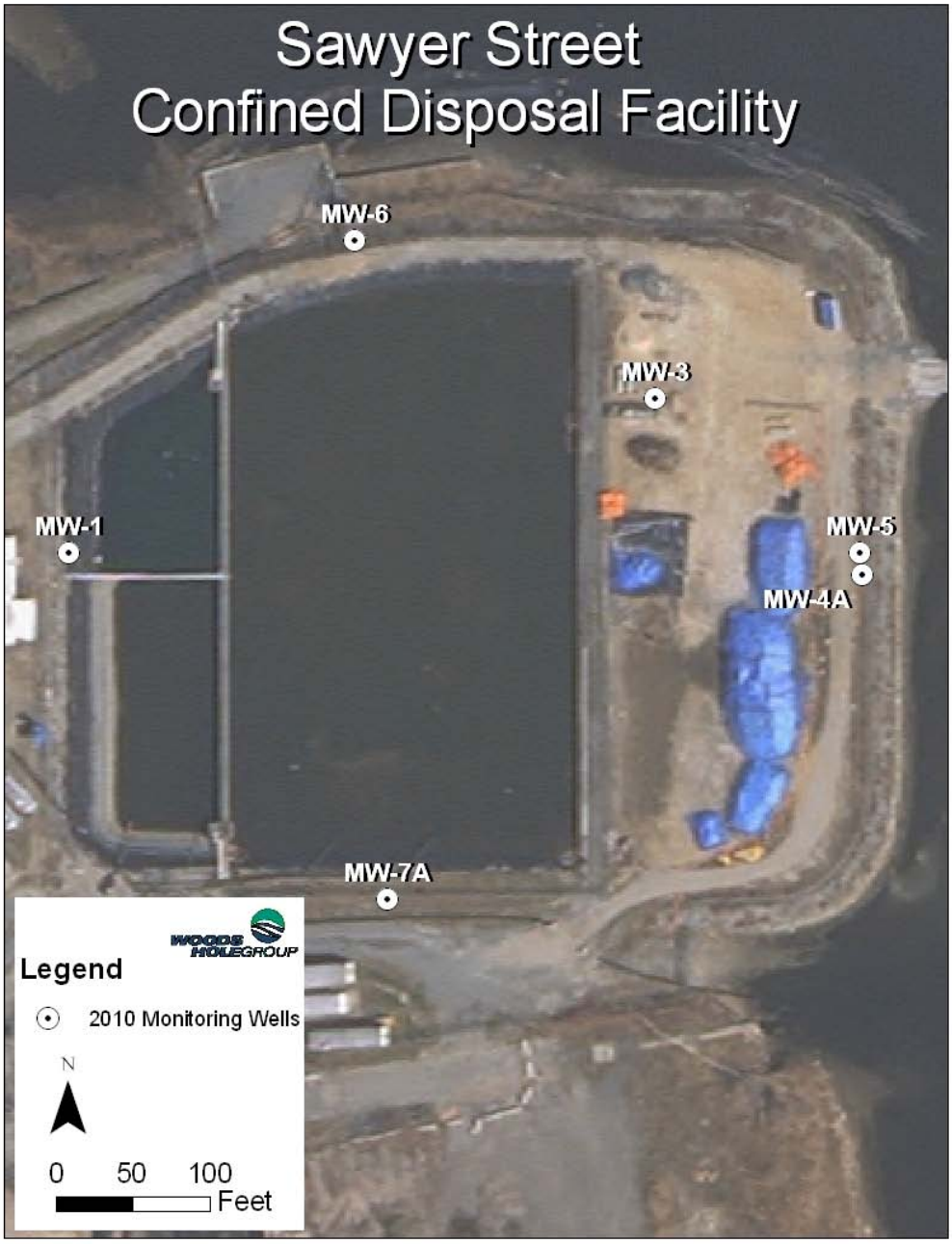


**Figure 1. 2010 Monitoring Well Locations**

WHG decontaminated all sampling equipment and used dedicated tubing and new bladders at each monitoring well. This procedure minimizes the potential for sample contamination and cross-contamination between monitoring wells.

Two deviations from the FSP occurred over the course of the 2010 monitoring study, both surrounding the sampling of well MW-1. The first deviation occurred during the July monitoring event; during this instance the well would not recharge, even at very low

purge rates. To ensure the sampling of formation water, MW-1 was pumped down to the intake level on July 7th, then allowed to recharge to 90% of the original well volume. MW-1 had recharged to 90% of the original well volume by the following day; at that point water quality parameters were recorded and a grab sample was collected using the bladder pump. The second deviation occurred during the October sampling event. During this instance MW-1 could not be sampled due to a blockage midway down the well. The blockage, which was found to be an abandoned length of tubing used prior to the 2010 sampling events, was later removed and the well was sampled per FSP specifications on the 20th of October. Since the sampling on October 20th occurred separately from the original October sampling date, additional equipment and trip blanks were collected to meet QC standards.

**Laboratory Analysis**

Groundwater samples were submitted to Alpha Analytical, a Massachusetts and USACE certified laboratory, for Volatile Organic Compounds (VOCs) - USEPA Method 8260B; Polychlorinated biphenyl (PCB) Aroclor analysis - USEPA Method 8082; selected metal analysis (Cadmium, Chromium, Copper, Lead) - USEPA Method 6020A; and TSS analysis - USEPA Method 2540D.

Quality control (QC) of samples was performed by collecting separate field duplicates (DUP), matrix spike (MS), and matrix spike duplicate (MSD) samples, which were submitted for analysis along with the field samples to Alpha Analytical. During the July 2010 sampling round, QC samples were collected from MW-4A and MW-03. These samples were identified as MW-04A-070810-DUP, MW-003-070810-MS, and MW-003-070810-MSD. During the October 2010 sampling round, QC samples were collected from MW-03 and MW-06, and were identified as MW-003-100510-DUP, MW-006-100510-MS, and MW-006-100510-MSD.

WHG also submitted equipment blanks (EB) and trip blanks (TB) for the July and October sampling events. The equipment blanks were collected using VOC-Free de-ionized (DI) water provided by AAL, which was run through the decontaminated bladder pumps into sample containers. The purpose of equipment blanks is to assess the effectiveness of decontamination procedures. Trip blanks were also prepared with VOC-Free DI water provided by AAL. Trip blanks are used to verify that field samples were not contaminated during transport to the laboratory. Trip blank and field duplicate samples were collected on July 8, October 5, and October 20.

The case narrative from Alpha Analytical noted that no significant deviations were encountered during the preparation or analysis of the groundwater samples (Appendix B). Sample Receipt, Container Information, and the Chain of Custody documents are also located at the end of the lab reports provided in Appendix B.

Quality assurance (QA) samples were submitted to ESS Laboratory for interlaboratory comparison on July 8 and October 5. WHG has not received, reviewed, nor incorporated the ESS Lab data package into this memo as the data were reported directly to the USACE project chemist for independent review.

## Data Validation

Laboratory results were submitted to New Environmental Horizons, Inc. for EPA Region I Tier I+ validation of VOCs, PCB Aroclors, and Metals. The intention of data validation is: 1) to determine if the data were generated and reported in accordance with the *Field Sampling Plan* and *Quality Assurance Project Plan, New Bedford Harbor Superfund Site, Operable Unit (OU1)* (WHG, 2010b); 2) to determine if the data meet 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.

Based on this Tier I+ validation of VOCs, PCB Aroclors, and Metals, all results were considered usable for project (Appendix C). No contamination was observed in the associated Method Blanks or Trip Blanks. Acetone was detected in the July equipment blank (EB-070910); however, the associated field samples were all non-detect for acetone, and no action was required.

Copper and lead were detected in all equipment blanks (EB-070910, EB-100510, and EB-102010). Subsequent analysis of the AAL provided water (identified as "VOC-free water") used to generate the equipment blanks showed that it was contaminated with these two metals at levels similar to those measures in the equipment blanks (Table 2). Please refer to the Metals Data Validation Checklists in Appendix C for communication confirming the presence of copper and lead in the VOC-Free DI water provided by AAL to the field team. Based on the evidence, the copper and lead contamination observed in the equipment blanks is likely due to the water used to generate the equipment blanks and not due to sample collection or handling procedural contamination. Professional judgment was used to qualify associated copper and lead results as estimated (J) rather than negated, due to equipment blank action. These estimated results have an indeterminate bias (NEH, 2010a; NEH, 2010b). Unless AAL can provide evidence that the supplied DI water is free of Cu and Pb contamination, in future sampling events WHG will not use the AAL supplied VOC-Free DI water for an equipment blank sample that will be analyzed for metals; instead a commercial brand of DI water will be used for the sample collection. The data validation actions and the corrective lab and field procedures proposed for future sampling events have been reviewed and approved by the USACE-NAE Project Chemist, Mr. Mark Koenig (Appendix D).

The Lab Control Sample (LCS) and LCS Duplicate (LCSD) for VOCs reported low recoveries for bromomethane and dichlorodifluoromethane during the July event. Therefore, the results for these two compounds in all samples were estimated (UJ: non-detect is estimated) with possible low bias. Three LCS/LCSD pairs were analyzed for VOCs for the October sampling event. Dichlorodifluoromethane was estimated (UJ) in three samples due to low LCS/LCSD recoveries and acetone was estimated (J: result estimated) in three samples due to high LCS/LCSD recoveries.

The MS/MSD analysis for VOCs performed on sample MW-006-100510 found that tetrahydrofuran was not recovered in either the MS or MSD; therefore, the non-detect for tetrahydrofuran was rejected (R) since it may have been a false negative.

## Results

Table 3 provides a summary of detected analytes, which were limited to Aroclor 1242, acetone, cadmium, chromium, copper, lead, and total suspended solids (TSS). No analytes were detected above the Massachusetts Contingency Plan (MCP) GW-3 limits in either the July or October 2010 groundwater sampling events. No MCP GW-3 standards are promulgated for copper. All other compounds analyzed by Alpha Analytical were non-detects, estimated non-detects, or rejected based on QC finding. The complete lab results for the July and October 2010 sampling events are attached in Appendix B. Tables 4 and 5 contain the complete lab results as well as the validated data qualifiers.

The reporting limits achieved by Alpha Analytical lab were below MCP GW-3 standards, where MCP GW-3 standards exist. No notable changes were revealed between the July and October groundwater sampling events.

## Conclusions

In July and October 2010, WHG collected groundwater samples at the Sawyer Street pilot study CDF. Groundwater samples were analyzed for VOCs, PCBs, selected metals (Cadmium, Chromium, Copper, and Lead) and TSS. Analytical results, from the samples collected during both events, indicate that none of the analytes have exceeded the promulgated MCP GW-3 standards.

Sincerely,
**Woods Hole Group, Inc.**

David R. Walsh
Chief Scientist

| | | |
|---|---|---|
| Attachments: | Appendix A | Field Data Records |
| | Appendix B | Alpha Analytical Laboratory Reports |
| | Appendix C | New Environmental Horizons, Inc. Data Validation Reports |
| | Appendix D | USACE-NAE QA Review Memorandum |

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## Table 1. Summary of Groundwater Parameters Prior to Sampling

| Event | Well ID | Sample Data/Time | Depth to Water (ft) | pH | Specific Cond. (µS/cm) | Temperature (°C) | DO (mg/L) | Turbidity (NTU) | ORP (mV) | Purge Volume (L) | Flow Rate (mL/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July 2010 | MW-1* | 7/9/10 12:55 | 16.98 | 6.92 | 0.574 | 23.83 | 1.3 | 8.8 | 150.8 | N/A | 150 |
| | MW-3 | 7/9/10 9:40 | 16.3 | 7.2 | 3.88 | 22.22 | 0.33 | 2.3 | -54.5 | 0.71 | 80 |
| | MW-4A | 7/8/10 14:40 | 12.5 | 6.97 | 3.05 | 25.87 | -0.02 | 1 | -323 | 0.58 | 80 |
| | MW-5 | 7/8/10 0:00 | 12.2 | 7.85 | 0.765 | 22.63 | 0.48 | 1.1 | -110.9 | 0.84 | 40 |
| | MW-6 | 7/9/2010 9:40 | 13.55 | 7.25 | 0.489 | 25.33 | 1 | 42.2 | -132.7 | 0.42 | 40 |
| | MW-7A | 7/8/10 10:45 | 11.71 | 6.56 | 0.59 | 23.46 | 1.15 | 1.2 | 164.7 | 0.87 | 100 |
| October 2010 | MW-1 | 10/20/10 13:45 | 16.4 | 6.89 | 0.558 | 17.18 | 0.95 | 0.79 | 34.7 | 0.735 | 100 |
| | MW-3 | 10/5/10 10:29 | 15.45 | 7.28 | 5.27 | 15.23 | 0.93 | 3.14 | -140 | 1.06 | 100 |
| | MW-4A | 10/5/10 14:11 | 11.35 | 7.18 | 2.53 | 16.95 | 0.04 | 3.29 | -187.3 | 0.578 | 36 |
| | MW-5 | 10/5/10 14:05 | 10.15 | 7.8 | 0.886 | 16.96 | 0.47 | 2.32 | -145.3 | 0.4 | 40 |
| | MW-6 | 10/5/10 9:50 | 13.2 | 7.4 | 0.426 | 15.92 | 0.95 | 4.16 | -136.1 | 0.67 | 80 |
| | MW-7A | 10/5/10 17:34 | 11.19 | 7.31 | 0.618 | 16.32 | 6.33 | 1.54 | 31.7 | 1.2 | 70 |

## Table 2. Copper and Lead Concentrations in Equipment Blanks and in Lab-Provided Water

| Metal | EB-070910 | EB- 100510 | EB-102010 | Lab-Provided Water used to generate EB* |
|---|---|---|---|---|
| | mg/L | | | |
| Copper | 0.118 | 0.109 | 0.119 | 0.119 |
| Lead | 0.003 | 0.001 | 0.003 | 0.006 |

**Table 3. Summary of Detected Analytes July and October 2010 Groundwater Sampling**

| Well ID | Sample Data/Time | Results (µg/L) | | Results (mg/L) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Total PCB | Acetone | Cadmium | Chromium | Copper | Lead | TSS |
| MW-1 | 7/9/10 12:55 | U | U | U | U | 0.002 J | 0.003 J | 9.00 |
| MW-1 | 10/20/10 13:45 | U | 7.4 | 0.0005 | U | 0.002 J | 0.001 J | 1.20 |
| MW-3 | 7/9/10 9:40 | U | U | U | U | 0.007 J | 0.001 J | 26.20 |
| MW-3 | 10/5/10 10:29 | 0.038 | U | U | 0.002 | 0.014 J | U | 31.40 |
| MW-3-DUP | 10/5/10 10:29 | U | 5.7 J | U | 0.002 | 0.014 J | U | 32.30 |
| MW-4A | 7/8/10 14:40 | U | U | U | U | 0.004 J | U | 2.50 |
| MW-4A-DUP | 7/8/10 14:40 | U | U | U | U | 0.004 J | U | 2.50 |
| MW-4A | 10/5/10 14:11 | U | U | U | 0.001 | 0.005 J | U | U |
| MW-5 | 7/8/10 0:00 | U | U | U | U | 0.002 J | U | 1.90 |
| MW-5 | 10/5/10 14:05 | U | U | U | 0.001 | 0.003 J | 0.001 J | 2.20 |
| MW-6 | 7/9/2010 9:40 | U | U | U | U | 0.002 J | U | 12.30 |
| MW-6 | 10/5/10 9:50 | U | 5.6 J | U | U | U | U | 7.80 |
| MW-7A | 7/8/10 10:45 | U | U | 0.0006 | U | 0.006 J | U | 1.20 |
| MW-7A | 10/5/10 17:34 | U | 31 J | U | U | 0.002 J | U | 1.00 |
| MCP GW-3 Criteria | | 10 | 50000 | 4 | 300 | N/A | 0.01 | N/A |

**Notes**:

[(a)]- Total PCB calculated as the sum of Aroclors 1016, 1221, 1232, 1242, 1254 and 1260; a value of zero (0) used in summation for non-detects. 1242 was the only detected Aroclor

µg/L- micrograms per liter (ppb)

mg/L- milligrams per liter (ppm)

U- Analyte is non-detect at or above the sample-specific reporting limit

J – Result is estimated

# Table 4. July Laboratory Results and Validated Qualifiers

| Parameter Name | Units | Detection Limit | MW-001-070910 | | | MW-003-070910 | | | MW-005-070910 | | | MW-006-070910 | | | MW-04A-070810 | | | MW-04A-070810-DUP | | | MW-07A-070810 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier |
| Cadmium | mg/L | 0.0005 | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0006 | | |
| Chromium | mg/L | 0.005 | 0.005 | U | U | 0.005 | U | U | 0.005 | U | U | 0.005 | U | U | 0.005 | U | U | 0.005 | U | U | 0.005 | U | U |
| Copper | mg/L | 0.001 | 0.002 | | J | 0.007 | | J | 0.002 | | J | 0.002 | | J | 0.004 | | J | 0.004 | | J | 0.006 | | J |
| Lead | mg/L | 0.001 | 0.003 | | J | 0.001 | U | U | 0.001 | U | U | 0.001 | U | U | 0.001 | U | U | 0.001 | U | U | 0.001 | | J |
| Aroclor 1016 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1221 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1232 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1242 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1248 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1254 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Aroclor 1260 | µg/L | 0.213 | 0.213 | U | U | 0.213 | U | U | 0.215 | U | U | 0.22 | U | U | 0.225 | U | U | 0.235 | U | U | 0.213 | U | U |
| Total DecaCB, Concentration | % rec | 20 | 91 | | | 46 | | | 84 | | | 82 | | | 83 | | | 93 | | | 88 | | |
| 2,4,5,6-Tetrachloro-Meta-Xylene | % rec | 20 | 81 | | | 79 | | | 84 | | | 82 | | | 75 | | | 87 | | | 79 | | |
| Total suspended solids | mg/L | | 9 | | | 26.2 | | | 1.9 | | | 12.3 | | | 2.5 | | | 2.5 | | | 1.2 | | |
| Acetone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| Benzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Bromobenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromochloromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromodichloromethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Bromoform | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromomethane | µg/L | 2 | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ |
| Carbon Disulfide | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Carbon Tetrachloride | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chloroethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Chloroform | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chloromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Cis-1,2-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Cis-1,3-Dichloropropene | µg/L | 0.5 | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U |
| Dibromochloromethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Dibromomethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Dichlorodifluoromethane | µg/L | 2 | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ | 2 | U | UJ |
| Diethyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Di-Isopropyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Ethyl Tertiary-Butyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Ethylbenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Hexachlorobutadiene | µg/L | 0.6 | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U |
| Isopropylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Methylene Chloride | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Methyl-Tert-Butyl-Ether (Mtbe) | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| N-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| N-Propylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| O-Xylene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| P-Isopropyltoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| P/M Xylene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Sec-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Styrene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Tert-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Tertiary-Amyl Methyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Tetrachloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Toluene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trans-1,2-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trans-1,3-Dichloropropene | µg/L | 0.5 | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U |
| Trichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trichlorofluoromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Vinyl Chloride | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloropropene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,1,1-Trichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,1,2-Tetrachloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,2-Trichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,2,2-Tetrachloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dibromoethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2-Dibromo-3-Chloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dichloropropane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2,3-Trichlorobenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,3-Trichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,4-Trichlorobenezene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,4-Trimethylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,3-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,3-Dichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,3,5-Trimethylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,4-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,4-Dioxane (P-Dioxane) | µg/L | 250 | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U |
| 2-Butanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| 2-Chlorotoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 2-Hexanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| 2,2-Dichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 4-Chlorotoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 4-Methyl-2-Pentanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| Tetrahydrofuran | µg/L | 10 | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | U |
| Naphthalene | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |

**Notes:** Shaded regions represent detected laboratory analytes or analytes for which the validated qualifier differs from the laboratory qualifier.
U- Analyte is non-detect at or above the sample-specific reporting limit
J – Result is estimated
UJ- Non-detect is estimated
R- Result is rejected and is unusable for project decisions

# Table 5. October Laboratory Results and Validated Qualifiers

| Parameter Name | Units | Detection Limit | MW-001-102010 | | | MW-003-100510 | | | MW-003-100510 | | | MW-005-100510 | | | MW-006-100510 | | | MW-04A-100510 | | | MW-07A-100510 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier | Results | Lab Qualifier | DV Qualifier |
| Cadmium | mg/L | 0.0005 | 0.0005 | | | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U | 0.0005 | U | U |
| Chromium | mg/L | 0.005 | 0.001 | U | U | 0.002 | | | 0.002 | | | 0.001 | | | 0.001 | U | U | 0.001 | | | 0.001 | U | U |
| Copper | mg/L | 0.001 | 0.002 | | J | 0.014 | | J | 0.014 | | J | 0.003 | | J | 0.001 | U | U | 0.005 | | J | 0.002 | | J |
| Lead | mg/L | 0.001 | 0.001 | | J | 0.001 | U | U | 0.001 | U | U | 0.001 | | J | 0.001 | U | U | 0.001 | U | U | 0.001 | U | U |
| Aroclor 1016 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1221 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1232 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1242 | µg/L | 0.213 | 0.021 | U | U | 0.038 | | | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1248 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1254 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Aroclor 1260 | µg/L | 0.213 | 0.021 | U | U | 0.023 | U | U | 0.022 | U | U | 0.022 | U | U | 0.023 | U | U | 0.021 | U | U | 0.021 | U | U |
| Total DecaCB, Concentration | % rec | 20 | 99 | | | 45 | | | 44 | | | 88 | | | 87 | | | 99 | | | 87 | | |
| 2,4,5,6-Tetrachloro-Meta-Xylene | % rec | 20 | 85 | | | 94 | | | 94 | | | 93 | | | 91 | | | 100 | | | 82 | | |
| Total suspended solids | mg/L | | 1.2 | | | 31.4 | | | 32.3 | | | 2.2 | | | 7.8 | | | 1 | U | U | 1 | | |
| Acetone | µg/L | 5 | 7.4 | | | 5 | U | U | 5.7 | | J | 5 | U | U | 5.6 | | J | 5 | U | U | 31 | | J |
| Benzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Bromobenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromochloromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromodichloromethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Bromoform | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Bromomethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Carbon Disulfide | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Carbon Tetrachloride | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chloroethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Chloroform | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Chloromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Cis-1,2-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Cis-1,3-Dichloropropene | µg/L | 0.5 | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U |
| Dibromochloromethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Dibromomethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Dichlorodifluoromethane | µg/L | 2 | 2 | U | UJ | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Diethyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Di-Isopropyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Ethyl Tertiary-Butyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Ethylbenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Hexachlorobutadiene | µg/L | 0.6 | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U | 0.6 | U | U |
| Isopropylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Methylene Chloride | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Methyl-Tert-Butyl-Ether (Mtbe) | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| N-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| N-Propylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| O-Xylene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| P-Isopropyltoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| P/M Xylene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Sec-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Styrene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Tert-Butylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Tertiary-Amyl Methyl Ether | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Tetrachloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Toluene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trans-1,2-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trans-1,3-Dichloropropene | µg/L | 0.5 | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U | 0.5 | U | U |
| Trichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| Trichlorofluoromethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| Vinyl Chloride | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloroethene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1-Dichloropropene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,1,1-Trichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,1,2-Tetrachloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,2-Trichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,1,2,2-Tetrachloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dibromoethane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2-Dibromo-3-Chloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dichloroethane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2-Dichloropropane | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,2,3-Trichlorobenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,3-Trichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,4-Trichlorobenezene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,2,4-Trimethylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,3-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,3-Dichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,3,5-Trimethylbenzene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 1,4-Dichlorobenzene | µg/L | 1 | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U | 1 | U | U |
| 1,4-Dioxane (P-Dioxane) | µg/L | 250 | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U | 250 | U | U |
| 2-Butanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| 2-Chlorotoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 2-Hexanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| 2,2-Dichloropropane | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 4-Chlorotoluene | µg/L | 2 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |
| 4-Methyl-2-Pentanone | µg/L | 5 | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U | 5 | U | U |
| Tetrahydrofuran | µg/L | 10 | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | U | 10 | U | R | 10 | U | U | 10 | U | U |
| Naphthalene | µg/L | 5 | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U | 2 | U | U |

**Notes:** Shaded regions represent detected laboratory analytes or analytes for which the validated qualifier differs from the laboratory qualifier.
U- Analyte is non-detect at or above the sample-specific reporting limit
J – Result is estimated
UJ- Non-detect is estimated
R- Result is rejected and is unusable for project decisions

## References

New Environmental Horizons, Inc.. 2010a. Data Validation Report. New Bedford Harbor Superfund Site – OU1. Prepared for Woods Hole Group, Inc. based on Alpha Analytical SDG L1010361. Completed: August 26, 2010. Revised: February 11, 2011

New Environmental Horizons, Inc.. 2010b. Data Validation Report. New Bedford Harbor Superfund Site – OU1. Prepared for Woods Hole Group, Inc. based on Alpha Analytical SDGs L1015773 and L1015775. Completed: December 14, 2010. Revised: February 11, 2011

Woods Hole Group. 2010a. Sawyer Street CDF Groundwater Monitoring 2010 Field Sampling Plan New Bedford Harbor Superfund Site, OU#1 Prepared under Contract W912WJ-09-D-0001 Task Order No 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group. 2010b. Environmental Monitoring, Sampling and Analysis Quality Assurance Project Plan. New Bedford Harbor Superfund Site, New Bedford, Massachusetts. Prepared under Contract W912WJ-09-D-0001 Task Order No 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

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# APPENDIX A: FIELD DATA RECORDS

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# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT New Bedford Harbor

DATE 7/8/10 TIME 0833/0650 7/9/10

CREW ID OR TASK ID

JOB NUMBER TO-0010-03

SAMPLER SIGNATURE M. Walsh / Dan Bailey

CHECKED BY

| EQUIPMENT CALIBRATION | | | AM CALIBRATION | | PM CALIBRATION CHECK | | |
|---|---|---|---|---|---|---|---|
| METER TYPE YSI 600 XLM | | | STANDARD VALUE | METER VALUE | STANDARD VALUE | METER VALUE | ACCEPTANCE CRITERIA ** |
| MODEL NO. 600XLM-V2-M | | | | | | | |
| UNIT ID NO. 08E 101296 | pH | units | 4.00 | 4.00 | 4.00 | 3.85 | ±0.2 unit |
| | pH | units | 7.00 | 7.00 | 7.00 | 6.97 | ±0.2 unit |
| | Redox | +/- mV | +229mV | 234.0 | +229mV | ~~258.2~~ 258.2 | ±20 mV |
| | Conductivity | mS/cm | 1,000 umhos | 1.000 mS/cm | 1,000 umhos | 0.791 mS/cm | 0.5% of reading + 0.001 mS/cm |
| | DO | mg/L * | | 8.82 mg/L | | 10.73 | 2% of reading or 0.2 mg/L., whichever is greater |
| | Temperature | deg. C | | 23.08 C | | 15.41 | |
| TURBIDITY | | | | | | | |
| METER TYPE Hach | | NTU (low) | 0 | 0 | 0 | 0.2 | 2% of reading or 0.3 NTU. Whichever is greater. |
| MODEL NO. 2100P | | | | | | | |
| UNIT ID NO. 09090C038194 | | NTU (high) | 100 | 99.9 | 100 | | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type:

| | Lot Number |
|---|---|
| pH /Conductivity | |
| ORP | |
| Turbidity | |
| Other | |

**NOTES:** Afternoon calibration was done with next days morning calibration

Barometric Pressure 779.0 mmHg

~~0 wrong value (M. Walsh)~~

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

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# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT: New Bedford

DATE: 7/8/2010

TIME: 0733 / 0701 7/9/10

CREW ID OR TASK ID:

JOB NUMBER: TO-0010-03

SAMPLER SIGNATURE: M. Walsh

CHECKED BY:

**EQUIPMENT CALIBRATION**

METER TYPE: 600 XLM-V2-M YSI

MODEL NO.: 600 XLM

UNIT ID NO.: 08E 101181

| | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|
| pH | units | 4.00 | 4.00 | 4.00 | 4.04 | ±0.2 unit |
| pH | units | 7.00 | 7.00 | 7.00 | 6.93 | ±0.2 unit |
| Redox | +/- mV | +229mV | 228.9 | +229mV | 242.7 | ±20 mV |
| Conductivity | mS/cm | 1,000 µmhos | 1.000 mS/cm | 1,000 | 0.800 | 0.5% of reading + 0.001 mS/cm |
| DO | mg/L * | | 8.71 | | 9.96 | 2% of reading or 0.2 mg/L., whichever is greater |
| Temperature | deg. C | | 21.31 | | 15.41 | |
| TURBIDITY | | | | | | |
| METER TYPE: Hach | NTU (low) | 0 | 0.2 | 0 | 0.1 | 2% of reading or 0.3 NTU. Whichever is greater. |
| MODEL NO.: 2100P | | | | | | |
| UNIT ID NO.: 10010C039333 | NTU (high) | 100 | 99.8 | 100 | 99.9 | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type: _____ _____

| | Lot Number |
|---|---|
| pH /Conductivity | |
| ORP | |
| Turbidity | |
| Other | |

**NOTES:**

Afternoon calibration was done with next days morning calibration

Barometric Pressure: 779.5mmHg

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

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# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT: New Bedford Harbor | DATE: 7/9/10 | TIME: 0650

CREW ID OR TASK ID: | JOB NUMBER: TO-0010-03

SAMPLER SIGNATURE: Mike Walsh | CHECKED BY:

**EQUIPMENT CALIBRATION**

METER TYPE: YSI 600 XLM
MODEL NO.: 600 XLM-V2-M
UNIT ID NO.: 08E 101296

| | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|
| pH | units | 4.00 | ~~3.85~~ 4.00 ① | 4.00 | 4.30 | ±0.2 unit |
| pH | units | 7.00 | 7.00 | 7.00 | 7.07 | ±0.2 unit |
| Redox | +/- mV | +229 | ~~253.2~~ 229.1 ② mw | +229 | 216.6 | ±20 mV |
| Conductivity | mS/cm | 1,000 mS/cm | 0.790 | 1,000 mS/cm | 0.855 | 0.5% of reading + 0.001 mS/cm |
| DO | mg/L * | | 10.65 | | 9.01 | 2% of reading or 0.2 mg/L., whichever is greater |
| Temperature | deg. C | | 15.41 | | 18.08 | |

TURBIDITY
METER TYPE: Hach
MODEL NO.: 2100P
UNIT ID NO.: 09090C038194

| | | | | | |
|---|---|---|---|---|---|
| NTU (low) | 0 | 0.2 | 0 | 1.2 | 2% of reading or 0.3 NTU. Whichever is greater. |
| NTU (high) | 100 | 99.9 | 100 | 99.9 | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type: _____ _____

**Lot Number**

pH / ~~Conductivity~~ pH 7: 8092576 pH 4: 8102211
ORP
Turbidity N/A
Other Redox Buffer 9110934
Conductivity: 0021858

**NOTES:** Barometric Pressure 779.0 mmHg
① wrong value (M. WALSH)
② wrong value (M. WALSH

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

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# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT: New Bedford Harbor | DATE: 7/9/10 | TIME: 0701/

CREW ID OR TASK ID: | JOB NUMBER: TO-0010-03

SAMPLER SIGNATURE: Mike Walsh | CHECKED BY:

**EQUIPMENT CALIBRATION**

METER TYPE: 600 XLM-U2-M YSI
MODEL NO.: 600 XLM
UNIT ID NO.: 08E 101181

| | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|
| pH | units | 4.00 | 4.00 | 4.00 | 4.04 | ±0.2 unit |
| pH | units | 7.00 | 7.00 | 7.00 | 6.97 | ±0.2 unit |
| Redox | +/- mV | +229 | 229.1mV | +229 | 224.6 | ±20 mV |
| Conductivity | mS/cm | 1,000 mS/cm | 0.802 | 1,000 mS/cm | 0.878 | 0.5% of reading + 0.001 mS/cm |
| DO | mg/L * | | 10.26 | | 4.86 | 2% of reading or 0.2 mg/L., whichever is greater |
| Temperature | deg. C | | 15.4 | | 18.38 | |
| TURBIDITY METER TYPE: Hach, MODEL NO.: 2100P, UNIT ID NO.: 10010C039333 | NTU (low) | 0 | 0.1 | 0 | 1 | 2% of reading or 0.3 NTU. Whichever is greater. |
| | NTU (high) | 100 | 99.9 | 100 | 99.9 | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type: _____ _____

**Lot Number**

pH / ~~Conductivity~~: pH 7: 8092576 pH 4: 8102211
ORP: 9110934
Turbidity: N/A
Other: Conductivity: 0021858

**NOTES:** Barometric Pressure: 779.5 mm Hg

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

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# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT New Bedford Harbor Ground Water DATE 10/5/10 TIME 07:12

CREW ID OR TASK ID TO-0010-03 JOB NUMBER

SAMPLER SIGNATURE Michael Walsh CHECKED BY

**EQUIPMENT CALIBRATION**

METER TYPE YSI 556
MODEL NO. 556-02
UNIT ID NO. 11154424

| | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|
| pH 4.0 units | | 4.02 | 4.00 | 4.0 | 3.99 | ±0.2 unit |
| pH 7.0 units | | 6.99 | 7.00 | 7.0 | 7.09 | ±0.2 unit |
| Redox 229 +/- mV | | 242.5 | ~~234.0~~ 240.0 ① | 229 | 239.8 | ±20 mV |
| Conductivity 1,000 mS/cm | 9.96 mS/cm / 1.000 mS/cm | 0.880 | 0.868 | 1.000 mS/cm 100% | 0.997 100.7% | 0.5% of reading + 0.001 mS/cm |
| DO mg/L * | | 9.40 | 9.36 | | 9.59 | 2% of reading or 0.2 mg/L., whichever is greater |
| Temperature deg. C | | | 18.74 | | 17.56 | |
| TURBIDITY METER TYPE HACH, MODEL NO. 2100 P, UNIT ID NO. 1095040 | NTU (low) | 0 | 0.20 | 0 | 0.14 | 2% of reading or 0.3 NTU. Whichever is greater. |
| | NTU (high) | 5 | 5.01 | 5 | 5.20 | |
| | | 50 | 50.2 | 50 | 53.2 | |

**Check One**

☐ Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.

☐ Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type:

| | Lot Number |
|---|---|
| ~~pH~~/Conductivity | 0021858 - |
| ORP | 0070929 |
| Turbidity | N/A |
| Other | — |

NOTES: Lot # Ph - 4.0 - 0061860
7.0 - 0031683
~~10.0 - 9060982~~
} Aqua-Solutions

① WN# M.WALSH 10/5/10

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

C:\Documents and Settings\dbailey\My Documents\New Bedford\Field_Form_CALIBRATION 10/4/2010

# FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT: NBH Groundwater | DATE: 10-5-10 | TIME: 0740

CREW ID OR TASK ID: TO-0010-03 | JOB NUMBER:

SAMPLER SIGNATURE: Michael Walsh | CHECKED BY:

| EQUIPMENT CALIBRATION | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|
| METER TYPE YSI 556 | | | | | | |
| MODEL NO. 556-02 | | | | | | |
| UNIT ID NO. 1115446 | pH 4.0 units | 4.06 | 4.00 | 4.00 | 3.98 | ±0.2 unit |
| | pH 7.0 units | 7.02 | 7.00 | 7.00 | 6.92 | ±0.2 unit |
| | Redox 228 +/- mV | 244.3 | 240.0 | 229 | 239.2 | ±20 mV |
| 1.065 mS/cm // 1.001 mS/cm | Conductivity 5.000 mS/cm | 0.914 | 0.858 | 1.000 mS/cm | 0.988 | 0.5% of reading + 0.001 mS/cm |
| | DO mg/L * | 9.81 | 9.72 | 100% | 98.9% 9.50 | 2% of reading or 0.2 mg/L., whichever is greater |
| | Temperature deg. C | | 16.86 | | 17.65 | |
| TURBIDITY METER TYPE HACH | NTU (low) | 0 | 0.23 | 0 | 0.16 | 2% of reading or 0.3 NTU. Whichever is greater. |
| MODEL NO. 2100P | | | | | | |
| UNIT ID NO. 1104441 | NTU (high) | 50 | 48.6 | 5 | 5.23 | |
| | | 10 | 9.8 | 50 | 51.6 | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type: _____ _____

| | Lot Number |
|---|---|
| ~~pH~~/Conductivity | 0021858 } Aqua Solutions |
| ORP | 0070929 } |
| Turbidity | N/A |
| Other | — |

**NOTES:**

Lot# Ph - 4.0 - 0061860 } Aqua Solutions
7.0 - 0031683 }

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

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# ATTACHMENT 1 FIELD INSTRUMENTATION CALIBRATION RECORD

## FIELD INSTRUMENTATION CALIBRATION RECORD

Woods Hole Group, INC.

PROJECT: NBH Groundwater

DATE: 10/20/10 TIME: 1200

CREW ID OR TASK ID: TO-0010-03

JOB NUMBER:

SAMPLER SIGNATURE: [illegible]

CHECKED BY:

| EQUIPMENT CALIBRATION | | | AM CALIBRATION STANDARD VALUE | AM CALIBRATION METER VALUE | PM CALIBRATION CHECK STANDARD VALUE | PM CALIBRATION CHECK METER VALUE | ACCEPTANCE CRITERIA ** |
|---|---|---|---|---|---|---|---|
| METER TYPE / MODEL NO. / UNIT ID NO. | pH | units | 4.0 | 3.99 | 4.0 | 3.98 | ±0.2 unit |
| | pH | units | 7.0 | 7.00 | 7.0 | 7.00 | ±0.2 unit |
| | Redox | +/- mV | +229 | +244.5 | +229 | +236.6 | ±20 mV |
| | Conductivity | mS/cm | 1.000 | 1.000 | 1.000 | 1.000 | 0.5% of reading + 0.001 mS/cm |
| | DO | mg/L * | 10.28 | 10.18 | 10.39 | 10.27 | 2% of reading or 0.2 mg/L, whichever is greater |
| | Temperature | deg. C | | 14.86 | | | |
| TURBIDITY METER TYPE: HACH; MODEL NO.: 2100 Turbidity; UNIT ID NO.: 46500-00 | | NTU (low) | 0-10 ntu | 5.68 | 0-10 | 5.64 | 2% of reading or 0.3 NTU. Whichever is greater. |
| | | NTU (high) | | | | | |

**Check One**

- [ ] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above (see notes below).

**MATERIALS RECORD**

Calibration Fluids / Standard Source: Woods Hole Group, INC.

Disposable Filter Type: _____ _____

| | | Lot Number |
|---|---|---|
| pH /Conductivity | Aqua Solutions | 0021858 |
| ORP | " " | 0070929 |
| Turbidity | NA | |
| Other | " " | pH 4.0 - 1022111; pH 7.0 - 8092576 |

**NOTES:**

** = If the meter reading is not within acceptance criteria, clean or replace probe and re-calibrate, or use a different meter if available. If project requirements necessitate use of the instrument, clearly document on all data sheets and log book entries that the parameter was not calibrated to the acceptance criteria.

* = standard based on saturated headspace at given temperature

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/8/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time:

MONITORING WELL ID: MW-1

ACTIVITY TIME: START 1115 END 1339

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 16.75 ft (TOR)

FINAL DTW: 22.85 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1229 | 18.9 | 100 | 26.76 | 0.564 | 6.53 | 0.74 | 1.2 | 124.6 | |
| 1232 | 19.25 | 100 | 25.36 | 0.55 | 6.54 | 1.37 | 1 | 129.6 | |
| 1236 | 19.61 | 100 | 23.28 | 0.536 | 6.56 | 2.58 | 1 | 134.8 | |
| 1239 | 20.11 | 100 | 23.98 | 0.544 | 6.59 | 3.26 | 1.4 | 134.8 | |
| 1243 | 20.56 | 100 | 24.13 | 0.549 | 6.6 | 4.43 | 1.4 | 135.8 | |
| 1249 | 20.71 | 80 | 23.63 | 0.523 | 6.5 | 1.85 | 1.3 | 130.4 | |
| 1253 | 21.15 | 80 | 24.34 | 0.524 | 6.48 | 1.86 | 1.3 | 128.3 | |
| 1256 | 21.3 | 80 | 23.81 | 0.523 | 6.49 | 1.93 | 1.4 | 127.6 | |
| 1300 | 21.6 | 80 | 23.65 | 0.515 | 6.47 | 1.42 | 2.6 | 87.1 | |
| 1304 | 21.85 | 80 | 23.92 | 0.514 | 6.47 | 2.35 | 2.3 | 72.7 | |
| 1307 | 22.15 | 80 | 23.45 | 0.518 | 6.52 | 3.14 | 2.3 | 45 | |
| stopped pumping to check recharge | | | | | | | | | |
| 1321 | 22 | 80 | 24.59 | 0.541 | 6.6 | 2.44 | 2 | 37.9 | |
| 1324 | 22.25 | 80 | 23.61 | 0.51 | 6.56 | 3.66 | 1.2 | 28.7 | |
| 1328 | 22.5 | 80 | 24.08 | 0.517 | 6.58 | 4.49 | 1.1 | 12.8 | |
| 1331 | 22.85 | 80 | 23.86 | 0.583 | 6.63 | 4.85 | 1.3 | 0.9 | |
| 1336 | stopped pumping to let well recharge | | | | | | | | |
| 1339 | stopped all activities/well pump too low | | | | | | | | |
| 1345 | well was pumped down to intake level | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Well was pumped down to intake level and allowed to recharge, once well charged to 90% of orginal well volume a sample will be taken.

SIGNATURE: Mike Walsh

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CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/9/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 12:55

MONITORING WELL ID: MW-1

ACTIVITY TIME: START 1222 END 1330

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 16.15 ft (TOR)

FINAL DTW: 21.98 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1238 | 16.8 | 40 | 23.91 | 0.574 | 6.83 | 1.56 | 9.1 | 163.5 | |
| 1241 | 16.98 | 40 | 23.83 | 0.574 | 6.92 | 1.3 | 8.8 | 150.8 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Well recharged to 90% of initial volume, grab sampled taken at 1255 on 7/9/10

SIGNATURE: Mike Walsh

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CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/9/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 940

MONITORING WELL ID: MW-3

ACTIVITY TIME: START 845 END 1153

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 15.00 ft (TOR)

FINAL DTW: 15.80 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 847 | 15.15 | 80 | 22.77 | 3.323 | 6.9 | 1.68 | 1.5 | -13.3 | |
| 852 | 15.6 | 80 | 22.48 | 3.343 | 6.98 | 1.48 | 3.2 | -41.8 | |
| 855 | 15.85 | 40 | 22.34 | 3.301 | 7.03 | 1.2 | 4.1 | -44.6 | |
| 902 | 15.95 | 40 | 23.83 | 3.434 | 7.05 | 0.93 | 4.3 | -45.7 | |
| 907 | 15.95 | 40 | 24.88 | 3.696 | 7.08 | 1.82 | 3.8 | -47.7 | |
| 915 | 15.95 | 40 | 25.43 | 4.078 | 7.16 | 0.62 | 3.4 | -52.5 | |
| 919 | 15.91 | 40 | 15.47 | 4.155 | 7.19 | 0.64 | 2.7 | -54.2 | |
| 923 | 15.9 | 40 | 25.65 | 4.207 | 7.21 | 1.51 | 2.8 | -55.5 | |
| 926 | 15.9 | 40 | 25.56 | 4.26 | 7.22 | 1.89 | 2.6 | -56 | |
| 929 | 15.95 | 80 | 25.41 | 4.261 | 7.23 | 1.18 | 2.1 | -56.4 | Increased Flow |
| 932 | 16.05 | 80 | 23.64 | 4.161 | 7.24 | 0.95 | 2.7 | -57 | |
| 935 | 16.3 | 80 | 22.22 | 3.88 | 7.2 | 0.33 | 2.3 | -54.5 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Depth to water with pump in well 14.55. Salinity: 2.14

Samples taken at 0940 sample ID MW-003-070910/MW-003-070910-MS/MW-003-070910-MSD

SIGNATURE: Mike Walsh

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW3_070910

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/8/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1440

MONITORING WELL ID: MW-04A

ACTIVITY TIME: START 1300 END

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 11.23 ft (TOR)

FINAL DTW: 12.50 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1406 | 11.8 | 80 | 28.7 | 3.55 | 7.04 | 0.26 | 1.5 | -212.8 | |
| 1411 | 12.1 | 80 | 24.09 | 3.18 | 6.86 | 0.09 | 1.2 | -263.5 | |
| 1416 | 12.36 | 80 | 22.87 | 3 | 6.87 | 0.02 | 1 | -286 | |
| 1421 | 12.45 | 80 | 23.5 | 3 | 6.92 | 0 | 1.1 | -285 | |
| 1426 | 12.47 | 80 | 24.66 | 3 | 6.96 | -0.01 | 1.1 | -298 | |
| 1429 | 12.47 | 80 | 25.34 | 3 | 6.97 | -0.01 | 1.2 | -315 | |
| 1431 | 12.5 | 80 | 25.64 | 3.02 | 6.97 | -0.02 | 1 | -322 | |
| 1434 | 12.5 | 80 | 25.87 | 3.05 | 6.97 | -0.02 | 1 | -323 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES**

SIGNATURE: Mike Walsh

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW04A_070810

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/9/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1610

MONITORING WELL ID: MW-5

ACTIVITY TIME: START 1455 END

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 10.50 ft (TOR)

FINAL DTW: 13.45 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1517 | 10.85 | 100 | 24.17 | 0.745 | 7.46 | 2.04 | 2.1 | 8.5 | |
| 1520 | 11.11 | 100 | 23.27 | 0.732 | 7.47 | 1.62 | 1.9 | -3.9 | |
| 1524 | 11.21 | 100 | 22.82 | 0.727 | 7.53 | 1.38 | 1.6 | -21.9 | |
| 1527 | 11.55 | 100 | 22.27 | 0.732 | 7.62 | 1.15 | 2.1 | -45.3 | Changed Battery |
| 1534 | 11.7 | 100 | 22.13 | 0.729 | 7.63 | 1.12 | 1.6 | -54.7 | |
| 1540 | 11.9 | 100 | 22.02 | 0.742 | 7.72 | 0.8 | 1.3 | -72.5 | |
| 1545 | 11.9 | 40 | 22.24 | 0.746 | 7.75 | 0.79 | 1.3 | -82.5 | |
| 1550 | 11.9 | 40 | 23.24 | 0.761 | 7.78 | 0.67 | 1.1 | -89.2 | |
| 1554 | 12.1 | 40 | 22.05 | 0.745 | 7.8 | 0.72 | 1.2 | -98.6 | |
| 1559 | 12.13 | 40 | 22.37 | 0.748 | 7.8 | 0.62 | 1 | -100.7 | |
| 1602 | 12.2 | 40 | 22.63 | 0.765 | 7.85 | 0.48 | 1.1 | -110.9 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Pump depth: 13.20ft, Depth to water after sampling: 13.45

SIGNATURE: Mike Walsh

CHECKED BY:

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CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/9/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 940

MONITORING WELL ID: MW-6

ACTIVITY TIME: START 840 END 1110

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 12.15 ft (TOR)

FINAL DTW: ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 852 | 13.4 | 40 | 24.11 | 0.468 | 7.21 | 2.03 | 98.9 | 70.7 | |
| 858 | 13.5 | 40 | 24.68 | 0.477 | 7.25 | 1.51 | 98 | -43.2 | |
| 903 | 13.53 | 40 | 25.02 | 0.483 | 7.27 | 1.4 | 87.1 | -77.3 | |
| 908 | 13.55 | 40 | 25.64 | 0.492 | 7.33 | 1.4 | >100 | -53 | Turbidity out of range |
| 913 | 13.55 | 40 | 25.94 | 0.495 | 7.28 | 1 | 85.1 | -83.8 | |
| 918 | 13.55 | 40 | 26.02 | 0.496 | 7.36 | 1.03 | 74.4 | -53.7 | |
| 923 | 13.55 | 40 | 26.03 | 0.496 | 7.26 | 0.96 | 45.6 | -87.2 | |
| 926 | 13.55 | 40 | 25.74 | 0.493 | 7.24 | 0.93 | 41.5 | -126 | |
| 929 | 13.55 | 40 | 25.53 | 0.491 | 7.25 | 0.94 | 42.9 | -131.5 | |
| 932 | 13.55 | 40 | 25.33 | 0.489 | 7.25 | 1 | 42.2 | -132.7 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Very high turbidity, lots of flock in water

SIGNATURE: David Bailey

CHECKED BY:

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CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 7/9/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1045

MONITORING WELL ID: MW-7A

ACTIVITY TIME: START 1003 END 1123

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 11.52 ft (TOR)

FINAL DTW: 11.73 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1007 | 11.63 | 200 | 25.75 | 0.67 | 6.78 | 2.22 | 33 | 98.3 | |
| 1010 | 11.67 | 100 | 22.6 | 0.65 | 6.54 | 2.17 | 6.8 | 125.3 | |
| 1013 | 11.7 | 100 | 23.44 | 0.62 | 6.56 | 2.27 | 5 | 134.4 | |
| 1017 | 11.7 | 100 | 23.86 | 0.6 | 6.6 | 2.14 | 3.3 | 138.4 | |
| 1020 | 11.7 | 100 | 22.9 | 0.56 | 6.6 | 1.92 | 2.7 | 145.1 | |
| 1026 | 11.71 | 100 | 23 | 0.58 | 6.63 | 1.95 | 2.3 | 149.7 | |
| 1031 | 11.71 | 100 | 23.22 | 0.57 | 6.57 | 1.3 | 1.3 | 157.6 | |
| 1034 | 11.71 | 100 | 23.38 | 0.58 | 6.57 | 1.13 | 1 | 160.7 | |
| 1037 | 11.71 | 100 | 23.46 | 0.59 | 6.56 | 1.15 | 1.2 | 164.7 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Pump depth: 14ft, Salinity: 0.30

SIGNATURE: David Bailey

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW7A_070810

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/20/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time:

MONITORING WELL ID: MW-1

ACTIVITY TIME: START 1246 END 1432

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 16.0 ft (TOR)

FINAL DTW: 16.7 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1318 | 16.3 | 80 | 17.49 | 0.552 | 7.21 | 3.84 | 3.73 | 127.1 | Salinity: 0.32 |
| 1321 | 16.4 | 100 | 17.39 | 0.552 | 6.99 | 3.01 | 2.96 | 123.5 | |
| 1324 | 16.4 | 100 | 17.23 | 0.551 | 6.95 | 2.1 | 2.38 | 114 | |
| 1327 | 16.4 | 100 | 17.11 | 0.551 | 6.93 | 1.82 | 2.27 | 100.2 | |
| 1329 | 16.4 | 100 | 17.04 | 0.551 | 6.91 | 1.54 | 1.41 | 82.7 | |
| 1332 | 16.4 | 100 | 17.02 | 0.552 | 6.9 | 1.42 | 1.45 | 71.2 | |
| 1335 | 16.4 | 100 | 17.01 | 0.553 | 6.9 | 1.31 | 1.43 | 60.8 | |
| 1338 | 16.55 | 130 | 16.96 | 0.553 | 6.89 | 1.17 | 0.99 | 51.7 | |
| 1341 | 16.4 | 100 | 17.09 | 0.555 | 6.88 | 1.08 | 0.86 | 41.7 | |
| 1346 | 16.4 | 100 | 17.18 | 0.558 | 6.89 | 0.95 | 0.79 | 34.7 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Depth to water with pump in well 15.55. Sample ID: MW-001-102010

SIGNATURE: _____

CHECKED BY: _____

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW1_102010

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/5/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1029

MONITORING WELL ID: MW-3

ACTIVITY TIME: START 820 END 1204

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 14.2 ft (TOR)

FINAL DTW: 14.95 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 944 | 14.61 | 50 | 16.04 | 2.645 | 6.93 | 1.69 | 10.4 | 46 | |
| 949 | 14.65 | 50 | 15.88 | 2.697 | 6.96 | 1.72 | 9.84 | 42.4 | |
| 952 | 14.75 | 48 | 15.87 | 2.853 | 7.01 | 1.52 | 7.97 | 31.1 | |
| 955 | 15.05 | 100 | 15.85 | 3.125 | 7.11 | 1.2 | 7.16 | -11.3 | |
| 958 | 15.1 | 100 | 15.84 | 3.298 | 7.15 | 0.94 | 5.39 | -14.5 | |
| 1001 | 15.3 | 100 | 15.83 | 3.399 | 7.18 | 0.65 | 4.7 | -59 | |
| 1004 | 15.4 | 100 | 15.8 | 3.468 | 7.2 | 0.58 | 5.02 | -79.1 | Salinity: 1.84 |
| 1007 | 15.5 | 100 | 15.75 | 3.592 | 7.21 | 0.57 | 4.39 | -91.9 | |
| 1010 | 15.55 | 100 | 15.71 | 3.73 | 7.23 | 0.51 | 3.7 | -104.4 | Salinity: 2.00 |
| 1013 | 15.58 | 100 | 15.6 | 4.085 | 7.24 | 0.45 | 2.99 | -127.5 | Salinity: 2.27 |
| 1018 | 15.62 | 100 | 15.36 | 4.779 | 7.26 | 0.38 | 3.35 | -140.3 | Salinity: 2.60 |
| 1022 | 15.6 | 100 | 15.26 | 5.116 | 7.27 | 0.26 | 3.29 | -146.2 | |
| 1025 | 15.55 | 100 | 15.22 | 5.207 | 7.27 | 0.33 | 3.35 | 143.3 | Salinity: 2.83 |
| 1028 | 15.45 | 100 | 15.23 | 5.27 | 7.28 | 0.43 | 3.14 | -140 | Salinity: 2.87 |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Depth to water with pump in well 14.61. Sample ID: MW-003-100510 and MW-003-100510-DUP Samples collected at 1029

SIGNATURE: Mike Walsh

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW3_10510

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/5/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1411

MONITORING WELL ID: MW-4A

ACTIVITY TIME: START 1315 END 1524

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 10.2 ft (TOR)

FINAL DTW: 11.95 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1335 | 10.51 | 100 | 17.2 | 2.617 | 7.3 | 9.73 | | -97.1 | Salinity: 1.36 |
| 1339 | 10.75 | 100 | 17.21 | 2.58 | 7.23 | 0.93 | 7.82 | -118 | |
| 1343 | 11.1 | 100 | 17.16 | 2.579 | 7.22 | 0.43 | 5.91 | -127.4 | |
| 1352 | 11.1 | 50 | 17.08 | 2.567 | 7.2 | 0.09 | 5.34 | -144.8 | Salinity: 1.33 |
| 1354 | 11.31 | 50 | 16.99 | 2.55 | 7.19 | 0.04 | 4.26 | -157 | |
| 1403 | 11.35 | 36 | 16.95 | 2.543 | 7.19 | 0.03 | 4.18 | -167 | |
| 1406 | 11.35 | 36 | 16.96 | 2.541 | 7.18 | 0.04 | 3.48 | -175.5 | Salinity: 1.32 |
| 1410 | 11.35 | 36 | 16.95 | 2.53 | 7.18 | 0.04 | 3.29 | -187.3 | Salinity: 1.31 |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Depth to water with pump in well 9.95. Sample ID: MW-04A-100510 Samples collected at 1411

SIGNATURE: _____

CHECKED BY: _____

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW4A_10510

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/5/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1405

MONITORING WELL ID: MW-5

ACTIVITY TIME: START 1325 END 1507

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 8.4 ft (TOR)

FINAL DTW: 10.20 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1330 | 9.65 | 80 | 16.93 | 0.872 | 7.8 | 9.65 | 6.45 | -89.6 | |
| 1335 | 9.8 | 60 | 16.92 | 0.881 | 7.79 | 0.98 | 3.76 | -108.9 | |
| 1340 | 9.9 | 60 | 16.91 | 0.884 | 7.79 | 0.8 | 3.14 | -119.4 | |
| 1345 | 10.06 | 40 | 16.91 | 0.887 | 7.79 | 0.55 | 2.56 | -132.2 | |
| 1350 | 10.11 | 40 | 16.93 | 0.887 | 7.8 | 0.49 | 2.73 | -135.8 | |
| 1355 | 10.13 | 40 | 16.94 | 0.886 | 7.8 | 0.46 | 2.39 | -141.2 | |
| 1400 | 10.15 | 40 | 16.96 | 0.886 | 7.8 | 0.47 | 2.32 | -145.3 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Samples taken: 1405, pump depth: 11.5ft, Salinity: 1.05

SIGNATURE: David Bailey

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW5_10510

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/5/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 950

MONITORING WELL ID: MW-6

ACTIVITY TIME: START 815 END 1145

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 12.4 ft (TOR)

FINAL DTW: 13.27 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 910 | 13.1 | 80 | 16.14 | 0.415 | 7.33 | 4.25 | 19.9 | -63.8 | |
| 920 | 13.2 | 80 | 16.1 | 0.419 | 7.36 | 2.16 | 14.2 | -93.4 | |
| 925 | 13.2 | 80 | 16.07 | 0.422 | 7.37 | 1.75 | 7.5 | -108.5 | |
| 930 | 13.19 | 80 | 16.05 | 0.424 | 7.37 | 1.37 | 6.07 | -112 | |
| 933 | 13.2 | 80 | 15.98 | 0.424 | 7.39 | 1.36 | 5.68 | -127.7 | |
| 936 | 13.2 | 80 | 15.95 | 0.425 | 7.4 | 1.24 | 5.06 | -133.6 | |
| 939 | 13.2 | 80 | 15.94 | 0.426 | 7.4 | 0.98 | 4.22 | -136.2 | |
| 942 | 13.2 | 80 | 15.92 | 0.426 | 7.4 | 0.95 | 4.16 | -136.1 | |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Samples taken: 950, pumping started: 0910, Salinity: 0.25

SIGNATURE: David Bailey

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW6_10510

CONSULTANT: Woods Hole Group INC.

# FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

Date: 10/5/2010

PROJECT: NBH Ground Water

JOB NUMBER: TO-0010-03

Bottle Time: 1734

MONITORING WELL ID: MW-7A

ACTIVITY TIME: START 1549 END 1835

**WATER LEVEL / PUMP DATA**

PUMP TYPE
- [ ] - PERISTALTIC
- [X] - BLADDER

INITIAL DTW: 11.0 ft (TOR)

FINAL DTW: 11.19 ft (TOR)

DRAWDOWN VOL INITIAL - FINAL X 0.16 gal/ft:

TOTAL VOLUME PURGED ml/m X minutes X 0.00026 gal/L:

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME:

| TIME | DTW (ft) | PURGE RATE (ml/m) | TEMP (Deg. C) | SPECIFIC CONDUCTANCE (mS/cm) | pH | DO (MG/L) | TURBIDITY (NTU) | ORP (mV) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 1624 | 11.23 | 80 | 16.46 | 0.659 | 6.85 | 3.49 | 5.78 | 7.9 | Salinity: 0.32 |
| 1636 | 11.21 | 60 | 16.47 | 0.645 | 7.26 | 9.29 | 5.78 | -3.5 | |
| 1644 | 11.2 | 60 | 16.44 | 0.636 | 7.36 | 9.29 | 12.2 | -2.2 | |
| 1649 | 11.2 | 60 | 16.42 | 0.632 | 7.38 | 9.36 | 8.5 | 12.5 | |
| 1710 | 11.19 | 70 | 16.36 | 0.638 | 7.26 | 9.34 | 3.85 | 25.6 | |
| 1713 | 11.19 | 70 | 16.36 | 0.635 | 7.27 | 9.2 | 3.58 | 26.7 | Salinity: 0.31 |
| 1717 | 11.19 | 70 | 16.34 | 0.626 | 7.29 | 6.52 | 2.9 | 28.9 | |
| 1720 | 11.19 | 70 | 16.33 | 0.623 | 7.29 | 6.33 | 2.86 | 29.9 | Salinity: 0.30 |
| 1723 | 11.19 | 70 | 16.32 | 0.617 | 7.3 | 6.33 | 2.67 | 31 | |
| 1726 | 11.19 | 70 | 16.33 | 0.617 | 7.3 | 6.18 | 2.06 | 31.4 | |
| 1729 | 11.19 | 70 | 16.32 | 0.616 | 7.3 | 6.14 | 1.65 | 31.7 | Salinity: 0.30 |
| 1732 | 11.19 | 70 | 16.32 | 0.618 | 7.31 | 6.33 | 1.54 | 31.7 | Salinity: 0.30 |

**ANALYTICAL PARAMETERS**

| | ANALYSIS | ANALYSIS METHOD | PRESERVATION METHOD | BOTTLE TYPE/ VOLUME REQUIRED | SAMPLE COLLECTED |
|---|---|---|---|---|---|
| [ ] | TCL VOCs + MTBE | 524.2 | HCl | 3 - 40 mL | [ ] |

**NOTES** Depth to water with pump in well 11.21. Sample ID: MW-07A-100510 Samples collected at 1734. Well cover is broken

SIGNATURE: Mike Walsh

CHECKED BY:

C:\Documents and Settings\dbailey\My Documents\New Bedford\Groundwater\MW07A_10510

# APPENDIX B: ALPHA ANALYTICAL LABORATORY REPORTS

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ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1010361 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 07/21/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1010361-01 | MW-07A-070810 | NEW BEDFORD, MA | 07/08/10 10:45 |
| L1010361-02 | MW-04A-070810 | NEW BEDFORD, MA | 07/08/10 14:40 |
| L1010361-03 | MW-04A-070810-DUP | NEW BEDFORD, MA | 07/08/10 14:40 |
| L1010361-04 | MW-005-070810 | NEW BEDFORD, MA | 07/08/10 16:10 |
| L1010361-05 | MW-003-070910 | NEW BEDFORD, MA | 07/09/10 09:40 |
| L1010361-06 | MW-006-070910 | NEW BEDFORD, MA | 07/09/10 09:40 |
| L1010361-07 | MW-001-070910 | NEW BEDFORD, MA | 07/09/10 12:55 |
| L1010361-08 | EB-070910 | NEW BEDFORD, MA | 07/09/10 13:05 |
| L1010361-09 | TB-070910 | NEW BEDFORD, MA | 07/09/10 13:05 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

## 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.

---

Volatile Organics by 8260

The WG423125-2 LCS/LCSD recoveries, associated with L1010361-01 through -08 are below the acceptance criteria for Bromomethane (67%) and Dichlorodifluoromethane (62%). The results of the associated samples are reported; however, all results are considered to have a potentially low bias for these compounds. In addition, the WG423125-2 LCS/LCSD RPD is above the acceptance criteria for Bromomethane (26%).

The WG423125-4 MS recoveries, performed on L1010361-05, were above the acceptance criteria for Trichlorofluoromethane (134%), Bromoform (131%),1,1-Dichloroethene (131%), Acetone (154%), Tetrahydrofuran (143%) and below the acceptance criteria for Bromomethane (64%).

The WG423125-5 MSD recoveries, performed on L1010361-05, were above the acceptance criteria for

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**Case Narrative (continued)**

Carbon tetrachloride (131%), Trichlorofluoromethane (131%),Bromodichloromethane (131%), Acetone (162%) and below the acceptance criteria for Bromomethane (67%).

Total Metals

WG422679-5: The difference between the QC sample result and the serial dilution result exceeded the 10% acceptance limit for Copper.

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: 07/21/10

# ORGANICS

# VOLATILES

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-01 | Date Collected: | 07/08/10 10:45 |
| Client ID: | MW-07A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 16:47 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-01 | Date Collected: | 07/08/10 10:45 |
| Client ID: | MW-07A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-01 | Date Collected: | 07/08/10 10:45 |
| Client ID: | MW-07A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 95 | | 70-130 |
| Toluene-d8 | 96 | | 70-130 |
| 4-Bromofluorobenzene | 103 | | 70-130 |
| Dibromofluoromethane | 112 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-02 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 17:20 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-02 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-02 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 95 | | 70-130 |
| Toluene-d8 | 94 | | 70-130 |
| 4-Bromofluorobenzene | 110 | | 70-130 |
| Dibromofluoromethane | 113 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-03 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810-DUP | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 14:06 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-03 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810-DUP | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-03 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810-DUP | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 97 | | 70-130 |
| Toluene-d8 | 95 | | 70-130 |
| 4-Bromofluorobenzene | 100 | | 70-130 |
| Dibromofluoromethane | 120 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-04 | Date Collected: | 07/08/10 16:10 |
| Client ID: | MW-005-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 14:39 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-04 | Date Collected: | 07/08/10 16:10 |
| Client ID: | MW-005-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-04 | Date Collected: | 07/08/10 16:10 |
| Client ID: | MW-005-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | | 70-130 |
| Toluene-d8 | 97 | | 70-130 |
| 4-Bromofluorobenzene | 93 | | 70-130 |
| Dibromofluoromethane | 110 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-05 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-003-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 15:11 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-05 Date Collected: 07/09/10 09:40

Client ID: MW-003-070910 Date Received: 07/09/10

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-05 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-003-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | | 70-130 |
| Toluene-d8 | 95 | | 70-130 |
| 4-Bromofluorobenzene | 103 | | 70-130 |
| Dibromofluoromethane | 116 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-06 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-006-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 15:43 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-06 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-006-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-06 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-006-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | | 70-130 |
| Toluene-d8 | 103 | | 70-130 |
| 4-Bromofluorobenzene | 102 | | 70-130 |
| Dibromofluoromethane | 118 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-07 | Date Collected: | 07/09/10 12:55 |
| Client ID: | MW-001-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 16:15 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-07 | Date Collected: | 07/09/10 12:55 |
| Client ID: | MW-001-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-07 | Date Collected: | 07/09/10 12:55 |
| Client ID: | MW-001-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | | 70-130 |
| Toluene-d8 | 95 | | 70-130 |
| 4-Bromofluorobenzene | 100 | | 70-130 |
| Dibromofluoromethane | 121 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-08 | Date Collected: | 07/09/10 13:05 |
| Client ID: | EB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 13:02 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-08 | Date Collected: | 07/09/10 13:05 |
| Client ID: | EB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | 87 | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-08 | Date Collected: | 07/09/10 13:05 |
| Client ID: | EB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | | 70-130 |
| Toluene-d8 | 98 | | 70-130 |
| 4-Bromofluorobenzene | 105 | | 70-130 |
| Dibromofluoromethane | 111 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-09 | Date Collected: | 07/09/10 13:05 |
| Client ID: | TB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 07/15/10 13:34 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-09 | Date Collected: | 07/09/10 13:05 |
| Client ID: | TB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 5.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-09 | Date Collected: | 07/09/10 13:05 |
| Client ID: | TB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 92 | | 70-130 |
| Toluene-d8 | 95 | | 70-130 |
| 4-Bromofluorobenzene | 103 | | 70-130 |
| Dibromofluoromethane | 116 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361
**Project Number:** TO-0010-03 **Report Date:** 07/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 07/15/10 08:44
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG423125-3 | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- |
| Chloroform | ND | | ug/l | 1.0 | -- |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- |
| Chlorobenzene | ND | | ug/l | 1.0 | -- |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- |
| Bromoform | ND | | ug/l | 2.0 | -- |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Benzene | ND | | ug/l | 1.0 | -- |
| Toluene | ND | | ug/l | 1.0 | -- |
| Ethylbenzene | ND | | ug/l | 1.0 | -- |
| Chloromethane | ND | | ug/l | 2.0 | -- |
| Bromomethane | ND | | ug/l | 2.0 | -- |
| Vinyl chloride | ND | | ug/l | 1.0 | -- |
| Chloroethane | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Trichloroethene | ND | | ug/l | 1.0 | -- |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361
**Project Number:** TO-0010-03 **Report Date:** 07/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 07/15/10 08:44
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG423125-3 | | | | | |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- |
| p/m-Xylene | ND | | ug/l | 2.0 | -- |
| o-Xylene | ND | | ug/l | 1.0 | -- |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Dibromomethane | ND | | ug/l | 2.0 | -- |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- |
| Styrene | ND | | ug/l | 1.0 | -- |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- |
| Acetone | ND | | ug/l | 5.0 | -- |
| Carbon disulfide | ND | | ug/l | 2.0 | -- |
| 2-Butanone | ND | | ug/l | 5.0 | -- |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- |
| 2-Hexanone | ND | | ug/l | 5.0 | -- |
| Bromochloromethane | ND | | ug/l | 2.0 | -- |
| Tetrahydrofuran | ND | | ug/l | 10 | -- |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Bromobenzene | ND | | ug/l | 2.0 | -- |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- |
| Naphthalene | ND | | ug/l | 5.0 | -- |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 07/15/10 08:44
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-09 Batch: WG423125-3 | | | | | |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| Ethyl ether | ND | | ug/l | 2.0 | -- |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- |
| 1,4-Dioxane | ND | | ug/l | 250 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | | 70-130 |
| Toluene-d8 | 96 | | 70-130 |
| 4-Bromofluorobenzene | 105 | | 70-130 |
| Dibromofluoromethane | 111 | | 70-130 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG423125-1 WG423125-2 | | | | | | | | |
| Methylene chloride | 95 | | 87 | | 70-130 | 9 | | 20 |
| 1,1-Dichloroethane | 93 | | 84 | | 70-130 | 10 | | 20 |
| Chloroform | 93 | | 83 | | 70-130 | 11 | | 20 |
| Carbon tetrachloride | 103 | | 91 | | 70-130 | 12 | | 20 |
| 1,2-Dichloropropane | 90 | | 88 | | 70-130 | 2 | | 20 |
| Dibromochloromethane | 92 | | 93 | | 70-130 | 1 | | 20 |
| 1,1,2-Trichloroethane | 83 | | 85 | | 70-130 | 2 | | 20 |
| Tetrachloroethene | 95 | | 86 | | 70-130 | 10 | | 20 |
| Chlorobenzene | 89 | | 84 | | 70-130 | 6 | | 20 |
| Trichlorofluoromethane | 106 | | 92 | | 70-130 | 14 | | 20 |
| 1,2-Dichloroethane | 89 | | 87 | | 70-130 | 2 | | 20 |
| 1,1,1-Trichloroethane | 95 | | 87 | | 70-130 | 9 | | 20 |
| Bromodichloromethane | 100 | | 93 | | 70-130 | 7 | | 20 |
| trans-1,3-Dichloropropene | 83 | | 82 | | 70-130 | 1 | | 20 |
| cis-1,3-Dichloropropene | 77 | | 74 | | 70-130 | 4 | | 20 |
| 1,1-Dichloropropene | 92 | | 81 | | 70-130 | 13 | | 20 |
| Bromoform | 108 | | 108 | | 70-130 | 0 | | 20 |
| 1,1,2,2-Tetrachloroethane | 95 | | 91 | | 70-130 | 4 | | 20 |
| Benzene | 93 | | 85 | | 70-130 | 9 | | 20 |
| Toluene | 92 | | 82 | | 70-130 | 11 | | 20 |
| Ethylbenzene | 96 | | 87 | | 70-130 | 10 | | 20 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010361

**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG423125-1 WG423125-2 | | | | | | | | |
| Chloromethane | 80 | | 70 | | 70-130 | 13 | | 20 |
| Bromomethane | 87 | | **67** | Q | 70-130 | **26** | Q | 20 |
| Vinyl chloride | 85 | | 77 | | 70-130 | 10 | | 20 |
| Chloroethane | 97 | | 85 | | 70-130 | 13 | | 20 |
| 1,1-Dichloroethene | 105 | | 87 | | 70-130 | 19 | | 20 |
| trans-1,2-Dichloroethene | 98 | | 85 | | 70-130 | 14 | | 20 |
| Trichloroethene | 87 | | 80 | | 70-130 | 8 | | 20 |
| 1,2-Dichlorobenzene | 91 | | 90 | | 70-130 | 1 | | 20 |
| 1,3-Dichlorobenzene | 92 | | 84 | | 70-130 | 9 | | 20 |
| 1,4-Dichlorobenzene | 91 | | 87 | | 70-130 | 4 | | 20 |
| Methyl tert butyl ether | 75 | | 79 | | 70-130 | 5 | | 20 |
| p/m-Xylene | 91 | | 83 | | 70-130 | 9 | | 20 |
| o-Xylene | 89 | | 83 | | 70-130 | 7 | | 20 |
| cis-1,2-Dichloroethene | 92 | | 85 | | 70-130 | 8 | | 20 |
| Dibromomethane | 79 | | 81 | | 70-130 | 3 | | 20 |
| 1,2,3-Trichloropropane | 94 | | 100 | | 70-130 | 6 | | 20 |
| Styrene | 89 | | 86 | | 70-130 | 3 | | 20 |
| Dichlorodifluoromethane | 70 | | **62** | Q | 70-130 | 12 | | 20 |
| Acetone | 94 | | 104 | | 70-130 | 10 | | 20 |
| Carbon disulfide | 105 | | 90 | | 70-130 | 15 | | 20 |
| 2-Butanone | 88 | | 99 | | 70-130 | 12 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG423125-1 WG423125-2 | | | | | | | | |
| 4-Methyl-2-pentanone | 84 | | 98 | | 70-130 | 15 | | 20 |
| 2-Hexanone | 79 | | 90 | | 70-130 | 13 | | 20 |
| Bromochloromethane | 86 | | 83 | | 70-130 | 4 | | 20 |
| Tetrahydrofuran | 104 | | 96 | | 70-130 | 8 | | 20 |
| 2,2-Dichloropropane | 87 | | 78 | | 70-130 | 11 | | 20 |
| 1,2-Dibromoethane | 83 | | 91 | | 70-130 | 9 | | 20 |
| 1,3-Dichloropropane | 88 | | 87 | | 70-130 | 1 | | 20 |
| 1,1,1,2-Tetrachloroethane | 89 | | 84 | | 70-130 | 6 | | 20 |
| Bromobenzene | 92 | | 90 | | 70-130 | 2 | | 20 |
| n-Butylbenzene | 99 | | 85 | | 70-130 | 15 | | 20 |
| sec-Butylbenzene | 96 | | 83 | | 70-130 | 15 | | 20 |
| tert-Butylbenzene | 92 | | 83 | | 70-130 | 10 | | 20 |
| o-Chlorotoluene | 92 | | 86 | | 70-130 | 7 | | 20 |
| p-Chlorotoluene | 98 | | 89 | | 70-130 | 10 | | 20 |
| 1,2-Dibromo-3-chloropropane | 84 | | 86 | | 70-130 | 2 | | 20 |
| Hexachlorobutadiene | 97 | | 79 | | 70-130 | 20 | | 20 |
| Isopropylbenzene | 94 | | 83 | | 70-130 | 12 | | 20 |
| p-Isopropyltoluene | 99 | | 86 | | 70-130 | 14 | | 20 |
| Naphthalene | 78 | | 84 | | 70-130 | 7 | | 20 |
| n-Propylbenzene | 96 | | 84 | | 70-130 | 13 | | 20 |
| 1,2,3-Trichlorobenzene | 79 | | 86 | | 70-130 | 8 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 Batch: WG423125-1 WG423125-2 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 83 | | 82 | | 70-130 | 1 | | 20 |
| 1,3,5-Trimethylbenzene | 92 | | 84 | | 70-130 | 9 | | 20 |
| 1,2,4-Trimethylbenzene | 92 | | 84 | | 70-130 | 9 | | 20 |
| Ethyl ether | 96 | | 95 | | 70-130 | 1 | | 20 |
| Isopropyl Ether | 83 | | 80 | | 70-130 | 4 | | 20 |
| Ethyl-Tert-Butyl-Ether | 76 | | 78 | | 70-130 | 3 | | 20 |
| Tertiary-Amyl Methyl Ether | 77 | | 83 | | 70-130 | 8 | | 20 |
| 1,4-Dioxane | 98 | | 113 | | 70-130 | 14 | | 20 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 91 | | 85 | | 70-130 |
| Toluene-d8 | 100 | | 99 | | 70-130 |
| 4-Bromofluorobenzene | 98 | | 95 | | 70-130 |
| Dibromofluoromethane | 96 | | 95 | | 70-130 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG423125-4 WG423125-5 QC Sample: L1010361-04 Client ID: MW-005-070810

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methylene chloride | ND | 10 | 12 | 118 | | 12 | 119 | | 70-130 | 1 | | 20 |
| 1,1-Dichloroethane | ND | 10 | 12 | 116 | | 12 | 118 | | 70-130 | 2 | | 20 |
| Chloroform | ND | 10 | 12 | 118 | | 12 | 117 | | 70-130 | 1 | | 20 |
| Carbon tetrachloride | ND | 10 | 12 | 125 | | 13 | **131** | Q | 70-130 | 5 | | 20 |
| 1,2-Dichloropropane | ND | 10 | 11 | 115 | | 12 | 117 | | 70-130 | 2 | | 20 |
| Dibromochloromethane | ND | 10 | 12 | 122 | | 12 | 124 | | 70-130 | 2 | | 20 |
| 1,1,2-Trichloroethane | ND | 10 | 11 | 110 | | 11 | 109 | | 70-130 | 1 | | 20 |
| Tetrachloroethene | ND | 10 | 11 | 114 | | 11 | 112 | | 70-130 | 2 | | 20 |
| Chlorobenzene | ND | 10 | 11 | 108 | | 10 | 105 | | 70-130 | 3 | | 20 |
| Trichlorofluoromethane | ND | 10 | 13 | **134** | Q | 13 | **131** | Q | 70-130 | 2 | | 20 |
| 1,2-Dichloroethane | ND | 10 | 12 | 117 | | 12 | 119 | | 70-130 | 2 | | 20 |
| 1,1,1-Trichloroethane | ND | 10 | 12 | 117 | | 12 | 120 | | 70-130 | 3 | | 20 |
| Bromodichloromethane | ND | 10 | 12 | 124 | | 13 | **131** | Q | 70-130 | 5 | | 20 |
| trans-1,3-Dichloropropene | ND | 10 | 10 | 103 | | 10 | 102 | | 70-130 | 1 | | 20 |
| cis-1,3-Dichloropropene | ND | 10 | 9.2 | 92 | | 9.8 | 98 | | 70-130 | 6 | | 20 |
| 1,1-Dichloropropene | ND | 10 | 12 | 115 | | 11 | 113 | | 70-130 | 2 | | 20 |
| Bromoform | ND | 10 | 13 | **131** | Q | 12 | 124 | | 70-130 | 5 | | 20 |
| 1,1,2,2-Tetrachloroethane | ND | 10 | 11 | 114 | | 11 | 108 | | 70-130 | 5 | | 20 |
| Benzene | ND | 10 | 12 | 115 | | 12 | 119 | | 70-130 | 3 | | 20 |
| Toluene | ND | 10 | 11 | 113 | | 11 | 109 | | 70-130 | 4 | | 20 |
| Ethylbenzene | ND | 10 | 11 | 113 | | 11 | 108 | | 70-130 | 5 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG423125-4 WG423125-5 QC Sample: L1010361-04 Client ID: MW-005-070810

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | ND | 10 | 9.8 | 98 | | 9.7 | 97 | | 70-130 | 1 | | 20 |
| Bromomethane | ND | 10 | 6.4 | **64** | Q | 6.7 | **67** | Q | 70-130 | 5 | | 20 |
| Vinyl chloride | ND | 10 | 11 | 110 | | 11 | 111 | | 70-130 | 1 | | 20 |
| Chloroethane | ND | 10 | 12 | 125 | | 12 | 121 | | 70-130 | 3 | | 20 |
| 1,1-Dichloroethene | ND | 10 | 13 | **131** | Q | 13 | 128 | | 70-130 | 2 | | 20 |
| trans-1,2-Dichloroethene | ND | 10 | 12 | 123 | | 12 | 124 | | 70-130 | 1 | | 20 |
| Trichloroethene | ND | 10 | 11 | 109 | | 11 | 115 | | 70-130 | 5 | | 20 |
| 1,2-Dichlorobenzene | ND | 10 | 11 | 110 | | 10 | 104 | | 70-130 | 6 | | 20 |
| 1,3-Dichlorobenzene | ND | 10 | 11 | 107 | | 9.9 | 99 | | 70-130 | 8 | | 20 |
| 1,4-Dichlorobenzene | ND | 10 | 11 | 108 | | 10 | 101 | | 70-130 | 7 | | 20 |
| Methyl tert butyl ether | ND | 10 | 11 | 107 | | 10 | 104 | | 70-130 | 3 | | 20 |
| p/m-Xylene | ND | 20 | 22 | 111 | | 21 | 106 | | 70-130 | 5 | | 20 |
| o-Xylene | ND | 20 | 22 | 109 | | 21 | 104 | | 70-130 | 5 | | 20 |
| cis-1,2-Dichloroethene | ND | 10 | 12 | 115 | | 12 | 119 | | 70-130 | 3 | | 20 |
| Dibromomethane | ND | 10 | 12 | 117 | | 11 | 112 | | 70-130 | 4 | | 20 |
| 1,2,3-Trichloropropane | ND | 10 | 12 | 119 | | 11 | 113 | | 70-130 | 5 | | 20 |
| Styrene | ND | 20 | 22 | 111 | | 21 | 106 | | 70-130 | 5 | | 20 |
| Dichlorodifluoromethane | ND | 10 | 9.0 | 90 | | 9.0 | 90 | | 70-130 | 0 | | 20 |
| Acetone | ND | 10 | 15 | **154** | Q | 16 | **162** | Q | 70-130 | 5 | | 20 |
| Carbon disulfide | ND | 10 | 12 | 119 | | 12 | 121 | | 70-130 | 2 | | 20 |
| 2-Butanone | ND | 10 | 12 | 120 | | 12 | 118 | | 70-130 | 2 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG423125-4 WG423125-5 QC Sample: L1010361-04 Client ID: MW-005-070810

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone | ND | 10 | 12 | 118 | | 12 | 122 | | 70-130 | 3 | | 20 |
| 2-Hexanone | ND | 10 | 11 | 108 | | 10 | 104 | | 70-130 | 4 | | 20 |
| Bromochloromethane | ND | 10 | 11 | 108 | | 12 | 116 | | 70-130 | 7 | | 20 |
| Tetrahydrofuran | ND | 10 | 14 | **143** | Q | 13 | 127 | | 70-130 | 12 | | 20 |
| 2,2-Dichloropropane | ND | 10 | 9.4 | 94 | | 9.8 | 98 | | 70-130 | 4 | | 20 |
| 1,2-Dibromoethane | ND | 10 | 11 | 113 | | 10 | 106 | | 70-130 | 6 | | 20 |
| 1,3-Dichloropropane | ND | 10 | 12 | 115 | | 11 | 112 | | 70-130 | 3 | | 20 |
| 1,1,1,2-Tetrachloroethane | ND | 10 | 11 | 107 | | 11 | 107 | | 70-130 | 0 | | 20 |
| Bromobenzene | ND | 10 | 11 | 112 | | 10 | 101 | | 70-130 | 10 | | 20 |
| n-Butylbenzene | ND | 10 | 11 | 106 | | 9.6 | 96 | | 70-130 | 10 | | 20 |
| sec-Butylbenzene | ND | 10 | 11 | 106 | | 9.7 | 97 | | 70-130 | 9 | | 20 |
| tert-Butylbenzene | ND | 10 | 11 | 109 | | 10 | 102 | | 70-130 | 7 | | 20 |
| o-Chlorotoluene | ND | 10 | 9.0 | 90 | | 8.6 | 86 | | 70-130 | 5 | | 20 |
| p-Chlorotoluene | ND | 10 | 11 | 109 | | 10 | 103 | | 70-130 | 6 | | 20 |
| 1,2-Dibromo-3-chloropropane | ND | 10 | 10 | 105 | | 10 | 102 | | 70-130 | 3 | | 20 |
| Hexachlorobutadiene | ND | 10 | 9.8 | 98 | | 9.4 | 94 | | 70-130 | 4 | | 20 |
| Isopropylbenzene | ND | 10 | 11 | 115 | | 11 | 109 | | 70-130 | 5 | | 20 |
| p-Isopropyltoluene | ND | 10 | 11 | 111 | | 10 | 100 | | 70-130 | 10 | | 20 |
| Naphthalene | ND | 10 | 9.9 | 99 | | 9.2 | 92 | | 70-130 | 7 | | 20 |
| n-Propylbenzene | ND | 10 | 11 | 109 | | 10 | 101 | | 70-130 | 8 | | 20 |
| 1,2,3-Trichlorobenzene | ND | 10 | 9.9 | 99 | | 9.4 | 94 | | 70-130 | 5 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG423125-4 WG423125-5 QC Sample: L1010361-04 Client ID: MW-005-070810 | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 10 | 9.9 | 99 | | 9.1 | 91 | | 70-130 | 8 | | 20 |
| 1,3,5-Trimethylbenzene | ND | 10 | 10 | 105 | | 9.7 | 97 | | 70-130 | 8 | | 20 |
| 1,2,4-Trimethylbenzene | ND | 10 | 11 | 108 | | 9.8 | 98 | | 70-130 | 10 | | 20 |
| Ethyl ether | ND | 10 | 12 | 125 | | 12 | 123 | | 70-130 | 2 | | 20 |
| Isopropyl Ether | ND | 10 | 10 | 105 | | 10 | 105 | | 70-130 | 0 | | 20 |
| Ethyl-Tert-Butyl-Ether | ND | 10 | 9.9 | 99 | | 9.8 | 98 | | 70-130 | 1 | | 20 |
| Tertiary-Amyl Methyl Ether | ND | 10 | 10 | 103 | | 10 | 103 | | 70-130 | 0 | | 20 |
| 1,4-Dioxane | ND | 1000 | 1100 | 110 | | 1200 | 116 | | 70-130 | 5 | | 20 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 95 | | 96 | | 70-130 |
| 4-Bromofluorobenzene | 96 | | 86 | | 70-130 |
| Dibromofluoromethane | 105 | | 99 | | 70-130 |
| Toluene-d8 | 97 | | 95 | | 70-130 |

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-01 | Date Collected: | 07/08/10 10:45 |
| Client ID: | MW-07A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 18:09 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.213 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 79 | 30-150 |
| Decachlorobiphenyl | 88 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-02 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 18:40 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.225 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.225 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 75 | 30-150 |
| Decachlorobiphenyl | 83 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-03 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810-DUP | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 19:10 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.235 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.235 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 87 | 30-150 |
| Decachlorobiphenyl | 93 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-04 | Date Collected: | 07/08/10 16:10 |
| Client ID: | MW-005-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 19:41 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.215 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.215 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 84 | 30-150 |
| Decachlorobiphenyl | 84 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-05 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-003-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 20:11 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.213 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 79 | 30-150 |
| Decachlorobiphenyl | 46 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-06 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-006-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 21:43 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.220 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.220 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 82 | 30-150 |
| Decachlorobiphenyl | 82 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-07 | Date Collected: | 07/09/10 12:55 |
| Client ID: | MW-001-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 22:13 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.213 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 81 | 30-150 |
| Decachlorobiphenyl | 91 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-08 | Date Collected: | 07/09/10 13:05 |
| Client ID: | EB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/13/10 13:30 |
| Analytical Date: | 07/15/10 22:43 | | |
| Analyst: | NS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.213 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.213 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 67 | 30-150 |
| Decachlorobiphenyl | 66 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 07/15/10 16:38
Analyst: NS

Extraction Method: EPA 3510C
Extraction Date: 07/13/10 13:30

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab for sample(s): 01-08 Batch: WG422486-1 | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.200 | -- |
| Aroclor 1221 | ND | | ug/l | 0.200 | -- |
| Aroclor 1232 | ND | | ug/l | 0.200 | -- |
| Aroclor 1242 | ND | | ug/l | 0.200 | -- |
| Aroclor 1248 | ND | | ug/l | 0.200 | -- |
| Aroclor 1254 | ND | | ug/l | 0.200 | -- |
| Aroclor 1260 | ND | | ug/l | 0.200 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 86 | | 30-150 |
| Decachlorobiphenyl | 87 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG422486-4 WG422486-5 QC Sample: L1010361-05 Client ID: MW-003-070910 | | | | | | | | | | | | |
| Aroclor 1016 | ND | 10.5 | 8.74 | 83 | | 8.88 | 84 | | 40-140 | 1 | | 50 |
| Aroclor 1260 | ND | 10.5 | 7.84 | 74 | | 7.86 | 74 | | 40-140 | 0 | | 50 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| Decachlorobiphenyl | 45 | | 62 | | 30-150 |
| Tetrachloro-meta-Xylene | 84 | | 81 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010361

**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-08 Batch: WG422486-2 WG422486-3 | | | | | | | | |
| Aroclor 1016 | 81 | | 83 | | 40-140 | 2 | | 50 |
| Aroclor 1260 | 72 | | 76 | | 40-140 | 5 | | 50 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| Tetrachloro-meta-Xylene | 82 | | 81 | | 30-150 |
| Decachlorobiphenyl | 76 | | 86 | | 30-150 |

# METALS

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-01 | Date Collected: | 07/08/10 10:45 |
| Client ID: | MW-07A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | 0.0006 | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:48 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:48 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.006 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:48 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:48 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-02 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:49 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:49 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.004 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:49 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:49 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-03 | Date Collected: | 07/08/10 14:40 |
| Client ID: | MW-04A-070810-DUP | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:50 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:50 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.004 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:50 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:50 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-04 | Date Collected: | 07/08/10 16:10 |
| Client ID: | MW-005-070810 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:51 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:51 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:51 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:51 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-05 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-003-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:52 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:52 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.007 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:52 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:52 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-06 | Date Collected: | 07/09/10 09:40 |
| Client ID: | MW-006-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:58 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:58 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:58 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:58 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-07 | Date Collected: | 07/09/10 12:55 |
| Client ID: | MW-001-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:59 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:59 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:59 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.003 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:59 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1010361-08 | Date Collected: | 07/09/10 13:05 |
| Client ID: | EB-070910 | Date Received: | 07/09/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 12:00 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 12:00 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.118 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 12:00 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.003 | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 12:00 | EPA 3020A | 1,6020A | LR |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

# Method Blank Analysis
# Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab for sample(s): 01-08 Batch: WG422679-1 | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:46 | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.005 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:46 | 1,6020A | LR |
| Copper, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:46 | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 07/14/10 08:00 | 07/15/10 11:46 | 1,6020A | LR |

**Prep Information**

Digestion Method: EPA 3020A

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010361

**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-08 Batch: WG422679-2 | | | | | | | | |
| Cadmium, Total | 101 | | - | | 80-120 | - | | 20 |
| Chromium, Total | 101 | | - | | 80-120 | - | | 20 |
| Copper, Total | 104 | | - | | 80-120 | - | | 20 |
| Lead, Total | 105 | | - | | 80-120 | - | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG422679-4 QC Sample: L1010361-05 Client ID: MW-003-070910 | | | | | | | | | | | | |
| Cadmium, Total | ND | 0.5 | 0.4763 | 95 | | - | - | | 75-125 | - | | 20 |
| Chromium, Total | ND | 1 | 1.03 | 103 | | - | - | | 75-125 | - | | 20 |
| Copper, Total | 0.007 | 1 | 0.967 | 96 | | - | - | | 75-125 | - | | 20 |
| Lead, Total | ND | 1 | 0.906 | 91 | | - | - | | 75-125 | - | | 20 |

# Lab Duplicate Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG422679-3 QC Sample: L1010361-05 Client ID: MW-003-070910 | | | | | | |
| Cadmium, Total | ND | ND | mg/l | NC | | 20 |
| Chromium, Total | ND | ND | mg/l | NC | | 20 |
| Copper, Total | 0.007 | 0.008 | mg/l | 19 | | 20 |
| Lead, Total | ND | ND | mg/l | NC | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

# Lab Serial Dilution Analysis
**Batch Quality Control**

**Lab Number:** L1010361
**Report Date:** 07/21/10

| Parameter | Native Sample | Serial Dilution | Units | % D | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG422679-5 QC Sample: L1010361-05 Client ID: MW-003-070910 | | | | | | |
| Cadmium, Total | ND | ND | mg/l | NC | | 10 |
| Chromium, Total | ND | ND | mg/l | NC | | 10 |
| Copper, Total | 0.007 | 0.006 | mg/l | **19** | Q | 10 |
| Lead, Total | ND | ND | mg/l | NC | | 10 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-01
Client ID: MW-07A-070810
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/08/10 10:45
Date Received: 07/09/10
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 | 1.20 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-02
Client ID: MW-04A-070810
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/08/10 14:40
Date Received: 07/09/10
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 | 2.50 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-03
Client ID: MW-04A-070810-DUP
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/08/10 14:40
Date Received: 07/09/10
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 | 2.50 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-04
Client ID: MW-005-070810
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/08/10 16:10
Date Received: 07/09/10
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 | 1.90 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-05
Client ID: MW-003-070910
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/09/10 09:40
Date Received: 07/09/10
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 | 26.2 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-06
Client ID: MW-006-070910
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/09/10 09:40
Date Received: 07/09/10
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 | 12.3 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## SAMPLE RESULTS

Lab ID: L1010361-07
Client ID: MW-001-070910
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 07/09/10 12:55
Date Received: 07/09/10
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 | 9.00 | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010361

**Project Number:** TO-0010-03 **Report Date:** 07/21/10

# 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): 01-07 Batch: WG422456-1 | | | | | | | | | | |
| Solids, Total Suspended | ND | | mg/l | 1.00 | NA | 1 | - | 07/13/10 16:00 | 30,2540D | ES |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010361

**Report Date:** 07/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-07 Batch: WG422456-2 | | | | | | | | |
| Solids, Total Suspended | 92 | | - | | 80-120 | - | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| A | Absent |
| B | Absent |
| C | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010361-01A | Plastic 500ml HNO3 preserved | A | <2 | 6 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-01B | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-01C | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-01D | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-01E | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-01F | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-01G | Plastic 1000ml unpreserved | A | N/A | 6 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-02A | Plastic 500ml HNO3 preserved | A | <2 | 6 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-02B | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-02C | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-02D | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-02E | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-02F | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-02G | Plastic 1000ml unpreserved | A | N/A | 6 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-03A | Plastic 500ml HNO3 preserved | A | <2 | 6 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-03B | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-03C | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-03D | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-03E | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-03F | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010361-03G | Plastic 1000ml unpreserved | A | N/A | 6 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-04A | Plastic 500ml HNO3 preserved | A | <2 | 6 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-04B | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-04C | Amber 1000ml unpreserved | A | 7 | 6 | Y | Absent | A2-PCB-8082(7) |
| L1010361-04D | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-04E | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-04F | Vial HCl preserved | A | N/A | 6 | Y | Absent | MCP-8260-10(14) |
| L1010361-04G | Plastic 1000ml unpreserved | A | N/A | 6 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-05A | Plastic 500ml HNO3 preserved | C | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-05B | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05C | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05D | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05E | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05F | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05G | Plastic 1000ml unpreserved | C | N/A | 5 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-05H | Plastic 500ml HNO3 preserved | C | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-05I | Plastic 500ml HNO3 preserved | C | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-05J | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05K | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05L | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05M | Amber 1000ml unpreserved | C | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-05N | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05O | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05P | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05Q | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05R | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-05S | Vial HCl preserved | C | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-06A | Plastic 500ml HNO3 preserved | B | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010361
**Report Date:** 07/21/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010361-06B | Amber 1000ml unpreserved | B | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-06C | Amber 1000ml unpreserved | B | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-06D | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-06E | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-06F | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-06G | Plastic 1000ml unpreserved | B | N/A | 5 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-07A | Plastic 500ml HNO3 preserved | B | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-07B | Amber 1000ml unpreserved | B | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-07C | Amber 1000ml unpreserved | B | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-07D | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-07E | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-07F | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-07G | Plastic 1000ml unpreserved | B | N/A | 5 | Y | Absent | A2-TSS-2540D(7) |
| L1010361-08A | Plastic 500ml HNO3 preserved | B | <2 | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1010361-08B | Amber 1000ml unpreserved | B | N/A | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-08C | Amber 1000ml unpreserved | B | N/A | 5 | Y | Absent | A2-PCB-8082(7) |
| L1010361-08D | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-08E | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-08F | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1010361-09D | Vial HCl preserved | B | N/A | 5 | Y | Absent | MCP-8260-10(14) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

## 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.

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.

***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.

**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.

**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.

**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.

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1010361 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 07/21/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

## Certificate/Approval Program Summary

Last revised July 19, 2010 - Westboro 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-0574. ***NELAP Accredited Solid Waste/Soil.***

*Drinking Water* (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))
*Wastewater/Non-Potable Water* (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)
*Solid Waste/Soil* (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons. )

**Maine Department of Human Services** Certificate/Lab ID: 2009024.
*Drinking Water* (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)
*Wastewater/Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624, ME DRO, ME GRO, MA EPH, MA VPH.)
*Solid Waste/Soil (*Organic Parameters: ME DRO, ME GRO, MA EPH, MA VPH.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA086.
*Drinking Water*
Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)
(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)
353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.
Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)
(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.
Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D
*Non-Potable Water*
Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)
(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Tl, V,Zn,Ca,Mg,Na,K)
245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 200307. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)
*Non-Potable Water* (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA935. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)
*Non-Potable Water* (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

**New York Department of Health** Certificate/Lab ID: 11148. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)
*Non-Potable Water* (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, S\M3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)
*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources** Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
*Non-Potable Water* (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)
*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NY-DOH Certificate for Potable and Non-Potable Water.

**Texas Commisson on Environmental Quality** Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S2¯D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

**Department of Defense** Certificate/Lab ID: L2217.
*Drinking Water* (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

*Non-Potable Water* (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 120.1, 9050A , 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035, MassDEP EPH, MassDEP VPH.)

**Analytes Not Accredited by NELAP**
Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.

# CHAIN OF CUSTODY

PAGE 1 OF 4

Date Rec'd in Lab:

ALPHA Job #: L1010361

ALPHA ANALYTICAL
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 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

**Project Information**

Project Name: NEW BEDFORD HARBOR
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | MW-07A-070810 | 7/8/10 | 1045 | GW | DSB | X | | | | | 2 |
| | MW-07A-070810 | | 1045 | | DSB | | X | | | | 3 |
| | MW-07A-070810 | | 1045 | | DSB | | | X | | | 1 |
| | MW-07A-070810 | | 1045 | | DSB | | | | X | | 1 |
| -2 | MW-04A-070810 | | 1440 | GW | DB | X | | | | | 2 |
| | MW-04A-070810 | | | | | | X | | | | 3 |
| | MW-04A-070810 | | | | | | | X | | | 1 |
| | MW-04A-070810 | | | | | | | | X | | 1 |
| -3 | MW-04A-070810-DUP | | | | | X | | | | | 2 |
| | MW-04A-070810-DUP | | | | | | X | | | | 3 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | C | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 7/9/10 1615 | [signature] | 7/9/10 1615 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)



Serial_No:07211009:48

# CHAIN OF CUSTODY

PAGE 2 OF 4

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010361

**Client Information**

Client: WOODS HOLE GROUP

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

**Project Information**

Project Name: NEWBEDFORD HARBOR

Project Location: NEWBEDFORD, MA

Project #: TO-0010-03

Project Manager: DAVE WALSH

ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS: PCB Aroclors; VOCs; Metals; TSS

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -3 | MW-04A-070810-DUP | 7/8/10 | 1440 | GW | DB | | X | | | | 1 |
| | MW-04A-070810-DUP | 7/8/10 | 1440 | GW | DB | | | X | | | 1 |
| -4 | MW-005-070810 | 7/8/10 | 1610 | GW | M WALSH | X | | | | | 2 |
| | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | X | | | | 3 |
| | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | | X | | | 1 |
| | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | | | X | | 1 |
| -5 | MW-003-070910 | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | V | P | P | | | | | | | | | | | | | |
| Preservative | A | B | C | A | | | | | | | | | | | | | |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 7/9/10 1415 | [illegible] | 7/9/10 1615 |
| | | | |
| | | | |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 3 OF 4

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010361

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Dr.
E. Falmouth, MA 02536
Phone: 508-540-8086
Fax: 508-540-1001
Email: DWALSH@WHGRP.com
☐ These samples have been previously analyzed by Alpha

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |
| 6 | MW-006-070910 | 7/9/10 | 0940 | GW | DB | X | | | | | 2 |
| | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | X | | | | 3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | V | P | P | | | | | |
| Preservative | A | B | C | A | | | | | |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 7/9/10 1615 | [signature] | 7/9/10 1615 |
| | | | |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)



Serial_No:07211009:48

# CHAIN OF CUSTODY

PAGE 4 OF 4

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010361

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -6 | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | X | | | | 1 |
| | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | | X | | | 1 |
| -7 | MW-001-070910 | 7/9/10 | 1255 | GW | DB | X | | | | | 2 |
| | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | X | | | | 3 |
| | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | | X | | | 1 |
| | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | | | X | | 1 |
| -8 | EB-070910 | 7/9/10 | 1305 | GW | MW | X | | | | Equipment Blank | 2 |
| | EB-070910 | 7/9/10 | 1305 | GW | MW | | X | | | Equipment Blank | 3 |
| | EB-070910 | 7/9/10 | 1305 | GW | MW | | | X | | Equipment Blank | 1 |
| -9 | TB-070910 | 7/9/10 | 1305 | GW | MW | | X | | | Trip Blank | 3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Container Type | A | V | P | P | | | |
| Preservative | A | B | C | A | | | |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Dave Walsh | 7/9/10 1615 | [signature] | 7/9/10 1615 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 1 OF 4

ALPHA Analytical Laboratories
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010361

**Client Information**

Client: WOODS HOLE GROUP
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

**Project Information**

Project Name: NEW BEDFORD HARBOR
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

**SAMPLE HANDLING**
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ~~PCB Aroclors~~ | VOCs | ~~Metals~~ | ~~TSS~~ | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | MW-07A-070810 | 7/8/10 | 1045 | GW | DSB | X | | | | | 2 |
| | MW-07A-070810 | | 1045 | | DSB | | X | | | | 3 |
| | MW-07A-070810 | | 1045 | | DSB | | | X | | | 1 |
| | MW-07A-070810 | | 1045 | | DSB | | | | X | | 1 |
| -2 | MW-04A-070810 | | 1440 | GW | DB | X | | | | | 2 |
| | MW-04A-070810 | | | | | | X | | | | 3 |
| | MW-04A-070810 | | | | | | | X | | | 1 |
| | MW-04A-070810 | | | | | | | | X | | 1 |
| -3 | MW-04A-070810-DUP | | | | | X | | | | | 2 |
| | MW-04A-070810-DUP | | | | | | X | | | | 3 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | C | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 7/9/10 1615 | [illegible] | 7/9/10 1615 |
| [illegible] | 7/12/10 0805 | P. Dillent | 7/12/10 8:35 |
| P. Dillent | 7/12/10 9:15 | [illegible] | 7/12/10 09:00 |

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FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 2 OF 4

Date Rec'd in Lab:

ALPHA Job #: L1010361

ALPHA ANALYTICAL
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 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

**Project Information**

Project Name: NEWBEDFORD HARBOR
Project Location: NEWBEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVE WALSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS: PCB Aroclors | VOCs | Metals | PB

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | PB | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -3 | MW-04A-070810-DUP | 7/8/10 | 1440 | GW | DB | | | X | | | 1 |
| ↓ | MW-04A-070810-DUP | 7/8/10 | 1440 | GW | DB | | | | X | | 1 |
| -4 | MW-005-070810 | 7/8/10 | 1610 | GW | M WALSH | X | | | | | 2 |
| ↓ | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | X | | | | 3 |
| ↓ | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | | X | | | 1 |
| ↓ | MW-005-070810 | 7/8/10 | 1610 | GW | M. WALSH | | | | X | | 1 |
| -5 | MW-003-070910 | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| ↓ | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| ↓ | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| ↓ | MW-003-070910 | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |

| | | | | |
|---|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | C | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Zalesk | 7/9/10 1415 | [illegible] | 7/9/10 1615 |
| [illegible] | 7/12/10 0805 | R. Gillett | 7/12/10 8:35 |
| R. Gillett | 7/12/10 9:15 | [illegible] | 7/12/10 0915 |

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FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 3 OF 4

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010361

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Dr.
E. Falmouth, MA 02536
Phone: 508-540-8086
Fax: 508-540-1001
Email: DWALSH@WHGRP.com

☐ These samples have been previously analyzed by Alpha

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
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Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| | MW-003-070910-MS | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | X | | | | | 2 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | X | | | | 3 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | | X | | | 1 |
| | MW-003-070910-MSD | 7/9/10 | 0940 | GW | MW | | | | X | | 1 |
| 6 | MW-006-070910 | 7/9/10 | 0940 | GW | DB | X | | | | | 2 |
| | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | X | | | | 3 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | V | P | P | | | | | | | |
| Preservative | A | B | C | A | | | | | | | |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Miguel Nalen | 7/9/10 1615 | [illegible] | 7/9/10 1615 |
| [illegible] P. Gilbert | 7/12/10 0805 | P. Gilbert | 7/12/10 8:35 |
| | 7/12/10 9:15 | T. [illegible] | 7/12/10 0915 |

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FORM NO: 01-01 (rev. 18-Jan-2010)

Serial_No:07211009:48

# CHAIN OF CUSTODY

PAGE 4 OF 4

Date Rec'd in Lab:

ALPHA Job #: L1010361

ALPHA ANALYTICAL
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 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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

**SAMPLE HANDLING**
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclor | VOCs | Metals | PB | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -6 | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | | X | | | 1 |
| -7 | MW-006-070910 | 7/9/10 | 0940 | GW | DB | | | | X | | 1 |
| -1 | MW-001-070910 | 7/9/10 | 1255 | GW | DB | X | | | | | 2 |
| -1 | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | X | | | | 3 |
| -1 | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | | X | | | 1 |
| -1 | MW-001-070910 | 7/9/10 | 1255 | GW | DB | | | | X | | 1 |
| -8 | EB-070910 | 7/9/10 | 1305 | GW | MW | X | | | | Equipment Blank | 2 |
| -8 | EB-070910 | 7/9/10 | 1305 | GW | MW | | X | | | Equipment Blank | 3 |
| -8 | EB-070910 | 7/9/10 | 1305 | GW | MW | | | X | | Equipment Blank | 1 |
| -9 | TB-070910 | 7/9/10 | 1305 | GW | MW | | X | | | Trip Blank | 3 |
| | | | | | Container Type | A | V | P | P | | |
| | | | | | Preservative | A | B | C | A | | |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 7/9/10 1615 | [illegible] | 7/9/10 1615 |
| [illegible] | 7/12/10 0805 | [illegible] | 7/12/10 8:35 |
| [illegible] | 7/12/10 9:15 | [illegible] | 7/12/10 0915 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1015775 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 11/08/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1015775-01 | MW-006-100510 | NEW BEDFORD, MA | 10/05/10 09:50 |
| L1015775-02 | MW-003-100510 | NEW BEDFORD, MA | 10/05/10 10:29 |
| L1015775-03 | MW-003-100510 DUP | NEW BEDFORD, MA | 10/05/10 10:29 |
| L1015775-04 | TB-100510 | NEW BEDFORD, MA | 10/05/10 17:45 |
| L1015775-05 | MW-04A-100510 | NEW BEDFORD, MA | 10/05/10 14:11 |
| L1015775-06 | MW-07A-100510 | NEW BEDFORD, MA | 10/05/10 17:34 |
| L1015775-07 | MW-005-100510 | NEW BEDFORD, MA | 10/05/10 14:05 |
| L1015775-08 | EB-100510 | NEW BEDFORD, MA | 10/05/10 17:45 |
| L1015775-09 | MW-001-102010 | NEW BEDFORD, MA | 10/20/10 13:45 |
| L1015775-10 | EB-102010 | NEW BEDFORD, MA | 10/20/10 17:45 |
| L1015775-11 | TB-102010 | NEW BEDFORD, MA | 10/20/10 13:45 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015775 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/08/10 |

## 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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Volatile Organics by GC/MS

The WG437326-1/-2 LCS/LCSD recoveries, associated with L1015775-01 through 07 are above the acceptance criteria for Acetone (157%)/(134%),1,4-Dioxane (LCS 142%); however, they have been identified as "difficult" analytes and are within the 40-160% acceptance limits. The results of the associated samples are reported; however, all positive detects are considered to have a potentially high bias for these compounds.'

The WG437326-4/-5 MS/MSD recoveries, performed on L1015775-01, were outside the acceptance criteria for several compounds; however, the associated LCS/LCSD recoveries were within criteria. The results of the sample utilized for the MS/MSD are considered to have a potentially high bias for Trichlorofluoromethane (MS 137%),Dichlorodifluoromethane (144%)/(134%) and a potentially low bias for Bromomethane (MS 63%). The WG437326-4/5 MS/MSD recovery for Tetrahydrofuran is reported as 0%, due to the concentration of this

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015775 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/08/10 |

**Case Narrative (continued)**

compound falling below the reported detection limit. In addition, the associated WG437326-5 MS/MSD RPD is above the acceptance criteria for Bromomethane (21%).

The WG437874-2 LCSD recoveries, associated with L1015775-08, are below the acceptance criteria for Dichlorodifluoromethane (68%); however, they are within the overall acceptance limits. The results of the associated samples are reported; however, all results are considered to have a potentially low bias for these compounds.

The WG439128-1 LCS recoveries, associated with L1015775-09,10,11, are outside the individual acceptance criteria for several compounds, but within the overall method allowances. The results of the associated samples are reported; however, all results are considered to have a potentially high bias for 1,1-Dichloroethene (133%), Ethyl ether (138%) and a potentially low bias for Dichlorodifluoromethane (60%).

The WG439128-2 LCSD recoveries, associated with L1015775-09,10,11, are below the acceptance criteria for Dichlorodifluoromethane (58%); but within the overall method allowances.

The WG439128-2 LCS/LCSD RPD(s), associated with L1015775-09,10,11, are above the acceptance criteria for 1,4-Dioxane (21%); however, the individual LCS/LCSD recoveries are within method limits.

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: 11/08/10

# ORGANICS

# VOLATILES

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-01 | Date Collected: | 10/05/10 09:50 |
| Client ID: | MW-006-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 13:06 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-01 Date Collected: 10/05/10 09:50

Client ID: MW-006-100510 Date Received: 10/06/10

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | 5.6 | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-01 | Date Collected: | 10/05/10 09:50 |
| Client ID: | MW-006-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 111 | | 70-130 |
| Toluene-d8 | 100 | | 70-130 |
| 4-Bromofluorobenzene | 94 | | 70-130 |
| Dibromofluoromethane | 106 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-02 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 13:38 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-02 Date Collected: 10/05/10 10:29
Client ID: MW-003-100510 Date Received: 10/06/10
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-02 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 117 | | 70-130 |
| Toluene-d8 | 99 | | 70-130 |
| 4-Bromofluorobenzene | 98 | | 70-130 |
| Dibromofluoromethane | 115 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-03 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 DUP | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 14:09 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-03 Date Collected: 10/05/10 10:29
Client ID: MW-003-100510 DUP Date Received: 10/06/10
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | 5.7 | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-03 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 DUP | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 122 | | 70-130 |
| Toluene-d8 | 102 | | 70-130 |
| 4-Bromofluorobenzene | 97 | | 70-130 |
| Dibromofluoromethane | 113 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-04 | Date Collected: | 10/05/10 17:45 |
| Client ID: | TB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 12:34 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-04 Date Collected: 10/05/10 17:45
Client ID: TB-100510 Date Received: 10/06/10
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-04 | Date Collected: | 10/05/10 17:45 |
| Client ID: | TB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 111 | | 70-130 |
| Toluene-d8 | 101 | | 70-130 |
| 4-Bromofluorobenzene | 101 | | 70-130 |
| Dibromofluoromethane | 106 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-05 | Date Collected: | 10/05/10 14:11 |
| Client ID: | MW-04A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 14:41 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-05 Date Collected: 10/05/10 14:11

Client ID: MW-04A-100510 Date Received: 10/06/10

Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-05 | Date Collected: | 10/05/10 14:11 |
| Client ID: | MW-04A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 117 | | 70-130 |
| Toluene-d8 | 101 | | 70-130 |
| 4-Bromofluorobenzene | 96 | | 70-130 |
| Dibromofluoromethane | 115 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-06 | Date Collected: | 10/05/10 17:34 |
| Client ID: | MW-07A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 15:13 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-06 | Date Collected: | 10/05/10 17:34 |
| Client ID: | MW-07A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | 31 | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-06 | Date Collected: | 10/05/10 17:34 |
| Client ID: | MW-07A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 118 | | 70-130 |
| Toluene-d8 | 99 | | 70-130 |
| 4-Bromofluorobenzene | 95 | | 70-130 |
| Dibromofluoromethane | 113 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-07 | Date Collected: | 10/05/10 14:05 |
| Client ID: | MW-005-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/13/10 15:45 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-07 | Date Collected: | 10/05/10 14:05 |
| Client ID: | MW-005-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-07 | Date Collected: | 10/05/10 14:05 |
| Client ID: | MW-005-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 121 | | 70-130 |
| Toluene-d8 | 100 | | 70-130 |
| 4-Bromofluorobenzene | 95 | | 70-130 |
| Dibromofluoromethane | 120 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-08 | Date Collected: | 10/05/10 17:45 |
| Client ID: | EB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/15/10 08:28 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-08 | Date Collected: | 10/05/10 17:45 |
| Client ID: | EB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-08 | Date Collected: | 10/05/10 17:45 |
| Client ID: | EB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | | 70-130 |
| Toluene-d8 | 93 | | 70-130 |
| 4-Bromofluorobenzene | 119 | | 70-130 |
| Dibromofluoromethane | 115 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-09 | Date Collected: | 10/20/10 13:45 |
| Client ID: | MW-001-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/22/10 13:42 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-09 Date Collected: 10/20/10 13:45
Client ID: MW-001-102010 Date Received: 10/20/10
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | 7.4 | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-09 | Date Collected: | 10/20/10 13:45 |
| Client ID: | MW-001-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 112 | | 70-130 |
| Toluene-d8 | 86 | | 70-130 |
| 4-Bromofluorobenzene | 87 | | 70-130 |
| Dibromofluoromethane | 126 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-10 | Date Collected: | 10/20/10 17:45 |
| Client ID: | EB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/22/10 13:09 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-10 | Date Collected: | 10/20/10 17:45 |
| Client ID: | EB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-10 | Date Collected: | 10/20/10 17:45 |
| Client ID: | EB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 118 | | 70-130 |
| Toluene-d8 | 88 | | 70-130 |
| 4-Bromofluorobenzene | 89 | | 70-130 |
| Dibromofluoromethane | 124 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-11 | Date Collected: | 10/20/10 13:45 |
| Client ID: | TB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |
| Analytical Method: | 97,8260B | | |
| Analytical Date: | 10/22/10 12:37 | | |
| Analyst: | MM | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Chloroform | ND | | ug/l | 1.0 | -- | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Chlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- | 1 |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- | 1 |
| Bromoform | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Benzene | ND | | ug/l | 1.0 | -- | 1 |
| Toluene | ND | | ug/l | 1.0 | -- | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | -- | 1 |
| Chloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Bromomethane | ND | | ug/l | 2.0 | -- | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | -- | 1 |
| Chloroethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Trichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-11 Date Collected: 10/20/10 13:45
Client ID: TB-102010 Date Received: 10/20/10
Sample Location: NEW BEDFORD, MA Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- | 1 |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | -- | 1 |
| o-Xylene | ND | | ug/l | 1.0 | -- | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- | 1 |
| Dibromomethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Styrene | ND | | ug/l | 1.0 | -- | 1 |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- | 1 |
| Acetone | ND | | ug/l | 5.0 | -- | 1 |
| Carbon disulfide | ND | | ug/l | 2.0 | -- | 1 |
| 2-Butanone | ND | | ug/l | 5.0 | -- | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- | 1 |
| 2-Hexanone | ND | | ug/l | 5.0 | -- | 1 |
| Bromochloromethane | ND | | ug/l | 2.0 | -- | 1 |
| Tetrahydrofuran | ND | | ug/l | 10 | -- | 1 |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- | 1 |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- | 1 |
| Bromobenzene | ND | | ug/l | 2.0 | -- | 1 |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- | 1 |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- | 1 |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- | 1 |
| Naphthalene | ND | | ug/l | 2.0 | -- | 1 |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl ether | ND | | ug/l | 2.0 | -- | 1 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-11 | Date Collected: | 10/20/10 13:45 |
| Client ID: | TB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab | | | | | | |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- | 1 |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- | 1 |
| 1,4-Dioxane | ND | | ug/l | 250 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | | 70-130 |
| Toluene-d8 | 89 | | 70-130 |
| 4-Bromofluorobenzene | 94 | | 70-130 |
| Dibromofluoromethane | 127 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775
**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/13/10 12:03
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG437326-3 | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- |
| Chloroform | ND | | ug/l | 1.0 | -- |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- |
| Chlorobenzene | ND | | ug/l | 1.0 | -- |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- |
| Bromoform | ND | | ug/l | 2.0 | -- |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Benzene | ND | | ug/l | 1.0 | -- |
| Toluene | ND | | ug/l | 1.0 | -- |
| Ethylbenzene | ND | | ug/l | 1.0 | -- |
| Chloromethane | ND | | ug/l | 2.0 | -- |
| Bromomethane | ND | | ug/l | 2.0 | -- |
| Vinyl chloride | ND | | ug/l | 1.0 | -- |
| Chloroethane | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Trichloroethene | ND | | ug/l | 1.0 | -- |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/13/10 12:03
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG437326-3 | | | | | |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- |
| p/m-Xylene | ND | | ug/l | 2.0 | -- |
| o-Xylene | ND | | ug/l | 1.0 | -- |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Dibromomethane | ND | | ug/l | 2.0 | -- |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- |
| Styrene | ND | | ug/l | 1.0 | -- |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- |
| Acetone | ND | | ug/l | 5.0 | -- |
| Carbon disulfide | ND | | ug/l | 2.0 | -- |
| 2-Butanone | ND | | ug/l | 5.0 | -- |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- |
| 2-Hexanone | ND | | ug/l | 5.0 | -- |
| Bromochloromethane | ND | | ug/l | 2.0 | -- |
| Tetrahydrofuran | ND | | ug/l | 10 | -- |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Bromobenzene | ND | | ug/l | 2.0 | -- |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- |
| Naphthalene | ND | | ug/l | 2.0 | -- |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/13/10 12:03
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG437326-3 | | | | | |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| Ethyl ether | ND | | ug/l | 2.0 | -- |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- |
| 1,4-Dioxane | ND | | ug/l | 250 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | | 70-130 |
| Toluene-d8 | 100 | | 70-130 |
| 4-Bromofluorobenzene | 101 | | 70-130 |
| Dibromofluoromethane | 103 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/15/10 07:56
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 08 Batch: WG437874-3 | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- |
| Chloroform | ND | | ug/l | 1.0 | -- |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- |
| Chlorobenzene | ND | | ug/l | 1.0 | -- |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- |
| Bromoform | ND | | ug/l | 2.0 | -- |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Benzene | ND | | ug/l | 1.0 | -- |
| Toluene | ND | | ug/l | 1.0 | -- |
| Ethylbenzene | ND | | ug/l | 1.0 | -- |
| Chloromethane | ND | | ug/l | 2.0 | -- |
| Bromomethane | ND | | ug/l | 2.0 | -- |
| Vinyl chloride | ND | | ug/l | 1.0 | -- |
| Chloroethane | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Trichloroethene | ND | | ug/l | 1.0 | -- |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/15/10 07:56
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 08 Batch: WG437874-3 | | | | | |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- |
| p/m-Xylene | ND | | ug/l | 2.0 | -- |
| o-Xylene | ND | | ug/l | 1.0 | -- |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Dibromomethane | ND | | ug/l | 2.0 | -- |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- |
| Styrene | ND | | ug/l | 1.0 | -- |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- |
| Acetone | ND | | ug/l | 5.0 | -- |
| Carbon disulfide | ND | | ug/l | 2.0 | -- |
| 2-Butanone | ND | | ug/l | 5.0 | -- |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- |
| 2-Hexanone | ND | | ug/l | 5.0 | -- |
| Bromochloromethane | ND | | ug/l | 2.0 | -- |
| Tetrahydrofuran | ND | | ug/l | 10 | -- |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Bromobenzene | ND | | ug/l | 2.0 | -- |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- |
| Naphthalene | ND | | ug/l | 2.0 | -- |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/15/10 07:56
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 08 Batch: WG437874-3 | | | | | |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| Ethyl ether | ND | | ug/l | 2.0 | -- |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- |
| 1,4-Dioxane | ND | | ug/l | 250 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | | 70-130 |
| Toluene-d8 | 94 | | 70-130 |
| 4-Bromofluorobenzene | 113 | | 70-130 |
| Dibromofluoromethane | 112 | | 70-130 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775
**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/22/10 10:27
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 09-11 Batch: WG439128-3 | | | | | |
| Methylene chloride | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethane | ND | | ug/l | 1.0 | -- |
| Chloroform | ND | | ug/l | 1.0 | -- |
| Carbon tetrachloride | ND | | ug/l | 1.0 | -- |
| 1,2-Dichloropropane | ND | | ug/l | 1.0 | -- |
| Dibromochloromethane | ND | | ug/l | 1.0 | -- |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Tetrachloroethene | ND | | ug/l | 1.0 | -- |
| Chlorobenzene | ND | | ug/l | 1.0 | -- |
| Trichlorofluoromethane | ND | | ug/l | 2.0 | -- |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 | -- |
| 1,1,1-Trichloroethane | ND | | ug/l | 1.0 | -- |
| Bromodichloromethane | ND | | ug/l | 1.0 | -- |
| trans-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| cis-1,3-Dichloropropene | ND | | ug/l | 0.50 | -- |
| 1,1-Dichloropropene | ND | | ug/l | 2.0 | -- |
| Bromoform | ND | | ug/l | 2.0 | -- |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Benzene | ND | | ug/l | 1.0 | -- |
| Toluene | ND | | ug/l | 1.0 | -- |
| Ethylbenzene | ND | | ug/l | 1.0 | -- |
| Chloromethane | ND | | ug/l | 2.0 | -- |
| Bromomethane | ND | | ug/l | 2.0 | -- |
| Vinyl chloride | ND | | ug/l | 1.0 | -- |
| Chloroethane | ND | | ug/l | 2.0 | -- |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | -- |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Trichloroethene | ND | | ug/l | 1.0 | -- |
| 1,2-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,3-Dichlorobenzene | ND | | ug/l | 1.0 | -- |
| 1,4-Dichlorobenzene | ND | | ug/l | 1.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775
**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/22/10 10:27
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 09-11 Batch: WG439128-3 | | | | | |
| Methyl tert butyl ether | ND | | ug/l | 2.0 | -- |
| p/m-Xylene | ND | | ug/l | 2.0 | -- |
| o-Xylene | ND | | ug/l | 1.0 | -- |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | -- |
| Dibromomethane | ND | | ug/l | 2.0 | -- |
| 1,2,3-Trichloropropane | ND | | ug/l | 2.0 | -- |
| Styrene | ND | | ug/l | 1.0 | -- |
| Dichlorodifluoromethane | ND | | ug/l | 2.0 | -- |
| Acetone | ND | | ug/l | 5.0 | -- |
| Carbon disulfide | ND | | ug/l | 2.0 | -- |
| 2-Butanone | ND | | ug/l | 5.0 | -- |
| 4-Methyl-2-pentanone | ND | | ug/l | 5.0 | -- |
| 2-Hexanone | ND | | ug/l | 5.0 | -- |
| Bromochloromethane | ND | | ug/l | 2.0 | -- |
| Tetrahydrofuran | ND | | ug/l | 10 | -- |
| 2,2-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromoethane | ND | | ug/l | 2.0 | -- |
| 1,3-Dichloropropane | ND | | ug/l | 2.0 | -- |
| 1,1,1,2-Tetrachloroethane | ND | | ug/l | 1.0 | -- |
| Bromobenzene | ND | | ug/l | 2.0 | -- |
| n-Butylbenzene | ND | | ug/l | 2.0 | -- |
| sec-Butylbenzene | ND | | ug/l | 2.0 | -- |
| tert-Butylbenzene | ND | | ug/l | 2.0 | -- |
| o-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| p-Chlorotoluene | ND | | ug/l | 2.0 | -- |
| 1,2-Dibromo-3-chloropropane | ND | | ug/l | 2.0 | -- |
| Hexachlorobutadiene | ND | | ug/l | 0.60 | -- |
| Isopropylbenzene | ND | | ug/l | 2.0 | -- |
| p-Isopropyltoluene | ND | | ug/l | 2.0 | -- |
| Naphthalene | ND | | ug/l | 2.0 | -- |
| n-Propylbenzene | ND | | ug/l | 2.0 | -- |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 97,8260B
Analytical Date: 10/22/10 10:27
Analyst: MM

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab for sample(s): 09-11 Batch: WG439128-3 | | | | | |
| 1,2,3-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trichlorobenzene | ND | | ug/l | 2.0 | -- |
| 1,3,5-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| 1,2,4-Trimethylbenzene | ND | | ug/l | 2.0 | -- |
| Ethyl ether | ND | | ug/l | 2.0 | -- |
| Isopropyl Ether | ND | | ug/l | 2.0 | -- |
| Ethyl-Tert-Butyl-Ether | ND | | ug/l | 2.0 | -- |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 2.0 | -- |
| 1,4-Dioxane | ND | | ug/l | 250 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 115 | | 70-130 |
| Toluene-d8 | 83 | | 70-130 |
| 4-Bromofluorobenzene | 84 | | 70-130 |
| Dibromofluoromethane | 122 | | 70-130 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG437326-1 WG437326-2 | | | | | | | | |
| Methylene chloride | 106 | | 100 | | 70-130 | 6 | | 20 |
| 1,1-Dichloroethane | 100 | | 99 | | 70-130 | 1 | | 20 |
| Chloroform | 94 | | 96 | | 70-130 | 2 | | 20 |
| Carbon tetrachloride | 89 | | 95 | | 70-130 | 7 | | 20 |
| 1,2-Dichloropropane | 107 | | 103 | | 70-130 | 4 | | 20 |
| Dibromochloromethane | 102 | | 101 | | 70-130 | 1 | | 20 |
| 1,1,2-Trichloroethane | 110 | | 107 | | 70-130 | 3 | | 20 |
| Tetrachloroethene | 108 | | 106 | | 70-130 | 2 | | 20 |
| Chlorobenzene | 99 | | 96 | | 70-130 | 3 | | 20 |
| Trichlorofluoromethane | 109 | | 105 | | 70-130 | 4 | | 20 |
| 1,2-Dichloroethane | 102 | | 100 | | 70-130 | 2 | | 20 |
| 1,1,1-Trichloroethane | 91 | | 94 | | 70-130 | 3 | | 20 |
| Bromodichloromethane | 92 | | 90 | | 70-130 | 2 | | 20 |
| trans-1,3-Dichloropropene | 112 | | 105 | | 70-130 | 6 | | 20 |
| cis-1,3-Dichloropropene | 102 | | 100 | | 70-130 | 2 | | 20 |
| 1,1-Dichloropropene | 96 | | 98 | | 70-130 | 2 | | 20 |
| Bromoform | 102 | | 101 | | 70-130 | 1 | | 20 |
| 1,1,2,2-Tetrachloroethane | 113 | | 108 | | 70-130 | 5 | | 20 |
| Benzene | 102 | | 102 | | 70-130 | 0 | | 20 |
| Toluene | 101 | | 99 | | 70-130 | 2 | | 20 |
| Ethylbenzene | 104 | | 100 | | 70-130 | 4 | | 20 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG437326-1 WG437326-2 | | | | | | | | |
| Chloromethane | 110 | | 105 | | 70-130 | 5 | | 20 |
| Bromomethane | 106 | | 101 | | 70-130 | 5 | | 20 |
| Vinyl chloride | 94 | | 96 | | 70-130 | 2 | | 20 |
| Chloroethane | 98 | | 95 | | 70-130 | 3 | | 20 |
| 1,1-Dichloroethene | 99 | | 102 | | 70-130 | 3 | | 20 |
| trans-1,2-Dichloroethene | 101 | | 96 | | 70-130 | 5 | | 20 |
| Trichloroethene | 94 | | 95 | | 70-130 | 1 | | 20 |
| 1,2-Dichlorobenzene | 103 | | 102 | | 70-130 | 1 | | 20 |
| 1,3-Dichlorobenzene | 102 | | 101 | | 70-130 | 1 | | 20 |
| 1,4-Dichlorobenzene | 105 | | 102 | | 70-130 | 3 | | 20 |
| Methyl tert butyl ether | 96 | | 86 | | 70-130 | 11 | | 20 |
| p/m-Xylene | 107 | | 104 | | 70-130 | 3 | | 20 |
| o-Xylene | 103 | | 101 | | 70-130 | 2 | | 20 |
| cis-1,2-Dichloroethene | 101 | | 99 | | 70-130 | 2 | | 20 |
| Dibromomethane | 112 | | 111 | | 70-130 | 1 | | 20 |
| 1,2,3-Trichloropropane | 102 | | 101 | | 70-130 | 1 | | 20 |
| Styrene | 99 | | 96 | | 70-130 | 3 | | 20 |
| Dichlorodifluoromethane | 120 | | 115 | | 70-130 | 4 | | 20 |
| Acetone | **157** | Q | **134** | Q | 70-130 | 16 | | 20 |
| Carbon disulfide | 84 | | 87 | | 70-130 | 4 | | 20 |
| 2-Butanone | 121 | | 110 | | 70-130 | 10 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG437326-1 WG437326-2 | | | | | | | | |
| 4-Methyl-2-pentanone | 110 | | 104 | | 70-130 | 6 | | 20 |
| 2-Hexanone | 107 | | 97 | | 70-130 | 10 | | 20 |
| Bromochloromethane | 107 | | 104 | | 70-130 | 3 | | 20 |
| Tetrahydrofuran | 103 | | 95 | | 70-130 | 8 | | 20 |
| 2,2-Dichloropropane | 94 | | 93 | | 70-130 | 1 | | 20 |
| 1,2-Dibromoethane | 105 | | 99 | | 70-130 | 6 | | 20 |
| 1,3-Dichloropropane | 109 | | 103 | | 70-130 | 6 | | 20 |
| 1,1,1,2-Tetrachloroethane | 99 | | 98 | | 70-130 | 1 | | 20 |
| Bromobenzene | 103 | | 102 | | 70-130 | 1 | | 20 |
| n-Butylbenzene | 116 | | 112 | | 70-130 | 4 | | 20 |
| sec-Butylbenzene | 105 | | 104 | | 70-130 | 1 | | 20 |
| tert-Butylbenzene | 102 | | 102 | | 70-130 | 0 | | 20 |
| o-Chlorotoluene | 100 | | 99 | | 70-130 | 1 | | 20 |
| p-Chlorotoluene | 100 | | 100 | | 70-130 | 0 | | 20 |
| 1,2-Dibromo-3-chloropropane | 106 | | 108 | | 70-130 | 2 | | 20 |
| Hexachlorobutadiene | 116 | | 112 | | 70-130 | 4 | | 20 |
| Isopropylbenzene | 100 | | 97 | | 70-130 | 3 | | 20 |
| p-Isopropyltoluene | 114 | | 110 | | 70-130 | 4 | | 20 |
| Naphthalene | 99 | | 94 | | 70-130 | 5 | | 20 |
| n-Propylbenzene | 103 | | 104 | | 70-130 | 1 | | 20 |
| 1,2,3-Trichlorobenzene | 109 | | 104 | | 70-130 | 5 | | 20 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG437326-1 WG437326-2 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 110 | | 101 | | 70-130 | 9 | | 20 |
| 1,3,5-Trimethylbenzene | 105 | | 102 | | 70-130 | 3 | | 20 |
| 1,2,4-Trimethylbenzene | 108 | | 106 | | 70-130 | 2 | | 20 |
| Ethyl ether | 106 | | 96 | | 70-130 | 10 | | 20 |
| Isopropyl Ether | 93 | | 89 | | 70-130 | 4 | | 20 |
| Ethyl-Tert-Butyl-Ether | 97 | | 85 | | 70-130 | 13 | | 20 |
| Tertiary-Amyl Methyl Ether | 111 | | 100 | | 70-130 | 10 | | 20 |
| 1,4-Dioxane | **142** | Q | 121 | | 70-130 | 16 | | 20 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | | 101 | | 70-130 |
| Toluene-d8 | 104 | | 105 | | 70-130 |
| 4-Bromofluorobenzene | 94 | | 99 | | 70-130 |
| Dibromofluoromethane | 102 | | 102 | | 70-130 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 08 Batch: WG437874-1 WG437874-2 | | | | | | | | |
| Methylene chloride | 98 | | 96 | | 70-130 | 2 | | 20 |
| 1,1-Dichloroethane | 94 | | 92 | | 70-130 | 2 | | 20 |
| Chloroform | 98 | | 97 | | 70-130 | 1 | | 20 |
| Carbon tetrachloride | 104 | | 100 | | 70-130 | 4 | | 20 |
| 1,2-Dichloropropane | 91 | | 92 | | 70-130 | 1 | | 20 |
| Dibromochloromethane | 94 | | 89 | | 70-130 | 5 | | 20 |
| 1,1,2-Trichloroethane | 91 | | 90 | | 70-130 | 1 | | 20 |
| Tetrachloroethene | 102 | | 100 | | 70-130 | 2 | | 20 |
| Chlorobenzene | 94 | | 89 | | 70-130 | 5 | | 20 |
| Trichlorofluoromethane | 113 | | 112 | | 70-130 | 1 | | 20 |
| 1,2-Dichloroethane | 97 | | 98 | | 70-130 | 1 | | 20 |
| 1,1,1-Trichloroethane | 102 | | 100 | | 70-130 | 2 | | 20 |
| Bromodichloromethane | 99 | | 99 | | 70-130 | 0 | | 20 |
| trans-1,3-Dichloropropene | 91 | | 92 | | 70-130 | 1 | | 20 |
| cis-1,3-Dichloropropene | 89 | | 90 | | 70-130 | 1 | | 20 |
| 1,1-Dichloropropene | 101 | | 98 | | 70-130 | 3 | | 20 |
| Bromoform | 94 | | 94 | | 70-130 | 0 | | 20 |
| 1,1,2,2-Tetrachloroethane | 90 | | 94 | | 70-130 | 4 | | 20 |
| Benzene | 97 | | 95 | | 70-130 | 2 | | 20 |
| Toluene | 96 | | 90 | | 70-130 | 6 | | 20 |
| Ethylbenzene | 100 | | 96 | | 70-130 | 4 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 08 Batch: WG437874-1 WG437874-2 | | | | | | | | |
| Chloromethane | 76 | | 72 | | 70-130 | 5 | | 20 |
| Bromomethane | 120 | | 101 | | 70-130 | 17 | | 20 |
| Vinyl chloride | 96 | | 97 | | 70-130 | 1 | | 20 |
| Chloroethane | 96 | | 86 | | 70-130 | 11 | | 20 |
| 1,1-Dichloroethene | 114 | | 112 | | 70-130 | 2 | | 20 |
| trans-1,2-Dichloroethene | 97 | | 93 | | 70-130 | 4 | | 20 |
| Trichloroethene | 100 | | 99 | | 70-130 | 1 | | 20 |
| 1,2-Dichlorobenzene | 101 | | 97 | | 70-130 | 4 | | 20 |
| 1,3-Dichlorobenzene | 102 | | 95 | | 70-130 | 7 | | 20 |
| 1,4-Dichlorobenzene | 102 | | 98 | | 70-130 | 4 | | 20 |
| Methyl tert butyl ether | 83 | | 91 | | 70-130 | 9 | | 20 |
| p/m-Xylene | 103 | | 98 | | 70-130 | 5 | | 20 |
| o-Xylene | 104 | | 100 | | 70-130 | 4 | | 20 |
| cis-1,2-Dichloroethene | 99 | | 96 | | 70-130 | 3 | | 20 |
| Dibromomethane | 88 | | 102 | | 70-130 | 15 | | 20 |
| 1,2,3-Trichloropropane | 93 | | 94 | | 70-130 | 1 | | 20 |
| Styrene | 100 | | 96 | | 70-130 | 4 | | 20 |
| Dichlorodifluoromethane | 71 | | **68** | Q | 70-130 | 4 | | 20 |
| Acetone | 108 | | 113 | | 70-130 | 5 | | 20 |
| Carbon disulfide | 97 | | 91 | | 70-130 | 6 | | 20 |
| 2-Butanone | 91 | | 91 | | 70-130 | 0 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 08 Batch: WG437874-1 WG437874-2 | | | | | | | | |
| 4-Methyl-2-pentanone | 83 | | 90 | | 70-130 | 8 | | 20 |
| 2-Hexanone | 77 | | 89 | | 70-130 | 14 | | 20 |
| Bromochloromethane | 97 | | 101 | | 70-130 | 4 | | 20 |
| Tetrahydrofuran | 80 | | 88 | | 70-130 | 10 | | 20 |
| 2,2-Dichloropropane | 105 | | 100 | | 70-130 | 5 | | 20 |
| 1,2-Dibromoethane | 89 | | 93 | | 70-130 | 4 | | 20 |
| 1,3-Dichloropropane | 88 | | 91 | | 70-130 | 3 | | 20 |
| 1,1,1,2-Tetrachloroethane | 99 | | 96 | | 70-130 | 3 | | 20 |
| Bromobenzene | 99 | | 94 | | 70-130 | 5 | | 20 |
| n-Butylbenzene | 114 | | 104 | | 70-130 | 9 | | 20 |
| sec-Butylbenzene | 107 | | 102 | | 70-130 | 5 | | 20 |
| tert-Butylbenzene | 105 | | 100 | | 70-130 | 5 | | 20 |
| o-Chlorotoluene | 100 | | 95 | | 70-130 | 5 | | 20 |
| p-Chlorotoluene | 103 | | 98 | | 70-130 | 5 | | 20 |
| 1,2-Dibromo-3-chloropropane | 92 | | 100 | | 70-130 | 8 | | 20 |
| Hexachlorobutadiene | 112 | | 102 | | 70-130 | 9 | | 20 |
| Isopropylbenzene | 103 | | 101 | | 70-130 | 2 | | 20 |
| p-Isopropyltoluene | 106 | | 100 | | 70-130 | 6 | | 20 |
| Naphthalene | 84 | | 90 | | 70-130 | 7 | | 20 |
| n-Propylbenzene | 105 | | 101 | | 70-130 | 4 | | 20 |
| 1,2,3-Trichlorobenzene | 88 | | 91 | | 70-130 | 3 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 08 Batch: WG437874-1 WG437874-2 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 91 | | 95 | | 70-130 | 4 | | 20 |
| 1,3,5-Trimethylbenzene | 104 | | 98 | | 70-130 | 6 | | 20 |
| 1,2,4-Trimethylbenzene | 104 | | 100 | | 70-130 | 4 | | 20 |
| Ethyl ether | 108 | | 109 | | 70-130 | 1 | | 20 |
| Isopropyl Ether | 86 | | 86 | | 70-130 | 0 | | 20 |
| Ethyl-Tert-Butyl-Ether | 88 | | 91 | | 70-130 | 3 | | 20 |
| Tertiary-Amyl Methyl Ether | 90 | | 97 | | 70-130 | 7 | | 20 |
| 1,4-Dioxane | 111 | | 121 | | 70-130 | 9 | | 20 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | | 100 | | 70-130 |
| Toluene-d8 | 97 | | 95 | | 70-130 |
| 4-Bromofluorobenzene | 103 | | 103 | | 70-130 |
| Dibromofluoromethane | 102 | | 101 | | 70-130 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 09-11 Batch: WG439128-1 WG439128-2 | | | | | | | | |
| Methylene chloride | 98 | | 96 | | 70-130 | 2 | | 20 |
| 1,1-Dichloroethane | 91 | | 89 | | 70-130 | 2 | | 20 |
| Chloroform | 92 | | 91 | | 70-130 | 1 | | 20 |
| Carbon tetrachloride | 100 | | 96 | | 70-130 | 4 | | 20 |
| 1,2-Dichloropropane | 87 | | 82 | | 70-130 | 6 | | 20 |
| Dibromochloromethane | 90 | | 90 | | 70-130 | 0 | | 20 |
| 1,1,2-Trichloroethane | 82 | | 79 | | 70-130 | 4 | | 20 |
| Tetrachloroethene | 93 | | 95 | | 70-130 | 2 | | 20 |
| Chlorobenzene | 87 | | 90 | | 70-130 | 3 | | 20 |
| Trichlorofluoromethane | 122 | | 117 | | 70-130 | 4 | | 20 |
| 1,2-Dichloroethane | 100 | | 100 | | 70-130 | 0 | | 20 |
| 1,1,1-Trichloroethane | 101 | | 98 | | 70-130 | 3 | | 20 |
| Bromodichloromethane | 96 | | 93 | | 70-130 | 3 | | 20 |
| trans-1,3-Dichloropropene | 85 | | 85 | | 70-130 | 0 | | 20 |
| cis-1,3-Dichloropropene | 88 | | 86 | | 70-130 | 2 | | 20 |
| 1,1-Dichloropropene | 89 | | 88 | | 70-130 | 1 | | 20 |
| Bromoform | 95 | | 96 | | 70-130 | 1 | | 20 |
| 1,1,2,2-Tetrachloroethane | 87 | | 93 | | 70-130 | 7 | | 20 |
| Benzene | 90 | | 89 | | 70-130 | 1 | | 20 |
| Toluene | 84 | | 86 | | 70-130 | 2 | | 20 |
| Ethylbenzene | 91 | | 91 | | 70-130 | 0 | | 20 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 09-11 Batch: WG439128-1 WG439128-2 | | | | | | | | |
| Chloromethane | 93 | | 86 | | 70-130 | 8 | | 20 |
| Bromomethane | 120 | | 105 | | 70-130 | 13 | | 20 |
| Vinyl chloride | 113 | | 108 | | 70-130 | 5 | | 20 |
| Chloroethane | 122 | | 120 | | 70-130 | 2 | | 20 |
| 1,1-Dichloroethene | **133** | Q | 129 | | 70-130 | 3 | | 20 |
| trans-1,2-Dichloroethene | 89 | | 89 | | 70-130 | 0 | | 20 |
| Trichloroethene | 94 | | 91 | | 70-130 | 3 | | 20 |
| 1,2-Dichlorobenzene | 88 | | 96 | | 70-130 | 9 | | 20 |
| 1,3-Dichlorobenzene | 89 | | 96 | | 70-130 | 8 | | 20 |
| 1,4-Dichlorobenzene | 86 | | 93 | | 70-130 | 8 | | 20 |
| Methyl tert butyl ether | 89 | | 84 | | 70-130 | 6 | | 20 |
| p/m-Xylene | 94 | | 96 | | 70-130 | 2 | | 20 |
| o-Xylene | 96 | | 96 | | 70-130 | 0 | | 20 |
| cis-1,2-Dichloroethene | 98 | | 96 | | 70-130 | 2 | | 20 |
| Dibromomethane | 92 | | 89 | | 70-130 | 3 | | 20 |
| 1,2,3-Trichloropropane | 82 | | 91 | | 70-130 | 10 | | 20 |
| Styrene | 96 | | 97 | | 70-130 | 1 | | 20 |
| Dichlorodifluoromethane | **60** | Q | **58** | Q | 70-130 | 3 | | 20 |
| Acetone | 120 | | 103 | | 70-130 | 15 | | 20 |
| Carbon disulfide | 100 | | 101 | | 70-130 | 1 | | 20 |
| 2-Butanone | 98 | | 98 | | 70-130 | 0 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 09-11 Batch: WG439128-1 WG439128-2 | | | | | | | | |
| 4-Methyl-2-pentanone | 95 | | 93 | | 70-130 | 2 | | 20 |
| 2-Hexanone | 81 | | 83 | | 70-130 | 2 | | 20 |
| Bromochloromethane | 100 | | 101 | | 70-130 | 1 | | 20 |
| Tetrahydrofuran | 87 | | 89 | | 70-130 | 2 | | 20 |
| 2,2-Dichloropropane | 98 | | 95 | | 70-130 | 3 | | 20 |
| 1,2-Dibromoethane | 86 | | 89 | | 70-130 | 3 | | 20 |
| 1,3-Dichloropropane | 88 | | 86 | | 70-130 | 2 | | 20 |
| 1,1,1,2-Tetrachloroethane | 99 | | 101 | | 70-130 | 2 | | 20 |
| Bromobenzene | 90 | | 96 | | 70-130 | 6 | | 20 |
| n-Butylbenzene | 85 | | 92 | | 70-130 | 8 | | 20 |
| sec-Butylbenzene | 83 | | 90 | | 70-130 | 8 | | 20 |
| tert-Butylbenzene | 85 | | 92 | | 70-130 | 8 | | 20 |
| o-Chlorotoluene | 83 | | 90 | | 70-130 | 8 | | 20 |
| p-Chlorotoluene | 83 | | 91 | | 70-130 | 9 | | 20 |
| 1,2-Dibromo-3-chloropropane | 81 | | 88 | | 70-130 | 8 | | 20 |
| Hexachlorobutadiene | 93 | | 97 | | 70-130 | 4 | | 20 |
| Isopropylbenzene | 92 | | 94 | | 70-130 | 2 | | 20 |
| p-Isopropyltoluene | 87 | | 95 | | 70-130 | 9 | | 20 |
| Naphthalene | 82 | | 86 | | 70-130 | 5 | | 20 |
| n-Propylbenzene | 83 | | 91 | | 70-130 | 9 | | 20 |
| 1,2,3-Trichlorobenzene | 95 | | 102 | | 70-130 | 7 | | 20 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 09-11 Batch: WG439128-1 WG439128-2 | | | | | | | | |
| 1,2,4-Trichlorobenzene | 92 | | 100 | | 70-130 | 8 | | 20 |
| 1,3,5-Trimethylbenzene | 102 | | 110 | | 70-130 | 8 | | 20 |
| 1,2,4-Trimethylbenzene | 89 | | 95 | | 70-130 | 7 | | 20 |
| Ethyl ether | **138** | Q | 130 | | 70-130 | 6 | | 20 |
| Isopropyl Ether | 80 | | 78 | | 70-130 | 3 | | 20 |
| Ethyl-Tert-Butyl-Ether | 90 | | 86 | | 70-130 | 5 | | 20 |
| Tertiary-Amyl Methyl Ether | 98 | | 93 | | 70-130 | 5 | | 20 |
| 1,4-Dioxane | 130 | | 105 | | 70-130 | **21** | Q | 20 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | | 92 | | 70-130 |
| Toluene-d8 | 89 | | 89 | | 70-130 |
| 4-Bromofluorobenzene | 84 | | 87 | | 70-130 |
| Dibromofluoromethane | 107 | | 98 | | 70-130 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG437326-4 WG437326-5 QC Sample: L1015775-01 Client ID: MW-006-100510 | | | | | | | | | | | | |
| Methylene chloride | ND | 10 | 11 | 110 | | 11 | 108 | | 70-130 | 0 | | 20 |
| 1,1-Dichloroethane | ND | 10 | 12 | 116 | | 11 | 111 | | 70-130 | 9 | | 20 |
| Chloroform | ND | 10 | 11 | 114 | | 11 | 106 | | 70-130 | 0 | | 20 |
| Carbon tetrachloride | ND | 10 | 12 | 120 | | 11 | 114 | | 70-130 | 9 | | 20 |
| 1,2-Dichloropropane | ND | 10 | 11 | 113 | | 11 | 109 | | 70-130 | 0 | | 20 |
| Dibromochloromethane | ND | 10 | 11 | 110 | | 11 | 112 | | 70-130 | 0 | | 20 |
| 1,1,2-Trichloroethane | ND | 10 | 11 | 107 | | 12 | 116 | | 70-130 | 9 | | 20 |
| Tetrachloroethene | ND | 10 | 12 | 119 | | 11 | 114 | | 70-130 | 9 | | 20 |
| Chlorobenzene | ND | 10 | 10 | 103 | | 10 | 104 | | 70-130 | 0 | | 20 |
| Trichlorofluoromethane | ND | 10 | 14 | **137** | Q | 12 | 125 | | 70-130 | 15 | | 20 |
| 1,2-Dichloroethane | ND | 10 | 11 | 112 | | 11 | 109 | | 70-130 | 0 | | 20 |
| 1,1,1-Trichloroethane | ND | 10 | 11 | 114 | | 11 | 108 | | 70-130 | 0 | | 20 |
| Bromodichloromethane | ND | 10 | 11 | 107 | | 10 | 104 | | 70-130 | 10 | | 20 |
| trans-1,3-Dichloropropene | ND | 10 | 11 | 112 | | 11 | 114 | | 70-130 | 0 | | 20 |
| cis-1,3-Dichloropropene | ND | 10 | 10 | 102 | | 10 | 102 | | 70-130 | 0 | | 20 |
| 1,1-Dichloropropene | ND | 10 | 12 | 116 | | 11 | 110 | | 70-130 | 9 | | 20 |
| Bromoform | ND | 10 | 11 | 107 | | 11 | 108 | | 70-130 | 0 | | 20 |
| 1,1,2,2-Tetrachloroethane | ND | 10 | 11 | 109 | | 11 | 110 | | 70-130 | 0 | | 20 |
| Benzene | ND | 10 | 12 | 117 | | 11 | 112 | | 70-130 | 9 | | 20 |
| Toluene | ND | 10 | 11 | 111 | | 11 | 109 | | 70-130 | 0 | | 20 |
| Ethylbenzene | ND | 10 | 11 | 114 | | 11 | 112 | | 70-130 | 0 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG437326-4 WG437326-5 QC Sample: L1015775-01 Client ID: MW-006-100510

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | ND | 10 | 12 | 116 | | 11 | 110 | | 70-130 | 9 | | 20 |
| Bromomethane | ND | 10 | 6.3 | **63** | Q | 7.8 | 78 | | 70-130 | **21** | Q | 20 |
| Vinyl chloride | ND | 10 | 12 | 119 | | 12 | 115 | | 70-130 | 0 | | 20 |
| Chloroethane | ND | 10 | 12 | 117 | | 10 | 105 | | 70-130 | 18 | | 20 |
| 1,1-Dichloroethene | ND | 10 | 12 | 122 | | 11 | 114 | | 70-130 | 9 | | 20 |
| trans-1,2-Dichloroethene | ND | 10 | 11 | 113 | | 11 | 110 | | 70-130 | 0 | | 20 |
| Trichloroethene | ND | 10 | 10 | 105 | | 10 | 105 | | 70-130 | 0 | | 20 |
| 1,2-Dichlorobenzene | ND | 10 | 10 | 101 | | 9.8 | 98 | | 70-130 | 2 | | 20 |
| 1,3-Dichlorobenzene | ND | 10 | 10 | 104 | | 9.9 | 99 | | 70-130 | 1 | | 20 |
| 1,4-Dichlorobenzene | ND | 10 | 10 | 102 | | 9.9 | 99 | | 70-130 | 1 | | 20 |
| Methyl tert butyl ether | ND | 10 | 8.9 | 89 | | 8.6 | 86 | | 70-130 | 3 | | 20 |
| p/m-Xylene | ND | 20 | 23 | 116 | | 23 | 114 | | 70-130 | 0 | | 20 |
| o-Xylene | ND | 20 | 22 | 113 | | 22 | 108 | | 70-130 | 0 | | 20 |
| cis-1,2-Dichloroethene | ND | 10 | 12 | 119 | | 11 | 111 | | 70-130 | 9 | | 20 |
| Dibromomethane | ND | 10 | 12 | 117 | | 12 | 122 | | 70-130 | 0 | | 20 |
| 1,2,3-Trichloropropane | ND | 10 | 10 | 101 | | 9.8 | 98 | | 70-130 | 2 | | 20 |
| Styrene | ND | 20 | 22 | 108 | | 21 | 105 | | 70-130 | 5 | | 20 |
| Dichlorodifluoromethane | ND | 10 | 14 | **144** | Q | 13 | **134** | Q | 70-130 | 7 | | 20 |
| Acetone | 5.6 | 10 | 15 | 97 | | 16 | 102 | | 70-130 | 6 | | 20 |
| Carbon disulfide | ND | 10 | 11 | 110 | | 10 | 103 | | 70-130 | 10 | | 20 |
| 2-Butanone | ND | 10 | 9.5 | 95 | | 11 | 108 | | 70-130 | 15 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG437326-4 WG437326-5 QC Sample: L1015775-01 Client ID: MW-006-100510 | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | ND | 10 | 8.5 | 85 | | 7.8 | 78 | | 70-130 | 9 | | 20 |
| 2-Hexanone | ND | 10 | 8.9 | 90 | | 9.5 | 95 | | 70-130 | 7 | | 20 |
| Bromochloromethane | ND | 10 | 11 | 113 | | 11 | 108 | | 70-130 | 0 | | 20 |
| Tetrahydrofuran | ND | 10 | ND | **0** | Q | ND | **0** | Q | 70-130 | NC | | 20 |
| 2,2-Dichloropropane | ND | 10 | 10 | 102 | | 9.6 | 96 | | 70-130 | 4 | | 20 |
| 1,2-Dibromoethane | ND | 10 | 10 | 105 | | 11 | 106 | | 70-130 | 10 | | 20 |
| 1,3-Dichloropropane | ND | 10 | 11 | 108 | | 11 | 107 | | 70-130 | 0 | | 20 |
| 1,1,1,2-Tetrachloroethane | ND | 10 | 11 | 107 | | 11 | 111 | | 70-130 | 0 | | 20 |
| Bromobenzene | ND | 10 | 10 | 106 | | 9.9 | 99 | | 70-130 | 1 | | 20 |
| n-Butylbenzene | ND | 10 | 9.0 | 90 | | 8.6 | 86 | | 70-130 | 5 | | 20 |
| sec-Butylbenzene | ND | 10 | 11 | 109 | | 10 | 103 | | 70-130 | 10 | | 20 |
| tert-Butylbenzene | ND | 10 | 11 | 107 | | 10 | 102 | | 70-130 | 10 | | 20 |
| o-Chlorotoluene | ND | 10 | 10 | 106 | | 10 | 100 | | 70-130 | 0 | | 20 |
| p-Chlorotoluene | ND | 10 | 10 | 104 | | 9.9 | 99 | | 70-130 | 1 | | 20 |
| 1,2-Dibromo-3-chloropropane | ND | 10 | 12 | 121 | | 10 | 106 | | 70-130 | 18 | | 20 |
| Hexachlorobutadiene | ND | 10 | 10 | 104 | | 10 | 103 | | 70-130 | 0 | | 20 |
| Isopropylbenzene | ND | 10 | 11 | 108 | | 11 | 107 | | 70-130 | 0 | | 20 |
| p-Isopropyltoluene | ND | 10 | 11 | 112 | | 11 | 107 | | 70-130 | 0 | | 20 |
| Naphthalene | ND | 10 | 7.7 | 77 | | 7.8 | 78 | | 70-130 | 1 | | 20 |
| n-Propylbenzene | ND | 10 | 11 | 111 | | 10 | 105 | | 70-130 | 10 | | 20 |
| 1,2,3-Trichlorobenzene | ND | 10 | 8.6 | 86 | | 9.0 | 90 | | 70-130 | 5 | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG437326-4 WG437326-5 QC Sample: L1015775-01 Client ID: MW-006-100510

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 10 | 8.5 | 86 | | 8.8 | 88 | | 70-130 | 3 | | 20 |
| 1,3,5-Trimethylbenzene | ND | 10 | 10 | 102 | | 9.7 | 97 | | 70-130 | 3 | | 20 |
| 1,2,4-Trimethylbenzene | ND | 10 | 11 | 111 | | 10 | 103 | | 70-130 | 10 | | 20 |
| Ethyl ether | ND | 10 | 9.9 | 99 | | 9.7 | 97 | | 70-130 | 2 | | 20 |
| Isopropyl Ether | ND | 10 | 9.2 | 92 | | 9.2 | 92 | | 70-130 | 0 | | 20 |
| Ethyl-Tert-Butyl-Ether | ND | 10 | 8.7 | 87 | | 8.8 | 88 | | 70-130 | 1 | | 20 |
| Tertiary-Amyl Methyl Ether | ND | 10 | 10 | 102 | | 10 | 102 | | 70-130 | 0 | | 20 |
| 1,4-Dioxane | ND | 1000 | 1100 | 111 | | 1100 | 113 | | 70-130 | 0 | | 20 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | | 104 | | 70-130 |
| 4-Bromofluorobenzene | 93 | | 93 | | 70-130 |
| Dibromofluoromethane | 104 | | 108 | | 70-130 |
| Toluene-d8 | 103 | | 104 | | 70-130 |

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-01 | Date Collected: | 10/05/10 09:50 |
| Client ID: | MW-006-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 13:42 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.023 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 91 | | 30-150 |
| Decachlorobiphenyl | 87 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-02 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 14:13 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.023 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 94 | | 30-150 |
| Decachlorobiphenyl | 45 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-02 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 14:13 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1242 | 0.038 | | ug/l | 0.023 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 94 | 30-150 |
| Decachlorobiphenyl | 45 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-03 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 DUP | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 14:43 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.022 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 94 | | 30-150 |
| Decachlorobiphenyl | 44 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-05 | Date Collected: | 10/05/10 14:11 |
| Client ID: | MW-04A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 15:14 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.021 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 100 | | 30-150 |
| Decachlorobiphenyl | 99 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-06 | Date Collected: | 10/05/10 17:34 |
| Client ID: | MW-07A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 15:44 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.021 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 82 | | 30-150 |
| Decachlorobiphenyl | 87 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-07 | Date Collected: | 10/05/10 14:05 |
| Client ID: | MW-005-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 16:15 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.022 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.022 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 93 | 30-150 |
| Decachlorobiphenyl | 88 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-08 | Date Collected: | 10/05/10 17:45 |
| Client ID: | EB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/12/10 10:43 |
| Analytical Date: | 11/04/10 16:45 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.023 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.023 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 96 | | 30-150 |
| Decachlorobiphenyl | 90 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-09 | Date Collected: | 10/20/10 13:45 |
| Client ID: | MW-001-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/26/10 08:49 |
| Analytical Date: | 11/04/10 17:46 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.021 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 85 | 30-150 |
| Decachlorobiphenyl | 99 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015775-10 | Date Collected: | 10/20/10 17:45 |
| Client ID: | EB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/26/10 08:49 |
| Analytical Date: | 11/04/10 18:17 | | |
| Analyst: | JS | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab | | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1221 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1232 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1242 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1248 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1254 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1260 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1262 | ND | | ug/l | 0.021 | -- | 1 |
| Aroclor 1268 | ND | | ug/l | 0.021 | -- | 1 |

| | | |
|---|---|---|
| Tetrachloro-meta-Xylene | 89 | 30-150 |
| Decachlorobiphenyl | 101 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/04/10 13:12
Analyst: JS

Extraction Method: EPA 3510C
Extraction Date: 10/12/10 10:43

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab for sample(s): 01-03,05-08 Batch: WG436869-1 | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.020 | -- |
| Aroclor 1221 | ND | | ug/l | 0.020 | -- |
| Aroclor 1232 | ND | | ug/l | 0.020 | -- |
| Aroclor 1242 | ND | | ug/l | 0.020 | -- |
| Aroclor 1248 | ND | | ug/l | 0.020 | -- |
| Aroclor 1254 | ND | | ug/l | 0.020 | -- |
| Aroclor 1260 | ND | | ug/l | 0.020 | -- |
| Aroclor 1262 | ND | | ug/l | 0.020 | -- |
| Aroclor 1268 | ND | | ug/l | 0.020 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 101 | | 30-150 |
| Decachlorobiphenyl | 103 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 11/04/10 17:16
Analyst: JS

Extraction Method: EPA 3510C
Extraction Date: 10/26/10 08:49

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab for sample(s): 09-10 Batch: WG439376-1 | | | | | |
| Aroclor 1016 | ND | | ug/l | 0.020 | -- |
| Aroclor 1221 | ND | | ug/l | 0.020 | -- |
| Aroclor 1232 | ND | | ug/l | 0.020 | -- |
| Aroclor 1242 | ND | | ug/l | 0.020 | -- |
| Aroclor 1248 | ND | | ug/l | 0.020 | -- |
| Aroclor 1254 | ND | | ug/l | 0.020 | -- |
| Aroclor 1260 | ND | | ug/l | 0.020 | -- |
| Aroclor 1262 | ND | | ug/l | 0.020 | -- |
| Aroclor 1268 | ND | | ug/l | 0.020 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Tetrachloro-meta-Xylene | 87 | | 30-150 |
| Decachlorobiphenyl | 94 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-03,05-08 QC Batch ID: WG436869-4 WG436869-5 QC Sample: L1015775-01 Client ID: MW-006-100510 | | | | | | | | | | | | |
| Aroclor 1016 | ND | 11.1 | 11.2 | 101 | | 11.9 | 106 | | 40-140 | 6 | | 50 |
| Aroclor 1260 | ND | 11.1 | 9.21 | 83 | | 10.4 | 93 | | 40-140 | 12 | | 50 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| Decachlorobiphenyl | 86 | | 94 | | 30-150 |
| Tetrachloro-meta-Xylene | 93 | | 97 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015775
**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-03,05-08 Batch: WG436869-2 WG436869-3 | | | | | | | | |
| Aroclor 1016 | 108 | | 106 | | 40-140 | 2 | | 50 |
| Aroclor 1260 | 93 | | 93 | | 40-140 | 0 | | 50 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| Tetrachloro-meta-Xylene | 100 | | 98 | | 30-150 |
| Decachlorobiphenyl | 96 | | 105 | | 30-150 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 09-10 Batch: WG439376-2 WG439376-3 | | | | | | | | |
| Aroclor 1016 | 99 | | 100 | | 40-140 | 0 | | 50 |
| Aroclor 1260 | 84 | | 86 | | 40-140 | 2 | | 50 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| Tetrachloro-meta-Xylene | 94 | | 91 | | 30-150 |
| Decachlorobiphenyl | 93 | | 95 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-01
Client ID: MW-006-100510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 09:50
Date Received: 10/06/10
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 | 7.80 | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-02
Client ID: MW-003-100510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 10:29
Date Received: 10/06/10
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 | 31.4 | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-03
Client ID: MW-003-100510 DUP
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 10:29
Date Received: 10/06/10
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 | 32.3 | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-05
Client ID: MW-04A-100510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 14:11
Date Received: 10/06/10
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 | ND | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-06
Client ID: MW-07A-100510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 17:34
Date Received: 10/06/10
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 | 1.00 | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-07
Client ID: MW-005-100510
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/05/10 14:05
Date Received: 10/06/10
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 | - | 10/12/10 07:00 | 30,2540D | NR |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## SAMPLE RESULTS

Lab ID: L1015775-09
Client ID: MW-001-102010
Sample Location: NEW BEDFORD, MA
Matrix: Water

Date Collected: 10/20/10 13:45
Date Received: 10/20/10
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 | 1.20 | | mg/l | 1.00 | NA | 1 | - | 10/25/10 16:00 | 30,2540D | ES |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015775

**Project Number:** TO-0010-03 **Report Date:** 11/08/10

# 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 Batch: WG436833-1 | | | | | | | | | | |
| Solids, Total Suspended | ND | | mg/l | 1.00 | NA | 1 | - | 10/12/10 07:00 | 30,2540D | NR |
| General Chemistry - Mansfield Lab for sample(s): 09 Batch: WG439116-1 | | | | | | | | | | |
| Solids, Total Suspended | ND | | mg/l | 1.00 | NA | 1 | - | 10/25/10 16:00 | 30,2540D | ES |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015775

**Report Date:** 11/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-03,05-07 Batch: WG436833-2 | | | | | | | | |
| Solids, Total Suspended | 103 | | - | | 80-120 | - | | 20 |
| General Chemistry - Mansfield Lab Associated sample(s): 09 Batch: WG439116-2 | | | | | | | | |
| Solids, Total Suspended | 100 | | - | | 80-120 | - | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

## 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(*) |
|---|---|---|---|---|---|---|---|
| L1015775-01B | Amber 1000ml unpreserved | A | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-01C | Amber 1000ml unpreserved | A | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-01D | Vial HCl preserved | A | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-01E | Vial HCl preserved | A | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-01F | Vial HCl preserved | A | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-01G | Plastic 1000ml unpreserved | A | 7 | 5 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-01H | Amber 1000ml unpreserved | A | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1015775-01I | Amber 1000ml unpreserved | A | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1015775-01J | Amber 1000ml unpreserved | A | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1015775-01K | Amber 1000ml unpreserved | A | 7 | 5 | Y | Absent | A2-PCB-8082(7) |
| L1015775-01L | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-01M | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-01N | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-01O | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-01P | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-01Q | Vial HCl preserved | A | N/A | 5 | Y | Absent | MCP-8260-10(14) |
| L1015775-02B | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |
| L1015775-02C | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |
| L1015775-02D | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-02E | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-02F | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-02G | Plastic 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-03B | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015775-03C | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |
| L1015775-03D | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-03E | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-03F | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-03G | Plastic 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-04D | Vial HCl preserved | A | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-04E | Vial HCl preserved | A | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-04F | Vial HCl preserved | A | N/A | 5 | NA | Absent | - |
| L1015775-05B | Amber 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-05C | Amber 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-05D | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-05E | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-05F | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-05G | Plastic 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-06B | Amber 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-06C | Amber 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-06D | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-06E | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-06F | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-06G | Plastic 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-07B | Amber 1000ml unpreserved | C | N/A | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-07C | Amber 1000ml unpreserved | C | N/A | 3 | NA | Absent | A2-PCB-8082(7) |
| L1015775-07D | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-07E | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-07F | Vial HCl preserved | C | N/A | 3 | NA | Absent | MCP-8260-10(14) |
| L1015775-07G | Plastic 1000ml unpreserved | C | 7 | 3 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-08B | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |
| L1015775-08C | Amber 1000ml unpreserved | B | 7 | 4 | NA | Absent | A2-PCB-8082(7) |
| L1015775-08D | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-08E | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-08F | Vial HCl preserved | B | N/A | 4 | NA | Absent | MCP-8260-10(14) |
| L1015775-09B | Amber 1000ml unpreserved | D | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-09C | Amber 1000ml unpreserved | D | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-09D | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-09E | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-09F | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015775
**Report Date:** 11/08/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015775-09G | Plastic 1000ml unpreserved | D | 7 | 5 | NA | Absent | A2-TSS-2540D(7) |
| L1015775-10B | Amber 1000ml unpreserved | D | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-10C | Amber 1000ml unpreserved | D | 7 | 5 | NA | Absent | A2-PCB-8082(7) |
| L1015775-10D | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-10E | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-10F | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-11D | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |
| L1015775-11E | Vial HCl preserved | D | N/A | 5 | NA | Absent | MCP-8260-10(14) |

**Container Comments**

| | |
|---|---|
| L1015775-09G | ENTIRE SAMPLE USED |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015775 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/08/10 |

## 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.

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.

***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.

**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.

**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.

**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.

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015775 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/08/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1015775 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/08/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.


## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

## Certificate/Approval Program Summary

Last revised July 19, 2010 - Westboro 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-0574. ***NELAP Accredited Solid Waste/Soil.***

*Drinking Water* (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))
*Wastewater/Non-Potable Water* (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)
*Solid Waste/Soil* (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons. )

**Maine Department of Human Services** Certificate/Lab ID: 2009024.
*Drinking Water* (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)
*Wastewater/Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624, ME DRO, ME GRO, MA EPH, MA VPH.)
*Solid Waste/Soil (*Organic Parameters: ME DRO, ME GRO, MA EPH, MA VPH.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA086.
*Drinking Water*
Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)
(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)
353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.
Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)
(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.
Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D
*Non-Potable Water*
Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)
(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Tl, V,Zn,Ca,Mg,Na,K)
245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 200307. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)
*Non-Potable Water* (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA935. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)
*Non-Potable Water* (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)
*Solid & Chemical Materials* (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

**New York Department of Health** Certificate/Lab ID: 11148. ***NELAP Accredited.***
*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)
*Non-Potable Water* (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, S\M3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)
*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources** Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
*Non-Potable Water* (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)
*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NY-DOH Certificate for Potable and Non-Potable Water.

**Texas Commisson on Environmental Quality** Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S2¯D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

**Department of Defense** Certificate/Lab ID: L2217.
*Drinking Water* (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

*Non-Potable Water* (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 120.1, 9050A , 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035, MassDEP EPH, MassDEP VPH.)

**Analytes Not Accredited by NELAP**
Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.

# CHAIN OF CUSTODY

PAGE 1 OF

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

*Filtration*
☐ Done
☐ Not needed
☐ Lab to do

*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | MW-006-100510 | 10/5/10 | 9:50 | GW | DB | X | | | | Salinity 0.25 ppt | 2 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | | X | ↓ | 1 |
| | MW-006-100510-MS | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510-MSD | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/6/10 1245 | P. Gillett | 10/6/10 12:45 |
| P. Gillett | 10/6/10 1615 | [illegible] | 10/6/10 1611 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial_No:11081017:27

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -2 | MW-003-100510 | 10/5/10 | 10:29 | GW | MW | X | | | | Salinity = 2.87 ppt | 2 |
| | MW-003-100510 | | | | | | X | | | | 3 |
| | MW-003-100510 | | | | | | | X | | | 1 |
| | MW-003-100510 | | | | | | | | X | | 1 |
| -3 | MW-003-100510-DUP | | | | | X | | | | | 2 |
| | MW-003-100510-DUP | | | | | | X | | | | 3 |
| | MW-003-100510-DUP | | | | | | | X | | | 1 |
| | MW-003-100510-DUP | | | | | | | | X | | 1 |
| -4 | TB-100510 | | 17:45 | | | | X | | | Air bubble found in 1 trip blank from lab | 2 |
| 5 | MW-04A-100510 | | 14:11 | | | X | | | | Salinity - 1.31 ppt | 2 |

| | | | | |
|---|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Mary Walsh | 10/6/10 1745 | P. Gillard | 10/6/10 12:45 |
| P. Gillard | 10/6/10 1615 | [illegible] | 10/6/10 1615 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial_No:11081017:27

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

Filtration ____
☐ Done
☐ Not needed
☐ Lab to do

Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | MW-04A-100510 | 10/5/10 | 14:11 | GW | MW | | X | | | Salinity - 1.31 ppt | 3 |
| | MW-04A-100510 | | | | | | | X | | | 1 |
| | MW-04A-100510 | | | | | | | | X | | 1 |
| 6 | MW-07A-100510 | | 17:34 | | | X | | | | Salinity - 0.30 ppt | 2 |
| | MW-07A-100510 | | | | | | X | | | | 3 |
| | MW-07A-100510 | | | | | | | X | | | 1 |
| | MW-07A-100510 | | | | | | | | X | | 1 |
| 7 | MW-00S-100510 | | 14:05 | | DB | X | | | | Salinity - 1.05 ppt | 2 |
| | MW-00S-100510 | | | | | | X | | | | 3 |
| | MW-00S-100510 | | | | | | | X | | | 1 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 10/6/10 1245 | P. Gallant | 10/6/10 12:45 |
| P. Gallant | 10/6/10 16:15 | [illegible] | 10/6/10 1615 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)



Serial_No:11081017:27

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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:

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | MW-00S-100510 | 10/5/10 | 14:05 | GW | DB | | | | X | Salinity - 1.05 | 1 |
| 8 | EB-100510 | ↓ | 17:45 | ↓ | ↓ | X | | | | | 2 |
| ↓ | EB-100510 | ↓ | 17:45 | ↓ | ↓ | | X | | | | 3 |
| ↓ | EB-100510 | ↓ | 17:45 | ↓ | ↓ | | | X | | | 1 |

| | | | | |
|---|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | A | A |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/6/10 1245 | P. Gilbert | 10/6/10 1245 |
| P. Gilbert | 10/6/10 16:15 | [illegible] | 10/6/10 1615 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial_No:11081017:27

# CHAIN OF CUSTODY

PAGE 1 OF

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-006-100510 | 10/5/10 | 9:50 | GW | DB | X | | | | Salinity 0.25 ppt | 2 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | | X | ↓ | 1 |
| | MW-006-100510-MS | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510-MSD | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/6/10 1245 | P. Gillett | 10/6/10 12:45 |
| P. Gillett | 10/6/10 1615 | [illegible] | 10/6/10 1611 |
| [illegible] | 10/8/10 1500 | P. Gillett | 10/8/10 17:00 |
| P. Gillett | 10/8/10 18:30 | | |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

Filtration ____

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | MW-003-100510 | 10/5/10 | 10:29 | GW | MW | X | | | | Salinity = 2.87 ppt | 2 |
| | MW-003-100510 | | | | | | X | | | | 3 |
| | MW-003-100510 | | | | | | | X | | | 1 |
| | MW-003-100510 | | | | | | | | X | | 1 |
| 3 | MW-003-100510-DUP | | | | | X | | | | | 2 |
| | MW-003-100510-DUP | | | | | | X | | | | 3 |
| | MW-003-100510-DUP | | | | | | | X | | | 1 |
| | MW-003-100510-DUP | | | | | | | | X | | 1 |
| 4 | TB-100510 | | 17:45 | | | | X | | | *Air bubble found in 1 trip blank from lab | 2 |
| 5 | MW-04A-100510 | | 14:11 | | | X | | | | Salinity - 1.31 ppt | 2 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 10/6/10 1745 | P. Gillett | 10/6/10 17:45 |
| P. Gillett | 10/6/10 16:15 | [signature] | 10/6/10 1611 |
| [signature] | 10/8/10 1500 | P. Gillett | 10/8/10 17:00 |
| P. Gillett | 10/8/10 18:30 | | |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# CHAIN OF CUSTODY

PAGE 3 OF ____

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | MW-04A-100510 | 10/5/10 | 14:11 | GW | MW | | X | | | Salinity - 1.31 ppt | 3 |
| | MW-04A-100510 | | | | | | | X | | | 1 |
| 4 | MW-04A-100510 | | | | | | | X | | | 1 |
| 6 | MW-07A-100510 | | 17:34 | | | X | | | | Salinity - 0.30 ppt | 2 |
| | MW-07A-100510 | | | | | | X | | | | 3 |
| | MW-07A-100510 | | | | | | | X | | | 1 |
| 7 | MW-07A-100510 | | | | | | | X | | | 1 |
| 7 | MW-00S-100510 | | 14:05 | | DB | X | | | | Salinity - 1.05 ppt | 2 |
| | MW-00S-100510 | | | | | | X | | | | 3 |
| | MW-00S-100510 | | | | | | | X | | | 1 |

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 10/6/10 1245 | P. Gillett | 10/6/10 12:45 |
| P. Gillett | 10/6/10 16:15 | [illegible] | 10/6/10 1615 |
| [illegible] | 10/8/10 1500 | P. Gillett | 10/8/10 17:00 |
| P. Gillett | 10/8/10 18:30 | | |

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.

FORM NO: 01-01 (rev. 14-OCT-07)



Serial_No:11081017:27

# CHAIN OF CUSTODY

PAGE 4 OF ____

ALPHA LABORATORIES

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: ____ ALPHA Job #: L1015775

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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:

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | MW-005-100510 | 10/5/10 | 14:05 | GW | DB | | | | X | Salinity - 1.05 | 1 |
| 8 | EB-100510 | ↓ | 17:45 | ↓ | ↓ | X | | | | | 2 |
| | EB-100510 | | 17:45 | | | | X | | | | 3 |
| | EB-100510 | | 17:45 | | | | | X | | | 1 |

**SAMPLE HANDLING**

Filtration ____

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

| Container Type | A | V | P | P |
|---|---|---|---|---|
| Preservative | A | B | A | A |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Mike Walsh | 10/6/10 1245 | P. Gilbert | 10/6/10 1245 |
| P. Gilbert | 10/6/10 1615 | [illegible] | 10/6/10 1615 |
| [illegible] | 10/8/10 1500 | P. Gilbert | 10/8/10 1700 |
| P. Gilbert | 10/8/10 18:30 | | |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

L1015775

# CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: ~~L1016494~~ mr

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

L1015775

**SAMPLE HANDLING**

Filtration
☐ Done
☐ Not needed
☐ Lab to do

Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | VOC's | Metals | PCB/Pesticides | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~L1016494~~ 1 | MW-001-102010 | 10/20/10 | 1345 | GW | MW | X | | | | | 3 |
| 9 | MW-001-102010 | | 1345 | | | | X | | | | 1 |
| | MW-001-102010 | | 1345 | | | | | X | | | 2 |
| | MW-001-102010 | | 1345 | | | | | | X | | 1 |
| 10-2 | EB-102010 | | | | | X | | | | | 3 |
| | EB-102010 | | | | | | X | | | | 1 |
| | EB-102010 | | | | | | | X | | | 1 |
| 11-3 | TB-102010 | | | | | X | | | | | 2 |

| Container Type | V | P | A | P |
|---|---|---|---|---|
| Preservative | B | C | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/20/10 1650 | [illegible] | 10/20/10 1650 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1015773 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 11/10/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015773
**Report Date:** 11/10/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1015773-01 | MW-006-100510 | NEW BEDFORD, MA | 10/05/10 09:50 |
| L1015773-02 | MW-003-100510 | NEW BEDFORD, MA | 10/05/10 10:29 |
| L1015773-03 | MW-003-100510 DUP | NEW BEDFORD, MA | 10/05/10 10:29 |
| L1015773-04 | MW-04A-100510 | NEW BEDFORD, MA | 10/05/10 14:11 |
| L1015773-05 | MW-07A-100510 | NEW BEDFORD, MA | 10/05/10 17:34 |
| L1015773-06 | MW-005-100510 | NEW BEDFORD, MA | 10/05/10 14:05 |
| L1015773-07 | EB-100510 | NEW BEDFORD, MA | 10/05/10 17:45 |
| L1015773-08 | MW-001-102010 | NEW BEDFORD, MA | 10/20/10 13:45 |
| L1015773-09 | EB-102010 | NEW BEDFORD, MA | 10/20/10 13:45 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

## 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: 11/10/10

# METALS

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-01 | Date Collected: | 10/05/10 09:50 |
| Client ID: | MW-006-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:29 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:29 | EPA 3020A | 1,6020A | LR |
| Copper, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:29 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:29 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-02 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:20 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:20 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.014 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:20 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:20 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-03 | Date Collected: | 10/05/10 10:29 |
| Client ID: | MW-003-100510 DUP | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:21 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:21 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.014 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:21 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:21 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-04 | Date Collected: | 10/05/10 14:11 |
| Client ID: | MW-04A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:22 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:22 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.005 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:22 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:22 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-05 | Date Collected: | 10/05/10 17:34 |
| Client ID: | MW-07A-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:23 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:23 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:23 | EPA 3020A | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:23 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-06 | Date Collected: | 10/05/10 14:05 |
| Client ID: | MW-005-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:24 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:24 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.003 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:24 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:24 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-07 | Date Collected: | 10/05/10 17:45 |
| Client ID: | EB-100510 | Date Received: | 10/06/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:25 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:25 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.109 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:25 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:25 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-08 | Date Collected: | 10/20/10 13:45 |
| Client ID: | MW-001-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | 0.0005 | | mg/l | 0.0005 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:56 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:56 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.002 | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:56 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.001 | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:56 | EPA 3020A | 1,6020A | LR |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1015773-09 | Date Collected: | 10/20/10 13:45 |
| Client ID: | EB-102010 | Date Received: | 10/20/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals - Mansfield Lab** | | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:49 | EPA 3020A | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:49 | EPA 3020A | 1,6020A | LR |
| Copper, Total | 0.119 | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:49 | EPA 3020A | 1,6020A | LR |
| Lead, Total | 0.003 | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:49 | EPA 3020A | 1,6020A | LR |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015773

**Project Number:** TO-0010-03 **Report Date:** 11/10/10

# Method Blank Analysis
# Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG437916-1 | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:11 | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:11 | 1,6020A | LR |
| Copper, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:11 | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 10/19/10 09:37 | 10/21/10 14:11 | 1,6020A | LR |

**Prep Information**

Digestion Method: EPA 3020A

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab for sample(s): 01-09 Batch: WG441449-1 | | | | | | | | | | |
| Cadmium, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:40 | 1,6020A | LR |
| Chromium, Total | ND | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:40 | 1,6020A | LR |
| Copper, Total | ND | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:40 | 1,6020A | LR |
| Lead, Total | ND | | mg/l | 0.001 | -- | 1 | 11/05/10 10:50 | 11/09/10 13:40 | 1,6020A | LR |

**Prep Information**

Digestion Method: EPA 3020A

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015773

**Report Date:** 11/10/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG437916-2 SRM Lot Number: S1SPIKE | | | | | | | | |
| Cadmium, Total | 102 | | - | | 80-120 | - | | 20 |
| Chromium, Total | 103 | | - | | 80-120 | - | | 20 |
| Copper, Total | 105 | | - | | 80-120 | - | | 20 |
| Lead, Total | 102 | | - | | 80-120 | - | | 20 |
| Total Metals - Mansfield Lab Associated sample(s): 01-09 Batch: WG441449-2 SRM Lot Number: S1SPIKE | | | | | | | | |
| Cadmium, Total | 99 | | - | | 80-120 | - | | 20 |
| Chromium, Total | 102 | | - | | 80-120 | - | | 20 |
| Copper, Total | 101 | | - | | 80-120 | - | | 20 |
| Lead, Total | 102 | | - | | 80-120 | - | | 20 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015773
**Report Date:** 11/10/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-07 100510 | | | QC Batch ID: WG437916-5 | | | WG437916-6 | QC Sample: L1015773-01 | | | Client ID: MW-006- | | |
| Cadmium, Total | ND | 0.5 | 0.5107 | 102 | | 0.5113 | 102 | | 75-125 | 0 | | 20 |
| Chromium, Total | ND | 1 | 1.02 | 102 | | 1.02 | 102 | | 75-125 | 0 | | 20 |
| Copper, Total | ND | 1 | 1.02 | 102 | | 1.00 | 100 | | 75-125 | 2 | | 20 |
| Lead, Total | ND | 1 | 1.02 | 102 | | 1.04 | 104 | | 75-125 | 2 | | 20 |
| Total Metals - Mansfield Lab Associated sample(s): 01-09 102010 | | | QC Batch ID: WG441449-4 | | | WG441449-5 | QC Sample: L1015773-08 | | | Client ID: MW-001- | | |
| Cadmium, Total | 0.0005 | 0.5 | 0.4914 | 98 | | 0.4936 | 99 | | 75-125 | 0 | | 20 |
| Chromium, Total | ND | 1 | 1.00 | 100 | | 1.01 | 101 | | 75-125 | 1 | | 20 |
| Copper, Total | 0.002 | 1 | 0.974 | 97 | | 0.976 | 97 | | 75-125 | 0 | | 20 |
| Lead, Total | 0.001 | 1 | 0.997 | 100 | | 0.995 | 99 | | 75-125 | 0 | | 20 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015773
**Report Date:** 11/10/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG437916-3 QC Sample: L1015773-01 Client ID: MW-006-100510 | | | | | | |
| Cadmium, Total | ND | ND | mg/l | NC | | 20 |
| Chromium, Total | ND | ND | mg/l | NC | | 20 |
| Copper, Total | ND | ND | mg/l | NC | | 20 |
| Lead, Total | ND | ND | mg/l | NC | | 20 |
| Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG441449-3 QC Sample: L1015773-08 Client ID: MW-001-102010 | | | | | | |
| Cadmium, Total | 0.0005 | 0.0005 | mg/l | 3 | | 20 |
| Chromium, Total | ND | ND | mg/l | NC | | 20 |
| Copper, Total | 0.002 | 0.002 | mg/l | 3 | | 20 |
| Lead, Total | 0.001 | ND | mg/l | NC | | 20 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

# Lab Serial Dilution Analysis
**Batch Quality Control**

**Lab Number:** L1015773
**Report Date:** 11/10/10

| Parameter | Native Sample | Serial Dilution | Units | % D | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG437916-4 QC Sample: L1015773-01 Client ID: MW-006-100510 | | | | | | |
| Cadmium, Total | ND | ND | mg/l | NC | | 10 |
| Chromium, Total | ND | ND | mg/l | NC | | 10 |
| Copper, Total | ND | ND | mg/l | NC | | 10 |
| Lead, Total | ND | ND | mg/l | NC | | 10 |
| Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG441449-6 QC Sample: L1015773-08 Client ID: MW-001-102010 | | | | | | |
| Cadmium, Total | 0.0005 | ND | mg/l | NC | | 10 |
| Chromium, Total | ND | ND | mg/l | NC | | 10 |
| Copper, Total | 0.002 | ND | mg/l | NC | | 10 |
| Lead, Total | 0.001 | ND | mg/l | NC | | 10 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015773
**Report Date:** 11/10/10

## 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(*) |
|---|---|---|---|---|---|---|---|
| L1015773-01A | Plastic 500ml HNO3 preserved | A | N/A | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-01B | Plastic 500ml HNO3 preserved | A | N/A | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-01C | Plastic 500ml HNO3 preserved | A | N/A | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-02A | Plastic 500ml HNO3 preserved | B | N/A | 4 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-03A | Plastic 500ml HNO3 preserved | B | N/A | 4 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-04A | Plastic 500ml HNO3 preserved | C | N/A | 3 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-05A | Plastic 500ml HNO3 preserved | C | N/A | 3 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-06A | Plastic 500ml HNO3 preserved | C | N/A | 3 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-07A | Plastic 500ml HNO3 preserved | B | N/A | 4 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015773
**Report Date:** 11/10/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015773-08A | Plastic 500ml HNO3 preserved | D | N/A | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |
| L1015773-09A | Plastic 500ml HNO3 preserved | D | N/A | 5 | Y | Absent | A2-PB-6020T(180),A2-CR-6020T(180),A2-CD-6020T(180),A2-PREP-3020(180),A2-CU-6020T(180) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

## 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.

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.

***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.

**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.

**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.

**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.

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1015773 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/10/10 |

## REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

## 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 July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015773

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-006-100510 | 10/5/10 | 9:50 | GW | DB | X | | | | Salinity 0.25 ppt | 2 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| -1 | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510 | ↓ | ↓ | ↓ | ↓ | | | | X | ↓ | 1 |
| | MW-006-100510-MS | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| -1 | MW-006-100510-MS | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |
| | MW-006-100510-MSD | 10/5/10 | 9:50 | GW | DB | X | | | | ↓ | 2 |
| | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | X | | | ↓ | 3 |
| -1 | MW-006-100510-MSD | ↓ | ↓ | ↓ | ↓ | | | X | | ↓ | 1 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | V | P | P | | | | | | | | | | | |
| Preservative | A | B | A | A | | | | | | | | | | | |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/6/10 1245 | P. Gillett | 10/6/10 12:45 |
| P. Gillett | 10/6/10 1615 | [illegible] | 10/6/10 1611 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)



Serial_No:11101016:31

Serial_No:11101016:31

# CHAIN OF CUSTODY

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ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015773

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-003-100510 | 10/5/10 | 10:29 | GW | MW | X | | | | Salinity = 2.87 ppt | 2 |
| | MW-003-100510 | | | | | | X | | | | 3 |
| -2 | MW-003-100510 | | | | | | | X | | | 1 |
| | MW-003-100510 | | | | | | | | X | | 1 |
| | MW-003-100510-DUP | | | | | X | | | | | 2 |
| | MW-003-100510-DUP | | | | | | X | | | | 3 |
| -3 | MW-003-100510-DUP | | | | | | | X | | | 1 |
| | MW-003-100510-DUP | | | | | | | | X | | 1 |
| | TB-100510 | | 17:45 | | | | X | | | *Air bubble found in 1 trip blank from lab | 2 |
| | MW-04A-100510 | | 14:11 | | | X | | | | Salinity - 1.31 ppt | 2 |

| | | | | |
|---|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 10/6/10 1745 | P. Gillett | 10/6/10 12:45 |
| P. Gillett | 10/6/10 16:15 | [illegible] | 10/6/10 1611 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial_No:11101016:31

# CHAIN OF CUSTODY

PAGE 3 OF ____

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015773

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**

Filtration ____

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-04A-100510 | 10/5/10 | 14:11 | GW | MW | | X | | | Salinity - 1.31 ppt | 3 |
| -4 | MW-04A-100510 | | | | | | | X | | | 1 |
| | MW-04A-100510 | | | | | | | | X | | 1 |
| | MW-07A-100510 | | 17:34 | | | X | | | | Salinity - 0.30ppt | 2 |
| | MW-07A-100510 | | | | | | X | | | | 3 |
| -5 | MW-07A-100510 | | | | | | | X | | | 1 |
| | MW-07A-100510 | | | | | | | | X | | 1 |
| | MW-00S-100510 | | 14:05 | | DB | X | | | | Salinity - 1.05ppt | 2 |
| | MW-00S-100510 | | | | | | X | | | | 3 |
| -6 | MW-00S-100510 | | | | | | | X | | | 1 |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| | | | |
|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | A | A |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [illegible] | 10/6/10 1245 | P. Gallant | 10/6/10 12:45 |
| P. Gallant | 10/6/10 16:15 | [illegible] | 10/6/10 16:15 |

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.

# CHAIN OF CUSTODY

PAGE 4 OF ____

ALPHA LABORATORIES

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015773

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor

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:

**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:

ANALYSIS: PCB Aroclors, VOCs, Metals, TSS

SAMPLE HANDLING

Filtration ____

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Aroclors | VOCs | Metals | TSS | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-00S-100510 | 10/5/10 | 14:05 | GW | DB | | | | X | Salinity - 1.05 | 1 |
| | EB-100510 | ↓ | 17:45 | ↓ | ↓ | X | | | | | 2 |
| | EB-100510 | ↓ | 17:45 | ↓ | ↓ | | X | | | | 3 |
| | EB-100510 | ↓ | 17:45 | ↓ | ↓ | | | X | | | 1 |

| | | | | |
|---|---|---|---|---|
| Container Type | A | V | P | P |
| Preservative | A | B | A | A |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 10/6/10 1245 | P. Gillett | 10/6/10 1245 |
| P. Gillett | 10/6/10 1615 | [illegible] | 10/6/10 1615 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

L1015773

# CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1016494

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: New Bedford Harbor
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: Dave WATSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

**SAMPLE HANDLING**
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | VOC's | Metals | PCB Aroclors | TSS | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 L1016494 | MW-001-102010 | 10/20/10 | 1345 | GW | MW | X | | | | | 3 |
| | MW-001-102010 | | 1345 | | | | X | | | | 1 |
| | MW-001-102010 | | 1345 | | | | | X | | | 2 |
| | MW-001-102010 | | 1345 | | | | | | X | | 1 |
| -9 | 2 EB-102010 | | | | | X | | | | | 3 |
| | EB-102010 | | | | | | X | | | | 1 |
| | EB-102010 | | | | | | | X | | | 1 |
| | 3 TB-102010 | | | | | X | | | | | 2 |

| Container Type | V | P | A | P |
|---|---|---|---|---|
| Preservative | B | C | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Timothy Walsh | 10/20/10 1650 | [illegible] | 10/20/10 1650 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# APPENDIX C: NEW ENVIRONMENTAL HORIZONS, INC. DATA VALIDATION REPORTS

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# Data Validation Report

## EPA Region I Tier I+-type
## VOCs by 8260B, PCB Aroclors by 8082, & Metals by 6020A

| | |
|---|---|
| **Client/Company:** | Woods Hole Group, Inc. (WHG) |
| **Site/Project Name:** | New Bedford Harbor Superfund Site – OU1 |
| **Laboratory:** | Alpha Analytical – Mansfield & Westborough, MA |
| **Lab Project Number(s):** | L1010361 |
| **Date(s) of Collection:** | July 8, 2010 & July 9, 2010 |
| **Number / Type Samples & Analyses for Validation:** | 7 groundwaters, 1 equipment blank (EB) and 1 trip blank (TB) for a project-specific list of Volatile Organic Compounds (VOC) by EPA SW-846 Method 8260B<br>7 groundwaters and 1 EB for Polychlorinated Biphenyl Compounds (PCB Aroclors) by EPA SW-846 Method 8082 and a project-specific list of Metals (cadmium, chromium, copper, & lead) by EPA SW-846 Method 6020A |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | August 26, 2010<br>*Revised: February 11, 2011 based on updated EB information* |

This EPA Region I Tier I+ validation for VOCs, PCB Aroclors, and Metals 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. 1.0, prepared by Woods Hole Group, Inc., October 2009 (NBH OU1 QAPP Addendum 2009); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996, including *Part II – Volatile /Semivolatile Data Validation Functional Guidelines, Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004, and *Part IV – Inorganic Data Validation Functional Guidelines*, November 2008; 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.

*34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474*
*Phone: (908) 874-5686 ◊ (781) 643-4294*
*Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net*
*www.neh-inc.com*

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 comments added based on actions taken; and
- The Data Review Checklists completed during this validation to document the Tier I+-type reviews. The Checklists are an integral part of the DV Report as they contain 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* | Sample Type |
|---|---|---|---|---|---|
| MW-07A-070809 | L1010361-01 | 7/08/10 | Groundwater | VOCs, PCBs, Metals | Field Sample |
| MW-04A-070810 | L1010361-02 | 7/08/10 | Groundwater | VOCs, PCBs, Metals | Field Sample |
| MW-04A-070810-DUP | L1010361-03 | 7/08/10 | Groundwater | VOCs, PCBs, Metals | FD of MW-04A-070810 |
| MW-005-070810 | L1010361-04 | 7/08/10 | Groundwater | VOCs, PCBs, Metals | Field Sample [used for VOC MS/MSD] |
| MW-003-070910 | L1010361-05 | 7/09/10 | Groundwater | VOCs, PCBs, Metals | Field Sample [used for PCB MS/MSD and Metals MS/MD] |
| MW-006-070910 | L1010361-06 | 7/09/10 | Groundwater | VOCs, PCBs, Metals | Field Sample |
| MW-001-070910 | L1010361-07 | 7/09/10 | Groundwater | VOCs, PCBs, Metals | Field Sample |
| EB-070910 | L1010361-08 | 7/09/10 | Aqueous | VOCs, PCBs, Metals | EB |
| TB-070910 | L1010361-09 | 7/09/10 | Aqueous | VOCs | TB |

* Analysis for Total Suspended Solids (TSS) was also performed; however, validation of this parameter was not required.

Analytical method references:

VOCs: *Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS)* in EPA's Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 8260B, Rev. 2, December 1996.

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.

Metals: *Inductively Coupled Plasma – Mass Spectrometry* in EPA's Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 6020A, Rev. 1, February 2007.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of VOCs, PCB Aroclors, and Metals sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2009 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*
- 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 VOCs, PCB Aroclors, and Metals, all results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2009 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 2009 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria.

The full documentation of all QC elements reviewed during the Tier I+ validations are presented in the attached Data Review Checklists.

**Accuracy**

No contamination was observed in the associated Method Blanks or Trip Blank. Acetone was detected in the Equipment Blank (EB-070910); however, the associated samples were all non-detect for acetone; therefore, no action was required. Copper and lead were also detected in the EB. Subsequent analysis of the lab-provided water (identified as "VOC-free water") used to generate the EB showed that it was contaminated with these two metals at levels similar to those measured in the EB, as follows:

| Metal | EB-070910<br>mg/L | Lab-Provided Water used to generate EB*<br>mg/L |
|---|---|---|
| Copper | 0.118 | 0.119 |
| Lead | 0.003 | 0.006 |

* See the lab communication attached to the revised Metals Data Validation Checklist for further information

Based on the evidence that the copper and lead contamination observed in the EB is likely due to the water used to generate the EB and not due to sample collection or handling procedural contamination, professional judgment was used to qualify associated copper and lead results as estimated (J) rather than negated, due to equipment blank action, as listed in Table 2. These estimated results have an indeterminate bias.

The LCS/LCSD for VOCs reported low recoveries for bromomethane and dichlorodifluoromethane. Therefore, the results for these two compounds in all samples were estimated (UJ) with possible low bias, unless other QC issues affected the results, as shown in Table 2.

MS/MSD analysis for VOCs was performed on sample MW-005-070810. Bromomethane recovered low compared to criteria in the MS/MSD resulting in estimation (UJ) of the unspiked sample result, as shown in Table 2. There were several additional compounds that recovered high in the MS/MSD; however, since the unspiked sample was non-detect for these compounds, no additional action was required.

MS/MSD for PCB Aroclors and MS for Metals was performed on sample MW-003-070910. LCS/LCSD and MS or MSD recoveries demonstrated acceptable accuracy in the groundwater matrix for PCB Aroclors and Metals.

No results were rejected due to accuracy criteria; therefore, DV qualified results are considered usable for project decisions with the understanding of the potential uncertainty (bias), as noted in Table 2.

**Precision**

The field duplicate samples for this groundwater set were: MW-04A-070810 and MW-04A-070810-DUP. LCS/LCSD, MS/MSD, sample/MD, and FD relative percent differences (RPD) demonstrated acceptable precision in the groundwater matrix for PCB Aroclors and Metals. MS/MSD and FD precision for VOCs were also acceptable. LCS/LCSD precision for VOCs was acceptable for all compounds except bromomethane; therefore, all bromomethane results were estimated (UJ) with indeterminate bias due to the observed imprecision, as noted in Table 2. Note, however, as the MS/MSD and FD precision were acceptable for VOCs, indicating acceptable precision in the groundwater matrix, the imprecision in the LCS/LCSD should not impact data usability.

**Sensitivity & Reporting**

Sensitivity in terms of sample-specific reporting limits (RLs), as compared to Project Action Limits (PALs) defined in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010 as the MCP GW-3 standards was met for all VOCs, PCB Aroclors, and Metals. Note that the QAPP also has NWQC as PALs; however, recent communication with the Corps indicated that the groundwater sample results would be compared to the MCP GW-3 standards for these data.

The field duplicate sample ID is inconsistent with the project identification scheme where "-REP" rather than "-DUP" indicates a field duplicate sample. No action was taken other than to note this discrepancy.

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Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| All samples except: MW-005-070810 | Bromomethane | UJ | I | Low LCS recovery + LCS/LCSD imprecision |
| MW-005-070810 | Bromomethane | UJ | I | Low LCS recovery + LCS/LCSD imprecision + Low MS recovery |
| All nine samples | Dichlorodifluoromethane | UJ | L | Low LCS recovery |
| MW-07A-070810, MW-04A-070810, MW-04A-070810-DUP, MW-005-070810, MW-003-070919, MW-006-070910, & MW-001-070910 | Copper | J | I | Equipment Blank Action |
| MW-07A-070810 & MW-001-070910 | Lead | J | I | Equipment Blank Action |

*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.*

*Bias: L = Low; H = High; I = Indeterminate*

*Abbreviations used in Table 2:*

*LCS = Laboratory Control Sample*
*LCSD = Laboratory Control Sample Duplicate*
*MS = Matrix Spike*

**New Bedford Harbor**
**OU1 Monitoring 2010**
**Metals Tier I+ Data Validation Checklist**

Lab: Alpha Analytical, Mansfield, MA
Date Sampled: 7/08/09 & 7/09/10
Analysis: Metals by EPA SW-846 Method 6020A

Lab Project # L1010361
No. Samples: 1FD + 1EB
Matrix: Groundwater

| QC Met Criteria? | | HT & Preserve pH <2 | RL QAPP PQLs? | Tune* met 6020 criteria? | Calibration* ICV/CCV 90-110%R | CRI* RL Check 80-120%R | EB MB < RL | LCS 80-120% R | ICSA/AB 80-120% R | MS 75-125% R | MD RPD ≤ 20% | FD RPD ≤ 30% | IS* 70-120% R | Serial Dilution ± 10% D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Yes** | | √ | √ | | | | √ MB | √ | √ | √ | √ | √ | | √ |
| **No** | | | | Tier I+: assumed OK | Tier I+: assumed OK | Tier I+: assumed OK | EB action: J 9 results | | | | | | Tier I+: assumed OK | |

**Groundwaters and EB for a Project-specific list of four Metals: Cadmium, Chromium, Copper, and Lead**

**These QC elements are not reviewed as part of Tier I+ validation. They are only reviewed during Tier II level validation. For the Tier I+ level validation, these QC results are assumed to be acceptable unless otherwise noted in the laboratory narrative.*

Chain-of-Custody (COC): Documentation acceptable.

Preservation: *Samples received preserved at pH < 2 @ 5°C & 6°C on 7/9/10. Acceptable.*

Holding Time (HT): *Prepared 7/14/10 and analyzed 7/15/10. Acceptable HT.*

MS/MD & Serial Dilution site sample used for QC: *MW-003-070910. Accuracy (% recovery of MS and %D for Serial Dilution) and precision (RPD for sample/MD) met QAPP acceptance criteria.*

FD pair samples: *MW-04A-070810 and MW-04A-070810-DUP. Acceptable FD precision (see next page for RPD calculations). Note that this FD sample ID is inconsistent with past FD IDs for this project, which are appended as "-REP" rather than "-DUP". No action taken other than to note this discrepancy.*

EB sample: EB-070910. *Copper detected at 0.118 mg/L; Lead detected at 0.003 mg/L. See EB actions page 2.*

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with NHB OU-1 QAPP Addendum 2009 & EPA Region 1 present in the data package? ***Yes.***

2. Were all result forms for all samples listed on the chain-of-custody present in data package? ***Yes***.

Date: *8/25/10 Revised 2/11/11*

Data Reviewer: *Susan D. Chapnick*

**New Bedford Harbor**
**OU1 Monitoring 2010**
**Metals Tier I+ Data Validation Checklist**

Lab: Alpha Analytical Lab Project #: L1010361

**Data Quality / Usability Issues:**

Preparation: EPA Method 3020A used for all 4 Metals.

Analysis: All analyses by ICP-MS EPA SW-846 method 6020A compliant with 2009 QAPP.

Blank Action: EB detected for copper & lead. ***ACTION: Estimate (J) all 7 GW copper results & lead results in samples MW-07A-070810 & MW-001-070910 due to EB blank actions (GW results ≤ EB level).*** *No action required for other lead results because lead was non-detected in remaining samples. Professional judgment used to estimate rather than negate these affected results due to evidence that the contamination observed in the EB was due to the laboratory water used to generate the EB and not due to any sample collection or handling contamination. See attached corrective action letter from Alpha Analytical with "VOC-free" water analytical results for Metals (page 4).*

Sensitivity: All RLs met QAPP 2009 sensitivity (RL) requirements (Worksheet #15) based on being lower than the PALs defined as the MCP GW-3 standards (note the current QAPP PALs also list the NWQC as PALs; however, based on recent communication with the Corps, the MCP GW-3 standards are the correct PALs for groundwater for this project).

Database EDD: Corrected "Lab_QC_Code" to "REP" for the FD samples.

FD: See below. Acceptable FD precision. No action.

Lab Narrative: no further issues.

**FD Precision:**

| Analyte | | Sample MW-04A-070810 (mg/L) | Qual | FD: MW-04A-070810-DUP (mg/L) | Qual | Precision RPD* % | Action | Comment |
|---|---|---|---|---|---|---|---|---|
| Cd | | 0.0005 | U | 0.0005 | U | NC | none | |
| Cr | | 0.005 | U | 0.005 | U | NC | none | |
| Cu | | 0.004 | | 0.004 | | 0 | none | |
| Pb | | 0.001 | U | 0.001 | U | NC | none | |

Date: *8/25/10 Revised 2/11/11*

Data Reviewer: *Susan D. Chapnick*

**New Bedford Harbor**
**OU1 Monitoring 2010**
**Metals Tier I+ Data Validation Checklist**

***QC & DV Action Criteria for OU-1 Metals [based on OU-1 QAPP 2010 & EPA Region I DV guidance]:***

| | |
|---|---|
| Pres./HT: | HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. pH >2 use professional judgment to J detects; UJ non-detects. |
| Blanks: | Method Blanks and instrument blanks: Metals < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found).<br>Equipment Blank: EB > RL for any metals; qualify associated detected results < 5x EB levela as "EB" - potential high bias based on EB contamination. |
| Tune: | Mass calibration (amu) > QC limit: J/UJ. Mass resolution/peak width (amu) > QC limit: J/UJ. %RSD > QC limit: J/UJ. See EPA SW-846 Method 6020A for Tune criteria. Tune not performed: R all associated data. |
| ICV/CCV: | Recoveries < 90%: J / UJ; recoveries > 110%: J detects; if severe exceedance <75%: R non-detects; > 160%: R detects. |
| CRI: | Only required if low-level standard equivalent to the RL is not included in the initial calibration curve. Results < 2xCRI: <80%: J / UJ; >120%: J detects. |
| LCS: | %Recoveries < 80%: J / UJ. %Recoveries > 120%: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix. |
| ICSA/AB: | Recoveries > 120% or < 80%: J / UJ unless extremely low for ICSAB at <50%: R non-detects / J detects. |
| MS/MSD: | %Recoveries < 75%: J / UJ. %Recoveries > 125%: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level. |
| MSD/MD: | Results > 5xRL: RPD >20%: J / UJ associated results in batch - to be determined using professional judgment.<br>Results < 5xRL: difference > ±RL, J / UJ associated results in batch - to be determined using professional judgment. |
| FD: | Results > 5xRL: RPD > 30%: J / UJ FD results only. Results < 5xRL: difference > ±2xRL,, J/UJ FD results only. |
| IS: | |
| Serial Dil: | Results > 50xMDL: % Difference > 10%: J detects. EPA guidance UJ non-detects; however, use professional judgment on whether it is a suppression or enhancement to qualify associated non-detects. |

**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.

**References**: Environmental Monitoring, Sampling, and Analysis Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Operable Unit 1 (OU1), New Bedford, MA, Rev. 1.0, prepared by Woods Hole Group, Inc., September 2009 (NBH OU1 QAPP Addendum 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996, including Part IV – Inorganic Data Validation Functional Guidelines, November 2008.

Date: *8/25/10 Revised 2/11/11*

Data Reviewer: *Susan D. Chapnick*

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February 09, 2011

As requested by David Walsh from the Woods Hole Group, Alpha Analytical initiated the analysis of the laboratory's VOC-free water source. This request was initiated due to the concentrations of Lead and Copper detected in the equipment blank and samples included in Alpha job # L1010361. On February 8, 2011 the VOC-free water was analyzed via method 6020a and the results are as follows: Lead was detected at 0.006 mg/L and Copper was detected at 0.119 mg/L.

Cindy McQueen
Project Manager/Technical Representative

# Data Validation Report

## EPA Region I Tier I+-type & Tier II-type
## VOCs by 8260B, PCB Aroclors by 8082, & Metals by 6020A

| | |
|---|---|
| **Client/Company:** | Woods Hole Group, Inc. (WHG) |
| **Site/Project Name:** | New Bedford Harbor Superfund Site – OU1 |
| **Laboratory:** | Alpha Analytical – Mansfield & Westborough, MA |
| **Lab Project Number(s):** | L1015773 & L1015775 |
| **Date(s) of Collection:** | October 5, 2010 & October 20, 2010 |
| **Number / Type Samples & Analyses for Validation:** | 7 groundwaters, 2 equipment blanks (EB), and 2 trip blanks (TB) for a project-specific list of Volatile Organic Compounds (VOC) by EPA SW-846 Method 8260B<br>7 groundwaters and 2 EBs for Polychlorinated Biphenyl Compounds (PCB Aroclors) by EPA SW-846 Method 8082 and a project-specific list of Metals (cadmium, chromium, copper, & lead) by EPA SW-846 Method 6020A |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | December 14, 2010<br>*Revised: February 11, 2011 based on updated EB information* |

This EPA Region I Tier I+-type validation for VOCs and PCB Aroclors and EPA Region I Tier II-type validation of Metals 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996, including *Part II – Volatile /Semivolatile Data Validation Functional Guidelines*, *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004, and *Part IV – Inorganic Data Validation Functional Guidelines*, November 2008; 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.

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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 comments added based on actions taken; and
- The Data Review Checklists completed during this validation to document the Tier I+-type reviews. The Checklists are an integral part of the DV Report as they contain 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* | Sample Type |
|---|---|---|---|---|---|
| MW-006-100510 | L1015773-01 | 10/5/10 | Groundwater | Metals | Field Sample [used for Metals MS/MSD] |
| MW-003-100510 | L1015773-02 | 10/5/10 | Groundwater | Metals | Field Sample |
| MW-003-100510-DUP | L1015773-03 | 10/5/10 | Groundwater | Metals | FD of MW-003-100510 |
| MW-04A-100510 | L1015773-04 | 10/5/10 | Groundwater | Metals | Field Sample |
| MW-07A-100510 | L1015773-05 | 10/5/10 | Groundwater | Metals | Field Sample |
| MW-005-100510 | L1015773-06 | 10/5/10 | Groundwater | Metals | Field Sample |
| EB-100510 | L1015773-07 | 10/5/10 | Aqueous | Metals | EB |
| MW-001-102010 | L1015773-08 | 10/20/10 | Groundwater | Metals | Field Sample [used for Metals MS/MSD] |
| EB-102010 | L1015773-09 | 10/20/10 | Aqueous | Metals | EB |
| MW-006-100510 | L1015775-01 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample [used of VOC & PCB MS/MSD] |
| MW-003-100510 | L1015775-02 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample |
| MW-003-100510-DUP | L1015775-03 | 10/5/10 | Groundwater | VOCs & PCBs | FD of MW-003-100510 |
| TB-100510 | L1015775-04 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample |

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters* | Sample Type |
|---|---|---|---|---|---|
| MW-04A-100510 | L1015775-05 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample |
| MW-07A-100510 | L1015775-06 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample |
| MW-005-100510 | L1015775-07 | 10/5/10 | Groundwater | VOCs & PCBs | Field Sample |
| EB-100510 | L1015775-08 | 10/5/10 | Aqueous | VOCs & PCBs | EB |
| MW-001-102010 | L1015775-09 | 10/20/10 | Groundwater | VOCs & PCBs | Field Sample |
| EB-102010 | L1015775-10 | 10/20/10 | Aqueous | VOCs & PCBs | EB |
| TB-102010 | L1015775-11 | 10/20/10 | Aqueous | VOCs | TB |

* Analysis for Total Suspended Solids (TSS) was also performed; however, validation of this parameter was not required.

Analytical method references:

VOCs: *Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS)* in EPA's Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 8260B, Rev. 2, December 1996.

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.

Metals: *Inductively Coupled Plasma – Mass Spectrometry* in EPA's Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846, Third Edition, Method 6020A, Rev. 1, February 2007.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of VOCs and PCB Aroclors and a Tier II-type validation of Metals sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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*
- 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 VOCs and PCB Aroclors and the Tier II-type validation of Metals, all results were considered usable for project decisions except for tetrahydrofuran in sample MW-006-100510 due to severe QC exceedances. Other data are usable based on a comparison of the validated results to the NBH OU1 QAPP Addendum 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the validation are presented in the attached Data Validation (DV) Checklists.

**Sample Receipt / Log-In**

The Chain-of-Custody (COC) was acceptable with one discrepancy. The COC indicates that the preservative for Metals collected 10/20/10 is "C", whereas it should be "A" for acid-preserved. As the sample was received acid-preserved, no action was taken other than to note this discrepancy. Though the COC lists samples and containers for all analyses collected, the laboratory split out the Metals samples into a separate SDG from the Organic and TSS analyses due to the reporting requirement differences as Metals required a full-deliverable (including raw data) for the Tier II-type data validation review. Therefore, the Metals are included in SDG L1015773 and the Organic and TSS analyses are included in SDG L1015775.

**Accuracy**

No contamination was observed in the associated Method Blanks, Trip Blanks, or Equipment Blanks (EB), with the exception of two Metals. Copper and lead were detected in both EBs. Subsequent analysis of the lab-provided water (identified as “VOC-free water”) used to generate the EB showed that it was contaminated with these two metals at levels similar to those measured in the EBs, as follows:

| Metal | EB-100510<br><br>mg/L | EB-102010<br><br>mg/L | Lab-Provided Water used to generate EB*<br>mg/L |
|---|---|---|---|
| Copper | 0.109 | 0.119 | 0.119 |
| Lead | 0.001 | 0.003 | 0.006 |

* See the lab communication attached to the revised Metals Data Validation Checklist for further information

Based on the evidence that the copper and lead contamination observed in the EBs is likely due to the water used to generate the EBs and not due to sample collection or handling procedural contamination, professional judgment was used to qualify associated copper and lead results as estimated (J) rather than negated, due to equipment blank action, as listed in Table 2. These estimated results have an indeterminate bias.

Three LCS/LCSD pairs were analyzed for VOCs. Dichlorodifluoromethane was estimated (UJ) in three samples due to low LCS/LCSD recoveries and acetone was estimated (J) in three samples due to high LCS/LCSD recoveries. Several additional compounds were not recovered within criteria in the LCS/LCSD results; however, no additional actions were required (see the DV Checklist for details). Table 2 indicates the results qualified and potential bias due to LCS/LCSD exceedances.

MS/MSD analysis for VOCs was performed on sample MW-006-100510. Tetrahydrofuran was not recovered in either the MS or MSD; therefore the non-detect for tetrahydrofuran was rejected (R) since this may be a false negative, as shown in Table 2. The rejected result is not usable for project decisions. Several additional compounds were not recovered within criteria in the MS/MSD results; however, no additional actions were required (see the DV Checklist for details).

**Precision**

The field duplicate samples for this groundwater set were: MW-003-0100510 and MW-003-100510-DUP. LCS/LCSD, MS/MSD, sample/MD, and FD relative percent differences (RPD) demonstrated acceptable precision in the groundwater matrix for VOCs, PCB Aroclors, and Metals indicating acceptable precision and representativeness of these groundwater samples to the site locations.

**Sensitivity & Reporting**

Sensitivity in terms of sample-specific reporting limits (RLs), as compared to Project Action Limits (PALs) defined in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010 as the MCP GW-3 standards was met for all VOCs, PCB Aroclors, and Metals. Note that the QAPP also has NWQC as PALs; however, recent communication with the Corps indicated that the groundwater sample results would be compared to the MCP GW-3 standards for these data.

The field duplicate sample ID is inconsistent with the project identification scheme where "-REP" rather than "-DUP" indicates a field duplicate sample. No action was taken other than to note this discrepancy.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| MW-006-100510 | Tetrahydrofuran | R | | Unusable: < 10% MS/MSD recoveries |
| MW-001-102010, EB-102010, & TB-102010 | Dichlorodifluoromethane | UJ | L | Low LCS/LCSD recoveries |
| MW-006-100510, MW-003-100510-DUP, & MW-07A-100510 | Acetone | J | H | High LCS/LCSD recoveries |
| MW-001-102010, MW-003-100510, MW-003-100510-DUP, MW-005-100510, MW-04A-100510, & MW-07A-100510 | Copper | J | I | Equipment Blank Action |
| MW-001-102010 & MW-005-100510 | Lead | J | I | Equipment Blank Action |

*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.*

*Bias: L = Low; H = High; I = Indeterminate*

*Abbreviations used in Table 2:*

*LCS = Laboratory Control Sample*
*LCSD = Laboratory Control Sample Duplicate*
*MS = Matrix Spike*
*MSD = Matrix Spike Duplicate*

Lab: Alpha Analytical, Mansfield, MA
Date Sampled: 10/05/10 & 10/20/10
Analysis: Metals by EPA SW-846 Method 6020A

Lab Project # L1015773
No. Samples: 6 + 1FD + 2EBs
Matrix: Groundwater

| QC Met Criteria? | HT & Preserve pH <2 | RL QAPP PQLs? | Tune met 6020 criteria? | Calibration ICV/CCV 90-110%R | CRI RL Check 80-120%R | EB MB < RL | LCS 80-120% R | ICSA/AB 80-120% R | MS 75-125% R | MD RPD ≤ 20% | FD RPD ≤ 30% | IS 70-120% R | Serial Dilution ± 10% D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Yes** | √ | √ | √ | √ | √ | √ MB | √ | √ | √ | √ | √ | √ | √ |
| **No** | | | | | | EB action: J 8 results | | | | | | | |

**Groundwaters and EBs for a Project-specific list of four Metals: Cadmium, Chromium, Copper, and Lead for Tier II-type DV.**

***Data Package Completeness:***

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with NHB OU-1 QAPP Addendum 2010 & EPA Region 1 present in the data package? ***Yes.*** *Summary QC and raw data provided for Metals to perform Tier II-type DV review.*

2. Were all result forms for all samples listed on the chain-of-custody present in data package? ***Yes***.

***Chain-of-Custody (COC):*** Documentation acceptable with one discrepancy. COC indicates preservative for Metals collected 10/20/10 as "C"; should be "A" for acid-preserved. As the sample was received acid-preserved, no action taken other than to note this discrepancy. Note that lab split out the Metals samples into a separate SDG from the Organic analyses due to the reporting requirement differences since Metals required a full-deliverable (including raw data) for Tier II-type data validation review.

***Preservation*:** Samples received in acid-preserved bottles @ 3°C to 5°C on 10/06/10 and 10/20/10. Acceptable.

***Holding Time (HT):*** Samples collected 10/05/10 prepared on 10/19/10 and analyzed 10/21/10. Acceptable HT.
Sample collected on 10/20/10 prepared on 11/05/10 and analyzed on 11/09/10. Acceptable HT.

***Preparation:*** EPA Method 3020A used for all 4 Metals.

***Analysis:*** All analyses by ICP-MS EPA SW-846 method 6020A compliant with 2010 QAPP.

***Data Validation Summary Review Details - continued:***

***Method Blank (MB) and Instrument Blanks:*** All metals < RLs. Acceptable.

***Equipment Blank:*** EB-100510: Copper detected at 0.109 mg/L; Lead detected at 0.001 mg/L. Associated with six samples collected on 10/05/10.
EB-102010: Copper detected at 0.119 mg/L; Lead at 0.003 mg/L. Associated with one sample collected on 10/20/10.
Blank Action: EBs detected for copper & lead.
***ACTIONS: Estimate (J) copper & lead results in sample MW-001-102010 due to EB blank action (sample result ≤ EB-102010 level); Estimate (J) copper in MW-003-100510, MW-003-100510-DUP, MW-005-100510, MW-04A-100510, & MW-07A-100510 and lead in MW-005-100510 due to EB blank actions (sample results ≤ EB-100510 level).*** No action required for other copper or lead results because lead was non-detected in remaining samples. Professional judgment used to estimate rather than negate these affected results due to evidence that the contamination observed in the EBs was due to the laboratory water used to generate the EBs and not due to any sample collection or handling contamination. See attached corrective action letter from Alpha Analytical with "VOC-free" water analytical results for Metals (page 4).

***Calibration (Tune, initial calibration, ICV/CCV), Laboratory Control Sample (LCS), & Interference Checks (ICSA/ICSAB):*** All recoveries acceptable. Acceptable method accuracy.
Note: lab does not analyze the low-level CRI standard; instead, they include a low-level standard in the calibration curve that is at or below the RL. This is acceptable protocol for method sensitivity.

***MS/MSD/MD & Serial Dilution:*** site samples used for QC = MW-001-102010 associated with this one sample only & MW-006-100510 associated with the six samples collected on 10/05/10.
*Accuracy (based on % recovery of MS and %D for Serial Dilution results) and Precision ( based on RPD for MS/MSD and sample/MD) met QAPP acceptance criteria.*

***Internal Standard (IS):*** All IS results acceptable for all samples & QC.

***FD pair samples*** : MW-003-100510 & MW-003-100510-DUP. Chromium and copper detected at the same level in both FD samples (RPD = 0%) All other results non-detect. See next page for FD precision calculations. FD precision acceptable. Note that this FD sample ID is inconsistent with past FD IDs for this project, which are appended as "-REP" rather than "-DUP". No action taken other than to note this discrepancy.

***Sensitivity:*** All RLs met QAPP 2010 sensitivity (RL) requirements (Worksheet #15) based on being ≤ the PALs defined as the MCP GW-3 standards (note the current QAPP PALs also list the NWQC as PALs; however, based on recent communication with the Corps, the MCP GW-3 standards are the correct PALs for groundwater for this project).

***Database EDD*** : No issues - only added DV information to appropriate fields.

***Lab Narrative*** : no further issues.

Lab: Alpha Analytical, Mansfield, MA Lab Project # L1015773

**FD Precision:**

| Analyte | | Sample MW-003-100510 (mg/L) | Qual | FD: MW-003-100510-DUP (mg/L) | Qual | Precision RPD* % | Action | Comment |
|---|---|---|---|---|---|---|---|---|
| Cd | | 0.0005 | U | 0.0005 | U | NC | none | |
| Cr | | 0.002 | | 0.002 | | 0 | none | |
| Cu | | 0.014 | | 0.014 | | 0 | none | |
| Pb | | 0.001 | U | 0.001 | U | NC | none | |

***QC & DV Action Criteria for OU-1 Metals [based on OU-1 QAPP 2010 & EPA Region I DV guidance]:***

| | |
|---|---|
| Pres./HT: | HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. pH >2 use professional judgment to J detects; UJ non-detects. |
| Blanks: | Method Blanks and instrument blanks: Metals < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found).<br>Equipment Blank: EB > RL for any metals; qualify associated detected results < 5x EB levela as "EB" - potential high bias based on EB contamination. |
| Tune: | Mass calibration (amu) > QC limit: J/UJ. Mass resolution/peak width (amu) > QC limit: J/UJ. %RSD > QC limit: J/UJ. See EPA SW-846 Method 6020A for Tune criteria. Tune not performed: R all associated data. |
| ICV/CCV: | Recoveries < 90%: J / UJ; recoveries > 110%: J detects; if severe exceedance <75%: R non-detects; > 160%: R detects. |
| CRI: | Only required if low-level standard equivalent to the RL is not included in the initial calibration curve. Results < 2xCRI: <80%: J / UJ; >120%: J detects. |
| LCS: | %Recoveries < 80%: J / UJ. %Recoveries > 120%: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix. |
| ICSA/AB: | Recoveries > 120% or < 80%: J / UJ unless extremely low for ICSAB at <50%: R non-detects / J detects. |
| MS/MSD: | %Recoveries < 75%: J / UJ. %Recoveries > 125%: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level. |
| MSD/MD: | Results > 5xRL: RPD >20%: J / UJ associated results in batch - to be determined using professional judgment.<br>Results < 5xRL: difference > ±RL, J / UJ associated results in batch - to be determined using professional judgment. |
| FD: | Results > 5xRL: RPD > 30%: J / UJ FD results only. Results < 5xRL: difference > ±2xRL,, J/UJ FD results only. |
| IS: | |
| Serial Dil: | Results > 50xMDL: % Difference > 10%: J detects. EPA guidance UJ non-detects; however, use professional judgment on whether it is a suppression or enhancement to qualify associated non-detects. |

**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.

**References**: Environmental Monitoring, Sampling, and Analysis Quality Assurance Project Plan Addendum, New Bedford Harbor Superfund Site, Operable Unit 1 (OU1), New Bedford, MA, Rev. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996, including Part IV – Inorganic Data Validation Functional Guidelines, November 2008.

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• 320 FORBES BOULEVARD, MANSFIELD, MA 02048
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February 09, 2011

As requested by David Walsh from the Woods Hole Group, Alpha Analytical initiated the analysis of the laboratory's VOC-free water source. This request was initiated due to the concentrations of Lead and Copper detected in the equipment blank and samples included in Alpha job # L1010361. On February 8, 2011 the VOC-free water was analyzed via method 6020a and the results are as follows: Lead was detected at 0.006 mg/L and Copper was detected at 0.119 mg/L.

Cindy McQueen
Project Manager/Technical Representative

# APPENDIX D: USACE NAE QA REVIEW MEMORANDUM

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CENAE-EP-GG 14 April 2011

MEMORANDUM FOR USACE Engineering Technical Lead Peter Hugh, US EPA Region I RPM, Elaine Stanley and Dave Walsh, WHG ATTN: Peter Hugh, Elaine Stanley and Dave Walsh

SUBJECT: Chemical Quality Assurance Report, 2010 QA Data Validation Report, New Bedford Harbor Superfund Site, 2010 Biannual Groundwater Monitoring Sawyer Street Pilot Study Confined Disposal Facility Monitoring Report, Prepared by Woods Hole Group, Inc., Revision February 15, 2011, New Bedford, MA. Evaluation of data quality issues from the 2010 Sawyer Street Groundwater Monitoring sampling events.

1. Copy furnished to the Peter Hugh, Elaine Stanley and Peter Hugh.

In regard to the EPA concerns about data quality issues on the metals contamination in the equipment blank and the data comparisons between the Alpha primary lab and ESS the QA lab, the USACE project chemist performed a thorough evaluation of both the QA and primary laboratory GW data. Enclosed please find the data validation report (DVR), QA-split data comparisons tables between Alpha and ESS labs and ESS Laboratory Work Order # 1007113 (SDG) data package.

The main issue with the QA data validation report was that the ESS QA-lab had contamination in the method blank of aroclor 1260 at 0.13 ug/l and it was also reported as a detect in QA-split sample MW-005-070810 at 0.48 B ug/l (B- also detected in the method blank). It is highly suspected that this is a false positive in the sample, as it was reported in the method blank at greater than 2x's the low-level reporting limit of 0.05 ug/l. The ESS lab manager and analyst agree that this is most like a false positive due to laboratory contamination. The primary lab, Alpha Analytical reported this MW-005-070810 as a ND which is what I believe to be the correct data. However, their RL was 0.215 on sample MW-005-070810, as they did not perform the low-level RL of 0.05 ug/l. We have not had a history of aroclor 1260 detects at the Sawyer St CDF facility or at MW-005. ESS has to extract 2-liters of sample and also concentrate the final extract down to 1 ml in order to achieve our very low NBH RL/LOQ requirement of 0.050 ug/l. I suspect that this contamination was from the ESS labs glassware, as it also showed up in the method blank. Aroclor 1260 is also not one of the major aroclor from the Aerovox Facility which used primarily aroclors 1242 and 1254. Also aroclor 1260 has limited solubility in ground water and is not likely an actual detection in this case at the ESS lab. This makes it even less likely to be an actual detection in the Sawyer Street MW-005 well. I will work with ESS to assure that there are no laboratory contamination issues for the 2011 sampling events from laboratory glassware the USACE will assure that all glassware will be appropriately solvent cleaned and baked in a high temperature oven/glassware furnace .

The VOC, metals and TSS data compared well between the Primary Alpha Analytical Lab and the ESS QA lab. Please refer to the Data comparisons provided in this data validation report.

As far as the metals contamination in the equipment blank for the metals Cu and Pb from both the EB-0700910 and EB-102010 GW Monitoring events, this metal contamination is definitely due to the Alpha Analytical Laboratory source of supplied Deionized Water that was used for EB's for both metals and VOC by Method 8260B. The WHG data validator performed the appropriate data validation procedures and also applied the appropriate data qualifiers to the lead and copper based on my review. I have talked to Dave Walsh and both labs regarding these issues and our corrective action will be to either purchase DI-water from a certified vendor or lab, or to have the lab analyze their DI-water source for trace level metals (Cd, Cu, Cr and Pb) and VOCs in order to certify there DI-water is contamination free prior to using it for our 2011 sampling events.

My overall assessment of these data quality issues are that although they appear to be minor in nature, both labs experienced some contamination issues that caused concern at the Sawyer Street facility CDF. Dave Walsh and I will work closely with the labs to avoid these contamination issues for the FY2011 GW Monitoring sampling events for this season. The overall evaluation of the data usability for the Sawyer Street 2010 Biannual Report is that the data is usable for its intended purpose. However, the 2011 GW sampling events will be closely monitored in the field and at the lab in order to avoid any data quality issues or trends for these future events.

Please let me know if you have any questions or concerns.

Thanks,

Mark R. Koenig
Senior Project Chemist
New England District, USACE
696 Virginia Road
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Ph: 978-318-8312
Fax: 978-318-8664

**DATA COMPARISON TABLES (VALIDATED RESULTS)**
**PROJECT: NEW BEDFORD HARBOR SUPERFUND SITE, SAWYER ST GW MONITORING**
**July 8, 2010 QA SAMPLING EVENT**

| | ALPHA | ESS |
|---|---|---|
| Laboratory Sample ID: | L1010361-04 | 1007113-01 |
| Field Sample ID: | **MW-005-070810** | **MW-005-070810** |
| Date Sampled: | 7/8/10 | 7/8/10 |
| Date Received: | 7/9/10 | 7/9/10 |
| Date Extracted: | 7/15/10 | 7/13/10 |
| Date Analyzed: | 7/15/10 | 7/13/10 |
| Extraction Method: | 5030B | 5030B |
| Analysis Method: | 8260B | 8260B |
| Matrix: | **Groundwater** | **Groundwater** |
| Concentration Units: | ug/L | ug/L |
| Dilution Factor: | 1.0 | 1.0 |
| | MW-005-070810 | |

| Target Analytes | STL-VT **LRL** | | **Primary Lab** Results **Alpha** | | AMRO **LRL** | | **QA Lab** Results **ESS** | | USACE Comparison Code | **%RPD** | USACE Discrep. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,1,1-Trichloroethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,1,2,2-Tetrachloroethane | 1.0 | U | 1.0 | U | 0.5 | U | 0.5 | U | 0 | NC | |
| 1,1,2-Trichloroethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,1-Dichloroethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,1-Dichloroethene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,1-Dichloropropene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| 1,2,3-Trichlorobenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2,3-Trichloropropane | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2,4-Trichlorobenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2,4-Trimethylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2-Dibromo-3-chloropropane | 2.0 | U | 2.0 | U | 5.0 | U | 5.0 | U | 0 | NC | |
| 1,2-Dibromoethane | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2-Dichlorobenzene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2-Dichloroethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,2-Dichloropropane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,3,5-Trimethylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,3-Dichlorobenzene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,3-Dichloropropane | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| **1,4-Dichlorobenzene** | 1.0 | U | 1.0 | U | 1.0 | U | **0.2** | **J** | 0 | NC | |
| 1-Chlorohexane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 1,4-Dioxane | 250 | U | 250 | U | 250 | U | 250 | U | 0 | NC | |
| 2,2-Dichloropropane | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 2-Butanone | 5.0 | U | 5.0 | U | 25.0 | U | 25.0 | U | 0 | NC | |
| 2-Hexanone | 5.0 | U | 5.0 | U | 10.0 | U | 10.0 | U | 0 | NC | |
| 4-Chlorotoluene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 4-Isopropyltoluene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| 4-Methyl-2-pentanone | 5.0 | U | 5.0 | U | 25.0 | U | 25.0 | U | 0 | NC | |
| Acetone | 5.0 | U | 5.0 | U | 25.0 | U | 25.0 | U | 0 | NC | |
| Benzene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Bromobenzene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Bromochloromethane | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Bromodichloromethane | 1.0 | U | 1.0 | U | 0.6 | U | 0.6 | U | 0 | NC | |
| Bromoform | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Bromomethane | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Carbon disulfide | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Carbon tetrachloride | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Chlorobenzene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Chloroethane | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Chloroform | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Chloromethane | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| cis-1,2-Dichloroethene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| cis-1,3-Dichloropropene | 0.5 | U | 0.5 | U | 0.4 | U | 0.4 | U | 0 | NC | |
| Dibromochloromethane | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Dibromomethane | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Dichlorodifluoromethane | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Ethyl ether | 2.0 | U | 2.0 | U | NA | | NA | | 0 | NC | |
| Ethylbenzene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Ethyl-Tert-Butyl-Ether | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| Hexachlorobutadiene | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U | 0 | NC | |
| Isopropyl Ether | 2.0 | U | 2.0 | U | NA | | NA | | 0 | NC | |
| Isopropylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Methyl tert butyl ether | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| Methylene chloride | 2.0 | U | 2.0 | U | 4.0 | U | 4.0 | U | 0 | NC | |
| Naphthalene | 5.0 | U | 5.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| n-Butylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| n-Propylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| o-Chlorotoluene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| o-Xylene | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |
| p/m-Xylene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| p-Chlorotoluene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| p-Isopropyltoluene | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0 | NC | |
| sec-Butylbenzene | 2.0 | U | 2.0 | U | 1.0 | U | 1.0 | U | 0 | NC | |

**DATA COMPARISON TABLES VALIDATED RESULTS**

**PROJECT: NEW BEDFORD HARBOR SUPERFUND SITE, SAWYER ST GW MONITORING**

**July 8, 2010 QA SAMPLING EVENT**

| | **ALPHA** | **ESS** |
|---|---|---|
| Laboratory Sample ID: | L1010361-04 | 1007113-01 |
| Field Sample ID: | **MW-005-070810** | **MW-005-070810** |
| Date Sampled: | 7/8/10 | 7/8/10 |
| Date Received: | 7/9/10 | 7/9/10 |
| Date Extracted: | 7/15/10 | 7/13/10 |
| Date Analyzed: | 7/15/10 | 7/13/10 |
| Extraction Method: | 3510C | 3510C |
| Analysis Method: | 8082-Aroclors | 8082-Aroclors |
| Matrix: | **Groundwater** | **Groundwater** |
| Concentration Units: | ug/L | ug/L |
| Dilution Factor: | 1.0 | 1.0 |

| | | | **ALPHA** | | | | **ESS** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PRIMARY LAB** | | **PRIMARY LAB** | | **QA LAB** | | **QA LAB** | | **COMPARISON** | | |
| **TARGET ANALYTE** | **RL** | | **RESULTS** | | **RL** | | **RESULTS** | | | **CODE** | ***%RPD*** |
| Aroclor-1016 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Aroclor-1221 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Aroclor-1232 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Aroclor-1242 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Arolcor-1248 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Arolcor-1254 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |
| Arolcor-1260 | 0.215 | U | 0.215 | U | 0.05 | U | 0.05 | U | 0 | 0 | 0 |

| SURROGATE RECOVERIES (%) | QA | | | CONTRACTOR | |
|---|---|---|---|---|---|
| | column 1 | column 2 | | column 1 | column 2 |
| Tetrachloro-m-xylene (30-150%) | 84 | NR | Tetrachloro-m-xylene (30-150%) | 76.0 | 86 |
| Decachlorobiphenyl (30-150%) | 84 | NR | Decachlorobiphenyl (40-135%) | 110 | 102 |

SEE APPENDIX A FOR KEY TO COMMENTS

U= Indicates compound was analyzed for but not detected above the reporting limit.

J= Indicates an estimated value. This flag is used when the result is less than the reporting limit, but > 1/2 MDL.

D= Surrogate diluted out.

NA= Not applicable

NR= Not reported

*= Surrogate recoveries outside acceptance limits

**COMPARISON OF QA & CONTRACTOR VALIDATED RESULTS**
**PROJECT: NEW BEDFORD HARBOR SUPERFUND SITE, SAWYER ST GW MONITORING**
**July 8, 2010 QA SAMPLING EVENT**

| | **ALPHA** | **ESS** |
|---|---|---|
| Laboratory Sample ID: | L1010361-04 | 1007113-01 |
| Field Sample ID: | **MW-005-070810** | **MW-005-070810** |
| Date Sampled: | 7/8/10 | 7/8/10 |
| Date Received: | 7/9/10 | 7/9/10 |
| Date Digested: | 7/14/10 | 7/14/10 |
| Date Analyzed: | 7/15/10 | 7/26/10 |
| Analysis Method: | 6020A | Cd by 7131A, Pb by 7421, Cr and Cu by 6010B |
| Matrix: | **Groundwater** | **Groundwater** |
| Concentration Units: | ug/L | ug/L |
| Dilution Factor: | 1.0 | 1.0 |

| Target Analyte | ALPHA PRIMARY LAB RL | | **ALPHA PRIMARY LAB RESULTS** | | ESS QA LAB RL | | **ESS QA LAB RESULTS** | | COMPARISON CODE Criteria 20% | QA split RPD's |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cadmium** | 0.5 | U | 0.5 | U | 0.12 | U | **0.05** | **J** | NC | |
| **Chromium** | 5.0 | U | 5.0 | U | 10 | U | 10 | U | NC | |
| **Copper** | 1.0 | U | **2.0** | **J** | 10 | U | **3.0** | **U** | NC | |
| **Lead** | 1.0 | U | 1.0 | U | 2.5 | U | 2.5 | U | NC | |

SEE APPENDIX A FOR KEY TO COMMENTS
NR=NOT REPORTED
U= Not Detected at the Reporting Limit
B= Less than the Contract Required Detection Limit (CRDL),
but greater than the Instrument Detction Limit (IDL).
J= Analyte detected below quantitation limit.
NC= Not Calculated

**COMPARISON OF QA & CONTRACTOR VALIDATED RESULTS**
**PROJECT: NEW BEDFORD HARBOR SUPERFUND SITE, SAWYER ST GW MONITORING**
**July 8, 2010 QA SAMPLING EVENT**

| | **ALPHA** | **ESS** |
|---|---|---|
| Laboratory Sample ID: | L1010361-04 | 1007113-01 |
| Field Sample ID: | **MW-005-070810** | **MW-005-070810** |
| Date Sampled: | 7/8/10 | 7/8/10 |
| Date Received: | 7/9/10 | 7/9/10 |
| Date Analyzed: | 7/13/10 | 7/14/10 |
| Analysis Method: | 2540D | 2540D |
| Matrix: | **Groundwater** | **Groundwater** |
| Concentration Units: | mg/L | mg/L |
| Dilution Factor: | 1.0 | 1.0 |

| Inorganic Target Analyte | Analysis Method | ALPHA Primary Lab RL | **ALPHA PRIMARY lAB RESULTS** | | ESS QA LAB RL | **ESS QA LAB RESULTS** | | USACE COMPARISON CODE | *RPD* |
|---|---|---|---|---|---|---|---|---|---|
| **Total Suspended Solids (TSS)** | 2540D | 1.0 | U | **2.50** | 5 | 5 | U | 0 | ***NC*** |

SEE APPENDIX A FOR KEY TO COMPARISON CODES
NR= NOT REPORTED
NC= NOT CALCULATED
U= Not detected at or above the Reporting Limit
J= Estimated value, below the Reporting Limit
LRL= Laboratory Reporting Limit

| Data Validation Level | Matrix | Preservation | Temperature Sample Receipt | Laboratory | SDG Number |
|---|---|---|---|---|---|
| Tier I+ Seed 2A<br><br>Level II Data Package | Aqueous GW Monitoring | Various (As appropriate by Method) | One (1) sample cooler was received by ESS Laboratory on 07-9-10 at 2.6 °C | ESS Laboratory Division of Thielsch Engineering, Inc.<br>185 Frances Ave.<br>Cranston, RI 02910-2211<br>Ph: 401-461-7181<br>POC: Liz Ouk | SDG# or Lab W.O. No. 1007113 |
| **Site:** New Bedford Harbor<br>Superfund Site<br>2010 Sawyer St GW Monitoring<br>QA-Split Sampling- 7-9-10 | | | | | |

**Field Identification of Samples Evaluated:**

| Field ID | Sample Location | Lab Sample Number | Sample Date |
|---|---|---|---|
| MW-0005-070810 | NBH Sawyer St | 1007113-01 | 07-09-10 |
| Trip Blank-070810 | ESS Lab TB | 1007113-02 | 07-09-10 |

***Note:*** *One QA split sample was collected for the Biannual Groundwater Monitoring at the Sawyer Street Pilot Study Confined Disposal Facility at the New Bedford harbor Superfund Site located in New Bedford, MA. The following suite of analysis parameters were performed by ESS Laboratory, Cranston, RI. The appropriate sample handling, shipping, COCs, COC seals, certified pre-clean sample containers and preservatives were used. All of the appropriate coolers, sample containers were provided by the primary laboratory, Alpha Analytical, Westboro, MA.*

*Data Validation Chemist:*

*Mark R. Koenig*
*Senior Project Chemist*
*USACE, New England District*
*696 Virginia Road*
*Concord, MA 01742-2751*
*Ph: 978-318-8312*
*Fax: 978-318-8664*

*Analytical Parameters collected 07-09-10:*

*VOCs by Method 5030B/8260B*
*PCBs by Method 3510C/8082-Aroclors*
*Metals by 3005A/3020A/6010B (Cr and Cu)/ 7131A (Cd) / 7421 (Pb)*
*TSS (Total Suspended Solids) by ASTM Method 2540D*

*Note: No field duplicates were collected. One QA Split sample was collected.*

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| COC | 1)Unbroken custody (accept or if broken R)<br>2) Temp≤6° ( Soil-J detects, R -nondetects<br>3) Preserved per method (amber bottles, temperature. J, UJ, or R (function of HT and compound). | Cooler temperature < 6°C at 2.6 degrees C. Sample preservation was adequate. The samples were transported to the laboratory in 1 cooler with ice packs but were not frozen upon receipt.<br>Sample custody was transferred from Field Team Leader to ESS Laboratory. The Chain of Custody was intact.<br>The laboratory sample receipt and login checklist indicates that sample integrity was maintained during transport. No qualifications were required. | X | - | |
| Holding Times (All analyses) | 1) 7 Days water, 14 days soil to extraction; (40 days after extraction)<br>2) J –detects, UJ or R – nondetects (function of time)<br>3) 180-days for metals, Hg 28-days | 1. All samples were extracted within 7 days from sample collection and analyzed within 40 days form sample extraction. Metals were digested and analyzed within the 180 holding times. No qualifications were required. | X | - | |
| % Solids Check (SOLIDS) | 30%<Solids: if no sample weight adjustment made<br>1) <10% R entire sample<br>2) 10%.> and <30%; J-detects, NDs -R | Not applicable | - | - | |
| Results > Cal Range or <Cal Range | 1) >Upper Cal Range J-detects - ensure instrument blank performed<br>2) <MRL but >MDL – J – detects (estimated) | 1. No reported results were outside of the linear calibration range. No qualifications were required. | X | - | |
| Equipment Blank (EB) | < 5x (<10x common) contaminants for aqueous samples | 1. Equipment Blank was not submitted with the QA-split sample. | - | - | |

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| Surrogates | Surrogate Recoveries (All methods)<br><br>**8260B-** sample MW-005-070810<br><br>1,2-Dichloroethane-d4 @ 85% (70-120)<br>4-Bromofluorobenzene @ 92% (75-120)<br>Dibromofluoromethane @ 90% (85-115)<br>Toluene-d8 @ 99% (85-120)<br><br>**8082-** sample MW-005-070810<br><br>TCMX @ 76% (30-150)<br>DCB @ 110% (40-135) | **8260B-** sample and QC samples<br><br>All the surrogate recoveries for sample MW-005-070810, Trip Blank TB-070810, MB-CG01304 and LCS-CG01304 were within the acceptance limits, except for a slight low recovery of dibromofluoromethane surrogate in the MS @ 82%. No qualification was made due to this slight MS surrogate outage.<br><br>**8082-** sample and QC samples<br><br>All the surrogate recoveries for sample MW-005-070810, Trip Blank TB-070810, MB-CG01304 and LCS-CG01304 were within the acceptance limits. No qualifiers required. | X | - | |

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| Laboratory Method Blanks (MB) | 1) < 5x contaminants – U<br>2) analytes <lab RL (contract lab) | 1 All of the Method Blanks for all of the analytical methods associated with sample MW-005-070910 were free of contamination above the RLs or LOQs, except for the aroclor 1260 which was detected at 0.13 ug/l in the MB CG01423. Aroclor 1260 was also detected in the sample at 0.48 ug/l and was qualified with a J-value at 0.48 UJ ug/l as an elevated estimate J-value ND because of the MB contamination and because 1260 is not considered a major NBH target analyte of concern (Aerovox used 1242 and 1254).<br>2 Metals: Copper was reported in the method blank MB CG01423 at 3.0 J ug/l and it was reported at 3.0 J ug/l in sample MW-005-070810. The copper (Cu) result was qualified as a ND at 3.0 U ug/l because it was less than 5x the method blank contamination level in the sample (per EPA Region I, DV Guidelines). | X | - | |
| Laboratory Control Sample (LCS) Percent Recovery | 1) LCS ESS laboratory acceptance limits (WHG UFP-QAPP)<br>2) DOD QSM Table D-12 (aqueous)<br><br>10% and <LCL% J detects, UJ -NDs<br>>UCL% J detects <10% R NDs, J-detects | 1. All of the LCS QC samples for all the analytical analyses were within the acceptance limits. No qualifications were required due to LCS outages. | X | - | |

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| LCS/LCSD Relative Percent Difference (RPD) | RPD<30% laboratory SOP | All of the LCS/LCSD performed were within the laboratory acceptance limits for accuracy and precision.<br><br>No LCSD was performed on TSS by Method 2540D, so precision could not be evaluated. | X | Refer to Table 2 | |
| Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Percent Recovery | 1) MS/MSD ESS Lab acceptance limits (WHG UFP-QAPP limits).<br>2) DOD QSM Table D-12 (aqueous) D-13 (s) QAPP limits (if MS > 4X native levels)<br>Qualification of MS sample:<br><10% J detects, R NDs<br>>10% and <LCL J detects, UJ -NDs<br>>UCL J detects | 1. **Metals-** No MS/MSD or MS reported. No evaluation of matrix effects or % recoveries on sample MW-005-070810 could be made.<br>2. **8082 PCBs by aroclors:** MS/MSD on sample MW-005-070810 all within the accuracy and precision acceptance limits. No qualifications required.<br>3. **8260B VOCs**: The complete VOC target analyte MS/MSD spike list of compounds were all within the acceptance limits for accuracy and precision, except for high recovery of chlorobenzene in the MS at 226% recovery (80-120%). Chlorobenzene was not detected in sample MW-005-070910, so no qualifications were required.<br>4. **TSS by Method 2540D:** No MS/MSD was performed on TSS. The lab duplicate and the sample were reported as ND @ 5 U mg/l. | - | - | |
| MS/MSD RPD | RPD ≤ 30% (ESS Lab Limits and WHG UFP-QAPP)<br>J –detects in MS sample<br>UJ-non detects | See above. All analyses were within the acceptance limits for precision. | - | - | |

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| Retention times | Within 3X standard deviation for each analyte from ICAL/CCV –lab window limits.<br>Once per ICAL determined and evaluated with each CCV<br>Exceeds: determine if false positives reported | No samples qualified. | X | - | |
| Field Duplicate RPD | 1) RPD ≤ 50% water<br><br>Results > X MRL (FD pair only) J-detects (both > X PQL)<br>2) If one >X MRL, other ND, J-detections, UJ non-detect<br>Other conditions use judgment | 1. No field duplicates were collected. | - | - | |
| Initial Calibration (ICAL) (Linearity) | Correct calibration standards %RSD < 20% use average RF for calibration DOD QSM %RSD> 20% use least squares regression r> 0.995 MMR QAPP | 1. Not evaluated as part of the Tier I+ or SEDD 2A DV. | X | - | |
| 2nd Source Initial Calibration Verification (ICV) | %D ≤ 20% DOD QSM, 20% WHG UFP-QAPP once after ICAL<br><br>Qualification: J detects, R or UJ ND's | 1. Not evaluated as part of the Tier I+ or SEDD 2A DV. | X | - | |
| Continuing Calibration Verification (CCV) | 1) 20 %D/drift of expected value (primary column)<br>2) 20% of expected value (confirmation column) WHG UFP-QAPP<br><br>Analyzed after every 10 samples and at end of sequence. | 1. Not evaluated as part of the Tier I+ or SEDD 2A DV. | X | - | |

| REVIEW ITEMS | ACCEPTANCE CRITERIA | SAMPLES AFFECTED | Inventory | QUAL | BIAS |
|---|---|---|---|---|---|
| Compound Detection Confirmed | 1) Detects within proper retention time windows<br>2) Primary column detects confirmed by secondary column detects for PCB aroclors.<br>3) RPD <40% between column detections for PCBs by Method 8082 by aroclors.<br>4) MS/MSD no matrix interferences noted. | 1. No QC deviations were observed.<br><br>2. Executive Summary of Detections of QA-split sample MW-005-070810:<br><br>**8260B-**<br>1,4-Dichlorobenzene @ **0.2 J ug/l**<br><br>**8082 Aroclors-**<br>Aroclor 1260 **@ 0.48 UJ ug/l** which was qualified as UJ- non-detect estimated due to contamination in the method blank @ 0.13 ug/l. It is suspected that this was contamination from the extraction preparation glassware. ESS lab has to extract 2-liters of sample and concentrate the final extract to 1 ml in order to achieve the NBH RL or LOQ of 0.05 ug/l. This was most likely have contributed to the contamination. It should also be noted that the primary lab, Alpha, RL was 0.215 ug/l which was 4.3 times higher than ESS's RL.<br><br>**Metals-6010B/7000 series GFAA**<br>Cadmium @ **0.05 J ug/l**<br>(RL/LOQ/MRL @ 0.12 ug/l)<br>Copper @ **3 U ug/l**<br>(RL/LOQ/MRL) @ 10 ug/l) | X | Refer to Table 3 | |
| Quantitation Sensitivity | Check MRL per WHG UFP-QAPP<br>Check if dilutions have raised MRL>WHG UFP-QAPP limits | Acceptable | X | - | |
| Overall Evaluation of Data | 1) Appropriate method<br>2) Evaluate any analytical problems<br>3) Evaluate sampling errors – field contamination, sample hold times | <u>Analytical Error Evaluation:</u><br>1. All LCS/LCSD %REC's and RPD's were within QC limits.<br>2. MS and MSD were all within acceptance limits for accuracy and precision, expect were noted above.<br>3. Method Blank was free of contaminations, except for aroclor 1260.<br>4. All the analytical method surrogate spikes recovered within the acceptance limits, except 1 MS surrogate for 8260B.<br><u>Sampling Error Evaluation:</u><br>1. Sampling precision was not evaluated. No applicable field duplicate analyzed with this SDG. | X | - | |

*(Tier I+, SEDD 2A Check items) Completeness Check:  Inventory Check Sheet_ X__  Sample Quantitation Calculations (TIER II ONLY):
Lab Correspondence: none

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*CERTIFICATE OF ANALYSIS*

Mark Koenig
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742

**RE: NBH Sawyer St (G606422)**
**ESS Laboratory Work Order Number: 1007113**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Digitally signed by Laurel Stoddard
Date: 2010.07.28 16:41:39 -04'00'

Laurel Stoddard
Laboratory Director

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## PROJECT NARRATIVE

**8082 Polychlorinated Biphenyls (PCB) / Low Level**

| | |
|---|---|
| 1007113-01 | **Present in Method Blank (B).** |
| | Aroclor 1260 |

**8260B Volatile Organic Compounds**

| | |
|---|---|
| CG01304-MS1 | **Matrix Spike recovery is above upper control limit (M+).** |
| | 4-Isopropyltoluene (136% @ 75-130%) |
| CG01304-MS1 | **Surrogate recovery(ies) below lower control limit (S-).** |
| | Dibromofluoromethane (82% @ 85-115%) |
| CG01304-MSD1 | **Matrix Spike recovery is above upper control limit (M+).** |
| | Chlorobenzene (226% @ 80-120%) |
| CG01304-MSD1 | **Relative percent difference for duplicate is outside of criteria (D+).** |
| | Chlorobenzene (73%) |
| CG01304-MSD1 | **Surrogate recovery(ies) below lower control limit (S-).** |
| | Dibromofluoromethane (83% @ 85-115%) |

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A
Initial Volume: 1930
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: SEP
Prepared: 7/14/10 18:00

## 8082 Polychlorinated Biphenyls (PCB) / Low Level

| Analyte | Results (MRL) | LOD (MDL) | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1221 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1232 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1242 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1248 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1254 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| **Aroclor 1260** | **B 0.48** (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1262 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |
| Aroclor 1268 | ND (0.05) | 0.03 (0.02) | 1 | 07/26/10 22:48 | CTG0131 | CG01423 |

| | %Recovery | Qualifier | |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *110 %* | | *40-135* |
| *Surrogate: Decachlorobiphenyl [2C]* | *102 %* | | *40-135* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *86 %* | | *30-150* |

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Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water
Units: ug/L

## 3005A/3020A/6000/7000 Total Metals

| Analyte | Results (MRL) | LOD (MDL) | Method | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Cadmium** | **J 0.05** (0.12) | 0.10 (0.03) | 7131A | 1 | SVD | 07/16/10 17:48 | 50 | 25 | CG01201 |
| Chromium | ND (10) | 3 (2) | 6010B | 1 | SVD | 07/13/10 22:53 | 50 | 25 | CG01201 |
| **Copper** | **J 3** (10) | 3 (2) | 6010B | 1 | SVD | 07/13/10 22:53 | 50 | 25 | CG01201 |
| Lead | ND (2.5) | 1.0 (0.5) | 7421 | 1 | SVD | 07/16/10 22:17 | 50 | 25 | CG01201 |

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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1,1-Trichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1,2,2-Tetrachloroethane | ND (0.5) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1,2-Trichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1-Dichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1-Dichloroethene | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,1-Dichloropropene | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2,3-Trichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2,3-Trichloropropane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2,4-Trichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2,4-Trimethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2-Dibromo-3-Chloropropane | ND (5.0) | 1.0 (1.0) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2-Dibromoethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2-Dichlorobenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2-Dichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,2-Dichloropropane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,3,5-Trimethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,3-Dichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1,3-Dichloropropane | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| **1,4-Dichlorobenzene** | **J 0.2** (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 1-Chlorohexane | ND (1.0) | 0.5 (0.4) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 2,2-Dichloropropane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 2-Butanone | ND (25.0) | 10.0 (5.8) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 2-Chlorotoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 2-Hexanone | ND (10.0) | 5.0 (1.5) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 4-Chlorotoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 4-Isopropyltoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| 4-Methyl-2-Pentanone | ND (25.0) | 5.0 (1.6) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Acetone | ND (25.0) | 5.0 (5.0) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Benzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Bromobenzene | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Bromochloromethane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Bromodichloromethane | ND (0.6) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |

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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|
| Bromoform | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Bromomethane | ND (2.0) | 1.0 (0.4) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Carbon Disulfide | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Carbon Tetrachloride | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Chlorobenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Chloroethane | ND (2.0) | 1.0 (0.4) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Chloroform | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Chloromethane | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| cis-1,2-Dichloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| cis-1,3-Dichloropropene | ND (0.4) | 0.2 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Dibromochloromethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Dibromomethane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Dichlorodifluoromethane | ND (2.0) | 1.0 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Ethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Hexachlorobutadiene | ND (0.6) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Isopropylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Methyl tert-Butyl Ether | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Methylene Chloride | ND (4.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Naphthalene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| n-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| n-Propylbenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| sec-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Styrene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| tert-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Tetrachloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Toluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| trans-1,2-Dichloroethene | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| trans-1,3-Dichloropropene | ND (0.5) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Trichloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Trichlorofluoromethane | ND (1.0) | 0.5 (0.4) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Vinyl Chloride | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Xylene O | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |
| Xylene P,M | ND (2.0) | 0.4 (0.2) | 1 | 07/13/10 13:33 | CTG0076 | CG01304 |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|
| | | *%Recovery* | *Qualifier* | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *85 %* | | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | | *92 %* | | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | | *90 %* | | *85-115* | | | |
| *Surrogate: Toluene-d8* | | *99 %* | | *85-120* | | | |

ESS Laboratory
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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: MW-005-070810
Date Sampled: 07/08/10 16:10
Percent Solids: N/A

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-01
Sample Matrix: Ground Water

## Classical Chemistry

| Analyte | Results (MRL) | LOD (MDL) | Units | Method | DF | Analyst | Analyzed | Batch |
|---|---|---|---|---|---|---|---|---|
| Total Suspended Solids | ND (5) | (N/A) | mg/L | 2540D | 1 | EEM | 07/14/10 17:55 | CG01416 |

ESS Laboratory
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BAL Laboratory
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*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: TB-070810
Date Sampled: 07/08/10 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1,1-Trichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1,2,2-Tetrachloroethane | ND (0.5) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1,2-Trichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1-Dichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1-Dichloroethene | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,1-Dichloropropene | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2,3-Trichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2,3-Trichloropropane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2,4-Trichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2,4-Trimethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2-Dibromo-3-Chloropropane | ND (5.0) | 1.0 (1.0) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2-Dibromoethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2-Dichlorobenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2-Dichloroethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,2-Dichloropropane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,3,5-Trimethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,3-Dichlorobenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,3-Dichloropropane | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1,4-Dichlorobenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 1-Chlorohexane | ND (1.0) | 0.5 (0.4) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 2,2-Dichloropropane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 2-Butanone | ND (25.0) | 10.0 (5.8) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 2-Chlorotoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 2-Hexanone | ND (10.0) | 5.0 (1.5) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 4-Chlorotoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 4-Isopropyltoluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| 4-Methyl-2-Pentanone | ND (25.0) | 5.0 (1.6) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Acetone | ND (25.0) | 5.0 (5.0) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Benzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Bromobenzene | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Bromochloromethane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Bromodichloromethane | ND (0.6) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |

ESS Laboratory
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BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: TB-070810
Date Sampled: 07/08/10 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|
| Bromoform | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Bromomethane | ND (2.0) | 1.0 (0.4) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Carbon Disulfide | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Carbon Tetrachloride | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Chlorobenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Chloroethane | ND (2.0) | 1.0 (0.4) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Chloroform | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Chloromethane | ND (2.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| cis-1,2-Dichloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| cis-1,3-Dichloropropene | ND (0.4) | 0.2 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Dibromochloromethane | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Dibromomethane | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Dichlorodifluoromethane | ND (2.0) | 1.0 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Ethylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Hexachlorobutadiene | ND (0.6) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Isopropylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Methyl tert-Butyl Ether | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Methylene Chloride | ND (4.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Naphthalene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| n-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| n-Propylbenzene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| sec-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Styrene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| tert-Butylbenzene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Tetrachloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Toluene | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| trans-1,2-Dichloroethene | ND (1.0) | 0.5 (0.3) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| trans-1,3-Dichloropropene | ND (0.5) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Trichloroethene | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Trichlorofluoromethane | ND (1.0) | 0.5 (0.4) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Vinyl Chloride | ND (1.0) | 0.5 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Xylene O | ND (1.0) | 0.2 (0.1) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |
| Xylene P,M | ND (2.0) | 0.4 (0.2) | 1 | 07/13/10 12:28 | CTG0076 | CG01304 |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St
Client Sample ID: TB-070810
Date Sampled: 07/08/10 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1007113
ESS Laboratory Sample ID: 1007113-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | LOD (MDL) | | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|
| | | %Recovery | Qualifier | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 84 % | | 70-120 | | | |
| Surrogate: 4-Bromofluorobenzene | | 91 % | | 75-120 | | | |
| Surrogate: Dibromofluoromethane | | 87 % | | 85-115 | | | |
| Surrogate: Toluene-d8 | | 100 % | | 85-120 | | | |

ESS Laboratory
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BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **3005A/3020A/6000/7000 Total Metals** | | | | | | | | | | |
| **Batch CG01201 - 3005A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Cadmium | ND | 0.12 | ug/L | | | | | | | |
| Chromium | ND | 10 | ug/L | | | | | | | |
| Copper | 3 | 10 | ug/L | | | | | | | J |
| Lead | ND | 2.5 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Chromium | 261 | 10 | ug/L | 250.0 | | 105 | 80-120 | | | |
| Copper | 249 | 10 | ug/L | 250.0 | | 100 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Cadmium | 5.45 | 1.88 | ug/L | 5.000 | | 109 | 80-120 | | | |
| Lead | 10.5 | 2.5 | ug/L | 10.00 | | 105 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Chromium | 260 | 10 | ug/L | 250.0 | | 104 | 80-120 | 0.5 | 20 | |
| Copper | 249 | 10 | ug/L | 250.0 | | 100 | 80-120 | 0.03 | 20 | |
| **LCS Dup** | | | | | | | | | | |
| Cadmium | 5.18 | 1.88 | ug/L | 5.000 | | 104 | 80-120 | 5 | 20 | |
| Lead | 10.5 | 2.5 | ug/L | 10.00 | | 105 | 80-120 | 0.2 | 20 | |
| **8082 Polychlorinated Biphenyls (PCB) / Low Level** | | | | | | | | | | |
| **Batch CG01423 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1260 | 0.13 | 0.05 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.05 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0267* | | ug/L | *0.02500* | | *107* | *40-135* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0254* | | ug/L | *0.02500* | | *102* | *40-135* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0199* | | ug/L | *0.02500* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0234* | | ug/L | *0.02500* | | *94* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.53 | 0.05 | ug/L | 0.5000 | | 107 | 25-145 | | | |
| Aroclor 1260 | 0.49 | 0.05 | ug/L | 0.5000 | | 97 | 30-145 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0271* | | ug/L | *0.02500* | | *108* | *40-135* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0253* | | ug/L | *0.02500* | | *101* | *40-135* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0205* | | ug/L | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0218* | | ug/L | *0.02500* | | *87* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082 Polychlorinated Biphenyls (PCB) / Low Level** | | | | | | | | | | |
| **Batch CG01423 - 3510C** | | | | | | | | | | |
| Aroclor 1016 | 0.57 | 0.05 | ug/L | 0.5000 | | 113 | 25-145 | 6 | 30 | |
| Aroclor 1260 | 0.47 | 0.05 | ug/L | 0.5000 | | 94 | 30-145 | 4 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0268* | | ug/L | *0.02500* | | *107* | *40-135* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0247* | | ug/L | *0.02500* | | *99* | *40-135* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0189* | | ug/L | *0.02500* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0207* | | ug/L | *0.02500* | | *83* | *30-150* | | | |
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.5 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | ND | 2.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | ND | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 5.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | ND | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | ND | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1-Chlorohexane | ND | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | ND | 1.0 | ug/L | | | | | | | |
| 2-Butanone | ND | 25.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | ND | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | ND | 10.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | ND | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | ND | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 25.0 | ug/L | | | | | | | |
| Acetone | ND | 25.0 | ug/L | | | | | | | |
| Benzene | ND | 1.0 | ug/L | | | | | | | |
| Bromobenzene | ND | 2.0 | ug/L | | | | | | | |
| Bromochloromethane | ND | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | ND | 0.6 | ug/L | | | | | | | |
| Bromoform | ND | 1.0 | ug/L | | | | | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8260B Volatile Organic Compounds | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| Bromomethane | ND | 2.0 | ug/L | | | | | | | |
| Carbon Disulfide | ND | 1.0 | ug/L | | | | | | | |
| Carbon Tetrachloride | ND | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| Chloroethane | ND | 2.0 | ug/L | | | | | | | |
| Chloroform | ND | 1.0 | ug/L | | | | | | | |
| Chloromethane | ND | 2.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.4 | ug/L | | | | | | | |
| Dibromochloromethane | ND | 1.0 | ug/L | | | | | | | |
| Dibromomethane | ND | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | ND | 2.0 | ug/L | | | | | | | |
| Ethylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | ND | 0.6 | ug/L | | | | | | | |
| Isopropylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1.0 | ug/L | | | | | | | |
| Methylene Chloride | ND | 4.0 | ug/L | | | | | | | |
| Naphthalene | ND | 1.0 | ug/L | | | | | | | |
| n-Butylbenzene | ND | 1.0 | ug/L | | | | | | | |
| n-Propylbenzene | ND | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Styrene | ND | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | ND | 1.0 | ug/L | | | | | | | |
| Toluene | ND | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.5 | ug/L | | | | | | | |
| Trichloroethene | ND | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | ND | 1.0 | ug/L | | | | | | | |
| Vinyl Chloride | ND | 1.0 | ug/L | | | | | | | |
| Xylene O | ND | 1.0 | ug/L | | | | | | | |
| Xylene P,M | ND | 2.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *20.8* | | ug/L | *25.00* | | *83* | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *23.3* | | ug/L | *25.00* | | *93* | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | *21.9* | | ug/L | *25.00* | | *87* | *85-115* | | | |
| *Surrogate: Toluene-d8* | *25.2* | | ug/L | *25.00* | | *101* | *85-120* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 10.2 | | ug/L | 10.00 | | 102 | 80-130 | | | |
| 1,1,1-Trichloroethane | 9.5 | | ug/L | 10.00 | | 95 | 65-130 | | | |
| 1,1,2,2-Tetrachloroethane | 9.2 | | ug/L | 10.00 | | 92 | 65-130 | | | |
| 1,1,2-Trichloroethane | 9.8 | | ug/L | 10.00 | | 98 | 75-125 | | | |
| 1,1-Dichloroethane | 9.6 | | ug/L | 10.00 | | 96 | 70-135 | | | |
| 1,1-Dichloroethene | 10.4 | | ug/L | 10.00 | | 104 | 70-130 | | | |
| 1,1-Dichloropropene | 9.2 | | ug/L | 10.00 | | 92 | 75-130 | | | |
| 1,2,3-Trichlorobenzene | 12.3 | | ug/L | 10.00 | | 123 | 55-140 | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

8260B Volatile Organic Compounds

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| 1,2,3-Trichloropropane | 9.5 | | ug/L | 10.00 | | 95 | 75-125 | | | |
| 1,2,4-Trichlorobenzene | 11.6 | | ug/L | 10.00 | | 116 | 65-135 | | | |
| 1,2,4-Trimethylbenzene | 10.3 | | ug/L | 10.00 | | 103 | 75-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 8.9 | | ug/L | 10.00 | | 89 | 50-130 | | | |
| 1,2-Dibromoethane | 10.0 | | ug/L | 10.00 | | 100 | 80-120 | | | |
| 1,2-Dichlorobenzene | 10.3 | | ug/L | 10.00 | | 103 | 70-120 | | | |
| 1,2-Dichloroethane | 9.3 | | ug/L | 10.00 | | 93 | 70-130 | | | |
| 1,2-Dichloropropane | 9.9 | | ug/L | 10.00 | | 99 | 75-125 | | | |
| 1,3,5-Trimethylbenzene | 10.7 | | ug/L | 10.00 | | 107 | 75-130 | | | |
| 1,3-Dichlorobenzene | 10.4 | | ug/L | 10.00 | | 104 | 75-125 | | | |
| 1,3-Dichloropropane | 10.1 | | ug/L | 10.00 | | 101 | 75-125 | | | |
| 1,4-Dichlorobenzene | 10.2 | | ug/L | 10.00 | | 102 | 75-125 | | | |
| 1-Chlorohexane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | | | |
| 2,2-Dichloropropane | 10.1 | | ug/L | 10.00 | | 101 | 70-135 | | | |
| 2-Butanone | 49.4 | | ug/L | 50.00 | | 99 | 30-150 | | | |
| 2-Chlorotoluene | 10.2 | | ug/L | 10.00 | | 102 | 75-125 | | | |
| 2-Hexanone | 51.8 | | ug/L | 50.00 | | 104 | 55-130 | | | |
| 4-Chlorotoluene | 9.8 | | ug/L | 10.00 | | 98 | 75-130 | | | |
| 4-Isopropyltoluene | 10.9 | | ug/L | 10.00 | | 109 | 75-130 | | | |
| 4-Methyl-2-Pentanone | 46.9 | | ug/L | 50.00 | | 94 | 60-135 | | | |
| Acetone | 54.4 | | ug/L | 50.00 | | 109 | 40-140 | | | |
| Benzene | 9.8 | | ug/L | 10.00 | | 98 | 80-120 | | | |
| Bromobenzene | 10.2 | | ug/L | 10.00 | | 102 | 75-125 | | | |
| Bromochloromethane | 9.6 | | ug/L | 10.00 | | 96 | 65-130 | | | |
| Bromodichloromethane | 9.6 | | ug/L | 10.00 | | 96 | 75-120 | | | |
| Bromoform | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | | | |
| Bromomethane | 9.1 | | ug/L | 10.00 | | 91 | 30-145 | | | |
| Carbon Disulfide | 10.8 | | ug/L | 10.00 | | 108 | 35-160 | | | |
| Carbon Tetrachloride | 9.6 | | ug/L | 10.00 | | 96 | 65-140 | | | |
| Chlorobenzene | 10.2 | | ug/L | 10.00 | | 102 | 80-120 | | | |
| Chloroethane | 9.5 | | ug/L | 10.00 | | 95 | 60-135 | | | |
| Chloroform | 9.5 | | ug/L | 10.00 | | 95 | 65-135 | | | |
| Chloromethane | 8.7 | | ug/L | 10.00 | | 87 | 40-125 | | | |
| cis-1,2-Dichloroethene | 9.8 | | ug/L | 10.00 | | 98 | 70-125 | | | |
| cis-1,3-Dichloropropene | 9.2 | | ug/L | 10.00 | | 92 | 70-130 | | | |
| Dibromochloromethane | 9.6 | | ug/L | 10.00 | | 96 | 60-135 | | | |
| Dibromomethane | 9.4 | | ug/L | 10.00 | | 94 | 75-125 | | | |
| Dichlorodifluoromethane | 9.3 | | ug/L | 10.00 | | 93 | 30-155 | | | |
| Ethylbenzene | 10.1 | | ug/L | 10.00 | | 101 | 75-125 | | | |
| Hexachlorobutadiene | 11.8 | | ug/L | 10.00 | | 118 | 50-140 | | | |
| Isopropylbenzene | 9.0 | | ug/L | 10.00 | | 90 | 75-125 | | | |
| Methyl tert-Butyl Ether | 9.6 | | ug/L | 10.00 | | 96 | 65-125 | | | |
| Methylene Chloride | 9.8 | | ug/L | 10.00 | | 98 | 55-140 | | | |
| Naphthalene | 11.2 | | ug/L | 10.00 | | 112 | 55-140 | | | |
| n-Butylbenzene | 11.7 | | ug/L | 10.00 | | 117 | 70-135 | | | |

ESS Laboratory
Division of Thielsch Engineering, Inc.

BAL Laboratory
The Microbiology Division of Thielsch Engineering, Inc.

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8260B Volatile Organic Compounds | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| n-Propylbenzene | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | | | |
| sec-Butylbenzene | 11.4 | | ug/L | 10.00 | | 114 | 70-125 | | | |
| Styrene | 9.6 | | ug/L | 10.00 | | 96 | 65-135 | | | |
| tert-Butylbenzene | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | | | |
| Tetrachloroethene | 10.1 | | ug/L | 10.00 | | 101 | 45-150 | | | |
| Toluene | 9.9 | | ug/L | 10.00 | | 99 | 75-120 | | | |
| trans-1,2-Dichloroethene | 9.0 | | ug/L | 10.00 | | 90 | 60-140 | | | |
| trans-1,3-Dichloropropene | 8.8 | | ug/L | 10.00 | | 88 | 55-140 | | | |
| Trichloroethene | 9.7 | | ug/L | 10.00 | | 97 | 70-125 | | | |
| Trichlorofluoromethane | 8.5 | | ug/L | 10.00 | | 85 | 60-145 | | | |
| Vinyl Chloride | 9.2 | | ug/L | 10.00 | | 92 | 50-145 | | | |
| Xylene O | 10.1 | | ug/L | 10.00 | | 101 | 80-120 | | | |
| Xylene P,M | 20.7 | | ug/L | 20.00 | | 104 | 75-130 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *22.1* | | ug/L | *25.00* | | *89* | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *23.5* | | ug/L | *25.00* | | *94* | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | *23.2* | | ug/L | *25.00* | | *93* | *85-115* | | | |
| *Surrogate: Toluene-d8* | *24.2* | | ug/L | *25.00* | | *97* | *85-120* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9.5 | | ug/L | 10.00 | | 95 | 80-130 | 7 | 30 | |
| 1,1,1-Trichloroethane | 9.4 | | ug/L | 10.00 | | 94 | 65-130 | 2 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.2 | | ug/L | 10.00 | | 92 | 65-130 | 0.2 | 30 | |
| 1,1,2-Trichloroethane | 9.3 | | ug/L | 10.00 | | 93 | 75-125 | 5 | 30 | |
| 1,1-Dichloroethane | 9.4 | | ug/L | 10.00 | | 94 | 70-135 | 3 | 30 | |
| 1,1-Dichloroethene | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | 2 | 30 | |
| 1,1-Dichloropropene | 9.2 | | ug/L | 10.00 | | 92 | 75-130 | 0.7 | 30 | |
| 1,2,3-Trichlorobenzene | 11.3 | | ug/L | 10.00 | | 113 | 55-140 | 8 | 30 | |
| 1,2,3-Trichloropropane | 9.4 | | ug/L | 10.00 | | 94 | 75-125 | 1 | 30 | |
| 1,2,4-Trichlorobenzene | 10.4 | | ug/L | 10.00 | | 104 | 65-135 | 11 | 30 | |
| 1,2,4-Trimethylbenzene | 9.4 | | ug/L | 10.00 | | 94 | 75-130 | 9 | 30 | |
| 1,2-Dibromo-3-Chloropropane | 8.3 | | ug/L | 10.00 | | 83 | 50-130 | 7 | 30 | |
| 1,2-Dibromoethane | 9.9 | | ug/L | 10.00 | | 99 | 80-120 | 1 | 30 | |
| 1,2-Dichlorobenzene | 10.0 | | ug/L | 10.00 | | 100 | 70-120 | 3 | 30 | |
| 1,2-Dichloroethane | 9.4 | | ug/L | 10.00 | | 94 | 70-130 | 1 | 30 | |
| 1,2-Dichloropropane | 9.6 | | ug/L | 10.00 | | 96 | 75-125 | 3 | 30 | |
| 1,3,5-Trimethylbenzene | 9.6 | | ug/L | 10.00 | | 96 | 75-130 | 11 | 30 | |
| 1,3-Dichlorobenzene | 9.6 | | ug/L | 10.00 | | 96 | 75-125 | 8 | 30 | |
| 1,3-Dichloropropane | 9.8 | | ug/L | 10.00 | | 98 | 75-125 | 4 | 30 | |
| 1,4-Dichlorobenzene | 9.4 | | ug/L | 10.00 | | 94 | 75-125 | 8 | 30 | |
| 1-Chlorohexane | 9.5 | | ug/L | 10.00 | | 95 | 70-130 | 6 | 30 | |
| 2,2-Dichloropropane | 9.5 | | ug/L | 10.00 | | 95 | 70-135 | 6 | 30 | |
| 2-Butanone | 51.3 | | ug/L | 50.00 | | 103 | 30-150 | 4 | 30 | |
| 2-Chlorotoluene | 9.7 | | ug/L | 10.00 | | 97 | 75-125 | 5 | 30 | |
| 2-Hexanone | 52.3 | | ug/L | 50.00 | | 105 | 55-130 | 1 | 30 | |
| 4-Chlorotoluene | 9.5 | | ug/L | 10.00 | | 95 | 75-130 | 3 | 30 | |
| 4-Isopropyltoluene | 9.8 | | ug/L | 10.00 | | 98 | 75-130 | 11 | 30 | |

ESS Laboratory
Division of Thielsch Engineering, Inc.

BAL Laboratory
The Microbiology Division of Thielsch Engineering, Inc.

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8260B Volatile Organic Compounds | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| 4-Methyl-2-Pentanone | 46.0 | | ug/L | 50.00 | | 92 | 60-135 | 2 | 30 | |
| Acetone | 56.9 | | ug/L | 50.00 | | 114 | 40-140 | 4 | 30 | |
| Benzene | 9.4 | | ug/L | 10.00 | | 94 | 80-120 | 4 | 30 | |
| Bromobenzene | 9.9 | | ug/L | 10.00 | | 99 | 75-125 | 2 | 30 | |
| Bromochloromethane | 9.5 | | ug/L | 10.00 | | 95 | 65-130 | 0.5 | 30 | |
| Bromodichloromethane | 9.1 | | ug/L | 10.00 | | 91 | 75-120 | 4 | 30 | |
| Bromoform | 9.5 | | ug/L | 10.00 | | 95 | 70-130 | 7 | 30 | |
| Bromomethane | 8.4 | | ug/L | 10.00 | | 84 | 30-145 | 8 | 30 | |
| Carbon Disulfide | 10.3 | | ug/L | 10.00 | | 103 | 35-160 | 5 | 30 | |
| Carbon Tetrachloride | 9.5 | | ug/L | 10.00 | | 95 | 65-140 | 2 | 30 | |
| Chlorobenzene | 9.6 | | ug/L | 10.00 | | 96 | 80-120 | 6 | 30 | |
| Chloroethane | 9.0 | | ug/L | 10.00 | | 90 | 60-135 | 6 | 30 | |
| Chloroform | 9.4 | | ug/L | 10.00 | | 94 | 65-135 | 0.6 | 30 | |
| Chloromethane | 8.3 | | ug/L | 10.00 | | 83 | 40-125 | 5 | 30 | |
| cis-1,2-Dichloroethene | 9.6 | | ug/L | 10.00 | | 96 | 70-125 | 2 | 30 | |
| cis-1,3-Dichloropropene | 9.0 | | ug/L | 10.00 | | 90 | 70-130 | 3 | 30 | |
| Dibromochloromethane | 9.4 | | ug/L | 10.00 | | 94 | 60-135 | 3 | 30 | |
| Dibromomethane | 8.9 | | ug/L | 10.00 | | 89 | 75-125 | 5 | 30 | |
| Dichlorodifluoromethane | 8.6 | | ug/L | 10.00 | | 86 | 30-155 | 8 | 30 | |
| Ethylbenzene | 9.4 | | ug/L | 10.00 | | 94 | 75-125 | 7 | 30 | |
| Hexachlorobutadiene | 10.8 | | ug/L | 10.00 | | 108 | 50-140 | 10 | 30 | |
| Isopropylbenzene | 8.3 | | ug/L | 10.00 | | 83 | 75-125 | 8 | 30 | |
| Methyl tert-Butyl Ether | 9.4 | | ug/L | 10.00 | | 94 | 65-125 | 2 | 30 | |
| Methylene Chloride | 9.6 | | ug/L | 10.00 | | 96 | 55-140 | 3 | 30 | |
| Naphthalene | 10.0 | | ug/L | 10.00 | | 100 | 55-140 | 11 | 30 | |
| n-Butylbenzene | 10.8 | | ug/L | 10.00 | | 108 | 70-135 | 7 | 30 | |
| n-Propylbenzene | 9.5 | | ug/L | 10.00 | | 95 | 70-130 | 8 | 30 | |
| sec-Butylbenzene | 10.3 | | ug/L | 10.00 | | 103 | 70-125 | 10 | 30 | |
| Styrene | 9.4 | | ug/L | 10.00 | | 94 | 65-135 | 2 | 30 | |
| tert-Butylbenzene | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | 9 | 30 | |
| Tetrachloroethene | 10.1 | | ug/L | 10.00 | | 101 | 45-150 | 0.7 | 30 | |
| Toluene | 9.6 | | ug/L | 10.00 | | 96 | 75-120 | 3 | 30 | |
| trans-1,2-Dichloroethene | 8.9 | | ug/L | 10.00 | | 89 | 60-140 | 2 | 30 | |
| trans-1,3-Dichloropropene | 8.4 | | ug/L | 10.00 | | 84 | 55-140 | 5 | 30 | |
| Trichloroethene | 9.3 | | ug/L | 10.00 | | 93 | 70-125 | 4 | 30 | |
| Trichlorofluoromethane | 8.3 | | ug/L | 10.00 | | 83 | 60-145 | 3 | 30 | |
| Vinyl Chloride | 8.6 | | ug/L | 10.00 | | 86 | 50-145 | 6 | 30 | |
| Xylene O | 9.4 | | ug/L | 10.00 | | 94 | 80-120 | 7 | 30 | |
| Xylene P,M | 19.5 | | ug/L | 20.00 | | 98 | 75-130 | 6 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *22.4* | | ug/L | *25.00* | | *90* | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *23.0* | | ug/L | *25.00* | | *92* | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | *22.8* | | ug/L | *25.00* | | *91* | *85-115* | | | |
| *Surrogate: Toluene-d8* | *23.8* | | ug/L | *25.00* | | *95* | *85-120* | | | |
| **Matrix Spike** **Source: 1007113-01** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9.5 | | ug/L | 10.00 | ND | 95 | 80-130 | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*

BAL Laboratory
*The Microbiology Division of Thielsch Engineering, Inc.*

*CERTIFICATE OF ANALYSIS*

Client Name: U.S. Army Corps of Engineers
Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8260B Volatile Organic Compounds | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 9.2 | | ug/L | 10.00 | ND | 92 | 65-130 | | | |
| 1,1,2,2-Tetrachloroethane | 9.3 | | ug/L | 10.00 | ND | 93 | 65-130 | | | |
| 1,1,2-Trichloroethane | 9.4 | | ug/L | 10.00 | ND | 94 | 75-125 | | | |
| 1,1-Dichloroethane | 9.4 | | ug/L | 10.00 | ND | 94 | 70-135 | | | |
| 1,1-Dichloroethene | 10.2 | | ug/L | 10.00 | ND | 102 | 70-130 | | | |
| 1,1-Dichloropropene | 9.5 | | ug/L | 10.00 | ND | 95 | 75-130 | | | |
| 1,2,3-Trichlorobenzene | 9.5 | | ug/L | 10.00 | ND | 95 | 55-140 | | | |
| 1,2,3-Trichloropropane | 9.5 | | ug/L | 10.00 | ND | 95 | 75-125 | | | |
| 1,2,4-Trichlorobenzene | 9.1 | | ug/L | 10.00 | ND | 91 | 65-135 | | | |
| 1,2,4-Trimethylbenzene | 10.9 | | ug/L | 10.00 | ND | 109 | 75-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 9.1 | | ug/L | 10.00 | ND | 91 | 50-130 | | | |
| 1,2-Dibromoethane | 9.5 | | ug/L | 10.00 | ND | 95 | 80-120 | | | |
| 1,2-Dichlorobenzene | 10.1 | | ug/L | 10.00 | ND | 101 | 70-120 | | | |
| 1,2-Dichloroethane | 8.4 | | ug/L | 10.00 | ND | 84 | 70-130 | | | |
| 1,2-Dichloropropane | 10.2 | | ug/L | 10.00 | ND | 102 | 75-125 | | | |
| 1,3,5-Trimethylbenzene | 11.8 | | ug/L | 10.00 | ND | 118 | 75-130 | | | |
| 1,3-Dichlorobenzene | 9.7 | | ug/L | 10.00 | ND | 97 | 75-125 | | | |
| 1,3-Dichloropropane | 10.6 | | ug/L | 10.00 | ND | 106 | 75-125 | | | |
| 1,4-Dichlorobenzene | 9.6 | | ug/L | 10.00 | 0.2 | 94 | 75-125 | | | |
| 1-Chlorohexane | 12.2 | | ug/L | 10.00 | ND | 122 | 70-130 | | | |
| 2,2-Dichloropropane | 9.5 | | ug/L | 10.00 | ND | 95 | 70-135 | | | |
| 2-Butanone | 51.6 | | ug/L | 50.00 | ND | 103 | 30-150 | | | |
| 2-Chlorotoluene | 10.4 | | ug/L | 10.00 | ND | 104 | 75-125 | | | |
| 2-Hexanone | 54.1 | | ug/L | 50.00 | ND | 108 | 55-130 | | | |
| 4-Chlorotoluene | 9.9 | | ug/L | 10.00 | ND | 99 | 75-130 | | | |
| 4-Isopropyltoluene | 13.6 | | ug/L | 10.00 | ND | 136 | 75-130 | | | M+ |
| 4-Methyl-2-Pentanone | 48.8 | | ug/L | 50.00 | ND | 98 | 60-135 | | | |
| Acetone | 44.7 | | ug/L | 50.00 | 1.7 | 86 | 40-140 | | | |
| Benzene | 9.7 | | ug/L | 10.00 | ND | 97 | 80-120 | | | |
| Bromobenzene | 10.4 | | ug/L | 10.00 | ND | 104 | 75-125 | | | |
| Bromochloromethane | 8.9 | | ug/L | 10.00 | ND | 89 | 65-130 | | | |
| Bromodichloromethane | 11.0 | | ug/L | 10.00 | ND | 110 | 75-120 | | | |
| Bromoform | 9.2 | | ug/L | 10.00 | ND | 92 | 70-130 | | | |
| Bromomethane | 5.5 | | ug/L | 10.00 | ND | 55 | 30-145 | | | |
| Carbon Disulfide | 10.4 | | ug/L | 10.00 | ND | 104 | 35-160 | | | |
| Carbon Tetrachloride | 9.1 | | ug/L | 10.00 | ND | 91 | 65-140 | | | |
| Chlorobenzene | 10.6 | | ug/L | 10.00 | 0.08 | 105 | 80-120 | | | |
| Chloroethane | 9.2 | | ug/L | 10.00 | ND | 92 | 60-135 | | | |
| Chloroform | 8.9 | | ug/L | 10.00 | ND | 89 | 65-135 | | | |
| Chloromethane | 7.8 | | ug/L | 10.00 | ND | 78 | 40-125 | | | |
| cis-1,2-Dichloroethene | 9.4 | | ug/L | 10.00 | ND | 94 | 70-125 | | | |
| cis-1,3-Dichloropropene | 9.1 | | ug/L | 10.00 | ND | 91 | 70-130 | | | |
| Dibromochloromethane | 9.2 | | ug/L | 10.00 | ND | 92 | 60-135 | | | |
| Dibromomethane | 8.4 | | ug/L | 10.00 | ND | 84 | 75-125 | | | |
| Dichlorodifluoromethane | 8.5 | | ug/L | 10.00 | ND | 85 | 30-155 | | | |

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Client Project ID: NBH Sawyer St

ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8260B Volatile Organic Compounds | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| Ethylbenzene | 11.3 | | ug/L | 10.00 | ND | 113 | 75-125 | | | |
| Hexachlorobutadiene | 8.0 | | ug/L | 10.00 | ND | 80 | 50-140 | | | |
| Isopropylbenzene | 9.5 | | ug/L | 10.00 | ND | 95 | 75-125 | | | |
| Methyl tert-Butyl Ether | 9.4 | | ug/L | 10.00 | ND | 94 | 65-125 | | | |
| Methylene Chloride | 9.3 | | ug/L | 10.00 | ND | 93 | 55-140 | | | |
| Naphthalene | 10.5 | | ug/L | 10.00 | ND | 105 | 55-140 | | | |
| n-Butylbenzene | 10.5 | | ug/L | 10.00 | ND | 105 | 70-135 | | | |
| n-Propylbenzene | 10.8 | | ug/L | 10.00 | ND | 108 | 70-130 | | | |
| sec-Butylbenzene | 10.3 | | ug/L | 10.00 | ND | 103 | 70-125 | | | |
| Styrene | 11.0 | | ug/L | 10.00 | ND | 110 | 65-135 | | | |
| tert-Butylbenzene | 10.5 | | ug/L | 10.00 | ND | 105 | 70-130 | | | |
| Tetrachloroethene | 10.7 | | ug/L | 10.00 | ND | 107 | 45-150 | | | |
| Toluene | 9.6 | | ug/L | 10.00 | ND | 96 | 75-120 | | | |
| trans-1,2-Dichloroethene | 9.0 | | ug/L | 10.00 | ND | 90 | 60-140 | | | |
| trans-1,3-Dichloropropene | 8.1 | | ug/L | 10.00 | ND | 81 | 55-140 | | | |
| Trichloroethene | 9.5 | | ug/L | 10.00 | ND | 95 | 70-125 | | | |
| Trichlorofluoromethane | 7.9 | | ug/L | 10.00 | ND | 79 | 60-145 | | | |
| Vinyl Chloride | 9.0 | | ug/L | 10.00 | ND | 90 | 50-145 | | | |
| Xylene O | 10.6 | | ug/L | 10.00 | ND | 106 | 80-120 | | | |
| Xylene P,M | 21.9 | | ug/L | 20.00 | ND | 110 | 75-130 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.0* | | ug/L | *25.00* | | *76* | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *23.5* | | ug/L | *25.00* | | *94* | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | *20.5* | | ug/L | *25.00* | | *82* | *85-115* | | | *S-* |
| *Surrogate: Toluene-d8* | *25.6* | | ug/L | *25.00* | | *103* | *85-120* | | | |
| **Matrix Spike Dup Source: 1007113-01** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 9.7 | | ug/L | 10.00 | ND | 97 | 80-130 | 1 | 30 | |
| 1,1,1-Trichloroethane | 9.3 | | ug/L | 10.00 | ND | 93 | 65-130 | 1 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.5 | | ug/L | 10.00 | ND | 95 | 65-130 | 2 | 30 | |
| 1,1,2-Trichloroethane | 8.4 | | ug/L | 10.00 | ND | 84 | 75-125 | 12 | 30 | |
| 1,1-Dichloroethane | 9.5 | | ug/L | 10.00 | ND | 95 | 70-135 | 0.9 | 30 | |
| 1,1-Dichloroethene | 10.5 | | ug/L | 10.00 | ND | 105 | 70-130 | 3 | 30 | |
| 1,1-Dichloropropene | 9.7 | | ug/L | 10.00 | ND | 97 | 75-130 | 2 | 30 | |
| 1,2,3-Trichlorobenzene | 10.0 | | ug/L | 10.00 | ND | 100 | 55-140 | 5 | 30 | |
| 1,2,3-Trichloropropane | 9.5 | | ug/L | 10.00 | ND | 95 | 75-125 | 0.2 | 30 | |
| 1,2,4-Trichlorobenzene | 9.7 | | ug/L | 10.00 | ND | 97 | 65-135 | 7 | 30 | |
| 1,2,4-Trimethylbenzene | 10.7 | | ug/L | 10.00 | ND | 107 | 75-130 | 2 | 30 | |
| 1,2-Dibromo-3-Chloropropane | 8.7 | | ug/L | 10.00 | ND | 87 | 50-130 | 5 | 30 | |
| 1,2-Dibromoethane | 10.0 | | ug/L | 10.00 | ND | 100 | 80-120 | 5 | 30 | |
| 1,2-Dichlorobenzene | 9.9 | | ug/L | 10.00 | ND | 99 | 70-120 | 1 | 30 | |
| 1,2-Dichloroethane | 8.5 | | ug/L | 10.00 | ND | 85 | 70-130 | 0.8 | 30 | |
| 1,2-Dichloropropane | 9.7 | | ug/L | 10.00 | ND | 97 | 75-125 | 5 | 30 | |
| 1,3,5-Trimethylbenzene | 11.0 | | ug/L | 10.00 | ND | 110 | 75-130 | 7 | 30 | |
| 1,3-Dichlorobenzene | 9.7 | | ug/L | 10.00 | ND | 97 | 75-125 | 0.1 | 30 | |
| 1,3-Dichloropropane | 10.5 | | ug/L | 10.00 | ND | 105 | 75-125 | 0.8 | 30 | |
| 1,4-Dichlorobenzene | 9.5 | | ug/L | 10.00 | 0.2 | 93 | 75-125 | 1 | 30 | |

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ESS Laboratory Work Order: 1007113

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CG01304 - 5030B** | | | | | | | | | | |
| Xylene P,M | 22.1 | | ug/L | 20.00 | ND | 110 | 75-130 | 0.7 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.4* | | ug/L | *25.00* | | *78* | *70-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *24.5* | | ug/L | *25.00* | | *98* | *75-120* | | | |
| *Surrogate: Dibromofluoromethane* | *20.8* | | ug/L | *25.00* | | *83* | *85-115* | | | *S-* |
| *Surrogate: Toluene-d8* | *25.1* | | ug/L | *25.00* | | *100* | *85-120* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CG01416 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 28 | | mg/L | 30.70 | | 91 | 80-120 | | | |
| **Duplicate** **Source: 1007113-01** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | ND | | | | 20 | |

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**Notes and Definitions**

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| S- | Surrogate recovery(ies) below lower control limit (S-). |
| M+ | Matrix Spike recovery is above upper control limit (M+). |
| J | Reported between MDL and MRL; Estimated value. |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| B | Present in Method Blank (B). |
| ND | Analyte NOT DETECTED above the detection limit (LOD for DoD Reports) |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| LOD | Limit of Detection |
| [CALC] | Calculated Analyte |

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**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002
http://www.nj.gov/dep/oqa/certlabs.htm

Pensylvania Potable and Non Potable Water, Solid and Hazardous Waste: 68-01752
http://files.dep.state.pa.us/RegionalResources/Labs/LabsPortalFiles/2009-0911_accredited_laboratories.pdf

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

# ESS Laboratory

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185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: (MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following: MA-MCP Navy (USACE) Other ____

Reporting Limits

ESS LAB PROJECT ID: 1007113

Electronic Deliverable: Yes ___ No ___
Format: Excel ___ Access ___ PDF ___ Other ___

Co. Name: DAVID WALSH / WOODS HOLE GROUP
Project #:
Project Name (20 Char. or less): New Bedford Harbor
Contact Person: Collected for USACE (M. KOENIG)
Address: 81 TECHNology Park Dr.
City: E. FALMOUTH
State: MA
Zip: 02536
PO#:
Telephone #: 508-540-8080
Fax #: 508-540-1001
Email Address: DWALSH@WHGRP.COM

Write Required Analysis

| ESS LAB Sample # | Date | Collection Time | COMP | GRAB | MATRIX | Sample Identification (20 Char. or less) | Pres Code | Number of Containers | Type of Containers | PCB Aroclors | VOCs | Metals/Cu, Cr, Pb | TSS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7/8/10 | 1610 | | | GW | MW-005-070810 | 1 | 2 | G | X | | | |
| 1 | 7/8/10 | 1610 | | | \| | MW-005-070810 | 2 | 6 | V | | X | | |
| 1 | 7/8/10 | 1610 | | | \| | MW-005-070810 | 4 | 1 | P | | | X | |
| 1 | 7/8/10 | 1610 | | | V | MW-005-070810 | 1 | 1 | P | | | | X |
| 2 | 7/8/10 | 1610 | | | | ~~MW-005-070810~~ TB-070810 | 1 | 1 | V | | X | | |

Container Type: P-Poly G-Glass S-Sterile V-VOA
Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: Yes ___ No
Seals Intact: ___ Yes ___ No NA: ✓
Cooler Temp: 2.6°C Ice

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- $H_2SO_4$, 4- $HNO_3$, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: Mike Walsh

Comments: TB-070810 is a trip blank. Please report/invoice to USACE-NAE M. Koenig @

| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| [signature] | 7/9/10 1030 | [signature] | 7/9/10 1030 | [signature] | 7/9/10 1344 | [signature] | 7/9/10 14:40 |
| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
| | | | | | | | |

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receip:

10/26/04 A

# FINAL
# SEDIMENT TRAP STUDY SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE, OU #1

## Contract No. W912WJ-09-D-0001-0010-03

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

Prepared By:
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth, MA 02536


April 2011

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# FINAL
# SEDIMENT TRAP STUDY SUMMARY REPORT
# 2010 REMEDIAL DREDGING
# NEW BEDFORD HARBOR SUPERFUND SITE
# OPERATIONAL UNIT #1
# NEW BEDFORD, MASSACHUSETTS

## Contract No. W912WJ-09-D-0001-0010-03

**April 2011**

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

**Prepared by:**
Woods Hole Group
81 Technology Park Drive
East Falmouth MA  02536
(508) 540-8080

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# EXECUTIVE SUMMARY

Suspended sediment monitoring was performed for eight months during the 2010 dredge season as part of the Environmental Monitoring, Sampling and Analysis for the New Bedford Harbor Superfund Site. Sediment trap samplers were positioned in three locations within the upper harbor with the goal of characterizing the chemical and physical properties of sediments that are actively transported in the estuary. The study area extended from the previously remediated area north of Wood Street (NWS), south to the Coggeshall Street and Interstate-195 bridges, and spanned six active remediation locations.

Two sediment trap samplers were deployed at each of three stations within the study area. The northernmost station, ST-001 was located 100 feet north of the Wood Street Bridge. The centralized station, ST-002/ST-004 was initially located in the center of Dredge Area K but was later moved south of Area K when active dredging began in Area K. The southernmost station, ST-003 was located 300 feet south of the I-195 Bridge in the Lower Harbor, adjacent to a sediment trap maintained by the City of New Bedford. The traps were initially deployed on March, 25, 2010, followed by routine sample collection events (approximately every 7 weeks) on May 5th, July 14th, August 25th, and September 30$^{th}$. The final recovery of the sediment traps occurred on November 22, 2010. The length of the study period allowed for samples to be collected during active and non-active remediation periods. Sampling during both time periods provides a valuable assessment of the site condition and allows for a better understanding of potential impacts that ongoing remediation activities may have on the estuarine system. Co-located surface sediments were collected each time the sediment traps were recovered and deployed to represent an integrated measurement of newly deposited sediment characteristics and PCB concentration.

Sediment trap samples were processed to determine the total particulate mass accumulated over the deployment period, this information was in turn used to calculate sediment deposition rates at each station. The accumulated sediment was analyzed for PCB congeners (NOAA-18), total organic carbon (TOC), and grain size. All co-located surface sediment samples were analyzed in the same manner. Sediment deposition rates in the traps were highest at ST-003 and lowest at ST-001. Stations at ST-003 and ST-002/ST-004 followed very similar accumulation patterns, even though ST-003 was located over one-half mile south of any dredge-related activity, and ST-002/ST-004 was located just 300 feet south of active remediation. The sediment deposition rates observed in the 2010 season are consistent with the rates observed in 2009. Results from the five deployments during the 2010 season show peaks in deposition rates from May-July and August-September, and a decrease in deposition rate from July-August.

Sediment trap samples were generally comprised of fine-grained sediments (clay and silt), with a minimal coarse-grained content. Surface sediments were poorly sorted and comprised of higher percentages of sand and gravel, when compared to co-located sediment trap samples. Concentrations of TOC were very similar among all stations and sample types.

PCB flux is defined in this study as the daily deposition rate of PCBs contaminated sediments from the water column to the bottom sediments. PCB flux was quantified

using the calculated sediment deposition rate ($g/m^2/day$) and the total PCB concentration of the sediment trap sample. PCB flux at the northernmost (ST-001) and southernmost (ST-003) locations remained relatively constant throughout the dredge season, averaging 10.03 and 7.54 $mg/m^2/day$, respectively. PCB flux was highest at the central trap station (ST-002/ST-004), with a mean rate of 37.68 $mg/m^2/day$. PCB flux at this station was significantly greater than at other stations.

Statistical comparison between the co-located sediment trap and grab samples revealed that PCB concentrations were comparable, with no significant difference in PCB concentration between the two. This suggests that sediments deposited in the trap samplers are representative of the material that has accumulated on the estuary floor.

The analytical data reveals three distinct trends, 1) highest sediment deposition rates at the southern station (ST-003), 2) highest PCB flux at the central station, and 3) uniformity between co-located sediment traps and grabs.

# 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.

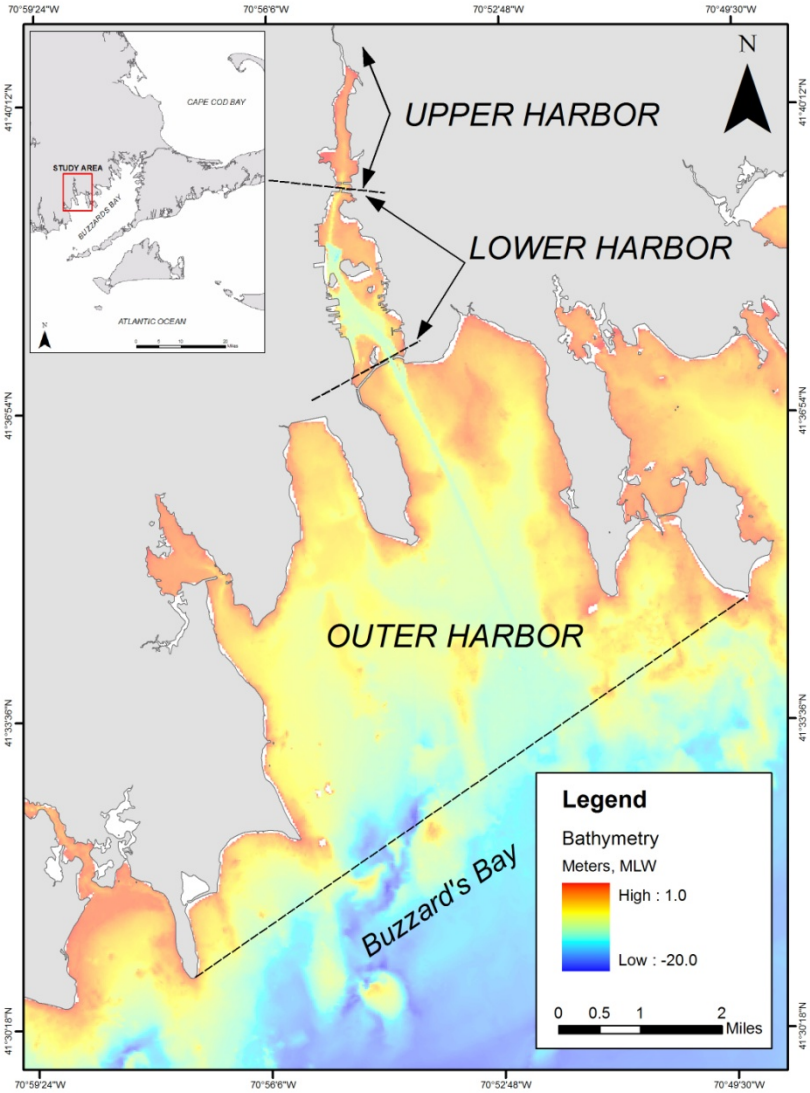


**Figure 1. Basemap of New Bedford Harbor Superfund Site**

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 sources of the PCB contamination have 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 is the primary source of PCB s to the harbor, 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, 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 current 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 current 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 AND SCOPE

The remediation of the Site involves the excavation and dredging of approximately 900,000 cubic yards of PCB-contaminated sediment. The majority of the contaminated material is being 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 is then pumped to the Area D Dewatering Facility located on Herman Melville Boulevard where it is mechanically dewatered and transported off-site for disposal.

The Site is divided into a series of Dredge Management Units (DMU) based primarily on contamination levels, contamination sources, and topography. In 2010, remediation activities at the Site included hydraulic dredging and/or debris removal in six areas: M, G, J, N, K and L (Figure 2). Five of the six areas (Areas M, G, J, N, and K) that were dredged during the 2010 season were in the vicinity of the Aerovox facility. These areas comprised the majority of the estuary between the Wood Street Bridge and the Aerovox facility. The sixth area, Area L, is located south of the submerged cable crossing.

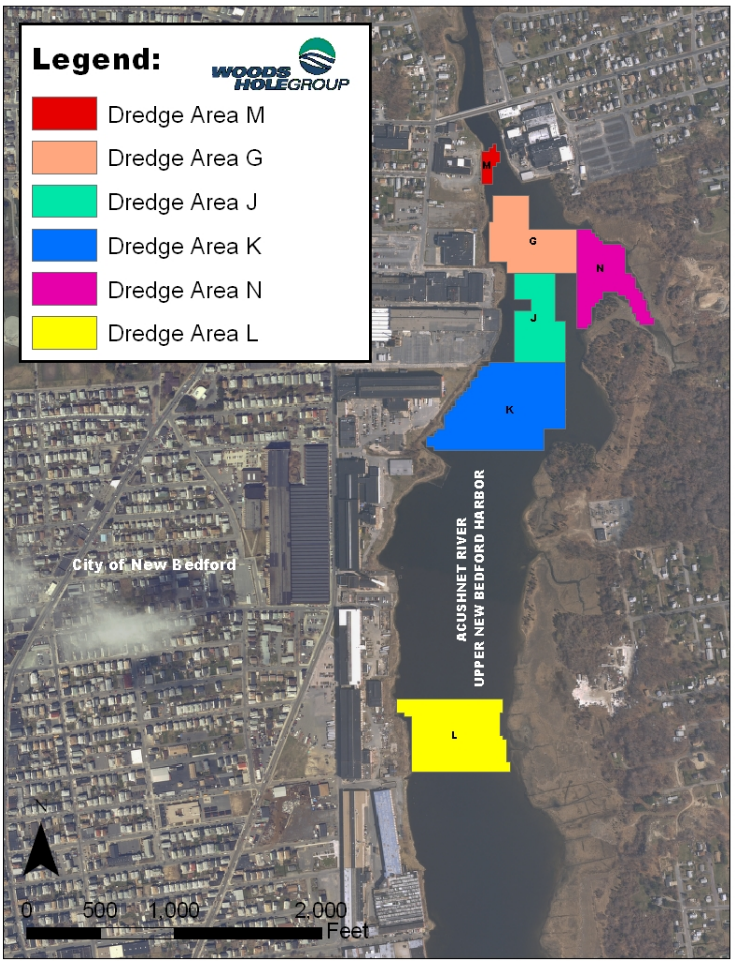


**Figure 2. Basemap of 2010 Remediation Dredging Areas**

The re-suspension of sediments during dredging, and dredging related activities, can transport contaminated sediments away from the dredge area. Additionally, contaminated sediments suspended in the water column present a concern for toxicity to aquatic organisms in the area.

The primary objective of the 2010 sediment trap study was to assess sedimentation rates throughout the Upper Harbor and evaluate the potential for redistribution or transport of contaminated sediments through re-suspension caused by dredging. The goal of this program was to monitor PCB concentrations in suspended sediments captured in the traps to help determine whether PCB contamination is being transported into areas of lower PCB concentrations south of the Coggeshall Street Bridge, as well as previously remediated areas such as north of Wood Street (NWS).

Changes in sedimentation rates and contaminant concentrations observed at the sediment trap stations could be associated with a number of processes, including but not limited to: 1) re-suspension of contaminated material by remedial dredging activities; 2) naturally occurring movement of suspended sediments in the harbor (e.g., river flow, tides, winds, etc.); and 3) upland sources such as combined sewer overflows (CSOs). Analytical data collected to support the study objectives included: sediment grain size; total organic carbon (TOC) concentration; and polychlorinated biphenyls (PCBs) concentrations. Analytical tests were conducted on sediment trap samples and adjacent surface sediments collected at each trap location. *In-situ* water quality measurements (e.g., turbidity) were recorded during sediment trap deployment and recovery to establish typical baseline water quality standards at each site.

# 2.0 METHODS

The study design and methods used to collect and analyze sediment trap and surface sediment samples are summarized in this section and described in detail in the project Field Sampling Plan (Woods Hole Group 2010a) and Quality Assurance Project Plan (Woods Hole Group 2010b).

## 2.1 STUDY AREA AND DESIGN

The 2010 sediment trap study area spanned the previously remediated area north of Wood Street (NWS) south through upper New Bedford Harbor to the Coggeshall Street and Interstate-195 bridges. This area included the entire active remediation dredge locations and combined sewer overflows (CSOs). North of the Wood Street Bridge, the estuary is shallow and the narrow channel is flanked with steep marsh banks. As the estuary widens to the south, the western shoreline becomes more industrialized. This portion of the upper harbor contained the highest concentrations of PCB contamination, and is the active remediation site. South of the Coggeshall Street and I-195 bridges, the river opens into the lower harbor, where harbor sediment PCB concentrations are generally much lower, typically below 100 ppm.

The sediment trap study was performed over an eight month period in 2010, with individual deployments during active dredging periods and demobilization of dredge-related equipment. Sediment trap samplers were deployed at three stations within the study area (Figure 3). The northernmost station, ST-001 was located 100 feet north of the Wood Street Bridge. The centralized station was originally named ST-002 when it was located 300 feet south of Dredge Area J in Dredge Area K, but was subsequently renamed to ST-004 after being repositioned midway through the dredge season to a location 300 feet south of Dredge Area K once dredging commenced in Dredge Area K. The southernmost station, ST-003, was located about 300 feet south of the I-195 Bridge, adjacent to a sediment trap maintained by the City of New Bedford. Sediment traps were recovered once a sufficient quantity of suspended sediment material had accumulated (usually seven weeks) to meet mass requirements for physical and chemical testing. Co-located surface sediments were collected each time the sediment traps were recovered and deployed to represent an integrated measurement of newly deposited sediment characteristics and PCB concentration.

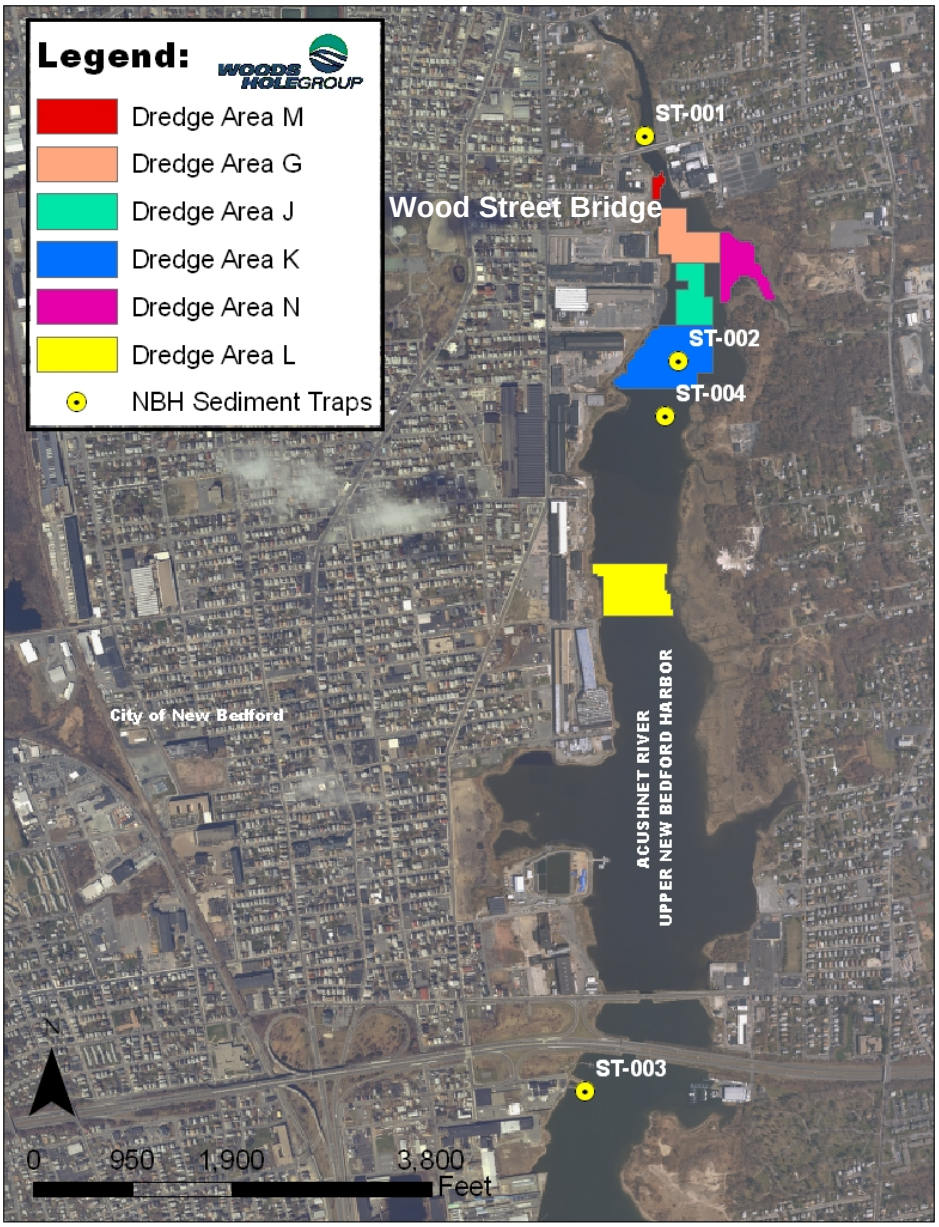


**Figure 3. 2010 Sediment Trap Stations**

All sediment samples (traps and surface sediment grabs) were analyzed for grain size, TOC, and PCB congeners, which were reported using the NOAA-18 PCB congener list (Woods Hole Group 2010b). As part of a separate project monitoring task, continuous in-situ water quality monitoring was performed at two of the three stations using co-located moored instruments to collect temperature, salinity, dissolved oxygen (DO) and turbidity data. During deployment and recovery, *in-situ* water quality measurements were also manually recorded at all stations. Other field data including sampling location, sample deployment and collection date, and sample depth were recorded on the field logs.

## 2.2 FIELD METHODS

### *2.2.1 Sediment Trap Deployment and Retrieval*

Two sediment traps were deployed for approximately 7 weeks (49 days) at each station to ensure the collection of adequate material volume for analysis. All information pertaining to the deployment and retrieval of sediment traps was recorded in the Woods Hole Group field log book. Following sediment trap deployment at each station, an in-situ profile of turbidity, temperature, dissolved oxygen, and salinity measurements was recorded on the sediment trap deployment and surface grab sampling log sheets. (Appendix A). A Garmin GPS Map 76CSx was used to record the geographic positions of the stations.

Each sediment trap sampler consisted of a one gallon, wide mouth plastic jar with a funnel affixed to the mouth. The outer diameter of the funnel was 8 inches. The jar/funnel assembly was secured inside a weighted plastic bucket. This configuration placed the opening of the trap (mouth of the funnel) approximately 1.5 feet above the sediment water interface. Figure 4 depicts the sediment trap assembly following recovery. A line from the weighted bucket was used to lower the assembly to the bottom under control and ensure an upright deployment. During deployment, clean sediment traps were lowered slowly through the water column and placed gently on the bottom. This process was important to minimize re-suspension of sediments during deployment of the trap. A small float secured to the line kept the line buoyant to prevent it from fouling the trap. This line was attached to a surface marker buoy.

Sediment traps were retrieved after a deployment period of approximately seven-weeks, provided that a sufficient quantity of material had accumulated in the traps. Based on visual observation of traps, approximately 50 grams (g) of wet material was required to meet mass requirements for physical and chemical testing. During sediment trap retrieval, the traps were pulled to the surface in a slow, controlled manner using the surface buoy line. Every effort was made to minimize disturbance of sediments within the trap. After the traps were secured aboard the vessel, the funnel was gently removed, and a cap was placed on the 1-gallon jar. The caps were secured with tape to ensure no sediment or water was lost from the jars. Samples were kept cold (4°C) and transported under chain of custody to EnviroSystems Inc. (ESI) for dewatering and processing. At ESI, the two sample containers from each station were composited into one sediment sample. Reports from this process are available in Appendix B. These reports document the total wet sample weight and a benthic fauna count and description. The benthic fauna count and description was conducted as a routine part of the processing at ESI, these data are not incorporated as part of this study. Following sample processing at ESI, samples were transported by courier to Alpha Analytical Labs (AAL). At AAL, samples were analyzed for grain size, TOC, and PCB congeners (NOAA-18).

**Figure 4. Recovered Sediment Trap Assembly**

### *2.2.2 Surface Sediment Sampling*

Surface sediment samples were collected at each of the three sediment trap locations to represent an integrated measurement of actual surface sediment characteristics and PCB concentrations before and after sediment trap sample collection. Co-located surface sediment samples were compared to sediment trap samples to determine if sediments deposited in the trap samplers are representative of the material accumulated on the adjacent estuary floor. Figure 5 contains a series of photographs depicting the surface sediment sampling process. Sediment was collected using a stainless-steel petite PONAR grab sampler. Each surface sediment sample was inspected to ensure the sample surface was undisturbed and representative of the sediment-water interface (Figure 5-A). Sediment was sampled using a pre-cleaned stainless steel spoon to scoop the top 0–2 cm of sediment in the grab (Figure 5-B). Often times, more than one grab was necessary to collect enough material for all chemical and physical analyses. The PONAR grab and sub-sampling process was repeated multiple times to ensure enough sediment was collected for all required samples (Figure 5-C). Sediment was homogenized prior to sample collection by stirring with a stainless steel spoon in a clean stainless steel container (Figure 5-D). Samples were spooned into the appropriate sample containers, stored on ice (4°C), and transported to Alpha Analytical Labs (AAL) under chain of custody. At AAL, samples were analyzed for grain size, TOC, and PCB congeners (NOAA-18).

**Figure 5. Process of Collecting and Sampling Co-located Surface Sediment Grabs**

## 2.3 LABORATORY METHODS

### *2.3.1 Polychlorinated Biphenyl Analyses*

The methods used by the laboratory are summarized below and detailed in Alpha Analytical Laboratories SOP O-012 and the USEPA's SOP EIA-FLDPCB2 in the Quality Assurance Project Plan (Woods Hole Group, 2010b).

Upon sample preparation, an aliquot of a well-mixed, homogeneous sediment sample is accurately measured for sample preparation. Generally, 50 g of sediment is extracted. The New Bedford Harbor QAPP requires 30 g of sediment for extraction by Method 3540C Soxhlet Extraction, which is air dried to a minimum of >50% solids and generally >90% solids. The sample is spiked with surrogate compounds and then extracted using methylene chloride or a methylene chloride/acetone mixture. The extract is dried and exchanged to hexane during sample concentration. After extraction, clean-up techniques are applied as necessary. The extract may be treated with Aminoprpyl, Carbon Column, Florisil (3620B) or GPC (3640A) for hydrocarbon and lipid removal, and copper (3660B) for sulfur removal. The extract is 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 1-5mL.

After clean-up and re-concentration, the extracts are analyzed on a gas chromatograph (GC) fitted with two capillary columns of differing polarities each employing separate

detectors. This process follows a modified USEPA Method 8082 (Woods Hole Group 2010b). 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 kilogram (µg/kg) for the individual 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.

### *2.3.2 Grain Size Analyses*

Grain size analysis was done using both wet sieve and hydrometer methods, based on methods in ASTM D422-63. Particle size *without hydrometer* (sometimes referred to as Grain Size Analysis) is determined by mechanically sieving a dried, homogenized sample with an array of sieves. The distribution of soil sample remaining on each of the sieves is determined by weight and represents the various classes of soil including cobble, gravel, course and fine sand, silt and clay. Particle size *with hydrometer* is determined by first homogenizing samples in sodium hexametaphosphate solution. A hydrometer test is then performed to define the fraction of sample in the silt and clay size range. The sample from the hydrometer test is transferred to a number 200 sieve and washed with tap water to remove all particles less than 75 um. The sample remaining on the number 200 sieve is then re-dried, re-homogenized and mechanically sieved with an array of sieve sizes that define the medium and fine sands present in the sample. Details on the analysis are included in Alpha Lab SOP W-029, Rev. 0, 7/17/06.

### *2.3.3 Total Organic Carbon Analyses*

TOC was analyzed using USEPA Method 9060 and 415.1. Details are provided in Alpha Lab SOP W-028, Rev. 2.0. With this method, a sample is homogenized, dried, and pre-treated with phosphoric acid to convert the inorganic carbon (i.e., carbonate and bicarbonate in the form of $CO_2$) prior to analysis. The sample is then re-dried, and organic carbon is measured using combustion and a carbonaceous analyzer. Prior to combustion, the sample is oxidized in a pure oxygen environment. The carrier gas ($O_2$) is combined with the carbon content of the combusted sample to form $CO_2$. The measured amount of $CO_2$ derived from the sample is directly proportional to the concentration of organic carbonaceous material in the sample.

## 2.4 QUALITY ASSURANCE/QUALITY CONTROL

### *2.4.1 Decontamination*

All of the sampling equipment was decontaminated prior to use in the field and between stations to prevent cross-contamination. The decontamination procedure specified in EPA Region II, CERCLA Quality Assurance Manual from October 1989, Revision 1 was

implemented prior to each station for sampling equipment that came into direct contact with the media to be sampled (e.g., PONAR grab sampler, stainless steel bowls, spoons, etc.). The EPA Region II procedures used for decontamination are summarized below (solvents used during decontamination activities were collected and stored for disposal at the laboratory):

1) Rinse with tap water (or site water on board)
2) Clean with non-phosphate soap (Liquinox) and tap water (or site water)
3) Rinse with tap water (or site water on board)
4) Rinse with Isopropanol
5) Let air-dry

### *2.4.2 Field-Based Quality Control Samples*

Replicate samples of the surface grabs were collected at one of the three stations during each sampling event. The purpose of these samples was to ensure field procedures did not affect the quality of the data. Replicate samples were used to evaluate the sampling procedure and analytical precision. The replicate samples were collected using the same techniques, and were handled, containerized, preserved, stored and transported in the same manner as field samples. All samples were analyzed by the same laboratory.

### *2.4.3 Laboratory-Based Quality Control Samples*

A routine suite of laboratory-based quality control (QC) samples were prepared with each set of field samples to evaluate data quality in terms of accuracy and precision. Grain size QC samples consisted of one laboratory duplicate sample for each batch of 20 or fewer samples. Quality control samples for TOC consisted of one method blank and one laboratory duplicate sample for each batch of 20 or fewer samples. Quality control samples for PCB analysis included one procedural blank (also called a method blank or procedural method blank), one laboratory control sample (LCS), one matrix spike (MS) and one matrix spike duplicate (MSD) for each batch of 20 or fewer samples. Surface sediment sample data were validated by a third party to Tier I+ standards for entry into the New Bedford Harbor Superfund Site Database. Sediment trap data were not validated.

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# 3.0 RESULTS

This section summarizes results from the sediment trap study. Complete analytical results are provided in Appendix C of this report. Validated data from surface grab samples are provided in Appendix D.

## 3.1 FIELD SAMPLING SUMMARY

A total of five deployments were performed at each of the three sample locations during the eight month study. Sediment traps were recovered for analysis after approximately seven weeks (49 days). The traps were initially deployed on March, 25, 2010, followed by routine sample collection events on May 5th, July 14th, August 25th, and September 30th. Final recovery of the sediment traps occurred on November 22, 2010. Table 1 provides a summary of each sample collection event.

**Table 1. Summary of Sediment Trap Deployments**

| Deployment Period | Deployment Duration (days) | Station ID | Station Location | Remediation Activities | Sample ID |
|---|---|---|---|---|---|
| 03/25/10 - 05/11/10 | 46 | ST-001 | 41° 40.719' N<br>70° 55.021' W | No Activity | S-10Y-T001-0-0 |
| | | ST-002 | 41° 40.365' N<br>70° 54.955' W | | S-10Y-T002-0-0 |
| | | ST-003 | 41° 39.218' N<br>70° 55.161' W | | S-10Y-T003-0-0 |
| 05/11/10 - 07/14/10 | 64 | ST-001 | 41° 40.719' N<br>70° 55.021' W | Dredging and Debris Removal in Areas G and J, Dredging in Area L, Debris Removal in Area N | S-10L-T001-0-0 |
| | | ST-002 | 41° 40.365' N<br>70° 54.955' W | | S-10L-T002-0-0 |
| | | ST-003 | 41° 39.218' N<br>70° 55.161' W | | S-10L-T003-0-0 |
| 07/14/10 - 08/25/10 | 42 | ST-001 | 41° 40.719' N<br>70° 55.021' W | Dredging and Debris Removal in Area K, Dredging in Area J and G, Excavating in Area M | S-10G-T001-0-0 |
| | | ST-004 | 41° 40.279' N<br>70° 54.983' W | | S-10G-T002-0-0 |
| | | ST-003 | 41° 39.218' N<br>70° 55.161' W | | S-10G-T003-0-0 |
| 08/25/10 - 09/30/10 | 36 | ST-001 | 41° 40.719' N<br>70° 55.021' W | Dredging and Debris Removal in Area K, Dredging in Area G, Debris Removal in Area N | S-10S-T001-0-0 |
| | | ST-004 | 41° 40.279' N<br>70° 54.983' W | | S-10S-T002-0-0 |
| | | ST-003 | 41° 39.218' N<br>70° 55.161' W | | S-10S-T003-0-0 |
| 09/30/2010 - 11/22/2010 | 55 | ST-001 | 41° 40.719' N<br>70° 55.021' W | No Activity | S-10S-T001-0-0 |
| | | ST-004 | 41° 40.279' N<br>70° 54.983' W | | S-10S-T002-0-0 |
| | | ST-003 | 41° 39.218' N<br>70° 55.161' W | | S-10S-T003-0-0 |

Co-located surface sediment samples were collected from the top 0–2 cm of sediment using a petite PONAR grab sampler before each sediment trap deployment. A final set of surface grab samples was collected on November 22, 2010 although no new trap samplers were deployed at that time.

All sediment trap samples were processed to determine the total particulate mass accumulated over the deployment period, this information was used to calculate sediment deposition rates at each station. The accumulated sediment was analyzed for PCB congeners (NOAA-18), total organic carbon (TOC), and grain size. All co-located surface sediment samples were analyzed in the same manner.

A water quality profile was recorded upon deployment and recovery of each set of sediment trap samplers. Profile parameters were recorded on field log sheets at various depths to characterize the water column in the vicinity of the sample location. Recorded water quality parameters included: depth; turbidity; dissolved oxygen (DO); salinity; and temperature. If the water was particularly shallow, only surface and bottom readings were recorded. The field log sheets containing these data are provided in Appendix A and summarized in Table 2.

## Table 2. Summary of *In-Situ* Water Quality Data

| Station | Water Depth (ft) | Sample Depth (ft) | Turbidity (NTU)* | DO (mg/L) | Salinity (ppt) | Temperature (°C) |
|---|---|---|---|---|---|---|
| March 25, 2010 | | | | | | |
| ST-001 | 4.1 | 1.01 | 0.8 | 11.51 | 0.08 | 9.86 |
| | | 3.45 | 1.0 | 11.33 | 0.11 | 9.86 |
| ST-002 | 4.4 | 1.49 | 1.4 | 11.20 | 2.81 | 9.59 |
| | | 2.50 | 1.7 | 11.10 | 4.27 | 9.54 |
| | | 3.93 | 4.1 | 10.83 | 29.69 | 7.32 |
| ST-003 | 18.3 | 1.55 | 1.2 | 10.69 | 23.95 | 7.47 |
| | | 8.99 | 1.2 | 10.21 | 31.53 | 6.46 |
| | | 17.35 | 1.2 | 9.94 | 35.04 | 5.62 |
| May 11, 2010 | | | | | | |
| ST-001 | 3.0 | 0.20 | 2.3 | 11.38 | 20.67 | 14.80 |
| | | 1.20 | 2.9 | 10.85 | 27.27 | 15.28 |
| | | 2.20 | 5.5 | 10.83 | 27.79 | 15.16 |
| ST-002 | N/A | N/A | N/A | N/A | N/A | N/A |
| ST-003 | 19.0 | 1.12 | 1.0 | 10.38 | 28.11 | 14.07 |
| | | 6.13 | 1.3 | 10.16 | 28.72 | 13.37 |
| | | 13.02 | 2.4 | 9.43 | 29.76 | 12.98 |
| | | 17.65 | 2.8 | 8.47 | 29.91 | 12.87 |
| July 14, 2010 | | | | | | |
| ST-001 | 4.3 | 0.72 | 8.2 | 6.47 | 26.99 | 26.97 |
| | | 3.14 | 4.5 | 2.12 | 28.17 | 26.91 |
| | | 5.25 | 4.2 | 1.68 | 28.30 | 26.97 |
| ST-004 | 4.4 | 1.20 | 4.1 | 5.02 | 27.38 | 25.95 |
| | | 3.84 | 3.9 | 4.64 | 27.93 | 25.97 |
| | | 5.97 | 4.6 | 3.67 | 29.22 | 26.06 |
| ST-003 | 21.3 | 0.91 | 4.1 | 4.98 | 29.46 | 26.41 |
| | | 7.78 | 5.4 | 4.93 | 29.52 | 26.39 |
| | | 16.98 | 5.3 | 4.84 | 29.75 | 26.27 |
| August 25, 2010 | | | | | | |
| ST-001 | 6.0 | 0.58 | 1.2 | 6.14 | 10.98 | 20.48 |
| | | 2.75 | 4.2 | 3.88 | 26.83 | 21.45 |
| | | 4.33 | 5.6 | 2.20 | 27.53 | 21.45 |
| ST-004 | 6.5 | 0.66 | 19.4 | 3.62 | 25.50 | 21.54 |
| | | 3.06 | 12.1 | 3.13 | 28.27 | 21.41 |
| | | 4.52 | 14.8 | 3.75 | 28.52 | 21.42 |
| ST-003 | 18.5 | 1.07 | 1.6 | 5.72 | 28.41 | 22.77 |
| | | 7.55 | 1.8 | 5.06 | 28.92 | 21.69 |
| | | 17.45 | 5.7 | 4.71 | 29.59 | 21.46 |
| September 30, 2010 | | | | | | |
| ST-001 | 6.3 | 1.01 | 3.4 | 9.25 | 19.51 | 22.22 |
| | | 2.80 | 3.0 | 8.81 | 26.21 | 22.13 |
| | | 5.02 | 3.4 | 6.22 | 28.88 | 21.95 |
| ST-004 | 6.5 | 1.06 | 2.6 | 7.76 | 30.16 | 22.09 |
| | | 3.05 | 2.6 | 7.76 | 30.17 | 22.09 |
| | | 5.10 | 4.8 | 7.52 | 30.40 | 21.95 |
| ST-003 | 16.5 | 1.05 | 1.8 | 6.60 | 31.59 | 21.37 |
| | | 10.08 | 0.6 | 6.63 | 31.61 | 21.33 |
| | | 15.54 | 0.9 | 6.64 | 31.60 | 21.34 |
| November 22, 2010 | | | | | | |
| ST-001 | 6.1 | 1.05 | -0.2 | 11.39 | 3.41 | 5.64 |
| | | 2.99 | -0.3 | 8.70 | 25.87 | 9.35 |
| | | 5.55 | -0.3 | 8.05 | 27.60 | 9.70 |
| ST-004 | 7.1 | 1.20 | -0.6 | 8.95 | 25.91 | 7.99 |
| | | 3.01 | -0.6 | 8.64 | 27.68 | 8.80 |
| | | 6.51 | -0.4 | 8.26 | 28.64 | 9.27 |
| ST-003 | 15.5 | 1.15 | 0.0 | 9.31 | 29.27 | 8.55 |
| | | 8.02 | -0.3 | 9.03 | 29.29 | 8.56 |
| | | 14.32 | 0.8 | 8.91 | 29.34 | 8.57 |

* Turbidity values are often negative when actual turbidity is near 0.0, this is a result of sensor calibration and sensitivity (±2% of reading or 0.3 NTU, whichever is greater)

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## 3.2 QUANTITATIVE SEDIMENT ANALYSES

### *3.2.1 Mass Accumulation*

Mass accumulation in the sediment traps varied by location and deployment period. The wet mass of sediment in the traps ranged from 149.30 g at station ST-001 during Deployment 1 (March 25 – May 11, 2010) to 1345.92 g at station ST-003 during the second deployment (May 11 – July 14, 2010). Total solid percentages ranged from 81.2% at station ST-001 during Deployment 1 to 97.2% at the same station during the final deployment (Deployment 5).

During four of the five deployment periods, the sediment trap located south of the I-195 bridge (ST-003) accumulated the most sediment. The station north of Wood Street (ST-001) accumulated the lowest mass of sediment during four of the five deployments. Dry sediment mass data was calculated by multiplying the wet mass of sediment by the total percentage of solids.

The data presented in Tables 3 and 4 are representative of the actual sample recovered from each sediment trap. These data have not been normalized for trap surface area or deployment duration. During Deployment 3 one of the two traps at ST-003 was fouled, and only one trap sample was submitted for analysis (as opposed to creating a composite of the two traps at each station). The data are normalized for these variables in the sediment deposition and PCB flux calculations.

A priority of sample analytes was established due to the potential of limited sample collection, preventing sufficient volume for all three analytes. In the event of limited sample volume the analytical priority was: 1) PCB congeners (NOAA-18); 2) TOC; and 3) grain size.

**Table 3. Summary of Sediment Trap Sample Accumulation**

| Deployment Period | Activity | Sample ID | Sediment Wet Weight (g) | Total Solids (%) | Sediment Dry Weight (g) |
|---|---|---|---|---|---|
| Deployment 1 | | | | | |
| 03/25/10 - 05/11/10 | No Activity | S-10Y-T001-0-0 | 331.10 | 85.30 | 282.43 |
| | | S-10Y-T002-0-0 | 149.30 | 94.90 | 141.69 |
| | | S-10Y-T003-0-0 | 464.30 | 92.00 | 427.16 |
| Deployment 2 | | | | | |
| 05/11/10 - 07/14/10 | Dredging and Debris Removal in Area G and J, Dredging in Area L, Debris Removal in Area N | S-10L-T001-0-0 | 299.65 | 81.20 | 243.32 |
| | | S-10L-T002-0-0 | 457.67 | 93.70 | 428.84 |
| | | S-10L-T003-0-0 | 1345.92 | 91.40 | 1230.17 |
| Deployment 3 | | | | | |
| 07/14/10 - 08/25/10 | Dredging and Debris Removal in Area K, Dredging in Area J and G, Excavating in Area M | S-10G-T001-0-0 | 223.80 | 94.00 | 210.37 |
| | | S-10G-T002-0-0 | 376.30 | 84.90 | 319.48 |
| | | S-10G-T003-0-0 | 197.50 | 96.10 | 189.80 |
| Deployment 4 | | | | | |
| 08/25/10 - 09/30/10 | Dredging and Debris Removal in Area K, Dredging in Area G, Debris Removal in Area N | S-10S-T001-0-0 | 250.36 | 93.90 | 235.09 |
| | | S-10S-T002-0-0 | 223.49 | 96.90 | 216.56 |
| | | S-10S-T003-0-0 | 839.69 | 88.20 | 740.61 |
| Deployment 5 | | | | | |
| 09/30/2010 - 11/22/2010 | No Activity | S-10N-T001-0-0 | 326.77 | 97.2 | 317.62 |
| | | S-10N-T002-0-0 | 525.52 | 95.4 | 501.35 |
| | | S-10N-T003-0-0 | 777.02 | 97.1 | 754.49 |

### *3.2.2 PCB Concentrations*

Sediment trap samples and co-located surface grab samples were analyzed for the NOAA-18 PCB congeners. Tables 4 and 5 summarize the trap and grab results,

respectively. Total PCB content was calculated by multiplying the sum of the NOAA-18 congeners by a known Upper and Lower New Bedford Harbor specific factor of 2.6. In the case of a non-detect for a particular congener, a value of zero was used during the summation.

Concentrations of PCBs in the sediment trap samples ranged from 20.94 mg/kg (ppm) to 281.28 mg/kg (ppm) over the 2010 season. Substantial variability in PCB concentrations was observed between the stations and deployment periods. Throughout the 2010 season the highest PCB concentrations were always collected at the central station ST-002/ST-004, while the lowest PCB concentrations were always collected at the southernmost station ST-003. A summary of the total concentration of total PCBs results for each sediment trap stations is provided in Table 4.

**Table 4. Summary of Sediment Trap Analytical Results**

| Deployment Period | Activity | Sample ID | Sediment Dry Weight (g) | Total PCBs (mg/kg) | Total Organic Carbon (%) |
|---|---|---|---|---|---|
| Deployment 1 | | | | | |
| 03/25/10 - 05/11/10 | No Activity | S-10Y-T001-0-0 | 282.43 | 26.81 | 5.51 |
| | | S-10Y-T002-0-0 | 141.69 | 57.21 | 5.57 |
| | | S-10Y-T003-0-0 | 427.16 | 20.94 | 3.92 |
| Deployment 2 | | | | | |
| 05/11/10 - 07/14/10 | Dredging and Debris Removal in Areas G and J, Dredging in Area L, Debris Removal in Area N | S-10L-T001-0-0 | 243.32 | 107.92 | 6.13 |
| | | S-10L-T002-0-0 | 428.84 | 233.01 | 4.58 |
| | | S-10L-T003-0-0 | 1230.17 | 32.65 | 4.03 |
| Deployment 3 | | | | | |
| 07/14/10 - 08/25/10 | Dredging and Debris Removal in Area K, Dredging in Areas J and G, Excavating in Area M | S-10G-T001-0-0 | 210.37 | 196.79 | N/A |
| | | S-10G-T002-0-0 | 319.48 | 281.28 | N/A |
| | | S-10G-T003-0-0 | 189.80 | 28.59 | N/A |
| Deployment 4 | | | | | |
| 08/25/10 - 09/30/10 | Dredging and Debris Removal in Area K, Dredging in Area G, Debris Removal in Area N | S-10S-T001-0-0 | 235.09 | 156.96 | 4.71 |
| | | S-10S-T002-0-0 | 216.56 | 223.42 | 4.71 |
| | | S-10S-T003-0-0 | 740.61 | 34.60 | 3.78 |
| Deployment 5 | | | | | |
| 09/30/2010 - 11/22/2010 | No Activity | S-10S-T001-0-0 | 317.62 | 107.20 | 6.16 |
| | | S-10S-T002-0-0 | 501.35 | 280.81 | 5.42 |
| | | S-10S-T003-0-0 | 754.49 | 45.78 | 4.42 |

**Table 5. Summary of Surface Sediment Grab Analytical Results**

| Sampling Date | Remediation Activity | Station ID | Total PCBs (mg/kg) | Total Organic Carbon (%) |
|---|---|---|---|---|
| 5/11/2010 | No Activity | ST-001 | 70.79 | 4.87 |
| | | ST-002 | 231.22 | 5.49 |
| | | ST-002 REP | 260.86 | 5.23 |
| | | ST-003 | 34.85 | 4.24 |
| 7/14/2010 | Dredging and Debris Removal in Areas G and J, Dredging in Area L, Debris Removal in Area N | ST-001 | 42.66 | 4.34 |
| | | ST-002 | 279.03 | 5.37 |
| | | ST-002 REP | 305.76 | 5.19 |
| | | ST-003 | 38.77 | 4.13 |
| 8/25/2010 | Dredging and Debris Removal in Area K, Dredging in Areas J and G, Excavating in Area M | ST-001 | 54.37 | 4.92 |
| | | ST-002 | 812.76 | 5.06 |
| | | ST-002 REP | 819.94 | 4.98 |
| | | ST-003 | 27.20 | 4.56 |
| 9/30/2010 | Dredging and Debris Removal in Area K, Dredging in Area G, Debris Removal Area in N | ST-001 | 54.45 | 3.85 |
| | | ST-002 | 421.60 | 4.78 |
| | | ST-002 REP | 600.55 | 4.04 |
| | | ST-003 | 49.15 | 3.27 |
| 11/22/2010 | No Activity | ST-001 | 67.87 | 3.99 |
| | | ST-002 | 629.19 | 4.93 |
| | | ST-002 REP | 400.72 | 5.11 |
| | | ST-003 | 51.08 | 3.05 |

### *3.2.3 Grain Size and Total Organic Carbon (TOC)*

Results of grain size analysis for the sediment trap and surface grab samples are presented in Table 6. The first and third deployments resulted in insufficient volume for grain size analysis of trap samples from all three locations. TOC results are also presented in Table 6. Little variability in the concentration of organic carbon was observed between the sediment trap and surface sediment samples. The third deployment resulted in insufficient volume for TOC analysis of trap samples from all three locations.

**Table 6. Summary of Physical Results for Sediment Trap and Surface Sediment Grab Samples**

| Type of Sample | Sample ID | TOC (%) | % Clay (<1.95 µm) | % Silt (1.95-62.5 µm) | % Very Fine Sand (0.063-0.125 mm) | % Fine Sand (0.125-0.25mm) | % Medium Sand (0.25 - 0.5mm) | % Coarse Sand (0.5-1.0mm) | % Very Coarse Sand (1.0-2.0mm) | % Gravel (.2.0mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| Deployment 1 | | | | | | | | | | |
| Sediment Trap | S-10Y-T001-0-0 | 5.505 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | S-10Y-T002-0-0 | 5.57 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | S-10Y-T003-0-0 | 3.92 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Surface Grab | S-10Y-G001-0-0 | 4.865 | 9.9 | 29.9 | 8.6 | 16.9 | 20.3 | 6.1 | 4.4 | 2.1 |
| | S-10Y-G002-0-0 | 5.49 | 31.7 | 56 | 2.4 | 2 | 2.2 | 2.3 | 2.1 | 1 |
| | S-10Y-G002-0-0-REP | 5.23 | 27.2 | 56 | 3 | 2.6 | 3.3 | 3.6 | 3.2 | 0.7 |
| | S-10Y-G003-0-0 | 4.235 | 25.9 | 55.8 | 4 | 3.8 | 3.6 | 3.3 | 2.8 | 0.6 |
| Deployment 2 | | | | | | | | | | |
| Sediment Trap | S-10L-T001-0-0 | 6.125 | 11.9 | 32.9 | 22.2 | 4.1 | 5 | 8.2 | 12.2 | 2.8 |
| | S-10L-T002-0-0 | 4.58 | 11.9 | 38.4 | 12.4 | 2.4 | 4.8 | 9 | 14.3 | 5 |
| | S-10L-T003-0-0 | 4.03 | 11.6 | 43.4 | 20.9 | 2.7 | 6.7 | 8.8 | 5.7 | 0.2 |
| Surface Grab | S-10L-G001-0-0 | 4.335 | 3.7 | 20.9 | 20.6 | 27.4 | 23 | 2.7 | 1.1 | 0.4 |
| | S-10L-G002-0-0 | 5.365 | 6.2 | 32.4 | 13.1 | 9.2 | 15.3 | 21 | 1.9 | 0.7 |
| | S-10L-G002-0-0-REP | 5.19 | 7 | 38.2 | 14 | 8.7 | 13.8 | 15.9 | 1.9 | 0.4 |
| | S-10L-G003-0-0 | 4.125 | 3.9 | 33.1 | 17 | 9.4 | 10.1 | 11.9 | 12.6 | 1.6 |
| Deployment 3 | | | | | | | | | | |
| Sediment Trap | S-10G-T001-0-0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | S-10G-T002-0-0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | S-10G-T003-0-0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Surface Grab | S-10G-G001-0-0 | 4.92 | 5.9 | 21.5 | 13.9 | 16.8 | 15.6 | 8.8 | 9 | 5.3 |
| | S-10G-G002-0-0 | 5.055 | 5.3 | 19.3 | 10.6 | 8.1 | 9.3 | 10.2 | 13.4 | 13.9 |
| | S-10G-G002-0-0-REP | 4.98 | 7.1 | 22.1 | 12.2 | 9.8 | 11 | 11.7 | 13.7 | 7.4 |
| | S-10G-G003-0-0 | 4.555 | 6 | 20.5 | 8.3 | 4.6 | 4.8 | 6.5 | 9.4 | 13.7 |
| Deployment 4 | | | | | | | | | | |
| Sediment Trap | S-10S-T001-0-0 | 4.71 | 16.7 | 25.4 | 10.7 | 18.9 | 23.1 | 5.2 | 0.1 | 0.1 |
| | S-10S-T002-0-0 | 4.71 | 25.3 | 36.1 | 9 | 0.6 | 28.9 | 0.1 | 0.1 | 0.1 |
| | S-10S-T003-0-0 | 3.78 | 21.7 | 63.1 | 13.8 | 0.5 | 0.5 | 0.4 | 0.1 | 0.1 |
| Surface Grab | S-10S-G001-0-0 | 3.85 | 7.3 | 48.5 | 8.8 | 13.9 | 18 | 2.4 | 0.9 | 0.2 |
| | S-10S-G002-0-0 | 4.78 | 10.4 | 69.6 | 7.1 | 4.1 | 4.9 | 3.2 | 0.7 | 0.1 |
| | S-10S-G002-0-0-REP | 4.04 | 9.1 | 47.1 | 9 | 13.7 | 18.1 | 2 | 0.6 | 0.3 |
| | S-10S-G003-0-0 | 3.27 | 9 | 60.2 | 8.7 | 6.9 | 4.1 | 3.7 | 3.9 | 1.5 |
| Deployment 5 | | | | | | | | | | |
| Sediment Trap | S-10N-T001-0-0 | 6.155 | 20.3 | 73.2 | 4.2 | 1.6 | 0.5 | 0.1 | 0.1 | 0.1 |
| | S-10N-T002-0-0 | 5.415 | 10.9 | 80.4 | 2.9 | 2.6 | 2 | 1 | 0.2 | 0.1 |
| | S-10N-T003-0-0 | 4.42 | 12.6 | 81.1 | 3.3 | 1.6 | 1 | 0.4 | 0.1 | 0.1 |
| Surface Grab | S-10N-G001-0-0 | 3.985 | 5.1 | 40.9 | 13.9 | 24.7 | 11.7 | 2.5 | 1.1 | 0.1 |
| | S-10N-G002-0-0 | 4.925 | 21.8 | 59.3 | 7.1 | 4.6 | 3.4 | 2.8 | 0.9 | 0.1 |
| | S-10N-G002-0-0-REP | 5.11 | 19 | 64.7 | 6.8 | 4 | 3.1 | 1.7 | 0.4 | 0.2 |
| | S-10N-G003-0-0 | 3.045 | 17.8 | 57.7 | 7 | 5.2 | 4.3 | 4.7 | 2.9 | 0.3 |

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# 4.0 DISCUSSION

This section presents an analysis of the analytical results, discusses sediment accumulation at the harbor sampling locations, and addresses trends in PCB concentrations at those sites. These data were collected to assess whether contaminated sediment particles are actively transported in the water column, and to quantify the sediment deposition rates.

## 4.1 SEDIMENT DEPOSITION AND PHYSICAL CHARACTERISTICS

Sediment deposition rates were calculated by dividing the total mass of dry sediment collected in the trap over the total time the traps were deployed. The calculation is represented per unit area to take into account the size of the funnel mouth, and expanded over a one square meter. Trends in sediment deposition rate ($g/m^2/day$) over the five deployment periods are presented in Figure 6.

Sediment deposition rates and physical properties of accumulated suspended sediments varied greatly between sediment trap stations and deployment periods. On average, the sediment traps located north of Wood Street (ST-001) accumulated less sediment than the traps downstream (Figure 6). Though the traps at ST-003 always accumulated the greatest amount of sediment, the traps located at ST-002/ST-004 followed a similar accumulation pattern. This is noteworthy considering ST-003 is located over one-half mile south of any dredge-related activity, and ST-002/ST-004 is located just 300 feet south of active dredging and debris removal. A possible explanation for this trend may be that the higher salinity of the lower harbor caused suspended fine grained material to flocculate and fall out of suspension. However, other explanations may include a change in physical hydraulic environment or a sediment source proximal to the ST-003 location. Additionally, the ST-003 station was down gradient of a CSO located near major construction activity.

Sediment deposition rates ranged across the study area from approximately 77 $g/m^2/day$ at ST-001 during July-August, to 319 $g/m^2/day$ at ST-003 during August-September. The deposition rates observed in the 2010 season are consistent with the rates observed in 2009, although the trends differ. Results from previous years indicate that sediment deposition rates vary seasonally, increasing from late spring to summer, reach a maximum during July and August, and decrease from late fall to winter. However, results from the five deployments during the 2010 season show peaks in deposition rates from May-July and August-September, and a decrease in deposition rate from July-August (Figure 6). Table 7 presents the calculated daily deposition rate.

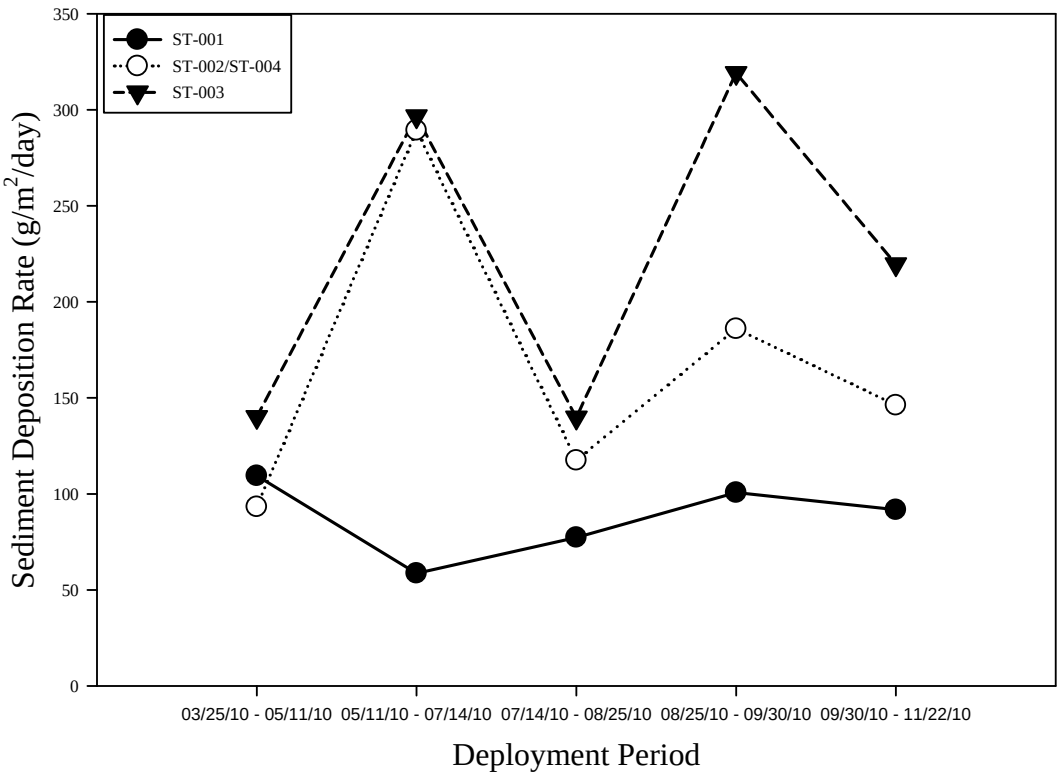


**Figure 6. Sediment Deposition Rate by Deployment Period**

**Table 7. Summary of Sediment Deposition Rates and Total PCB Flux**

| Deployment Period | Activity | Sample ID | Sediment Deposition Rate ($g/m^2/day$) | Total PCB Flux ($mg/m^2/day$) |
|---|---|---|---|---|
| Deployment 1 | | | | |
| 03/25/10 - 05/11/10 | No Activity | S-10Y-T001-0-0 | 109.44 | 2.93 |
| | | S-10Y-T002-0-0 | 93.27 | 5.34 |
| | | S-10Y-T003-0-0 | 140.10 | 2.93 |
| Deployment 2 | | | | |
| 05/11/10 - 07/14/10 | Dredging and Debris Removal in Areas G and J, Dredging in Area L, Debris Removal in Area N | S-10L-T001-0-0 | 58.70 | 6.33 |
| | | S-10L-T002-0-0 | 289.30 | 67.41 |
| | | S-10L-T003-0-0 | 296.65 | 9.69 |
| Deployment 3 | | | | |
| 07/14/10 - 08/25/10 | Dredging and Debris Removal in Area K, Dredging in Area J and G, Excavating in Area M | S-10G-T001-0-0 | 77.35 | 15.22 |
| | | S-10G-T002-0-0 | 117.53 | 33.06 |
| | | S-10G-T003-0-0 | 139.76 | 4.00 |
| Deployment 4 | | | | |
| 08/25/10 - 09/30/10 | Dredging and Debris Removal in Area K, Dredging in Area G, Debris Removal Area in N | S-10S-T001-0-0 | 100.69 | 15.80 |
| | | S-10S-T002-0-0 | 186.02 | 41.56 |
| | | S-10S-T003-0-0 | 319.22 | 11.05 |
| Deployment 5 | | | | |
| 09/30/10 - 11/22/10 | No Activity | S-10S-T001-0-0 | 91.75 | 9.84 |
| | | S-10S-T002-0-0 | 146.20 | 41.05 |
| | | S-10S-T003-0-0 | 219.60 | 10.05 |

Sediment trap samples were generally comprised of fine-grained sediments (clay and silt) and contained minimal gravel. Co-located surface sediments were highly variable, containing an almost uniform assortment of sediment types. Surface sediments were

comprised of higher percentages of sand and occasionally more gravel than the co-located sediment trap samples. Due to insufficient sample volume, grain size data are only available for three of the five sediment trap deployments. Sediment analysis was prioritized to ensure proper volume for PCB analysis, followed by TOC and grain size. Concentrations of organic carbon were similar through the harbor from both the sediment traps and surface sediment samples. Organic carbon content ranged from 3.05% to 6.16% with a mean of 4.7% (Figure 7). Traps and surface samples from the southernmost station (ST-003) typically contained lower percentages of TOC.

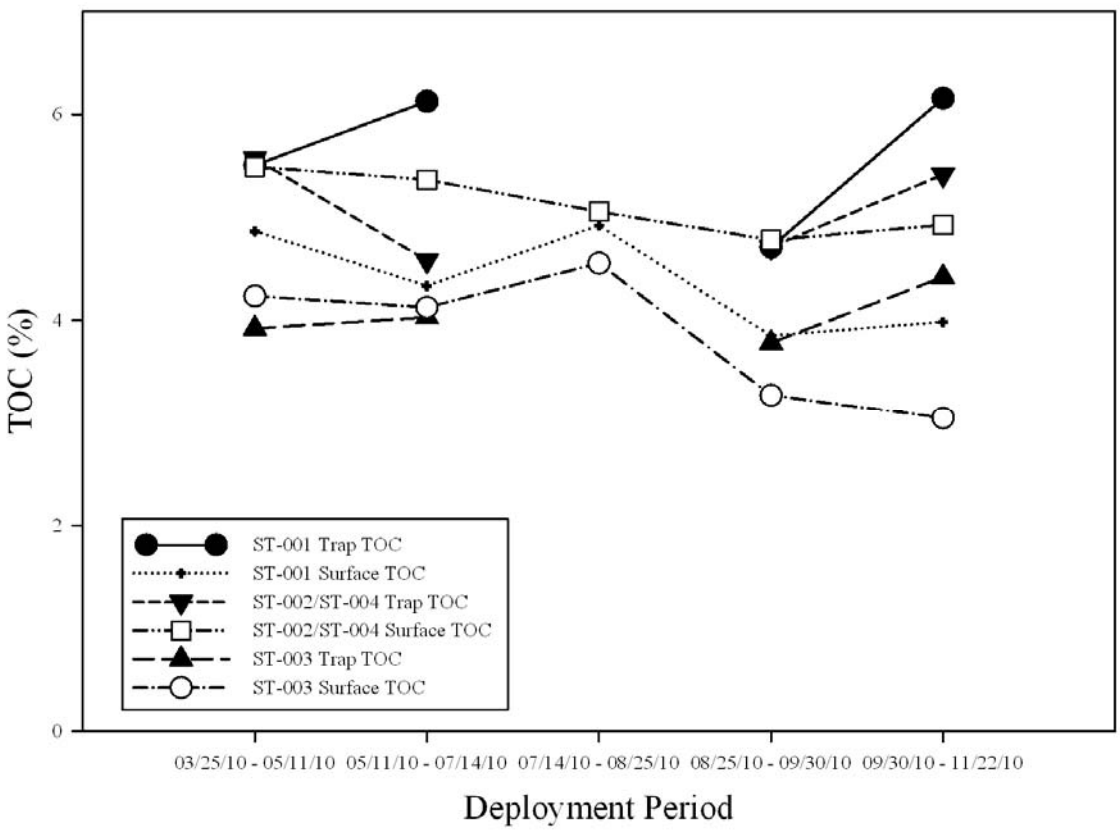


**Figure 7. Total Organic Carbon Concentrations for Traps and Surface Grabs**

### 4.2 POLYCHLORINATED BIPHENYLS

PCB flux is defined as the daily deposition rate of PCB contaminated sediments from the water column to the bottom sediments. PCB flux was quantified using the calculated sediment deposition rate ($g/m^2/day$) and the total PCB concentration of the sediment trap sample. The PCB flux is representative of the period during which the sediment trap was deployed. A summary of sediment deposition rate and PCB flux results for the 2010 season is provided in Table 7.

Flux of PCBs at the northernmost (ST-001) and southernmost (ST-003) locations remained relatively constant throughout the dredge season, averaging 10.03 ± 5.58 and

7.54 ± 3.77 mg/m$^2$/day, respectively. However, at the central trap station (ST-002/ST-004), daily flux of PCBs ranged from 5.34 to 67.41 mg/m$^2$/day. The mean rate of PCB flux at ST-002 was 37.68 ± 22.24. Statistically, the mean flux at ST-002/ST-004 is significantly greater than the traps at ST-001 and ST-003 over the entire deployment period. Statistical significance was determined by conducting a two-tailed t-test, in which the t-value is less than or equal to 0.05. Despite less total sediment deposition compared to ST-003, the greater PCB flux at ST-002/ST-004 may be attributed to the station's close proximity to remediation activities and to the Aerovox facility, where sediment PCB concentrations are highest. Figure 8 depicts the total PCB flux for each location and deployment period, and highlights the elevated flux at ST-002/ST-004 with respect to the other stations.

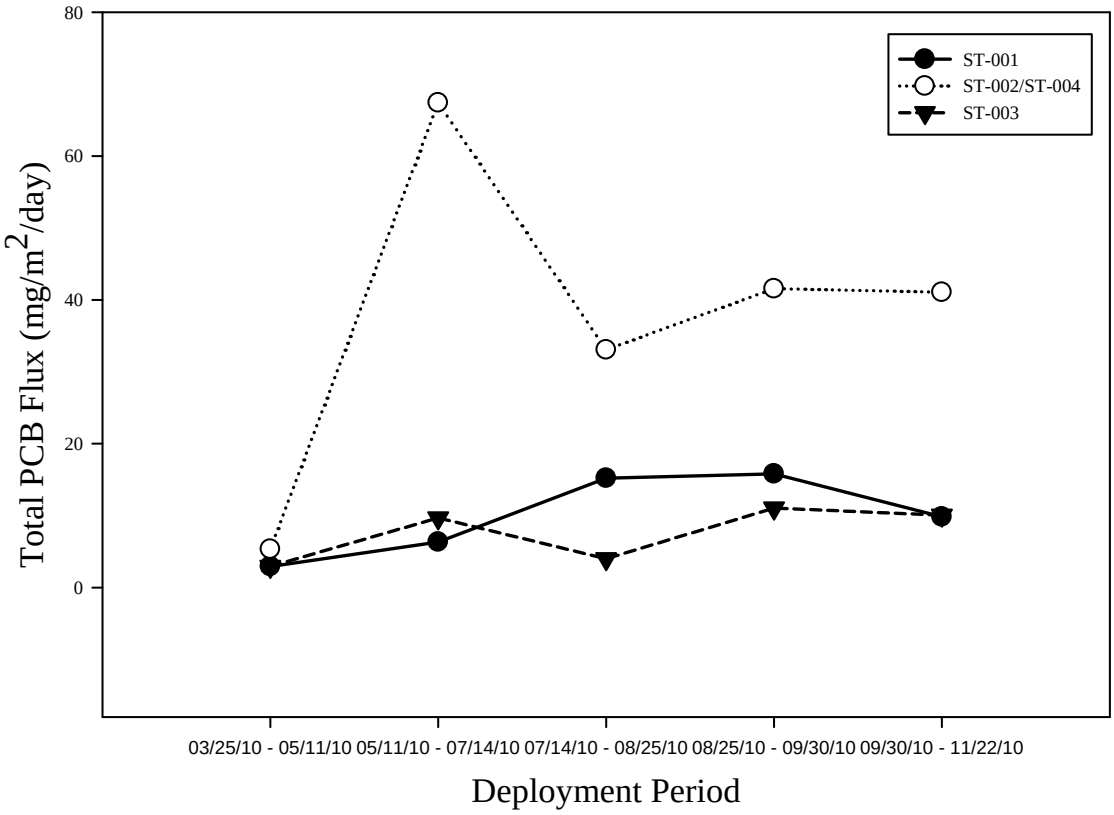


**Figure 8. PCB Flux**

Figure 9 depicts PCB concentration in sediment traps and surface grabs over the course of the 2010 season. The figure highlights the greater concentrations of ST-002/ST-004 versus the other stations in both sediment traps and surface sediment samples. Figure 9 clarifies that the positioning of ST-002/ST-004 in a "hot spot" of contaminants influences the concentrations of PCB contaminants in the traps and surface sediment samples. Furthermore, ST-002/ST-004 was located in closest proximity to remediation activities, whereas ST-001 is situated in a previously remediated area, and ST-003 is in a far-field position known to have lower contaminant levels. The t-tests revealed that PCB concentrations in sediment trap samples from ST-002 were significantly different than

those from ST-001 and ST-003. Differences between PCB concentrations in ST-001 and ST-003 sediment traps were statistically insignificant.

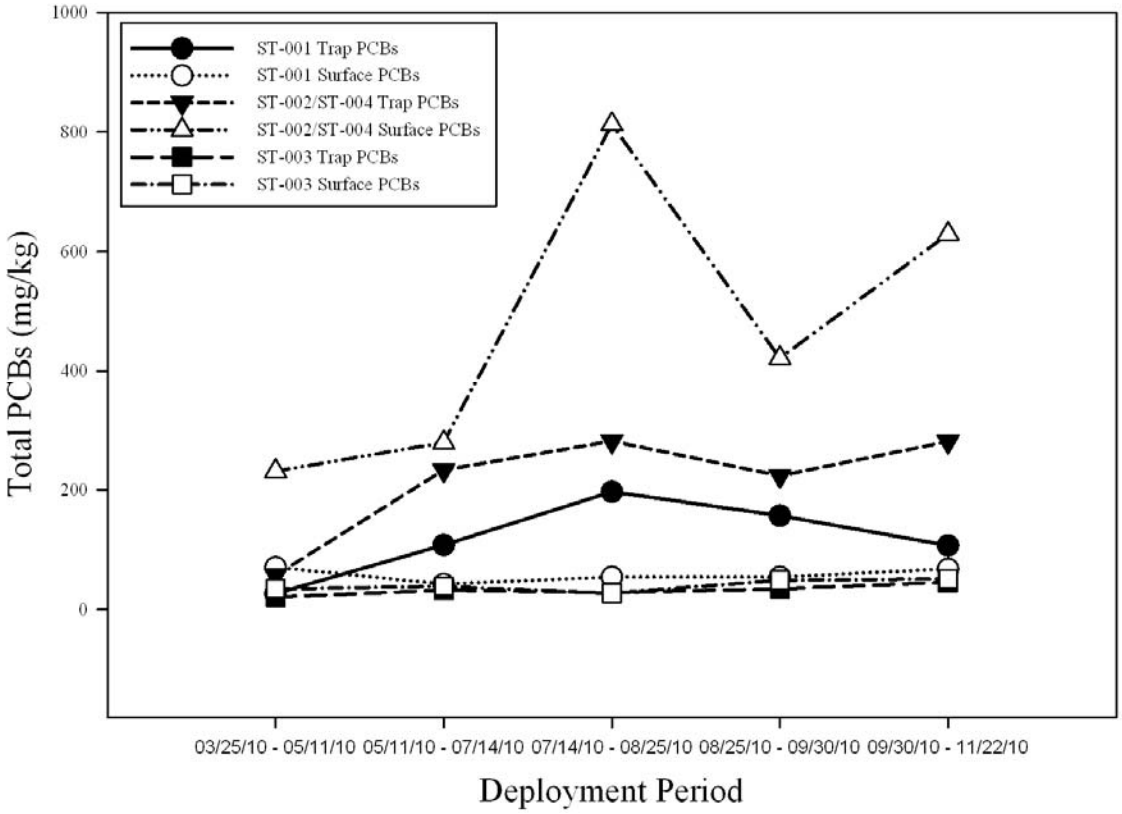


**Figure 9. PCB Concentrations in Sediment Trap Samples and Co-located Surface Grab Samples**

Co-located sediment trap samples and surface sediment samples were comparable in terms of the PCB concentrations, as indicated by insignificant t-test results. These results support the premise that sediments deposited in the trap samplers are representative of the material accumulated on the estuary floor.

### 4.3 DISCUSSION SUMMARY

A review of the analytical data reveals three distinct trends: 1) highest sediment deposition rates at the southern station (ST-003); 2) highest PCB flux at the central station; and 3) uniformity between co-located sediment traps and grabs.

Sediment deposition rates were highest at ST-003 and lowest at ST-001; rates at ST-003 rates and ST-002/ST-004 followed the same concentration trends. The sediment deposition rates observed in 2010 are consistent with range of rates observed in the previous year. Although ST-003 exhibited the highest sediment deposition rates, PCB flux was highest at ST-002/ST-004. PCB flux at this station was significantly greater than at other stations. This may be attributed to the station's location relative to the active remediation areas and known source of contamination. Statistical comparison between the sediment trap and grab samples at each location revealed no significant

difference in PCB concentration, suggesting that sediments deposited in the trap samplers are representative of the material that has accumulated on the estuary floor.

# 5.0 REFERENCES

Woods Hole Group. 2010a. 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 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group. 20010b. 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 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

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# APPENDIX A. *IN-SITU* SEDIMENT TRAP DEPLOYMENT AND SURFACE GRAB SAMPLING LOG SHEETS (ON CD)

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# APPENDIX A: *IN-SITU* SEDIMENT TRAP DEPLOYMENT AND SURFACE GRAB SAMPLING LOG SHEETS

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# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 3/25/10 Latitude: 41° 40.725'

Logged By: K. McCartney Longitude: 70° 55.023'

Station ID: ST-001 Water Depth: 4.1 ft.

Time on Station: 14:03 Time off Station: 14:43

## Sample Collection

Trap 1 Recovery Time: N/A Trap 1 Deployment Time: 14:37

Trap 2 Recovery Time: N/A Trap 2 Deployment Time: 14:38

# of Grabs Homogenized: 5 # of Unsucessful Grabs: 1

Samples Collected:

- PCB Congeners (2x8-oz jar) ☑ Sample ID: S-10M-G001-0-0
- TOC (1x4-oz jar) ☑ Sample ID: S-10M-G001-0-0
- Grain Size (1 baggie) ☑ Sample ID: S-10M-G001-0-0
- MS/MSD (2x8-oz jar) ☒ Sample ID: N/A
- TOC replicate (1x4-oz jar) ☒ Sample ID: N/A
- Grain Size replicate (1 baggie) ☒ Sample ID: N/A
- PCB replicate (1x8oz jar) ☒ Sample ID: N/A

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.01 | 0.8 | 0.08 | 11.51 | 9.86 |
| 3.45 | 1.0 | 0.11 | 11:33 | 9.86 |
| | | | | |
| | | | | |
| | | | | |

Notes: very leafy sediment, high content organic detritus, difficult to get enough surface sediment w/o leaves in sample, spotty sheen, black, $H_2S$ odor high water content
one trap located on either side of the WQ mooring

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: [signature]

* eastern trap dragged 300' South past bridge, probably by storm surge. New trap deployed 4/8/10 @ 13:05. original trap removed recovered 5/11/10 @

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 3/25/10

Logged By: K. McCartney

Station ID: ST-ØØ2

Time on Station: 12:42

Latitude: 41° 4Ø.373'

Longitude: 7Ø° 54.95Ø'

Water Depth: 4.4 ft.

Time off Station: ~~12~~ KCM 13:30

## Sample Collection

Trap 1 Recovery Time: N/A

Trap 2 Recovery Time: N/A

Trap 1 Deployment Time: 13:27

Trap 2 Deployment Time: 13:29

# of Grabs Homogenized: 6

# of Unsucessful Grabs: Ø

Samples Collected:

- PCB Congeners (2x8-oz jar) ☑ Sample ID: S-1ØM-GØØ2-Ø-Ø
- TOC (1x4-oz jar) ☑ Sample ID: S-1ØM-GØØ2-Ø-Ø
- Grain Size (1 baggie) ☑ Sample ID: S-1ØM-GØØ2-Ø-Ø
- MS/MSD (2x8-oz jar) ☑ Sample ID: S-1ØM-GØØ2-Ø-ØMSMSD
- TOC replicate (1x4-oz jar) ☑ Sample ID: S-1ØM-GØØ2-Ø-ØREP
- Grain Size replicate (1 baggie) ☑ Sample ID: S-1ØM-GØØ2-Ø-ØREP
- PCB replicate (1x8-oz jar) ☑ Sample ID: S-1ØM-GØØ2-Ø-ØREP

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.49 | 1.4 | KCM ~~5.17~~ 2.81 | 12.2Ø | 9.59 |
| 2.5Ø | 1.7 | 4.27 | 11.1Ø | 9.54 |
| ~~4~~ 3.93 | 4.1 | 29.69 | 1Ø.83 | 7.32 |
| | | | | |
| | | | | |

Notes: dark olive grey/black, high water content, spotty but heavy sheen,
one trap located on either side of WQ mooring

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: [signature]

recovered 5/11/10 @

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 3/25/10
Latitude: 41° 39.214'
Logged By: K. McCartney
Longitude: 70° 55.155'
Station ID: ST-ØØ3
Water Depth: 18.3ft.

Time on Station: 11:Ø7
Time off Station: 12:Ø5

## Sample Collection

Trap 1 Recovery Time: N/A
Trap 1 Deployment Time: 11:58
Trap 2 Recovery Time: N/A
Trap 2 Deployment Time: 12:ØØ

# of Grabs Homogenized: 4
# of Unsucessful Grabs: 5

Samples Collected:

| | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-1ØM-6ØØ3-Ø-Ø |
| TOC (1x4-oz jar) | ☑ | Sample ID: | S-1ØM-6ØØ3-Ø-Ø |
| Grain Size (1 baggie) | ☑ | Sample ID: | S-1ØM-6ØØ3-Ø-Ø |
| MS/MSD (2x8-oz jar) | ☒ | Sample ID: | N/A |
| TOC replicate (1x4-oz jar) | ☒ | Sample ID: | N/A |
| Grain Size replicate (1 baggie) | ☒ | Sample ID: | N/A |
| PCB replicate (1x8oz jar) | ☒ | ID: | N/A |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.55 | 1.2 | 23.95 | 1Ø.69 | 7.47 |
| 8.99 | 1.2 | 31.53 | 1Ø.21 | 6.46 |
| 17.35 | 1.2 | 35.Ø4 | 9.94 | 5.62 |
| | | | | |
| | | | | |

Notes: grabs: dark olive brown over black, sandy, high water content, very shelly in areas closer towards channel – difficult to get a grab easier to grab closer to south side of old wooden pier
traps were set ~40ft apart to account for length of line & weather conditions at this deeper, more exposed station

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: Karen McCa

wrong location

recovered 5/11/10 @

~~* Eastern sed trap dragged 300'S (south of bridge) possibly by storm surge. recovered 4/6/10. redeployed 4/8/10 @ 13:0~~

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 5/11/10 | Latitude: 41° 39.216'

Logged By: KGM | Longitude: 70° 55.157'

Station ID: ST-003 | Water Depth: 19.0 ft.

Time on Station: 12:55 | Time off Station: 13:50

## Sample Collection

Trap 1 Recovery Time: 12:55 | Trap 1 Deployment Time: 13:47

Trap 2 Recovery Time: 12:58 | Trap 2 Deployment Time: 13:48

# of Grabs Homogenized: 4 | # of Unsucessful Grabs: ~~55~~ ~~X~~ KGM 2

Samples Collected:

- PCB Congeners (2x8-oz jar) ☑ Sample ID: S-10~~A~~Y-G003-0-0
- TOC (1x4-oz jar) ☑ Sample ID: S-10~~B~~Y-G003-0-0
- Grain Size (1 baggie) ☑ Sample ID: S-10~~C~~Y-G003-0-0
- MS/MSD (2x8-oz jar) ☐ Sample ID: NA
- TOC replicate (1x4-oz jar) ☐ Sample ID: NA
- Grain Size replicate (1 baggie) ☐ Sample ID: NA

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.12 | 1.0 | 28.11 | 10.38 | 14.07 |
| 6.13 | 1.3 | 28.72 | 10.16 | 13.37 |
| 13.02 | 2.4 | 29.76 | 9.43 | 12.98 |
| 17.65 | 2.8 | 29.91 | 8.47 | 12.87 |
| | | | | |

Notes:

Sampling Crew: M. Walsh, D. Bailey, K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 5/11/10 Latitude: 41°40.723'
Logged By: KGM Longitude: 70° 55.018'
Station ID: ST-001 Water Depth: 3.0

Time on Station: 09:35 Time off Station: 10:12

## Sample Collection

Trap 1 Recovery Time: 09:37 (deployed 3/25) Trap 1 Deployment Time: 10:10 (east)
Trap 2 Recovery Time: 09:38 (deployed 4/8) Trap 2 Deployment Time: 10:11 (west)

# of Grabs Homogenized: 4 # of Unsucessful Grabs: 0

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-10Y-G001-0-0 |
| TOC (1x4-oz jar) | ☑ | Sample ID: | S-10Y-G001-0-0 |
| Grain Size (1 baggie) | ☑ | Sample ID: | S-10Y-G001-0-0 |
| MS/MSD (2x8-oz jar) | ☐ | Sample ID: | NA |
| TOC replicate (1x4-oz jar) | ☐ | Sample ID: | NA |
| Grain Size replicate (1 baggie) | ☐ | Sample ID: | NA |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 0.20 | 2.3 | 20.67 | 11.38 | 14.80 |
| 1.20 | 2.9 | 27.27 | 10.85 | 15.28 |
| 2.20 | KM 5.5 | 27.79 | 10.83 | 15.16 |
| | | | | |
| | | | | |

Notes:

Sampling Crew: M. Walsh, D. Bailey, K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 5/11/10 Latitude: 41° 40.369'

Logged By: KGM Longitude: 70° 54.954'

Station ID: ST-002 Water Depth:

Time on Station: 10:36 Time off Station: 11:17

## Sample Collection

Trap 1 Recovery Time: 10:39 Trap 1 Deployment Time:

Trap 2 Recovery Time: 10:39 Trap 2 Deployment Time:

# of Grabs Homogenized: 6 # of Unsucessful Grabs:

| Samples Collected: | | | Sample ID: |
|---|---|---|---|
| | PCB Congeners (2x8-oz jar) | ☑ | S-104-G002-0-0 |
| | TOC (1x4-oz jar) | ☑ | " |
| | Grain Size (1 baggie) | ☑ | " |
| | MS/MSD (1x8-oz jar) | ☑ | S-104-G-0002-0-0 MSMS |
| | TOC replicate (1x4-oz jar) | ☑ | S-104-G002-0-0 REP |
| | Grain Size replicate (1 baggie) | ☑ | " |
| | PCB replicate (1x 8oz) | ☑ | " |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Notes: grabs taken upon recovery 5/11/10
traps deployed

Sampling Crew: M. Walsh, P. Bailey, K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 7/14/2010 Latitude: 41°40.724'
Logged By: KGM Longitude: 70° 55.019
Station ID: ST-001 Water Depth: 4.3'

Time on Station: 09:20 Time off Station:

## Sample Collection

Trap 1 Recovery Time: 09:20 Trap 1 Deployment Time: 10:43 (E)
Trap 2 Recovery Time: 09:22 Trap 2 Deployment Time: 10:44 (W)

# of Grabs Homogenized: 4 # of Unsucessful Grabs: Ø

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ1-Ø-Ø |
| TOC (1x4-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ1-Ø-Ø |
| Grain Size (1 baggie) | ☑ | Sample ID: | S-1ØL-GØØ1-Ø-Ø |
| MS/MSD (2x8-oz jar) | ☐ | Sample ID: | NA |
| TOC replicate (1x4-oz jar) | ☐ | Sample ID: | NA |
| Grain Size replicate (1 baggie) | ☐ | Sample ID: | NA |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 0.72 | 8.2 | 26.99 | 6.47 | 26.97 |
| 3.14 | 4.5 | 28.17 | 2.12 | 26.91 |
| 5.25 | 4.2 | 28.30 | 1.68 | 26.97 |
| | | | | |
| | | | | |

Notes: black sandy silt, strong $H_2S$ odor, highly organic (detritus), black noticeable sheen on surface of grab samples, high water content

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 7/14/2010

Logged By: KGM

Station ID: ~~ST-002~~ ST-004 ① M.WALSH New location S of K

Time on Station: 1130

Latitude: 41040.279'

Longitude: 70°54.982'

Water Depth: 4.4'

Time off Station: 12:32

## Sample Collection

Trap 1 Recovery Time: 11:30

Trap 2 Recovery Time: 11:30

Trap 1 Deployment Time: 12:30 (E)

Trap 2 Deployment Time: 12:31 (W)

# of Grabs Homogenized: 6

# of Unsucessful Grabs: Ø

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ2-Ø-Ø |
| TOC (1x4-oz jar) | ☑ | Sample ID: | " |
| Grain Size (1 baggie) | ☑ | Sample ID: | " |
| MS/MSD (2x8-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ2-Ø-ØMSMSD |
| TOC replicate (1x4-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ2-Ø-ØREP |
| Grain Size replicate (1 baggie) | ☐ | Sample ID: | " |
| PCB replicate (2x8oz) | ☑ | | " |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.2 | 4.1 | 27.38 | ~~27.38~~ 5.02 | 25.75 |
| 3.84 | 3.9 | 27.93 | 4.64 | 25.97 |
| 5.97 | 4.6 | 29.22 | 3.67 | 26.06 |
| | | | | |
| | | | | |

Notes: Soft silt, high water content, fine sand, olive grey over black slight $H_2S$ odor, spotty sheen.

Ø wrong time MW 7/15/10

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature: [signature]

① station location moved so station name needed to changed from ST-002 to ST-004 M.WALSH 9/21/10

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 7/14/2010
Logged By: KGM
Station ID: ST-ØØ3

adjusted: Latitude: 41° 39.212'
Longitude: 70° 55.163'
Water Depth: 21.32

Time on Station: ~~ST-ØØ3~~ 13:25
Time off Station: 14:35

## Sample Collection

Trap 1 Recovery Time: 13:25
Trap 2 Recovery Time: 13:40

Trap 1 Deployment Time: 14:30
Trap 2 Deployment Time: 14:35

# of Grabs Homogenized: 5
# of Unsucessful Grabs: 7

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-1ØL-GØØ3-Ø-Ø |
| TOC (1x4-oz jar) | ☑ | Sample ID: | " |
| Grain Size (1 baggie) | ☑ | Sample ID: | " |
| MS/MSD.(2x8-oz jar) | ☐ | Sample ID: | NA |
| TOC replicate (1x4-oz jar) | ☐ | Sample ID: | NA |
| Grain Size replicate (1 baggie) | ☐ | Sample ID: | NA |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 0.91 | 4.1 | 29.46 | 4.98 | 26.41 |
| 7.78 | 5.4 | 29.52 | 4.93 | 26.39 |
| 16.98 | 5.3 | 29.75 | 4.84 | 26.27 |
| | | | | |
| | | | | |

Notes: Impossible to get a grab where traps were located. Found a spot ~20 yrds SW where there was sediment. Black sandy silt w/ quahogs, slight sheen

Sampling Crew: M. Walsh, K. McCourtney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 8/25/10
Logged By: KGM
Station ID: ST-001
Time on Station: 10:00

Latitude: 41° 40.725'
Longitude: 70° 55.022'
Water Depth: 6.0
Time off Station: 11:01

## Sample Collection

Trap 1 Recovery Time: 10:01
Trap 2 Recovery Time: 10:03

Trap 1 Deployment Time: 10:59
Trap 2 Deployment Time: 11:00

# of Grabs Homogenized: 4

# of Unsucessful Grabs: 0

| Samples Collected: | | Sample ID: |
|---|---|---|
| PCB Congeners (2x8-oz jar) | ☐ | S-100G-G001-0-0 |
| TOC (1x4-oz jar) | ☐ | " |
| Grain Size (1 baggie) | ☐ | " |
| MS/MSD (1x8-oz jar) | ☐ | — |
| PCB replicate (1x8-oz jar) | ☐ | — |
| TOC replicate (1x4-oz jar) | ☐ | — |
| Grain Size replicate (1 baggie) | ☐ | — |
| Other (see notes below) | ☐ | — |

@10:45
8/25/10

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 0.58 | 1.2 | 10.98 | 6.14 | 20.48 |
| 2.75 | 4.2 | 26.83 | 3.88 | 21.45 |
| 4.33 | 5.6 | 27.53 | 2.20 | 21.45 |
| | | | | |
| | | | | |

Notes: black, sandy silt, significant sheen, $H_2S$ odor with slight petrol odor high water content, bacterial mat on surface, organic detritus

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 8/25/10 | Latitude: 41°40.279'

Logged By: KCM ① m.walsh | Longitude: 70°54.983'

ST-004 ← Station ID: ~~ST-002~~ | Water Depth: 6.5 ft.

Time on Station: 11:16 | Time off Station: 12:20

## Sample Collection

Trap 1 Recovery Time: 11:16 | Trap 1 Deployment Time: 12:15

Trap 2 Recovery Time: 11:19 | Trap 2 Deployment Time: 12:19

# of Grabs Homogenized: 8 | # of Unsucessful Grabs: 0

| Samples Collected: | | | Sample ID: |
|---|---|---|---|
| | PCB Congeners (2x8-oz jar) | ☐ | S-106-6002-0-0 @ 12:00 8/25/10 |
| | TOC (1x4-oz jar) | ☐ | " |
| | Grain Size (1 baggie) | ☐ | " |
| | MS/MSD (1x8-oz jar) | ☐ | S-106-6002-0-0MSMSD |
| | PCB replicate (1x8-oz jar) | ☐ | S-106-6002-0-0REP |
| | TOC replicate (1x4-oz jar) | ☐ | " |
| | Grain Size replicate (1 baggie) | ☐ | " |
| | Other (see notes below) | ☐ | |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 0.66 | 19.4 | 25.50 | 3.62 | 21.54 |
| 3.06 | 12.1 | 28.27 | 3.13 | 21.41 |
| 4.52 | 14.8 | 28.52 | 3.75 | 21.42 |
| | | | | |
| | | | | |

Notes: brown over dark grey, sandy silt, ~~significant~~ heavy sheen, high water content, shell hash $H_2S$ and chemical odor

Sampling Crew: K. McCartney, M. Walsh

Chief Scientist Signature: [signature]

① Station location changed so station name needed to change from ST-002 to ST-004 m.walsh 9/22/10

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 8/25/10
Latitude: 41° 39.211'
Logged By: KGM
Longitude: 70° 55.175'
Station ID: ST-003
Water Depth: ~~>15 ft.~~ 18.5 ft.

Time on Station: 12:30
Time off Station: 14:10

## Sample Collection

Trap 1 Recovery Time: 12:30
Trap 1 Deployment Time: 14:09
Trap 2 Recovery Time: NA
Trap 2 Deployment Time: 14:09

# of Grabs Homogenized: 4
# of Unsucessful Grabs: 1

| Samples Collected: | | | Sample ID: |
|---|---|---|---|
| | PCB Congeners (2x8-oz jar) | ☐ | S-100-G003-0-0 |
| | TOC (1x4-oz jar) | ☐ | " |
| | Grain Size (1 baggie) | ☐ | " |
| | MS/MSD (1x8-oz jar) | ☒ | — |
| | PCB replicate (1x8-oz jar) | ☒ | — |
| | TOC replicate (1x4-oz jar) | ☒ | — |
| | Grain Size replicate (1 baggie) | ☒ | — |
| | Other (see notes below) | ☒ | — |

@13:30
8/25/10

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.07 | 1.6 | 28.41 | 5.72 | 22.77 |
| 7.55 | 1.8 | 28.92 | 5.06 | ~~22~~ 21.69 |
| 17.45 | 5.7 | 29.59 | 4.71 | 21.46 |
| | | | | |
| | | | | |

Notes: olive grey over black, sandy silt, $H_2S$ odor,

Sampling Crew: K. McCarney M. Walsh

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 9/30/10 | Latitude: 41°40.725'
Logged By: KGM | Longitude: 70°55.020'
Station ID: ST-001 | Water Depth: 6.3

Time on Station: 11:42 | Time off Station: 12:26

## Sample Collection

Trap 1 Recovery Time: 11:42 | Trap 1 Deployment Time: 12:24
Trap 2 Recovery Time: 11:44 | Trap 2 Deployment Time: 12:25

# of Grabs Homogenized: ~~IIII~~ 5 | # of Unsucessful Grabs: 1 1

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-10S-G001-0-0 |
| TOC (1x4-oz jar) | ☑ | Sample ID: | S-10S-G001-0-0 |
| Grain Size (1 baggie) | ☑ | Sample ID: | S-10S-G001-0-0 |
| ~~MS/MSD (1x8-oz jar)~~ | ☐ | Sample ID: | |
| ~~PCB replicate (1x8-oz jar)~~ | ☐ | Sample ID: | |
| ~~TOC replicate (1x4-oz jar)~~ | ☐ | Sample ID: | |
| ~~Grain Size replicate (1 baggie)~~ | ☐ | Sample ID: | |
| ~~Other (see notes below)~~ | ☐ | Sample ID: | |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.01 | 3.4 | 19.51 | 9.25 | 22.22 |
| 2.80 | 3.0 | 26.21 | 8.81 | 22.13 |
| 5.02 | 3.4 | 28.88 | 6.22 | 21.95 |
| | | | | |
| | | | | |

Notes: grey over black (bacterial mat?) high water content, leafy organic detritus, strong $H_2S$, spotty sheen, sampled @ 12:05

Sampling Crew: M. Walsh, K. McCormick

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 9/30/10 | Latitude: 41°39.217'
Logged By: KGM | Longitude: 70°55.168'
Station ID: ST-003 | Water Depth: 16.5 ft.

Time on Station: 09:24 | Time off Station: 10:30

## Sample Collection

Trap 1 Recovery Time: 09:24 | Trap 1 Deployment Time: 10:23
Trap 2 Recovery Time: 09:25 | Trap 2 Deployment Time: 10:27

# of Grabs Homogenized: 4 | # of Unsucessful Grabs: 5

Samples Collected:

| | | Sample ID: |
|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | S-10S-G003-0-0 |
| TOC (1x4-oz jar) | ☑ | S-10S-G003-0-0 |
| Grain Size (1 baggie) | ☑ | S-10S-G003-0-0 |
| ~~MS/MSD (1x8-oz jar)~~ | ☐ | |
| ~~PCB replicate (1x8-oz jar)~~ | ☐ | |
| ~~TOC replicate (1x4-oz jar)~~ | ☐ | |
| ~~Grain Size replicate (1 baggie)~~ | ☐ | |
| ~~Other (see notes below)~~ | ☐ | |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.05 | 1.8 | 31.59 | 6.60 | 21.37 |
| 10.08 | 0.6 | 31.61 | 6.63 | 21.33 |
| 15.54 | 0.9 | 31.60 | 6.64 | 21.34 |
| | | | | |
| | | | | |

Notes: Olive grey over black, sandy silt, high water content, no odor observed, slight spotty sheen — sampled @ 10:06

Sampling Crew: M. Walsh, K. McCartney

Chief Scientist Signature:

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 9/30/10
Logged By: KGM
Station ID: ~~ST-002~~ ST-004
Time on Station: 10:40

Latitude: 41°40.283'
Longitude: 70°54.983'
Water Depth: 10.5
Time off Station: 11:32

## Sample Collection

Trap 1 Recovery Time: 10:41
Trap 2 Recovery Time: N/A

Trap 1 Deployment Time: 11:30
Trap 2 Deployment Time: ~~N/A~~ 9/22/10 @ 13:15

# of Grabs Homogenized: ~~11~~ 7

# of Unsucessful Grabs: 1 1

Samples Collected:

| | | |
|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: S-10S-G002-0-0 |
| TOC (1x4-oz jar) | ☑ | Sample ID: S-10S-G002-0-0 |
| Grain Size (1 baggie) | ☑ | Sample ID: S-10S-G002-0-0 |
| MS/MSD (1x8-oz jar) | ☑ | Sample ID: S-10S-G002-0-0MSMSD |
| PCB replicate (1x8-oz jar) | ☑ | Sample ID: S-10S-G002-0-0REP |
| TOC replicate (1x4-oz jar) | ☑ | Sample ID: S-10S-G002-0-0REP |
| Grain Size replicate (1 baggie) | ☑ | Sample ID: S-10S-G002-0-0REP |
| ~~Other (see notes below)~~ | ☐ | Sample ID: |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.06 | 2.6 | 30.16 | 7.76 | 22.09 |
| 3.05 | 2.6 | 30.17 | 7.76 | 22.09 |
| 5.10 | 4.8 | 30.40 | 7.52 | 21.95 |
| | | | | |
| | | | | |

Notes: olive grey over black, spotty sheen, shell hash, sandy silt, high water content, sampled @ 11:15

Sampling Crew: M. Walsh, K. McCarthy

Chief Scientist Signature:

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 11/22/10 Latitude: _____

Logged By: KGM Longitude: _____

Station ID: ST-001 Water Depth: 6.1

Time on Station: 08:41 Time off Station: 09:16

## Sample Collection

Trap 1 Recovery Time: 08:41 Trap 1 Deployment Time: X

Trap 2 Recovery Time: 08:44 Trap 2 Deployment Time: X

# of Grabs Homogenized: 4 # of Unsucessful Grabs: Ø

Samples Collected:

- PCB Congeners (2x8-oz jar) ☐ Sample ID: S-1ØN-GØØ1-Ø-Ø
- TOC (1x4-oz jar) ☐ Sample ID: S-1ØN-GØØ1-Ø-Ø
- Grain Size (1 baggie) ☐ Sample ID: S-1ØN-GØØ1-Ø-Ø
- MS/MSD (2x8-oz jar) ☒ Sample ID: —
- TOC replicate (1x4-oz jar) ☒ Sample ID: —
- Grain Size replicate (1 baggie) ☒ Sample ID: —

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.05 | -0.2 | 3.41 | 11.39 | 5.64 |
| 2.99 | -0.3 | 25.87 | 8.70 | 9.35 |
| 5.55 | -0.3 | 27.60 | 8.05 | 9.70 |
| | | | | |
| | | | | |

Notes: Samples collected @ 09:10

Sampling Crew: M. Walsh K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 11/22/10 Latitude: _____

Logged By: KGM Longitude: _____

Station ID: ~~ST-004~~ ST-004 Water Depth: 7.1

Time on Station: 09:33 Time off Station: 10:09

## Sample Collection

Trap 1 Recovery Time: 09:33 Trap 1 Deployment Time: _____

Trap 2 Recovery Time: 09:36 Trap 2 Deployment Time: _____

# of Grabs Homogenized: 5 # of Unsucessful Grabs: 0

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☑ | Sample ID: | S-WQN-CAP2-P-0 |
| TOC (1x4-oz jar) | ☑ | Sample ID: | " |
| Grain Size (1 baggie) | ☑ | Sample ID: | " |
| MS/MSD (2x8-oz jar) | ☑ | Sample ID: | " MS/MSD |
| TOC replicate (1x4-oz jar) | ☑ | Sample ID: | " REP |
| Grain Size replicate (1 baggie) | ☑ | Sample ID: | " REP |
| pcb replicate (1 8oz jar) | | | " REP |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.20 | -0.6 | 25.91 | 8.95 | 7.99 |
| 3.01 | -0.6 | 27.68 | 8.64 | 8.80 |
| 6.51 | -0.4 | 28.64 | 8.26 | 9.27 |
| | | | | |
| | | | | |

Notes: Samples collected at 10:00

Sampling Crew: M. Walsh K. McCartney

Chief Scientist Signature: [signature]

# New Bedford Harbor Environmental Monitoring
# Sediment Trap Deployment and Surface Grab Sampling

## General Information

Date: 11/22/10 Latitude: _____

Logged By: KGM Longitude: _____

Station ID: ST-003 Water Depth: 15.5

Time on Station: 10:31 Time off Station: 11:15

## Sample Collection

Trap 1 Recovery Time: 10:31 Trap 1 Deployment Time: —

Trap 2 Recovery Time: 10:31 Trap 2 Deployment Time: —

# of Grabs Homogenized: 3 # of Unsucessful Grabs: Ø

| Samples Collected: | | | |
|---|---|---|---|
| PCB Congeners (2x8-oz jar) | ☐ | Sample ID: | S-10N-CPCS-0-0 |
| TOC (1x4-oz jar) | ☐ | Sample ID: | " |
| Grain Size (1 baggie) | ☐ | Sample ID: | " |
| MS/MSD (2x8-oz jar) | ☐ | Sample ID: | — |
| TOC replicate (1x4-oz jar) | ☐ | Sample ID: | — |
| Grain Size replicate (1 baggie) | ☐ | Sample ID: | — |

## Water Quality Profile

| Sample Depth (ft) | Turbidity (NTU) | Salinity (ppt) | Dissolved Oxygen (mg/L) | Temperature (°C) |
|---|---|---|---|---|
| 1.15 | 0.0 | 29.27 | 9.31 | 8.55 |
| 8.02 | -0.3 | 29.29 | 9.03 | 8.56 |
| 14.32 | 0.8 | 29.34 | 8.91 | 8.57 |
| | | | | |
| | | | | |

Notes: Samples collected at 11:05

Sampling Crew: M. Walsh, R. McCartney

Chief Scientist Signature: [signature]

# APPENDIX B. ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL DATA (ON CD)

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# APPENDIX B: ENVIROSYSTEMS, INC. REPORTS AND ANALYTICAL DATA

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# ESI

EnviroSystems, Inc.
One Lafayette Road
P.O. Box 778
Hampton, N.H. 03843-0778
p 603 926 3345 · f 603 926 3521
envirosystems.com

Dave Walsh
Woods Hole Group
81 Technology Park Drive
East Falmouth, MA 02536

PO Number: None
Report Number: 19731
Date Received: 05/14/10
Date Reported: 05/20/10

Project: NBH Envir. Monitoring

Attached please find results for analyses performed on samples received on 05/14/10 at 1530.

Samples were received in acceptable condition and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

EnviroSystems, Incorporated

Date 5/20/10

Authorized
Signature

Attachment
Report

Report No: 19731 SDG:
Project: NBH Envir. Monitoring

Sample ID: S-10Y-T001-0-0
Matrix: Solid
Sampled: 05/14/10 1330

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19731-007 | 331.1 | 0.1 | g | 05/14/10 | 05/14/10 | JL /ESI SOP 1379 |

Notes:


EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

Report No: 19731 SDG:
Project: NBH Envir. Monitoring

Sample ID: S-10Y-T002-0-0
Matrix: Solid
Sampled: 05/14/10 1320

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19731-008 | 149.3 | 0.1 | g | 05/14/10 | 05/14/10 | JL /ESI SOP 1379 |

Notes:


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| | | | |
|---|---|---|---|
| Report No: | 19731 | SDG: | |
| Project: | NBH Envir. Monitoring | | |
| Sample ID: | S-10Y-T002-0-0REP | | |
| Matrix: | Solid | | |
| Sampled: | 05/14/10 1420 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19731-009 | 116.7 | 0.1 | g | 05/14/10 | 05/14/10 | JL /ESI SOP 1379 |

Notes:



ESI

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Report No: 19731 SDG:
Project: NBH Envir. Monitoring

Sample ID: S-10Y-T003-0-0
Matrix: Solid
Sampled: 05/14/10 1530

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19731-010 | 464.3 | 0.1 | g | 05/14/10 | 05/14/10 | JL /ESI SOP 1379 |

Notes:



ESI
EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | NBH Envir. Monitoring |
| Composite Identifier: | S-10Y-T001-0-0 |
| Composite Lab ID: | 19731-007 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 05/14/10 |
| Composite Prepared Time: | 13:30 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 331.1g |
| Composite Container(s): | 500mL Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10Y-T001-0-0 1 of 2 | 19731-001 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10Y-T001-0-0 2 of 2 | 19731-002 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained 1 crab approximately 2cm in size.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Samples frozen on 05/14/10. Sample sent to Alpha Analytical for chemical analysis on 05/18/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | NBH Envir. Monitoring |
| Composite Identifier: | S-10Y-T002-0-0 |
| Composite Lab ID: | 19731-008 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 05/14/10 |
| Composite Prepared Time: | 13:20 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 149.3 |
| Composite Container(s): | 1L Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10Y-T002-0-0 1 of 1 | 19731-003 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained 1 snail (1cm), 1 fish (5cm), and 1 crab approximately 2 cm. in size.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Samples frozen on 05/14/10. Sample sent to Alpha Analytical for chemical analysis on 05/18/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | NBH Envir. Monitoring |
| Composite Identifier: | S-10Y-T002-0-0REP |
| Composite Lab ID: | 19731-009 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 05/14/10 |
| Composite Prepared Time: | 14:20 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 116.7 |
| Composite Container(s): | 250mL. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10Y-T002-0-0REP 1 of 1 | 19731-004 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained 4 snails approximately 1cm. in size.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Samples frozen on 05/14/10. Sample sent to Alpha Analytical for chemical analysis on 05/18/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | NBH Envir. Monitoring |
| Composite Identifier: | S-10Y-T003-0-0 |
| Composite Lab ID: | 19731-010 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 05/14/10 |
| Composite Prepared Time: | 15:30 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 464.3 |
| Composite Container(s): | 500mL. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10Y-T003-0-0 1 of 2 | 19731-005 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10Y-T003-0-0 2 of 2 | 19731-006 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained 1 fish (5cm), 1 crab (5cm), and 5 smaller crabs aproximately 2cm in size.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Samples frozen on 05/14/10. Sample sent to Alpha Analytical for chemical analysis on 05/18/10.

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 19731 | | |
| SDG No: | | | |
| Project: | NBH Envir. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 05/11/10 1800 | Date and Time Logged into Lab: | 05/13/10 ~~1225~~ |
| Recieved By: | LCB | Logged into Lab by: | KAJ KAJ |
| 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 C | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | 4106 | | |
| COC Complete: | | 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 |
|---|---|---|---|---|---|---|
| S-10Y-T001-0-0 1 of 2 | 19731-001 | S | STP: S-10Y-T001-0-0 | 1Gal P | 4 C | KAJ |
| S-10Y-T001-0-0 2 of 2 | 19731-002 | S | STP: S-10Y-T001-0-0 | 1Gal P | 4 C | KAJ |
| S-10Y-T002-0-0 1 of 1 | 19731-003 | S | STP: S-10Y-T002-0-0 | 1Gal P | 4 C | KAJ |
| S-10Y-T002-0-0REP 1 of 1 | 19731-004 | S | STP: S-10Y-T002-0-0REP | 1Gal P | 4 C | KAJ |
| S-10Y-T003 1 of 2 | 19731-005 | S | STP: S-10Y-T003-0-0 | 1Gal P | 4 C | KAJ |
| S-10Y-T003 2 of 2 | 19731-006 | S | STP: S-10Y-T003-0-0 | 1Gal P | 4 C | KAJ |

Notes and qualifications:

# ESI

EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: ~~4100~~ (E3) KAT 19731

## CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NBH Envir Mon. | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr | Project Number: TO-ØØ1Ø | |
| Invoice to: Cathy Morey | Address: E. Falmouth MA | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: dwalsh@whgrp.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -001 | S-1ØY-TØØ1-Ø-Ø 1of2 | 5/11/10 | 10:00 | KGM | G | 1L | P | none | W | NL | composite as S-1ØY-TØØ1-Ø-Ø |
| -002 | S-1ØY-TØØ1-Ø-Ø 2of2 | 5/11/10 | 10:00 | KGM | G | 1L | P | | | | composite as S-1ØY-TØØ1-Ø-Ø |
| -003 | S-1ØY-TØØ2-Ø-Ø 1of1 | 5/11/10 | 11:00 | KGM | G | 1L | P | | | | DO NOT COMPOSITE, new ID: S-1ØY-T -Ø-Ø |
| ~~-004~~ B | S-1ØY-TØØ2-Ø-Ø REP 1of1 | 5/11/10 | 11:00 | KGM | G | 1L | P | | | | DO NOT COMPOSITE, new ID: S-1ØY-TØØ2 -Ø-Ø REP |
| -005 | S-1ØY-TØØ3-Ø-Ø 1of2 | 5/11/10 | 14:00 | KGM | G | 1L | P | | | | composite as S-1ØY-TØØ3-Ø |
| -006 | S-1ØY-TØØ3-Ø-Ø 2of2 | 5/11/10 | 14:00 | KGM | G | 1L | P | | | | |

Relinquished By: [signature] Date: 5/11/10 Time: 18:00 Received By: [signature] Date: 5/11/10 Time: 1800

Relinquished By: Date: Time: Received at Lab By: Date: Time:

Comments:

Sample Delivery Group No: Page of

COC Doc No:

# ESI

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envirosystems.com

Dave Walsh
Woods Hole Group
81 Technology Park Drive
East Falmouth, MA 02536

PO Number: None
Report Number: 19905
Date Received: 07/14/10
Date Reported: 08/12/10

Project: New Bedford Harbor Environ. Monitoring

Attached please find results for analyses performed on samples received on 07/14/10 1830.

Samples were received in acceptable condition and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

EnviroSystems, Incorporated

Authorized Signature

Date 8/16/10

Attachment
Report

Page 1 of 9

Report No: 19905 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10L-T001-0-0
Matrix: Solid
Sampled: 07/14/10 0922

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19905-007 | 299.6 | 0.1 | g | 07/15/10 | 07/15/10 | JL /ESI SOP 1379 |

Notes:



ESI
EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

Report No: 19905 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10L-T002-0-0
Matrix: Solid
Sampled: 07/14/10 1130

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19905-008 | 457.7 | 0.1 | g | 07/15/10 | 07/15/10 | JL /ESI SOP 1379 |

Notes:



ESI
EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

Report No: 19905 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10L-T003-0-0
Matrix: Solid
Sampled: 07/14/10 1325

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 19905-009 | 1345.9 | 0.1 | g | 07/15/10 | 07/15/10 | JL /ESI SOP 1379 |

Notes:



ESI
EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10L-T001-0-0 |
| Composite Lab ID: | 19905-007 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 07/15/10 |
| Composite Prepared Time: | 13:20 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 299.6 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10L-T001-0-0 1 of 2 | 19905-001 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10L-T001-0-0 2 of 2 | 19905-002 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained one crab approximately 3 cm, one fish about 5 cm, and some leaf litter.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 07/19/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10L-T002-0-0 |
| Composite Lab ID: | 19905-008 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 07/15/10 |
| Composite Prepared Time: | 13:50 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 457.7 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10L-T002-0-0 1 of 2 | 19905-003 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10L-T002-0-0 2 of 2 | 19905-004 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Composite Notes:

Excluded samples contained an estimated sixty snails approximately 1 cm in diameter, and four shrimp less than 2 cm in size.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 07/19/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10L-T003-0-0 |
| Composite Lab ID: | 19905-009 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 07/15/10 |
| Composite Prepared Time: | 15:00 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 1345.9 |
| Composite Container(s): | 32oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10L-T003-0-0 1 of 2 | 19905-005 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10L-T003-0-0 2 of 2 | 19905-006 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
| | | | | | | |
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Composite Notes:

Excluded samples contained three crabs less than 3 cm, one fish 6 cm long, and some leaf litter.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 07/19/10.

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 19905 | | |
| SDG No: | | | |
| Project: | New Bedford Harbor Environ. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 07/14/10 1830 | Date and Time Logged into Lab: | 07/15/10 0945 |
| Recieved By: | JTP | Logged into Lab by: | LCB LCB |
| 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: | 4 | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | NA | | |
| COC Complete: | | 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 |
|---|---|---|---|---|---|---|
| S-10L-T001-0-0 1 of 2 | 19905-001 | S | STP: S-10L-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10L-T001-0-0 2 of 2 | 19905-002 | S | STP: S-10L-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10L-T002-0-0 1 of 2 | 19905-003 | S | STP: S-10L-T002-0-0 | 1 Gal P | 4C | Yes |
| S-10L-T002-0-0 2 of 2 | 19905-004 | S | STP: S-10L-T002-0-0 | 1 Gal P | 4C | Yes |
| S-10L-T003-0-0 1 of 2 | 19905-005 | S | STP: S-10L-T003-0-0 | 1 Gal P | 4C | Yes |
| S-10L-T003-0-0 2 of 2 | 19905-006 | S | STP: S-10L-T003-0-0 | 1 Gal P | 4C | Yes |

Notes and qualifications:

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 19905

# CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: New Bedford Harbor Environ. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: dwalsh@whgrp.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -001 | S-1ØL-TØØ1-Ø-Ø 1 of 2 | 7/14/10 | 09:22 | KGM | C | 1 gal | P | none | W | N | composite / dewater 2 jars |
| -003 | S-1ØL-TØØ2-Ø-Ø 1 of 2 | 7/14/10 | 11:30 | KGM | C | 1 gal | P | none | W | N | composite / dewater 2 jars |
| -005 | S-1ØL-TØØ3-Ø-Ø 1 of 2 | 7/14/10 | 13:25 | KGM | C | 1 gal | P | none | W | N | composite / dewater 2 jars |
| -002 | S-1ØL-TØØ1-Ø-Ø 2 of 2 | 7/14/10 | 0922 | KGM | C | 1 gal | P | none | W | N | ↓ |
| -004 | S-1ØL-TØØ2-Ø-Ø 2 of 2 | 7/14/10 | 1130 | KGM | C | 1 gal | P | none | W | N | ↓ |
| -006 | S-1ØL-TØØ3-Ø-Ø 2 of 2 | 7/14/10 | 1325 | KGM | C | 1 gal | P | none | W | N | ↓ |
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|---|---|---|---|
| Relinquished By: Kaitlyn McCartney | Date: 7/14/10 Time: 15:00 | Received By: [signature] | Date: 7/14/10 Time: 15:00 |
| Relinquished By: [signature] | Date: 7/14/10 Time: 18:~~26~~ 30 (ES) Lab | Received at Lab By: [signature] | Date: 7/14/10 Time: 18:30 |

Comments:

Sample Delivery Group No: Page of

# ESI

EnviroSystems, Inc.
One Lafayette Road
P.O. Box 778
Hampton, N.H. 03843-0778
p 603 926 3345 · f 603 926 3521
envirosystems.com

Dave Walsh
Woods Hole Group
81 Technology Park Drive
East Falmouth, MA 02536

| | |
|---|---|
| PO Number: | None |
| Report Number: | 20110 |
| Date Received: | 08/25/10 |
| Date Reported: | 08/30/10 |

Project: NBH Environ. Monitoring

Attached please find results for analyses performed on samples received on 08/25/10 1749.

Samples were received in acceptable condition and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

EnviroSystems, Incorporated

Authorized Signature

Date 8/30/10

Attachment
Report

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10G-T001-0-0 |
| Composite Lab ID: | 20110-006 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 08/26/10 |
| Composite Prepared Time: | 13:30 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |
| Final Wet Mass Determination: | 223.8 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10G-T001-0-0 1 of 2 | 20110-001 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10G-T001-0-0 2 of 2 | 20110-002 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained 78 shrimp and some leaf litter.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 08/27/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |

| | | | |
|---|---|---|---|
| Composite Identifier: | S-10G-T002-0-0 | | |
| Composite Lab ID: | 20110-007 | | |
| Composite Matrix: | Solid | | |
| Composite Prepared Date: | 08/26/10 | Final Wet Mass Determination: | 376.3 |
| Composite Prepared Time: | 14:00 | Composite Container(s): | 32oz. Glass |
| Composite Prepared By: | JL | | |
| Protocol Procedure: | ESI SOP 1379 | | |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10G-T002-0-0 1 of 2 | 20110-003 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10G-T002-0-0 2 of 2 | 20110-004 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained sixty four shrimp, a 6 cm fish, and some leaf litter.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 08/27/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10G-T003-0-0 |
| Composite Lab ID: | 20110-008 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 08/26/10 |
| Composite Prepared Time: | 14:30 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |

| | |
|---|---|
| Final Wet Mass Determination: | 197.5 |
| Composite Container(s): | 32oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10G-T003-0-0 1 of 1 | 20110-005 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained fifty two shrimp and some leaf litter.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 08/27/10.

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 20110 | | |
| SDG No: | | | |
| Project: | NBH Environ. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 08/25/10 1749 | Date and TIme Logged into Lab: | 08/26/10 1000 |
| Recieved By: | JL | Logged into Lab by: | LCB LCB |
| 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: | 4 | Custody Seals intact? | NA |
| Number of COC Pages: | 1 | | |
| COC Serial Number(s): | NA | | |
| COC Complete: | | 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 |
|---|---|---|---|---|---|---|
| S-10G-T001-0-0 1 of 2 | 20110-001 | S | STP: S-10G-T001-0-0 | 1 Gal P | 4 C | Yes |
| S-10G-T001-0-0 2 of 2 | 20110-002 | S | STP: S-10G-T001-0-0 | 1 Gal P | 4 C | Yes |
| S-10G-T002-0-0 1 of 2 | 20110-003 | S | STP: S-10G-T002-0-0 | 1 Gal P | 4 C | Yes |
| S-10G-T002-0-0 2 of 2 | 20110-004 | S | STP: S-10G-T002-0-0 | 1 Gal P | 4 C | Yes |
| S-10G-T003-0-0 1 of 1 | 20110-005 | S | STP: S-10G-T003-0-0 | 1 Gal P | 4 C | Yes |

Notes and qualifications:

# EnviroSystems, Inc.

P.O Box 778
Hampton, NH 03843-0778
(603) 926-3345
(603) 926-3521 Fax
www.envirosystems.com

# Invoice

| Date | Invoice # |
|---|---|
| 8/31/2010 | 24298 |

| Bill To |
|---|
| WOODS HOLE GROUP, INC.<br>81 TECHNOLOGY PARK DRIVE<br>EAST FALMOUTH, MA 02536 |

| P.O. No. | Terms | PROJECT |
|---|---|---|
| SEE BELOW | Net 30 | 20110 |

| Qty | Description | Rate | Amount |
|---|---|---|---|
| 5 | SEDIMENT TRAP PREPARATION | 350.00 | 1,750.00 |
| | SAMPLE RECEIPT DATE: 8/26/10 | | |
| | NED ACOE JOB # TO-0010, TASK ORDER # ESI 0003 | Total | $1,750.00 |

| | | | |
|---|---|---|---|
| Report No: | 20110 | SDG: | |
| Project: | NBH Environ. Monitoring | | |
| Sample ID: | S-10G-T001-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 08/26/10 1330 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20110-006 | 223.8 | 0.1 | g | 08/26/10 | 08/26/10 | JL /ESI SOP 1379 |

Notes:

| | | | |
|---|---|---|---|
| Report No: | 20110 | SDG: | |
| Project: | NBH Environ. Monitoring | | |
| Sample ID: | S-10G-T002-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 08/26/10 1400 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20110-007 | 376.3 | 0.1 | g | 08/26/10 | 08/26/10 | JL /ESI SOP 1379 |

Notes:

| | | | |
|---|---|---|---|
| Report No: | 20110 | SDG: | |
| Project: | NBH Environ. Monitoring | | |
| Sample ID: | S-10G-T003-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 08/26/10 1430 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20110-008 | 197.5 | 0.1 | g | 08/26/10 | 08/26/10 | JL /ESI SOP 1379 |

Notes:

# CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: 20110

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: NBH Environ. monitoring

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:

**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

TO ESI for sample processing

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: dewater, centrifuge, composite | SAMPLE HANDLING | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|
| -001 | S-1ØG-TØØ1-Ø-Ø1 1of2 | 8/25/10 | 10:03 | SW | KGM | X | centrifuge, composite | 2 |
| -003 | S-1ØG-TØØ2-Ø-Ø1 1of3 | 8/25/10 | 11:19 | SW | KGM | X | centrifuge, composite | 2 |
| -005 | S-1ØG-TØØ3-Ø-Ø1 1of1 | 8/25/10 | 12:30 | SW | KGM | X | centrifuge, composite | 1 |
| -002 | S-1ØG-TØØ1-Ø-Ø 2of2 | 8/25/10 | 1003 | SW | KGM | X | ↓ | |
| -004 | S-1ØØ-TØØ2-Ø-Ø 2of2 | 8/25/10 | 1119 | SW | KGM | X | | |

Sample Handling: Filtration ☐ Done ☐ Not needed ☐ Lab to do; Preservation ☐ Lab to do (Please specify below)

Container Type: P

Preservative: A

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 8/25/10 1445 | [signature] | 8/25/10 1445 |
| [signature] | 8/25/10 1749 | | |
| [signature] | 8/25/10 1749 | | |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

# ESI

EnviroSystems, Inc.
One Lafayette Road
P.O. Box 778
Hampton, N.H. 03843-0778
p 603 926 3345 · f 603 926 3521
envirosystems.com

Dave Walsh
Woods Hole Group
81 Technology Park Drive
East Falmouth, MA 02536

PO Number: None
Report Number: 20226
Date Received: 09/30/10
Date Reported: 10/04/10

Project: NBH Environmental Monitoring

Attached please find results for analyses performed on samples received on 09/30/10 at 1900.

Samples were received in acceptable condition and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

EnviroSystems, Incorporated

Date 10/04/10

Authorized
Signature

Attachment
Report

| | | | |
|---|---|---|---|
| Report No: | 20226 | SDG: | |
| Project: | NBH Environmental Monitoring | | |
| Sample ID: | S-10S-T001-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 10/01/10 1050 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20226-006 | 250.36 | 0.1 | g | 10/01/10 | 10/01/10 | JL /ESI SOP 1379 |

Notes:

| | | | |
|---|---|---|---|
| Report No: | 20226 | SDG: | |
| Project: | NBH Environmental Monitoring | | |
| Sample ID: | S-10S-T002-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 10/01/10 1130 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20226-007 | 223.49 | 0.1 | g | 10/01/10 | 10/01/10 | JL /ESI SOP 1379 |

Notes:

| | | | |
|---|---|---|---|
| Report No: | 20226 | SDG: | |
| Project: | NBH Environmental Monitoring | | |
| Sample ID: | S-10S-T003-0-0 | | |
| Matrix: | Solid | | |
| Sampled: | 10/01/10 1310 | | |

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20226-008 | 839.69 | 0.1 | g | 10/01/10 | 10/01/10 | JL /ESI SOP 1379 |

Notes:

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10S-T001-0-0 |
| Composite Lab ID: | 20226-006 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 10/01/10 |
| Composite Prepared Time: | 10:50 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |
| Final Wet Mass Determination: | 250.36 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10S-T001-0-0 1 of 2 | 20226-001 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10S-T001-0-0 2 of 2 | 20226-002 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained some leaf litter and two crab arms.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 10/02/10.

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10S-T002-0-0 |
| Composite Lab ID: | 20226-007 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 10/01/10 |
| Composite Prepared Time: | 11:30 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |
| Final Wet Mass Determination: | 223.49 |
| Composite Container(s): | 9oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10S-T002-0-0 1 of 1 | 20226-003 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained two shrimp and two crab arms.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 10/02/10.



ESI

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

# Sediment Trap Composite Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10S-T003-0-0 |
| Composite Lab ID: | 20226-008 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 10/01/10 |
| Composite Prepared Time: | 13:10 |
| Composite Prepared By: | JL |
| Protocol Procedure: | ESI SOP 1379 |
| Final Wet Mass Determination: | 839.69 |
| Composite Container(s): | 32oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded | Amount Added | Notes |
|---|---|---|---|---|---|---|
| S-10S-T003-0-0 1 of 2 | 20226-004 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10S-T003-0-0 2 of 2 | 20226-005 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
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Composite Notes:

Excluded samples contained two crabs approximately 2cm in diameter and three shrimp.
1 Gallon Sampling containers were partially filled.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 10/02/10.

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 20226 | | |
| SDG No: | | | |
| Project: | NBH Environmental Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 09/30/10 1900 | Date and Time Logged into Lab: | 09/30/10 1907 |
| Recieved By: | LCB | Logged into Lab by: | LCB LCB |
| 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): | NA | | |
| COC Complete: | | 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 |
|---|---|---|---|---|---|---|
| S-10S-T001-0-0 (1 of 2) | 20226-001 | S | STP: S-10S-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10S-T001-0-0 (2 of 2) | 20226-002 | S | STP: S-10S-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10S-T002-0-0 (1 of 1) | 20226-003 | S | STP: S-10S-T002-0-0 | 1 Gal P | 4C | Yes |
| S-10S-T003-0-0 (1 of 2) | 20226-004 | S | STP: S-10S-T003-0-0 | 1 Gal P | 4C | Yes |
| S-10S-T003-0-0 (2 of 2) | 20226-005 | S | STP: S-10S-T003-0-0 | 1 Gal P | 4C | Yes |

Notes and qualifications:

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 20226

## CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NSH Environmental monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Morey | Address: E-Falmouth, MA | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: dwalsh@whgrp.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -001 | S-10S-T001-0-0 (1of2) | 9/30/10 | 11:44 | KGM | G | 1gal | P | ice | W | N | dewater & composit w/ 2of2 |
| -002 | S-10S-T001-0-0 (2of2) | 9/30/10 | 11:44 | KGM | G | 1gal | P | ice | W | N | dewater & composite w/ 1of2 |
| -003 | S-10S-T002-0-0 (1of1) | 9/30/10 | 10:41 | KGM | G | 1gal | P | ice | W | N | dewater (centrifuge) |
| -004 | S-10S-T003-0-0 (1of2) | 9/30/10 | 09:25 | KGM | G | 1gal | P | ice | W | N | dewater & composit w/ 2of2 |
| -005 | S-10S-T003-0-0 (2of2) | 9/30/10 | 09:25 | KGM | G | 1gal | P | ice | W | N | dewater & composite w/ 1of2 |
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Relinquished By: [signature] Date: 9/30/10 Time: 19:00 Received By: [signature] Date: 9/30/10 Time: 1900

Relinquished By: Date: Time: Received at Lab By: Date: Time:

Comments:

Sample Delivery Group No: Page of

COC Doc No: 4152

# ESI

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p 603 926 3345 · f 603 926 3521
envirosystems.com

Dave Walsh
Woods Hole Group
81 Technology Park Drive
East Falmouth, MA 02536

| | |
|---|---|
| PO Number: | None |
| Report Number: | 20424 |
| Date Received: | 11/22/10 |
| Date Reported: | 12/06/10 |

Project: New Bedford Harbor Environ. Monitoring

Attached please find results for analyses performed on samples received on 11/22/10 at 1600.

Samples were received in acceptable condition and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

EnviroSystems, Incorporated

Authorized Signature

Date 12/5/10

Attachment
Report

Report No: 20424 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10N-T001-0-0
Matrix: Solid
Sampled: 11/23/10 1120

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20424-007 | 326.77 | 0.1 | g | 11/23/10 | 11/23/10 | JEB/ESI SOP 1379 |

Notes:


EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com

Report No: 20424 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10N-T002-0-0
Matrix: Solid
Sampled: 11/23/10 1220

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20424-008 | 525.52 | 0.1 | g | 11/23/10 | 11/23/10 | JEB/ESI SOP 1379 |

Notes:

Report No: 20424 SDG:
Project: New Bedford Harbor Environ. Monitoring

Sample ID: S-10N-T003-0-0
Matrix: Solid
Sampled: 11/23/10 1330

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|---|---|---|---|---|---|---|
| Total Wet Mass Recovered | 20424-009 | 777.02 | 0.1 | g | 11/23/10 | 11/23/10 | JEB/ESI SOP 1379 |

Notes:

# Laboratory Composite Preparation Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10N-T001-0-0 |
| Composite Lab ID: | 20424-007 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 11/23/10 |
| Composite Prepared Time: | 1120 |
| Composite Prepared By: | JEB |
| Protocol Procedure: | ESI SOP 1379 |
| Composite Final Amount: | 326.77 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded (%) | Amount Added (Kg) | Notes |
|---|---|---|---|---|---|---|
| S-10N-T001-0-0 1of 1 | 20424-001 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10N-T001-0-0 1of 2 | 20424-002 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
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Composite Notes:

Excluded samples contained an estimated 100 shrimp all approximately 3cm in length, and three fish approximately 4cm in length.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 11/24/10.

# Laboratory Composite Preparation Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10N-T002-0-0 |
| Composite Lab ID: | 20424-008 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 11/23/10 |
| Composite Prepared Time: | 1220 |
| Composite Prepared By: | JEB |
| Protocol Procedure: | ESI SOP 1379 |
| Composite Final Amount: | 525.52 |
| Composite Container(s): | 16oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded (%) | Amount Added (Kg) | Notes |
|---|---|---|---|---|---|---|
| S-10N-T002-0-0 1of 1 | 20424-003 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10N-T002-0-0 1of 2 | 20424-004 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
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Composite Notes:

Excluded samples contained an estimated thirty shrimp all approximately 3cm in length, four crabs approximately 2cm in width ,and one eel approximately 30 cm long.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 11/24/10.

# Laboratory Composite Preparation Documentation

| | |
|---|---|
| Project: | New Bedford Harbor Environ. Monitoring |
| Composite Identifier: | S-10N-T003-0-0 |
| Composite Lab ID: | 20424-009 |
| Composite Matrix: | Solid |
| Composite Prepared Date: | 11/23/10 |
| Composite Prepared Time: | 1330 |
| Composite Prepared By: | JEB |
| Protocol Procedure: | ESI SOP 1379 |
| Composite Final Amount: | 777.02 |
| Composite Container(s): | 32oz. Glass |

This composite was prepared according to protocols cited using the samples and amounts listed below.

| Field ID | ESI Lab ID | Matrix | Liquids Excluded (%) | Solids Excluded (%) | Amount Added (Kg) | Notes |
|---|---|---|---|---|---|---|
| S-10N-T003-0-0 1of 1 | 20424-005 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| S-10N-T003-0-0 1of 2 | 20424-006 | Solid | >99 | All Visible Invertebrates | 1 Gallon | |
| | | | | | | |
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Composite Notes:

Excluded samples contained four crabs approximately 2cm in width, and three crabs approximately 1cm in width.

Subsamples removed:

Sample sent to Alpha Analytical for chemical analysis on 11/24/10.



ESI

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

ESI

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION



| | | | |
|---|---|---|---|
| STUDY NO: | 20424 | | |
| SDG No: | | | |
| Project: | New Bedford Harbor Environ. Monitoring | | |
| Delivered via: | Client | | |
| Date and Time Received: | 11/22/10 1600 | Date and TIme Logged into Lab: | 11/22/10 1645 |
| Recieved By: | RAM | Logged into Lab by: | LCB MeJ |
| 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: | | 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 |
|---|---|---|---|---|---|---|
| S-10N-T001-0-0 (1 of 2) | 20424-001 | S | STP: S-10N-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10N-T001-0-0 (2 of 2) | 20424-002 | S | STP: S-10N-T001-0-0 | 1 Gal P | 4C | Yes |
| S-10N-T002-0-0 (1 of 2) | 20424-003 | S | STP: S-10N-T002-0-0 | 1 Gal P | 4C | Yes |
| S-10N-T002-0-0 (2 of 2) | 20424-004 | S | STP: S-10N-T002-0-0 | 1 Gal P | 4C | Yes |
| S-10N-T003-0-0 (1 of 2) | 20424-005 | S | STP: S-10N-T003-0-0 | 1 Gal P | 4C | Yes |
| S-10N-T003-0-0 (1 of 2) | 20424-006 | S | STP: S-10N-T003-0-0 | 1 Gal P | 4C | Yes |

Notes and qualifications:

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Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 20424

# CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: New Bedford Harbor Environ. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: dwalsh@whgrp.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -001 | S-1ΦN-TΦΦ1-Φ-Φ (1of2) | 11/22/10 | 08:44 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine with TΦΦ1(2of |
| -002 | S-1ΦN-TΦΦ1-Φ-Φ (2of2) | 11/22/10 | 08:44 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine w/ TΦΦ1 (1of 2) |
| -003 | S-1ΦN-TΦΦ2-Φ-Φ (1of2) | 11/22/10 | 09:36 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine w/ TΦΦ2 (2of2 |
| -004 | S-1ΦN-TΦΦ2-Φ-Φ (2of2) | 11/22/10 | 09:36 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine w/ TΦΦ2 (1of2) |
| -005 | S-1ΦN-TΦΦ3-Φ-Φ (1of2) | 11/22/10 | 10:31 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine w/ TΦΦ3 (2of2) |
| -006 | S-1ΦN-TΦΦ3-Φ-Φ (2of2) | 11/22/10 | 10:31 | KGM | G | 1 gal | P | ice | W | N | Centrifuge & combine w/ TΦΦ3 (1of2) |
| | | | | | | | | | | | |
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9 of 9

| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 11/22/10 Time: 1600 | Received By: [signature] | Date: 11/22/10 Time: 1600 |
| Relinquished By: | Date: Time: | Received at Lab By: | Date: Time: |

Comments:

Sample Delivery Group No: Page of

COC Doc No: 4153

# 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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ALPHA ANALYTICAL

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1007001 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010 |
| Report Date: | 05/26/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1007001-01 | S-10Y-G001-0-0 | NEW BEDFORD, MA | 05/11/10 10:05 |
| L1007001-02 | S-10Y-G002-0-0 | NEW BEDFORD, MA | 05/11/10 11:00 |
| L1007001-03 | S-10Y-G002-0-0REP | NEW BEDFORD, MA | 05/11/10 11:00 |
| L1007001-04 | S-10Y-G003-0-0 | NEW BEDFORD, MA | 05/11/10 13:30 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on May 11, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until May 17, 2010 when they were removed to extract samples for PCB Congener analysis.

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

**Case Narrative (continued)**

whether it was the higher or lower value.

All samples were analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compounds that exceeded the calibration range.

Samples L1007001-01 through -04 as well as sample specific associated QC have the surrogates diluted out.

The WG413335-4,-5 MS/MSD recoveries and RPD, performed on L1007001-02, are outside the acceptance criteria for majority of the target compounds. The native sample concentrations were more than 4 times the spike concentration thereby effectively diluting out the spike.

The closing continuing calibration standard for samples L1007001-01D2, -02D, -03D as well as the associated QC and the opening continuing calibration for samples L1007001-01D, -04D had increased responses for BZ8 (21.7%-RTx-5, 29.9%-CLPII), BZ18 (15.9%RTx-5, 25.2%-CLPII) and BZ28(15.5%-RTx-5) above the individual acceptance criteria but within the method allowance. BZ8 and BZ18 in the associated samples were reported off CLPII and BZ28 was reported off RTx-5.

Grain Size

The WG413381-1 Laboratory Duplicate RPD, associated with L1007001-02, is outside the acceptance criteria for sieve, #10(51%),sieve, #20(74%),sieve, #40(74%),sieve, #60(74%),sieve, #140(69%),sieve, #200(67%),gravel(57%),% very coarse sand(83%),% coarse sand(77%),% medium sand(72%),% fine sand(49%),% very fine sand(40%),clay(27%),sand(66%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

**Case Narrative (continued)**

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: 05/26/10

# ORGANICS

# PCBS

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007001-01 | D2 | Date Collected: | 05/11/10 10:05 |
| Client ID: | S-10Y-G001-0-0 | | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 17:12 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 7370 | | ug/kg | 1370 | -- | 1000 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-01 D2 | Date Collected: | 05/11/10 10:05 |
| Client ID: | S-10Y-G001-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 17:12 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5800 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001

**Project Number:** TO-0010 **Report Date:** 05/26/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007001-01 | D | Date Collected: | 05/11/10 10:05 |
| Client ID: | S-10Y-G001-0-0 | | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 22:40 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1250 | | ug/kg | 137 | -- | 100 |
| Cl3-BZ#18 | 2510 | | ug/kg | 137 | -- | 100 |
| Cl4-BZ#52 | 5400 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#66 | 2250 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#118 | 1240 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#138 | 1120 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#187 | 298 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#180 | 250 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#170 | 197 | | ug/kg | 137 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 137 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 137 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 137 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-01 D | Date Collected: | 05/11/10 10:05 |
| Client ID: | S-10Y-G001-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 22:40 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4270 | E | ug/kg | 137 | -- | 100 |
| Cl4-BZ#44 | 1760 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#101 | 1500 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#153 | 1250 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#105 | 280 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#128 | 150 | | ug/kg | 137 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001

**Project Number:** TO-0010 **Report Date:** 05/26/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-02 D | Date Collected: | 05/11/10 11:00 |
| Client ID: | S-10Y-G002-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 17:53 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5150 | | ug/kg | 1400 | -- | 1000 |
| Cl3-BZ#18 | 15100 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#66 | 7370 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#118 | 3100 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#138 | 3220 | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1400 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-02 D | Date Collected: | 05/11/10 11:00 |
| Client ID: | S-10Y-G002-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 17:53 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 16500 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#52 | 22100 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#44 | 7160 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#101 | 4930 | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#153 | 4300 | | ug/kg | 1400 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-03 D | Date Collected: | 05/11/10 11:00 |
| Client ID: | S-10Y-G002-0-0REP | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 19:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7280 | | ug/kg | 1400 | -- | 1000 |
| Cl3-BZ#18 | 12900 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#66 | 8480 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#118 | 3480 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#138 | 3480 | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1400 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1400 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001

**Project Number:** TO-0010 **Report Date:** 05/26/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-03 D | Date Collected: | 05/11/10 11:00 |
| Client ID: | S-10Y-G002-0-0REP | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/21/10 19:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 20900 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#52 | 25600 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#44 | 8120 | | ug/kg | 1400 | -- | 1000 |
| Cl5-BZ#101 | 5350 | | ug/kg | 1400 | -- | 1000 |
| Cl6-BZ#153 | 4740 | | ug/kg | 1400 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-04 D | Date Collected: | 05/11/10 13:30 |
| Client ID: | S-10Y-G003-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/22/10 02:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 89% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 329 | | ug/kg | 147 | -- | 100 |
| Cl3-BZ#18 | 590 | | ug/kg | 147 | -- | 100 |
| Cl4-BZ#52 | 2110 | | ug/kg | 147 | -- | 100 |
| Cl4-BZ#66 | 1780 | | ug/kg | 147 | -- | 100 |
| Cl5-BZ#118 | 1470 | | ug/kg | 147 | -- | 100 |
| Cl6-BZ#138 | 1110 | | ug/kg | 147 | -- | 100 |
| Cl7-BZ#187 | 225 | | ug/kg | 147 | -- | 100 |
| Cl7-BZ#180 | 238 | | ug/kg | 147 | -- | 100 |
| Cl7-BZ#170 | 182 | | ug/kg | 147 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 147 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 147 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 147 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007001-04 D | Date Collected: | 05/11/10 13:30 |
| Client ID: | S-10Y-G003-0-0 | Date Received: | 05/11/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/17/10 16:08 |
| Analytical Date: | 05/22/10 02:04 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 05/18/10 |
| Percent Solids: | 89% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1690 | | ug/kg | 147 | -- | 100 |
| Cl4-BZ#44 | 814 | | ug/kg | 147 | -- | 100 |
| Cl5-BZ#101 | 1270 | | ug/kg | 147 | -- | 100 |
| Cl6-BZ#153 | 1060 | | ug/kg | 147 | -- | 100 |
| Cl5-BZ#105 | 353 | | ug/kg | 147 | -- | 100 |
| Cl6-BZ#128 | 181 | | ug/kg | 147 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001
**Project Number:** TO-0010 **Report Date:** 05/26/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 05/21/10 15:10
Analyst: NS

Extraction Method: EPA 3540C
Extraction Date: 05/17/10 16:08
Cleanup Method1: EPA 3630
Cleanup Date1: 05/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG413335-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 109 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001

**Project Number:** TO-0010 **Report Date:** 05/26/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 05/21/10 15:10
Analyst: NS

Extraction Method: EPA 3540C
Extraction Date: 05/17/10 16:08
Cleanup Method1: EPA 3630
Cleanup Date1: 05/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG413335-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 109 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

| 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): 01-04 QC Batch ID: WG413335-4 WG413335-5 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 5150 | 867 | 6590 | **166** | Q | 4590 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl3-BZ#18 | 15100 | 867 | 13800 | **0** | Q | 11500 | **0** | Q | 40-140 | NC | | 30 |
| Cl3-BZ#28 | 16500 | 867 | 18900 | **277** | Q | 14600 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl4-BZ#52 | 22100 | 867 | 24200 | **242** | Q | 17400 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl4-BZ#44 | 7160 | 867 | 8260 | 127 | | 5950 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl4-BZ#66 | 7370 | 867 | 8820 | **167** | Q | 6400 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl5-BZ#101 | 4930 | 867 | 5770 | 97 | | 4240 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl5-BZ#118 | 3100 | 867 | 4010 | 105 | | 3000 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl6-BZ#153 | 4300 | 867 | 5200 | 104 | | 3840 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl5-BZ#105 | ND | 867 | ND | **0** | Q | ND | **0** | Q | 40-140 | NC | | 30 |
| Cl6-BZ#138 | 3220 | 867 | 4120 | 104 | | 3070 | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl7-BZ#187 | ND | 867 | 1880 | **217** | Q | 1420 | **164** | Q | 40-140 | 28 | | 30 |
| Cl6-BZ#128 | ND | 867 | 1500 | **173** | Q | ND | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl7-BZ#180 | ND | 867 | 1510 | **174** | Q | ND | **0** | Q | 40-140 | **200** | Q | 30 |
| Cl7-BZ#170 | ND | 867 | ND | **0** | Q | ND | **0** | Q | 40-140 | NC | | 30 |
| Cl8-BZ#195 | ND | 867 | ND | **0** | Q | ND | **0** | Q | 40-140 | NC | | 30 |
| Cl9-BZ#206 | ND | 867 | ND | **0** | Q | ND | **0** | Q | 40-140 | NC | | 30 |
| Cl10-BZ#209 | ND | 867 | ND | **0** | Q | ND | **0** | Q | 40-140 | NC | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

| 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): 01-04 QC Batch ID: WG413335-4 WG413335-5 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | **0** | Q | **0** | Q | 30-150 |
| DBOB | **0** | Q | **0** | Q | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG413335-2 WG413335-3 | | | | | | | | |
| Cl2-BZ#8 | 77 | | 74 | | 40-140 | 4 | | 30 |
| Cl3-BZ#18 | 103 | | 95 | | 40-140 | 8 | | 30 |
| Cl3-BZ#28 | 94 | | 100 | | 40-140 | 6 | | 30 |
| Cl4-BZ#52 | 101 | | 100 | | 40-140 | 1 | | 30 |
| Cl4-BZ#44 | 94 | | 92 | | 40-140 | 2 | | 30 |
| Cl4-BZ#66 | 94 | | 94 | | 40-140 | 0 | | 30 |
| Cl5-BZ#101 | 98 | | 97 | | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 101 | | 102 | | 40-140 | 1 | | 30 |
| Cl5-BZ#105 | 94 | | 93 | | 40-140 | 1 | | 30 |
| Cl6-BZ#138 | 99 | | 99 | | 40-140 | 0 | | 30 |
| Cl7-BZ#187 | 96 | | 96 | | 40-140 | 0 | | 30 |
| Cl6-BZ#128 | 98 | | 96 | | 40-140 | 2 | | 30 |
| Cl7-BZ#180 | 99 | | 98 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 93 | | 93 | | 40-140 | 0 | | 30 |
| Cl8-BZ#195 | 94 | | 92 | | 40-140 | 2 | | 30 |
| Cl9-BZ#206 | 106 | | 102 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | 95 | | 92 | | 40-140 | 3 | | 30 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG413335-2 | WG413335-3 | | | |
| DBOB | 91 | | 83 | | 30-150 | | | |
| BZ 198 | 103 | | 100 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG413335-2 | WG413335-3 | | | |
| Cl6-BZ#153 | 89 | | 89 | | 40-140 | 0 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 91 | | 83 | | 30-150 |
| BZ 198 | 103 | | 100 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

## SAMPLE RESULTS

Lab ID: L1007001-01
Client ID: S-10Y-G001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/11/10 10:05
Date Received: 05/11/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.93 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.80 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 2.10 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 4.40 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 6.10 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 20.3 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 16.9 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 8.60 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 29.9 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 9.90 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 96.2 | | % | 0.100 | -- | 1 | - | 05/14/10 11:31 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 32.8 | | % | 0.100 | NA | 1 | - | 05/12/10 17:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

## SAMPLE RESULTS

Lab ID: L1007001-02
Client ID: S-10Y-G002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/11/10 11:00
Date Received: 05/11/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.52 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.46 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 1.00 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 2.10 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.30 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 2.20 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.00 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 2.40 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 56.0 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 31.7 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.2 | | % | 0.100 | -- | 1 | - | 05/14/10 11:31 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 24.8 | | % | 0.100 | NA | 1 | - | 05/12/10 17:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

## SAMPLE RESULTS

Lab ID: L1007001-03
Client ID: S-10Y-G002-0-0REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/11/10 11:00
Date Received: 05/11/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.30 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.16 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.700 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 3.20 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 3.60 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 3.30 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.60 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 3.00 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 56.0 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 27.2 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.0 | | % | 0.100 | -- | 1 | - | 05/14/10 11:31 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 24.7 | | % | 0.100 | NA | 1 | - | 05/12/10 17:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007001
**Report Date:** 05/26/10

## SAMPLE RESULTS

Lab ID: L1007001-04
Client ID: S-10Y-G003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/11/10 13:30
Date Received: 05/11/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.23 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.24 | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.600 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 2.80 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 3.30 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 3.60 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 3.80 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 4.00 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 55.8 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 25.9 | | % | 0.100 | NA | 1 | - | 05/17/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 89.3 | | % | 0.100 | -- | 1 | - | 05/14/10 11:31 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 27.0 | | % | 0.100 | NA | 1 | - | 05/12/10 17:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007001

**Project Number:** TO-0010 **Report Date:** 05/26/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG414579-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 05/25/10 15:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG414579-4 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.52 | 1.74 | 7.29 | 102 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 5.46 | 2.91 | 8.50 | 102 | | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG413037-1 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | |
| Solids, Total | 94.2 | 94.6 | % | 0 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG413381-1 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | |
| Gravel (>2.00mm) | 1.0 | 1.80 | % | **57** | Q | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 2.1 | 5.10 | % | **83** | Q | 20 |
| Coarse Sand (0.50-1.00 mm) | 2.3 | 5.20 | % | **77** | Q | 20 |
| Medium Sand (0.25-0.50 mm) | 2.2 | 4.70 | % | **72** | Q | 20 |
| Fine Sand (0.125-0.25 mm) | 2.0 | 3.30 | % | **49** | Q | 20 |
| Very Fine Sand (0.063-0.125 mm) | 2.4 | 3.60 | % | **40** | Q | 20 |
| Silt - (1.95-62.5 um) | 56.0 | 51.8 | % | 8 | | 20 |
| Clay - (<1.95 um) | 31.7 | 24.1 | % | **27** | Q | 20 |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG414579-3 QC Sample: L1007001-02 Client ID: S-10Y-G002-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 5.52 | 5.23 | % | 5 | | 25 |
| Total Organic Carbon (Rep2) | 5.46 | 5.44 | % | 0 | | 25 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG414579-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 121 | | 75-125 |
| Total Organic Carbon (Rep2) | 107 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1007001-01A | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA(),A2-TS(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1007001-01B | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA() |
| L1007001-01C | Glass 100ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1007001-01D | Bag | A | N/A | 3.3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1007001-02A | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA(),A2-TS(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1007001-02B | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA() |
| L1007001-02C | Glass 100ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1007001-02D | Bag | A | N/A | 3.3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1007001-02E | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA() |
| L1007001-03A | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA(),A2-TS(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1007001-03C | Glass 100ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1007001-03D | Bag | A | N/A | 3.3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1007001-04A | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA(),A2-TS(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1007001-04B | Glass 250ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-PCBCONG-8082-NOAA() |
| L1007001-04C | Glass 100ml unpreserved | A | N/A | 3.3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007001
**Report Date:** 05/26/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1007001-04D | Bag | A | N/A | 3.3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **H** | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1007001 |
| **Project Number:** | TO-0010 | **Report Date:** | 05/26/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

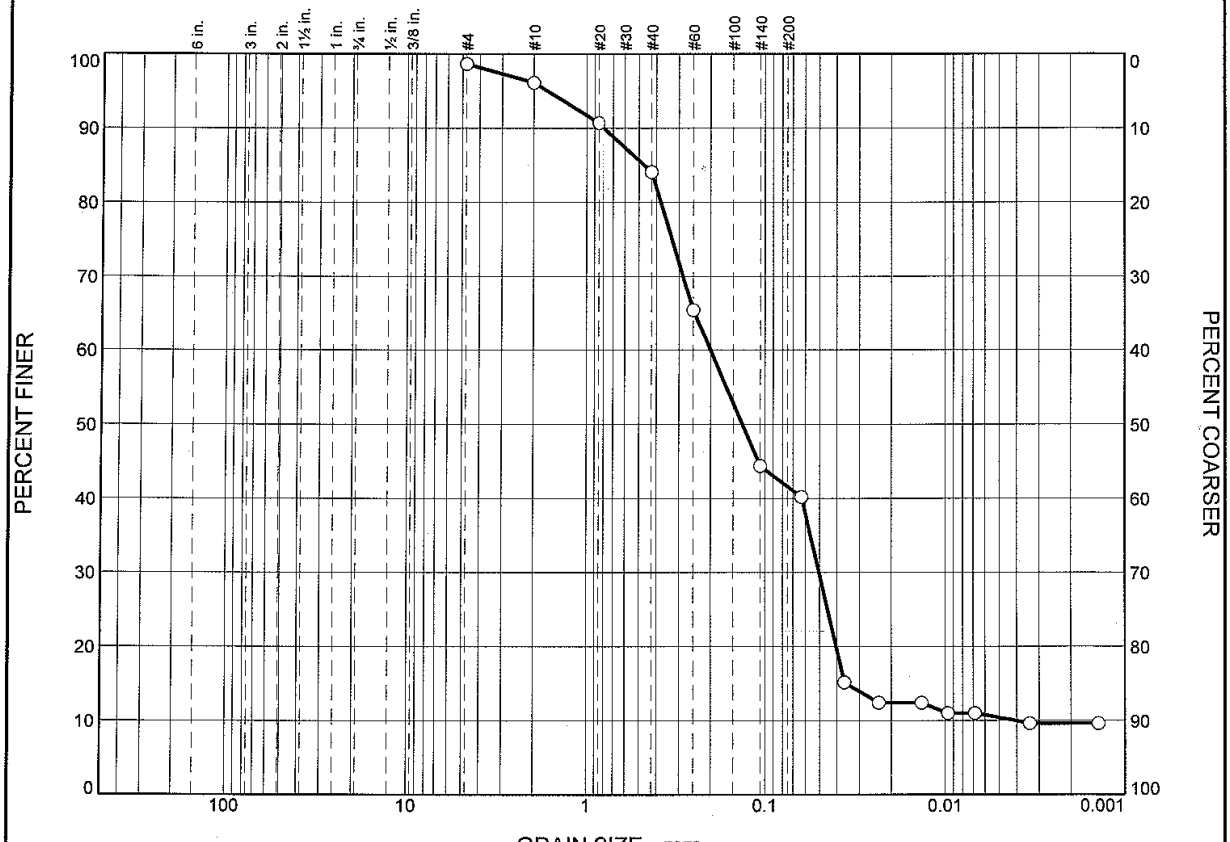

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 2.1 | 4.4 | 6.1 | 20.3 | 16.9 | 8.6 | 25.7 | 1.7 | 1.4 | 1.1 | 9.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.4680 | 0.2009 | 0.1335 | 0.0504 | 0.0355 | 0.0041 | 3.06 | 48.78 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1007001 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10Y-G001-0-0 **Sample Number:** L1007001-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

5/26/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1007001
**Location:** S-10Y-G001-0-0
**Sample Number:** L1007001-01
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 46.60 | 0.00 | #4 | 528.94 | 528.32 | 98.7 | 1.3 |
| | | #10 | 494.68 | 493.50 | 96.1 | 3.9 |
| | | #20 | 420.68 | 418.15 | 90.7 | 9.3 |
| | | #40 | 379.65 | 376.56 | 84.1 | 15.9 |
| | | #60 | 374.75 | 366.02 | 65.3 | 34.7 |
| | | #140 | 353.02 | 343.24 | 44.4 | 55.6 |
| | | #230 | 321.72 | 319.78 | 40.2 | 59.8 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 40.2
**Weight of hydrometer sample =**46.6
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 15.1 | 84.9 |
| 5.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0234 | 12.4 | 87.6 |
| 15.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0135 | 12.4 | 87.6 |
| 30.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0096 | 11.0 | 89.0 |
| 60.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0068 | 11.0 | 89.0 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 9.6 | 90.4 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 9.6 | 90.4 |

### Fractional Components

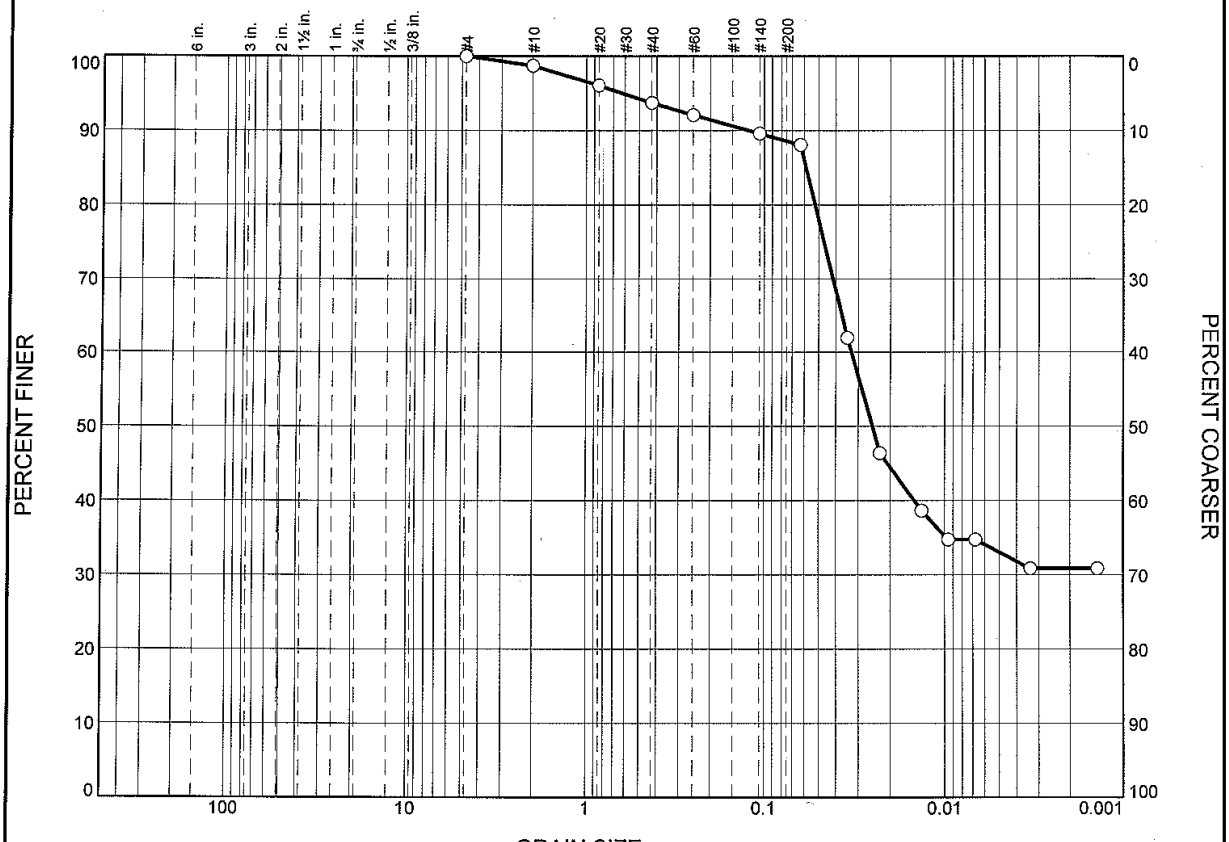
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 2.1 | 4.4 | 6.1 | 20.3 | 16.9 | 8.6 | 56.3 | 25.7 | 1.7 | 1.4 | 1.1 | 29.9 | 9.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0041 | 0.0355 | 0.0404 | 0.0504 | 0.1335 | 0.2009 | 0.3786 | 0.4680 | 0.7894 | 1.6718 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.00 | 48.78 | 3.06 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.3 | 1.0 | 2.1 | 2.3 | 2.2 | 2.0 | 2.4 | 29.9 | 17.0 | 6.1 | 3.0 | 31.7 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0587 | 0.0329 | 0.0251 | | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1007001 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10Y-G002-0-0 **Sample Number:** L1007001-02

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

5/26/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1007001
**Location:** S-10Y-G002-0-0
**Sample Number:** L1007001-02
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 36.40 | 0.00 | #4 | 527.83 | 527.83 | 100.0 | 0.0 |
| | | #10 | 494.24 | 493.78 | 98.7 | 1.3 |
| | | #20 | 424.47 | 423.51 | 96.1 | 3.9 |
| | | #40 | 375.68 | 374.81 | 93.7 | 6.3 |
| | | #60 | 361.46 | 360.87 | 92.1 | 7.9 |
| | | #140 | 338.38 | 337.48 | 89.6 | 10.4 |
| | | #230 | 320.01 | 319.45 | 88.1 | 11.9 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 88.1
**Weight of hydrometer sample =**36.4
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0346 | 61.9 | 38.1 |
| 5.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0228 | 46.4 | 53.6 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 38.6 | 61.4 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 34.7 | 65.3 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 34.7 | 65.3 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 30.8 | 69.2 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 30.8 | 69.2 |

### Fractional Components

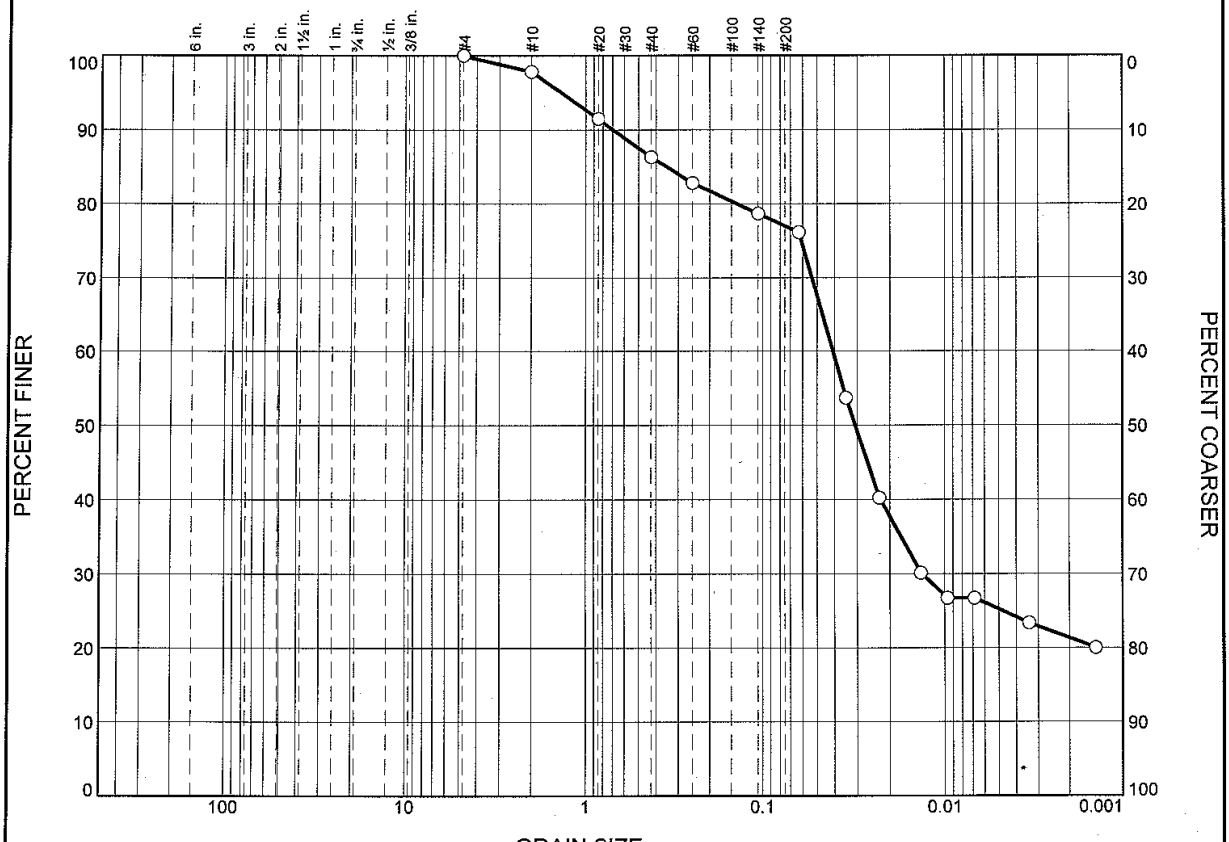
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.3 | 1.0 | 2.1 | 2.3 | 2.2 | 2.0 | 2.4 | 11.0 | 29.9 | 17.0 | 6.1 | 3.0 | 56.0 | 31.7 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.0251 | 0.0329 | 0.0524 | 0.0587 | 0.1211 | 0.6180 |

| Fineness Modulus |
|---|
| 0.26 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.4 | 1.8 | 5.1 | 5.2 | 4.7 | 3.3 | 3.6 | 25.7 | 17.3 | 6.2 | 2.6 | 24.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3483 | 0.0409 | 0.0308 | 0.0134 | | | | |

| | Material Description | USCS | AASHTO |
|---|---|---|---|
| ○ | | | |

**Project No.** L1007001 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10Y-G002-0-0 **Sample Number:** WG413381-1

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

5/26/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1007001
**Location:** S-10Y-G002-0-0
**Sample Number:** WG413381-1
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 26.30 | 0.00 | #4 | 528.32 | 528.32 | 100.0 | 0.0 |
| | | #10 | 494.07 | 493.50 | 97.8 | 2.2 |
| | | #20 | 419.82 | 418.15 | 91.5 | 8.5 |
| | | #40 | 377.92 | 376.56 | 86.3 | 13.7 |
| | | #60 | 366.94 | 366.02 | 82.8 | 17.2 |
| | | #140 | 344.33 | 343.24 | 78.7 | 21.3 |
| | | #230 | 320.44 | 319.78 | 76.2 | 23.8 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 76.2
**Weight of hydrometer sample =**36.3
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0346 | 53.7 | 46.3 |
| 5.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0228 | 40.2 | 59.8 |
| 15.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0135 | 30.1 | 69.9 |
| 30.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0096 | 26.7 | 73.3 |
| 60.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0068 | 26.7 | 73.3 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 23.4 | 76.6 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 20.0 | 80.0 |

### Fractional Components

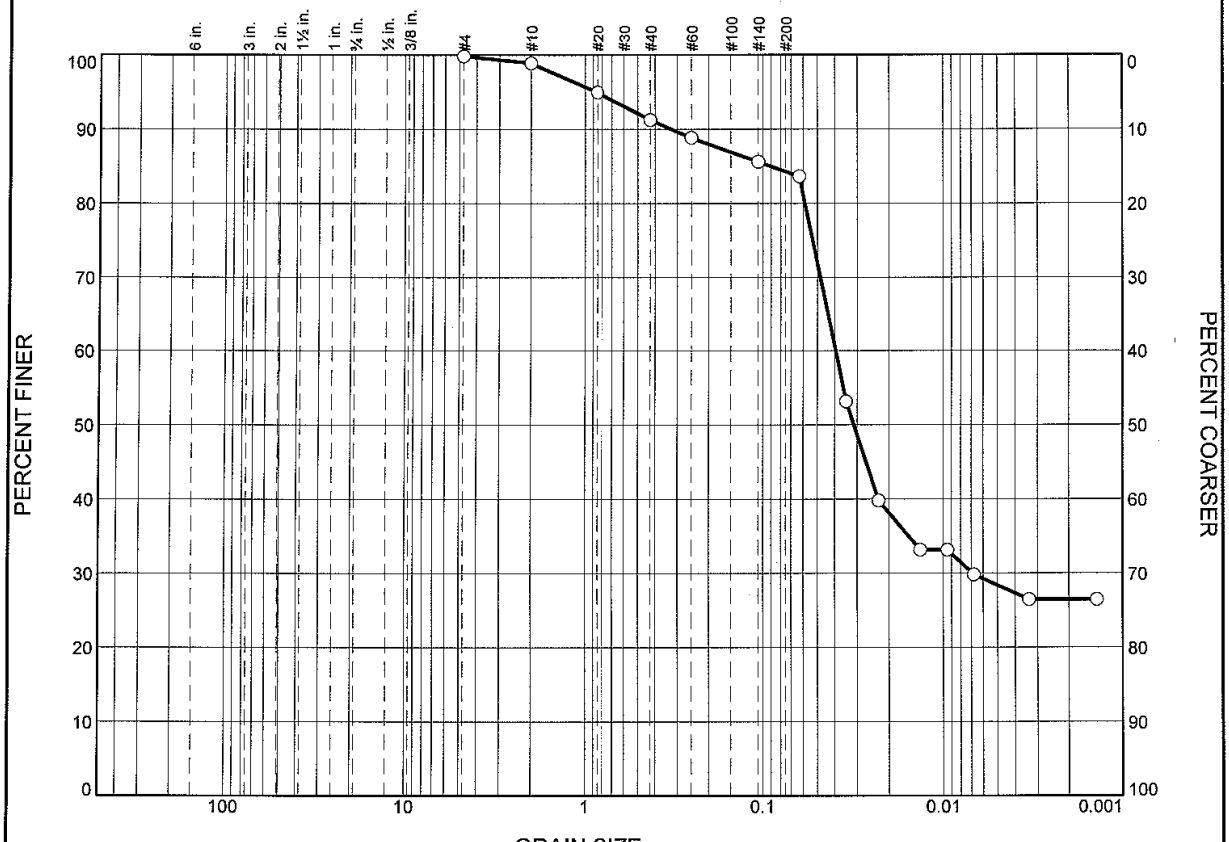
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.4 | 1.8 | 5.1 | 5.2 | 4.7 | 3.3 | 3.6 | 21.9 | 25.7 | 17.3 | 6.2 | 2.6 | 51.8 | 24.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0014 | 0.0134 | 0.0308 | 0.0409 | 0.1396 | 0.3483 | 0.6968 | 1.3654 |

| Fineness Modulus |
|---|
| 0.55 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 0.7 | 3.2 | 3.6 | 3.3 | 2.6 | 3.0 | 33.6 | 14.6 | 3.8 | 4.0 | 27.2 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0902 | 0.0396 | 0.0314 | 0.0069 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1007001 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10Y-G002-0-0REP **Sample Number:** L1007001-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

5/26/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1007001
**Location:** S-10Y-G002-0-0REP
**Sample Number:** L1007001-03
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 40.30 | 0.00 | #4 | 527.90 | 527.83 | 99.8 | 0.2 |
| | | #10 | 494.16 | 493.78 | 98.9 | 1.1 |
| | | #20 | 425.09 | 423.51 | 95.0 | 5.0 |
| | | #40 | 376.31 | 374.81 | 91.2 | 8.8 |
| | | #60 | 361.84 | 360.87 | 88.8 | 11.2 |
| | | #140 | 338.78 | 337.48 | 85.6 | 14.4 |
| | | #230 | 320.24 | 319.45 | 83.6 | 16.4 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 83.6
**Weight of hydrometer sample =**40.3
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0346 | 53.1 | 46.9 |
| 5.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0228 | 39.8 | 60.2 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 33.1 | 66.9 |
| 30.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0095 | 33.1 | 66.9 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 29.8 | 70.2 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 26.4 | 73.6 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 26.4 | 73.6 |

### Fractional Components

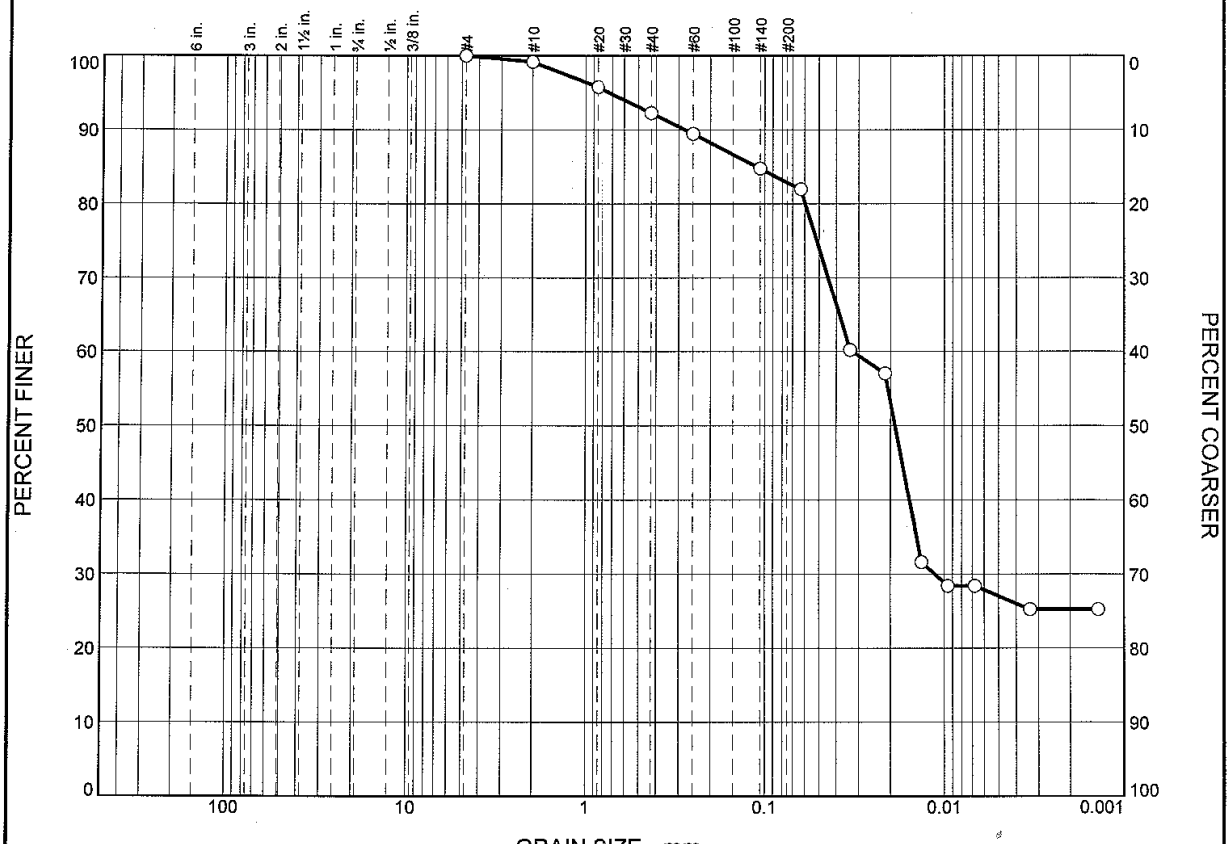
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 0.7 | 3.2 | 3.6 | 3.3 | 2.6 | 3.0 | 15.7 | 33.6 | 14.6 | 3.8 | 4.0 | 56.0 | 27.2 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.0069 | 0.0314 | 0.0396 | 0.0586 | 0.0902 | 0.3233 | 0.8569 |

| Fineness Modulus |
|---|
| 0.35 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.2 | 0.6 | 2.8 | 3.3 | 3.6 | 3.8 | 4.0 | 22.1 | 19.8 | 11.4 | 2.5 | 25.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.1108 | 0.0326 | 0.0188 | 0.0113 | | | | |

| | Material Description | USCS | AASHTO |
|---|---|---|---|
| ○ | | | |

**Project No.** L1007001 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10Y-G003-0-0 **Sample Number:** L1007001-04

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

5/26/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1007001
**Location:** S-10Y-G003-0-0
**Sample Number:** L1007001-04
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 41.40 | 0.00 | #4 | 528.32 | 528.32 | 100.0 | 0.0 |
| | | #10 | 493.84 | 493.50 | 99.2 | 0.8 |
| | | #20 | 419.55 | 418.15 | 95.8 | 4.2 |
| | | #40 | 378.02 | 376.56 | 92.3 | 7.7 |
| | | #60 | 367.18 | 366.02 | 89.5 | 10.5 |
| | | #140 | 345.19 | 343.24 | 84.8 | 15.2 |
| | | #230 | 320.94 | 319.78 | 82.0 | 18.0 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 82.0
**Weight of hydrometer sample =**41.4
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0190 | 1.0189 | 0.0136 | 16.0 | 12.1 | 0.0335 | 60.2 | 39.8 |
| 5.00 | 20.0 | 1.0180 | 1.0179 | 0.0136 | 15.0 | 12.3 | 0.0214 | 57.0 | 43.0 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 31.6 | 68.4 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 28.4 | 71.6 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 28.4 | 71.6 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 25.2 | 74.8 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 25.2 | 74.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.2 | 0.6 | 2.8 | 3.3 | 3.6 | 3.8 | 4.0 | 17.5 | 22.1 | 19.8 | 11.4 | 2.5 | 55.8 | 25.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.0113 | 0.0188 | 0.0326 | 0.0595 | 0.1108 | 0.2765 | 0.7267 |

| Fineness Modulus |
|---|
| 0.32 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised May 20, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

*Air & Emissions* (EPA TO-15.)

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

*Non-Potable Water* (Organic Parameters: EPA 5030B, EPA 8260)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1007001

**Client Information**

Client: Woods Hole Group
Address: 81 Technology Park Dr.
E. Falmouth 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: NBH Environmental Monitoring
Project Location: New Bedford, MA
Project #: TO-0010
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data report & project specific EDD

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB Cong | TOC | grain size (wet weight w/ hydrometer) | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|
| L1007001-1 | S-1ØY-GØØ1-Ø-Ø | 5/11/10 | 10:05 | SE | KGM | X | | | sample | 2 |
| | S-1ØY-GØØ1-Ø-Ø | | 10:05 | | | | X | | sample | 1 |
| | S-1ØY-GØØ1-Ø-Ø | | 10:05 | | | | | X | sample | 1 |
| -2 | S-1ØY-GØØ2-Ø-Ø | | 11:00 | | | X | | | sample | 2 |
| | S-1ØY-GØØ2-Ø-Ø | | 11:00 | | | | X | | sample | 1 |
| | S-1ØY-GØØ2-Ø-Ø | | 11:00 | | | | | X | sample | 1 |
| | S-1ØY-GØØ2-Ø-ØMS/MSD | | 11:00 | | | X | | | MS/MSD | 1 |
| -3 | S-1ØY-GØØ2-Ø-ØREP | | 11:00 | | | X | | | field rep | 1 |
| | S-1ØY-GØØ2-Ø-ØREP | | 11:00 | | | | X | | field rep | 1 |
| | S-1ØY-GØØ2-Ø-ØREP | | 11:00 | | | | | X | field rep | 1 |

**SAMPLE HANDLING**
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| Container Type | G | G | O |
|---|---|---|---|
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 5/11/10 1650 | [signature] | 5/11/10 1550 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

05261014:45

# CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

05261014:45

## Client Information

Client: Woods Hole Group

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

## Project Information

Project Name: NBH Envi. Monitoring

Project Location: New Bedford, MA

Project #: TO-0010

Project Manager: Dave Walsh

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

## 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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data report & Project specific EDD

ANALYSIS: NOAA 18 PCB cong. / TOC / grainsize (wet sieve w/ hydrom.)

SAMPLE HANDLING
*Filtration*
☐ Done
☐ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB cong. | TOC | grainsize (wet sieve w/ hydrom.) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|
| L1007001-4 | S-1Y-G003-0-0 | 5/11/10 | 13:30 | SE | KGM | X | | | sample | 2 |
| | S-1Y-G003-0-0 | 5/11/10 | 13:30 | SE | RGM | | X | | sample | 1 |
| | S-1Y-G003-0-0 | 5/11/10 | 13:30 | SE | KGM | | | X | sample | 1 |

| | | | |
|---|---|---|---|
| Container Type | 6 | 6 | O |
| Preservative | A | A | A |

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 5/11/10 15:50 | [signature] | 5/11/10 1550 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1007438 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010 |
| Report Date: | 06/08/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1007438-01 | S-10Y-T001-0-0 | NEW BEDFORD, MA | 05/14/10 13:30 |
| L1007438-02 | S-10Y-T002-0-0 | NEW BEDFORD, MA | 05/14/10 13:20 |
| L1007438-03 | S-10Y-T002-0-0REP | NEW BEDFORD, MA | 05/14/10 14:20 |
| L1007438-04 | S-10Y-T003-0-0 | NEW BEDFORD, MA | 05/14/10 15:30 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007438 |
| **Project Number:** | TO-0010 | **Report Date:** | 06/08/10 |

## 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.

---

Sample Receipt

Samples were received frozen on May 18, 2010. Aliquots were taken for percent solids and TOC and the remainder of the sample underwent air-drying. The samples were placed in refrigerated storage until they were removed for PCB extraction on May 24, 2010. They were placed in frozen storage May 28, 2010 until removed on June 3, 2010 for Grain Size analysis.

Sample L1007438-03 was cancelled for all analyses on May 21, 2010 per client communications.

Sample L1007438-02 was entirely consumed by the TOC and PCB analyses and therefore grain size was not performed.

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007438 |
| **Project Number:** | TO-0010 | **Report Date:** | 06/08/10 |

**Case Narrative (continued)**

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.

All samples were analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compounds that exceeded the calibration range.

All samples had the surrogated diluted out as documented by the 0% recoveries.

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: 06/08/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007438-01 D | Date Collected: | 05/14/10 13:30 |
| Client ID: | S-10Y-T001-0-0 | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 13:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 85% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 486 | | ug/kg | 155 | -- | 100 |
| Cl3-BZ#18 | 1270 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#52 | 2200 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#66 | 973 | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 155 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 155 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 155 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007438-01 | D | Date Collected: | 05/14/10 13:30 |
| Client ID: | S-10Y-T001-0-0 | | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 13:09 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 85% | | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1890 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#44 | 783 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#101 | 642 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#118 | 459 | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#153 | 428 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#138 | 252 | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 155 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 155 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007438-02 | D2 | Date Collected: | 05/14/10 13:20 |
| Client ID: | S-10Y-T002-0-0 | | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 11:06 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 95% | | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 7430 | | ug/kg | 1930 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007438-02 | D | Date Collected: | 05/14/10 13:20 |
| Client ID: | S-10Y-T002-0-0 | | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 13:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 95% | | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 817 | | ug/kg | 193 | -- | 100 |
| Cl3-BZ#18 | 2620 | | ug/kg | 193 | -- | 100 |
| Cl4-BZ#66 | 1720 | | ug/kg | 193 | -- | 100 |
| Cl7-BZ#187 | 271 | | ug/kg | 193 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 193 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 193 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 193 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 193 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1007438-02 D | Date Collected: | 05/14/10 13:20 |
| Client ID: | S-10Y-T002-0-0 | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 13:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 95% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3310 | | ug/kg | 193 | -- | 100 |
| Cl4-BZ#52 | 5150 | E | ug/kg | 193 | -- | 100 |
| Cl4-BZ#44 | 1520 | | ug/kg | 193 | -- | 100 |
| Cl5-BZ#101 | 1200 | | ug/kg | 193 | -- | 100 |
| Cl5-BZ#118 | 788 | | ug/kg | 193 | -- | 100 |
| Cl6-BZ#153 | 936 | | ug/kg | 193 | -- | 100 |
| Cl5-BZ#105 | 196 | | ug/kg | 193 | -- | 100 |
| Cl6-BZ#138 | 423 | | ug/kg | 193 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 193 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 193 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007438-04 | D | Date Collected: | 05/14/10 15:30 |
| Client ID: | S-10Y-T003-0-0 | | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 14:31 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 92% | | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 172 | | ug/kg | 143 | -- | 100 |
| Cl3-BZ#18 | 387 | | ug/kg | 143 | -- | 100 |
| Cl4-BZ#52 | 1280 | | ug/kg | 143 | -- | 100 |
| Cl4-BZ#66 | 1090 | | ug/kg | 143 | -- | 100 |
| Cl7-BZ#187 | 148 | | ug/kg | 143 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 143 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 143 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 143 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1007438-04 | D | Date Collected: | 05/14/10 15:30 |
| Client ID: | S-10Y-T003-0-0 | | Date Received: | 05/18/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 05/24/10 15:26 |
| Analytical Date: | 06/02/10 14:31 | | Cleanup Method1: | EPA 3630 |
| Analyst: | NS | | Cleanup Date1: | 06/01/10 |
| Percent Solids: | 92% | | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1000 | | ug/kg | 143 | -- | 100 |
| Cl4-BZ#44 | 500 | | ug/kg | 143 | -- | 100 |
| Cl5-BZ#101 | 823 | | ug/kg | 143 | -- | 100 |
| Cl5-BZ#118 | 802 | | ug/kg | 143 | -- | 100 |
| Cl6-BZ#153 | 574 | | ug/kg | 143 | -- | 100 |
| Cl5-BZ#105 | 242 | | ug/kg | 143 | -- | 100 |
| Cl6-BZ#138 | 462 | | ug/kg | 143 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 143 | -- | 100 |
| Cl7-BZ#180 | 145 | | ug/kg | 143 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 143 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438
**Project Number:** TO-0010 **Report Date:** 06/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 06/02/10 08:22
Analyst: NS

Extraction Method: EPA 3540C
Extraction Date: 05/24/10 15:26
Cleanup Method1: EPA 3630
Cleanup Date1: 06/01/10

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,04 Batch: WG414313-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 38 | | 30-150 |
| BZ 198 | 44 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 06/02/10 08:22
Analyst: NS

Extraction Method: EPA 3540C
Extraction Date: 05/24/10 15:26
Cleanup Method1: EPA 3630
Cleanup Date1: 06/01/10

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-02,04 Batch: WG414313-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 38 | | 30-150 |
| BZ 198 | 44 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010
**Lab Number:** L1007438
**Report Date:** 06/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,04 Batch: WG414313-2 WG414313-3 | | | | | | | | |
| Cl2-BZ#8 | 79 | | 74 | | 40-140 | 7 | | 30 |
| Cl3-BZ#18 | 75 | | 83 | | 40-140 | 10 | | 30 |
| Cl3-BZ#28 | 72 | | 89 | | 40-140 | 21 | | 30 |
| Cl4-BZ#52 | 82 | | 86 | | 40-140 | 5 | | 30 |
| Cl4-BZ#44 | 76 | | 85 | | 40-140 | 11 | | 30 |
| Cl4-BZ#66 | 76 | | 86 | | 40-140 | 12 | | 30 |
| Cl5-BZ#101 | 78 | | 86 | | 40-140 | 10 | | 30 |
| Cl5-BZ#118 | 81 | | 88 | | 40-140 | 8 | | 30 |
| Cl5-BZ#105 | 80 | | 87 | | 40-140 | 8 | | 30 |
| Cl6-BZ#138 | 83 | | 89 | | 40-140 | 7 | | 30 |
| Cl7-BZ#187 | 79 | | 85 | | 40-140 | 7 | | 30 |
| Cl6-BZ#128 | 83 | | 89 | | 40-140 | 7 | | 30 |
| Cl7-BZ#180 | 83 | | 89 | | 40-140 | 7 | | 30 |
| Cl7-BZ#170 | 80 | | 85 | | 40-140 | 6 | | 30 |
| Cl8-BZ#195 | 82 | | 86 | | 40-140 | 5 | | 30 |
| Cl9-BZ#206 | 89 | | 94 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 83 | | 88 | | 40-140 | 6 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,04 Batch: WG414313-2 WG414313-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 37 | | 41 | | 30-150 |
| BZ 198 | 41 | | 43 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-02,04 Batch: WG414313-2 WG414313-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 72 | | 76 | | 40-140 | 5 | | 30 |

| | | | | | |
|---|---|---|---|---|---|
| DBOB | 37 | | 41 | | 30-150 |
| BZ 198 | 41 | | 43 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

## SAMPLE RESULTS

Lab ID: L1007438-01
Client ID: S-10Y-T001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/14/10 13:30
Date Received: 05/18/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.10 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.91 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.200 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 2.10 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.60 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 2.50 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.20 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 5.70 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 59.6 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 23.1 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 85.3 | | % | 0.100 | -- | 1 | - | 05/24/10 13:44 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 32.5 | | % | 0.100 | NA | 1 | - | 05/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

## SAMPLE RESULTS

Lab ID: L1007438-02
Client ID: S-10Y-T002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/14/10 13:20
Date Received: 05/18/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.36 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.78 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.9 | | % | 0.100 | -- | 1 | - | 05/24/10 13:44 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 24.1 | | % | 0.100 | NA | 1 | - | 05/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

## SAMPLE RESULTS

Lab ID: L1007438-04
Client ID: S-10Y-T003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 05/14/10 15:30
Date Received: 05/18/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.86 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 3.98 | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.300 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 1.20 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.40 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.00 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 18.0 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 15.9 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 41.9 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 16.2 | | % | 0.100 | NA | 1 | - | 06/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 92.0 | | % | 0.100 | -- | 1 | - | 05/24/10 13:44 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 32.1 | | % | 0.100 | NA | 1 | - | 05/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438

**Project Number:** TO-0010 **Report Date:** 06/08/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-02,04 Batch: WG415085-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 05/28/10 07:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02,04 QC Batch ID: WG415085-4 QC Sample: L1007438-04 Client ID: S-10Y-T003-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.86 | 1.7 | 5.50 | 107 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 3.98 | 3.16 | 6.87 | 101 | | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-02,04 QC Batch ID: WG414056-1 QC Sample: L1007438-01 Client ID: S-10Y-T001-0-0 | | | | | | |
| Solids, Total | 85.3 | 85.3 | % | 0 | | 20 |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02,04 QC Batch ID: WG415085-3 QC Sample: L1007438-04 Client ID: S-10Y-T003-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 3.86 | 3.95 | % | 2 | | 25 |
| Total Organic Carbon (Rep2) | 3.98 | 3.86 | % | 3 | | 25 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1007438
**Project Number:** TO-0010 **Report Date:** 06/08/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG415085-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 104 | | 75-125 |
| Total Organic Carbon (Rep2) | 103 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010

**Lab Number:** L1007438
**Report Date:** 06/08/10

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA

| Cooler Information Cooler | Custody Seal |
|---|---|
| J | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1007438-01A | Glass 500ml unpreserved | J | N/A | 4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1007438-02A | Glass 500ml unpreserved | J | N/A | 4 | Y | Absent | - |
| L1007438-03A | Glass 500ml unpreserved | J | N/A | 4 | Y | Absent | - |
| L1007438-04A | Glass 500ml unpreserved | J | N/A | 4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007438 |
| **Project Number:** | TO-0010 | **Report Date:** | 06/08/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **H** | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1007438 |
| **Project Number:** | TO-0010 | **Report Date:** | 06/08/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1007438 |
| **Project Number:** | TO-0010 | **Report Date:** | 06/08/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

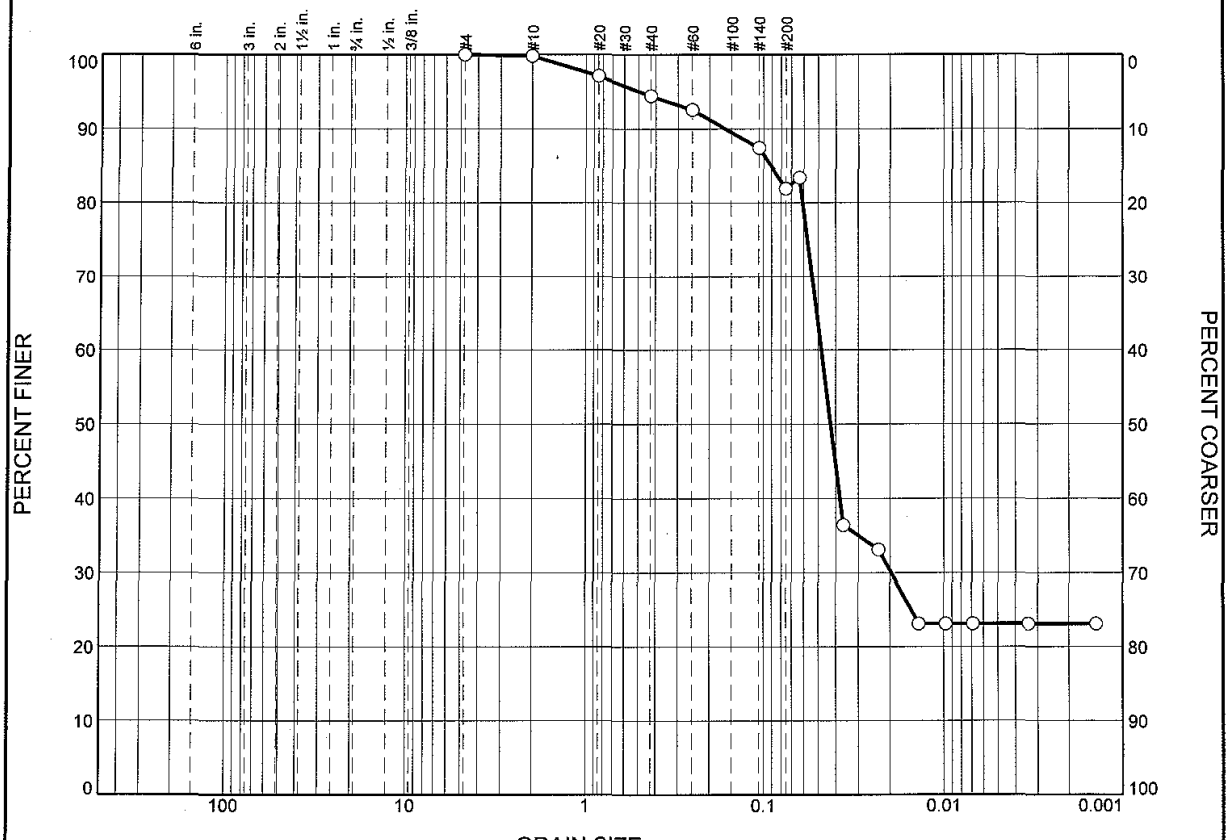

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.2 | 2.1 | 2.6 | 2.5 | 4.2 | 5.7 | 47.5 | 9.7 | 2.4 | 0.0 | 23.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0911 | 0.0479 | 0.0426 | 0.0197 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1007438 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10Y-T001-0-0 **Sample Number:** L1007438-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

6/8/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1007438
**Location:** S-10Y-T001-0-0
**Sample Number:** L1007438-01
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 11.27
**Tare Wt. =** 3.99
**Minus #200 from wash =** 81.9%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 40.22 | 0.00 | #4 | 527.82 | 527.82 | 100.0 | 0.0 |
| | | #10 | 493.84 | 493.77 | 99.8 | 0.2 |
| | | #20 | 424.61 | 423.53 | 97.1 | 2.9 |
| | | #40 | 375.94 | 374.85 | 94.4 | 5.6 |
| | | #60 | 361.63 | 360.89 | 92.6 | 7.4 |
| | | #140 | 339.61 | 337.53 | 87.4 | 12.6 |
| | | #230 | 321.41 | 319.79 | 83.4 | 16.6 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 83.4
**Weight of hydrometer sample =**40.22
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 36.4 | 63.6 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 33.1 | 66.9 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 23.1 | 76.9 |
| 30.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0097 | 23.1 | 76.9 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 23.1 | 76.9 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 23.1 | 76.9 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 23.1 | 76.9 |

### Fractional Components

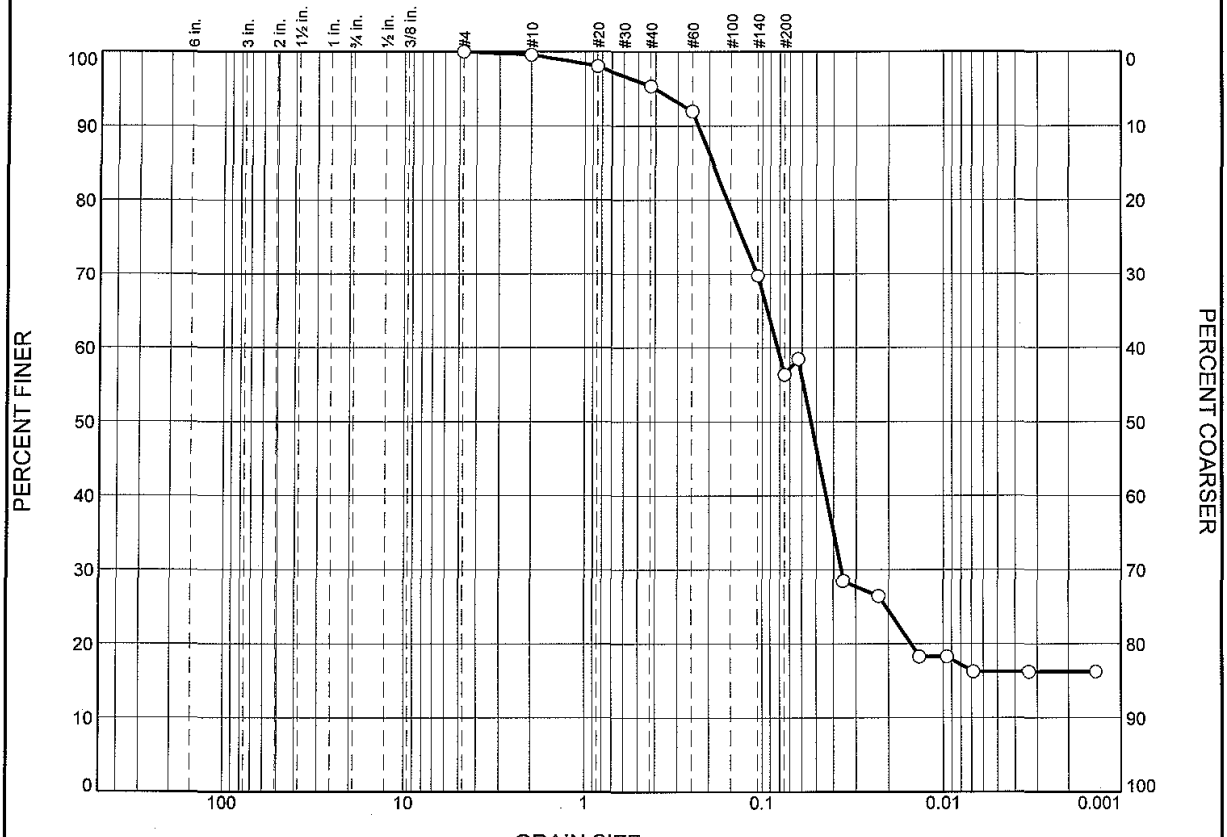
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.2 | 2.1 | 2.6 | 2.5 | 4.2 | 5.7 | 17.1 | 47.5 | 9.7 | 2.4 | 0.0 | 59.6 | 23.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.0197 | 0.0426 | 0.0479 | 0.0605 | 0.0911 | 0.1627 | 0.4916 |

| Fineness Modulus |
|---|
| 0.23 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.3 | 1.2 | 2.4 | 4.0 | 18.0 | 15.9 | 30.2 | 7.3 | 3.6 | 0.8 | 16.2 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.1911 | 0.0825 | 0.0535 | 0.0364 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1007438 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10Y-T003-0-0 **Sample Number:** L1007438-04

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

6/8/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1007438
**Location:** S-10Y-T003-0-0
**Sample Number:** L1007438-04
**Sieve opening list:** BS Bulk Sieve

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 24.07
Tare Wt. = 4.00
Minus #200 from wash = 56.3%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 45.95 | 0.00 | #4 | 527.82 | 527.82 | 100.0 | 0.0 |
| | | #10 | 493.96 | 493.77 | 99.6 | 0.4 |
| | | #20 | 424.23 | 423.53 | 98.1 | 1.9 |
| | | #40 | 376.09 | 374.85 | 95.4 | 4.6 |
| | | #60 | 362.45 | 360.89 | 92.0 | 8.0 |
| | | #140 | 347.76 | 337.53 | 69.7 | 30.3 |
| | | #230 | 324.95 | 319.79 | 58.5 | 41.5 |

### Hydrometer Test Data

**Hydrometer test uses material passing #230**
**Percent passing #230 based upon complete sample =** 58.5
**Weight of hydrometer sample =**45.95
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0140 | 1.0139 | 0.0136 | 11.0 | 13.4 | 0.0353 | 28.5 | 71.5 |
| 5.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0225 | 26.4 | 73.6 |
| 15.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0135 | 18.3 | 81.7 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 18.3 | 81.7 |
| 60.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0068 | 16.2 | 83.8 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 16.2 | 83.8 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 16.2 | 83.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.3 | 1.2 | 2.4 | 4.0 | 18.0 | 15.9 | 41.5 | 30.2 | 7.3 | 3.6 | 0.8 | 41.9 | 16.2 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0151 | 0.0364 | 0.0535 | 0.0825 | 0.1576 | 0.1911 | 0.2317 | 0.4015 |

| Fineness Modulus |
|---|
| 0.33 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised June 1, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 4108

## CHAIN OF CUSTODY DOCUMENTATION

ALPHA Job # L1007438

Serial No:06081012:19

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NBH Envir. Monitor | Page 1 of 1 |
| Report to: | Address: 81 Technology Park Drive | Project Number: * | |
| Invoice to: | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: DWALSH@WHGPP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 07438.1 | S-10Y-T001-0-0 | 5/14/10 | 1330 | JL | C | 500 | G | – | S | – | Grain Size, TOC, PCB Congeners * |
| 2 | S-10Y-T002-0-0 | 5/14/10 | 1320 | JL | C | 1000 | G | – | S | – | Grain Size, TOC, PCB Congeners * |
| 3 | S-10Y-T002-0-OREP | 5/14/10 | 1420 | JL | C | 250 | G | – | S | – | Grain Size, TOC, PCB Congeners * |
| 4 | S-10Y-T003-0-0 | 5/14/10 | 1530 | JL | C | 500 | G | – | S | – | Grain Size, TOC, PCB Congeners * |
| | | | | | | | | | | | |
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| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 5/18/10 Time: 1400 | Received By: [signature] | Date: 5/18/10 Time: 14[illegible] |
| Relinquished By: [signature] | Date: 5/18/10 Time: 1630 | Received at Lab By: P. Gilbert | Date: 5/18/10 Time: 16:30 |

Comments: * Samples were Frozen on 5/14/10.

Rel: P. Gilbert 5/18/10 17:10 Rec: Eileen Sullivan 5/18/10 17:10

Sample Delivery Group No: Page of

COC Doc No:

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1010588 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 10/14/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1010588-01 | S-10L-G001-0-0 | NEW BEDFORD, MA | 07/14/10 09:45 |
| L1010588-02 | S-10L-G002-0-0 | NEW BEDFORD, MA | 07/14/10 12:00 |
| L1010588-03 | S-10L-G002-0-0 REP | NEW BEDFORD, MA | 07/14/10 12:00 |
| L1010588-04 | S-10L-G003-0-0 | NEW BEDFORD, MA | 07/14/10 14:15 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

## 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 on July 30, 2010. During client review, an anomoly was noted with the results for one sample. The laboratory has re-extracted and submitted updated results for sample L1010588-04.

Sample Receipt

Sediment samples were received intact on July 14, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until July 22, 2010 when they were removed to extract samples for PCB Congener analysis and placed in frozen storage. Sample L1010588-04 remained in frozen storage until removed for extraction on

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

**Case Narrative (continued)**

September 23, 2010.

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.

L1010588-01 was re-analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

L1010588-01, 02, 03 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Sample L1010588-04 had the surrogates diluted out.

The WG433629-3 LCS/LCSD RPD, associated with L1010588-04, is above the acceptance criteria for Cl3-BZ#28 (32%); however, the individual LCS/LCSD recoveries are within method limits.

The WG423929-4/-5 MS/MSD recoveries, performed on L1010588-02, were outside the acceptance criteria for several compounds; however, the associated LCS/LCSD recoveries were within criteria. The results of the sample utilized for the MS/MSD are considered to have a potentially low bias for Cl2-BZ#8 (MS 30%), Cl2-BZ#18 (281%)/(463%), Cl3-BZ#28(0%)/(149%), Cl4-BZ#52 (MS 0%), Cl7-BZ#187 (MSD 151%), Cl4-BZ#44(MS 34%), Cl9-BZ#206 (MS 0%), Cl10-BZ#209 (0%)/(0%).
The WG423929-5 MS/MSD RPDs, performed on L1010588-02, are above the acceptance criteria for Cl4-

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

**Case Narrative (continued)**

BZ#44 (106%), Cl4-BZ#66 (65%), Cl5-BZ#101 (64%),Cl6-BZ#153(49%), Cl2-BZ#8 (99%), Cl3-BZ#18 (49%), Cl6-BZ#138 (34%).

Grain Size

The WG423075-1 Laboratory Duplicate RPD, performed on L1010588-02, is outside the acceptance criteria for Gravel (80%), % Very Coarse Sand (113%),% Coarse Sand(75%), % Medium Sand (46%),% Fine Sand (22%), Silt (27%), Clay(27%), Sand (21%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

Total Organic Carbon

The matrix spike associated with sample S-10L-G001-0-0 (L1010588-02) had a recovery of 100% MS#1 and 18% MS#2 which was below the 75% QC acceptance limit, possibly due to a matrix interference. The associated Laboratory Control Spike had an acceptable recovery, indicating the sample batch was in control, and all sample results were accepted.

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: 10/14/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010588-01 | D2 | Date Collected: | 07/14/10 09:45 |
| Client ID: | S-10L-G001-0-0 | | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 12:50 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 4360 | | ug/kg | 1730 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010588-01 | D | Date Collected: | 07/14/10 09:45 |
| Client ID: | S-10L-G001-0-0 | | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 19:41 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 704 | | ug/kg | 173 | -- | 20 |
| Cl3-BZ#18 | 1960 | | ug/kg | 173 | -- | 20 |
| Cl5-BZ#118 | 799 | | ug/kg | 173 | -- | 20 |
| Cl6-BZ#138 | 648 | | ug/kg | 173 | -- | 20 |
| Cl6-BZ#128 | ND | | ug/kg | 173 | -- | 20 |
| Cl7-BZ#180 | ND | | ug/kg | 173 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 173 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 173 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 173 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 173 | -- | 20 |

| | | |
|---|---|---|
| DBOB | 87 | 30-150 |
| BZ 198 | 83 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010588-01 | D | Date Collected: | 07/14/10 09:45 |
| Client ID: | S-10L-G001-0-0 | | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 19:41 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3160 | | ug/kg | 173 | -- | 20 |
| Cl4-BZ#52 | 3840 | E | ug/kg | 173 | -- | 20 |
| Cl4-BZ#44 | 1170 | | ug/kg | 173 | -- | 20 |
| Cl4-BZ#66 | 1300 | | ug/kg | 173 | -- | 20 |
| Cl5-BZ#101 | 1050 | | ug/kg | 173 | -- | 20 |
| Cl6-BZ#153 | 869 | | ug/kg | 173 | -- | 20 |
| Cl5-BZ#105 | 186 | | ug/kg | 173 | -- | 20 |
| Cl7-BZ#187 | 203 | | ug/kg | 173 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 87 | | 30-150 |
| BZ 198 | 83 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010588-02 D | Date Collected: | 07/14/10 12:00 |
| Client ID: | S-10L-G002-0-0 | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 13:31 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 90% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7500 | | ug/kg | 1830 | -- | 200 |
| Cl3-BZ#18 | 14200 | | ug/kg | 1830 | -- | 200 |
| Cl4-BZ#66 | 6710 | | ug/kg | 1830 | -- | 200 |
| Cl5-BZ#118 | 2690 | | ug/kg | 1830 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 1830 | -- | 200 |
| Cl6-BZ#138 | 3010 | | ug/kg | 1830 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 1830 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 1830 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 1830 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 1830 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 1830 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 1830 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 1830 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010588-02 | D | Date Collected: | 07/14/10 12:00 |
| Client ID: | S-10L-G002-0-0 | | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 13:31 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 90% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 24300 | | ug/kg | 1830 | -- | 200 |
| Cl4-BZ#52 | 32000 | | ug/kg | 1830 | -- | 200 |
| Cl4-BZ#44 | 7760 | | ug/kg | 1830 | -- | 200 |
| Cl5-BZ#101 | 4820 | | ug/kg | 1830 | -- | 200 |
| Cl6-BZ#153 | 4330 | | ug/kg | 1830 | -- | 200 |

| | | |
|---|---|---|
| DBOB | 92 | 30-150 |
| BZ 198 | 89 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010588-03 D | Date Collected: | 07/14/10 12:00 |
| Client ID: | S-10L-G002-0-0 REP | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 15:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7100 | | ug/kg | 1890 | -- | 200 |
| Cl3-BZ#18 | 20800 | | ug/kg | 1890 | -- | 200 |
| Cl4-BZ#66 | 7030 | | ug/kg | 1890 | -- | 200 |
| Cl5-BZ#118 | 3000 | | ug/kg | 1890 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 1890 | -- | 200 |
| Cl6-BZ#138 | 3190 | | ug/kg | 1890 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 1890 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 1890 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 1890 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 1890 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 1890 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 1890 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 1890 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 90 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010588-03 D | Date Collected: | 07/14/10 12:00 |
| Client ID: | S-10L-G002-0-0 REP | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 15:35 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 87% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 24900 | | ug/kg | 1890 | -- | 200 |
| Cl4-BZ#52 | 34000 | | ug/kg | 1890 | -- | 200 |
| Cl4-BZ#44 | 8110 | | ug/kg | 1890 | -- | 200 |
| Cl5-BZ#101 | 4990 | | ug/kg | 1890 | -- | 200 |
| Cl6-BZ#153 | 4480 | | ug/kg | 1890 | -- | 200 |

| | | |
|---|---|---|
| DBOB | 93 | 30-150 |
| BZ 198 | 90 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010588-04 | Date Collected: | 07/14/10 14:15 |
| Client ID: | S-10L-G003-0-0 | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/23/10 16:08 |
| Analytical Date: | 10/07/10 15:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/28/10 |
| Percent Solids: | 86% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 509 | | ug/kg | 155 | -- | 100 |
| Cl3-BZ#18 | 1060 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#52 | 2700 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#66 | 1760 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#118 | 1330 | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#138 | 951 | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#128 | 239 | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#180 | 193 | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#170 | 155 | | ug/kg | 155 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 155 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 155 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 155 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1010588-04 | Date Collected: | 07/14/10 14:15 |
| Client ID: | S-10L-G003-0-0 | Date Received: | 07/14/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/23/10 16:08 |
| Analytical Date: | 10/07/10 15:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/28/10 |
| Percent Solids: | 86% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2130 | | ug/kg | 155 | -- | 100 |
| Cl4-BZ#44 | 1030 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#101 | 1280 | | ug/kg | 155 | -- | 100 |
| Cl6-BZ#153 | 1040 | | ug/kg | 155 | -- | 100 |
| Cl5-BZ#105 | 337 | | ug/kg | 155 | -- | 100 |
| Cl7-BZ#187 | 199 | | ug/kg | 155 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588
**Project Number:** TO-0010-03 **Report Date:** 10/14/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 07/27/10 10:47
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 07/22/10 14:54
Cleanup Method1: EPA 3630
Cleanup Date1: 07/27/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG423929-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 07/27/10 10:47
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 07/22/10 14:54
Cleanup Method1: EPA 3630
Cleanup Date1: 07/27/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG423929-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/06/10 16:50
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/23/10 16:08
Cleanup Method1: EPA 3630
Cleanup Date1: 09/28/10

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 04 Batch: WG433629-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/06/10 16:50
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/23/10 16:08
Cleanup Method1: EPA 3630
Cleanup Date1: 09/28/10

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 04 Batch: WG433629-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010588

**Report Date:** 10/14/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG423929-2 WG423929-3 | | | | | | | | |
| Cl2-BZ#8 | 63 | | 73 | | 40-140 | 15 | | 30 |
| Cl3-BZ#18 | 106 | | 83 | | 40-140 | 24 | | 30 |
| Cl3-BZ#28 | 77 | | 79 | | 40-140 | 3 | | 30 |
| Cl4-BZ#52 | 99 | | 85 | | 40-140 | 15 | | 30 |
| Cl4-BZ#44 | 79 | | 80 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 75 | | 82 | | 40-140 | 9 | | 30 |
| Cl5-BZ#101 | 82 | | 84 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 81 | | 90 | | 40-140 | 11 | | 30 |
| Cl5-BZ#105 | 75 | | 86 | | 40-140 | 14 | | 30 |
| Cl6-BZ#138 | 85 | | 89 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 90 | | 92 | | 40-140 | 2 | | 30 |
| Cl6-BZ#128 | 83 | | 88 | | 40-140 | 6 | | 30 |
| Cl7-BZ#180 | 92 | | 94 | | 40-140 | 2 | | 30 |
| Cl7-BZ#170 | 86 | | 92 | | 40-140 | 7 | | 30 |
| Cl8-BZ#195 | 88 | | 107 | | 40-140 | 19 | | 30 |
| Cl9-BZ#206 | 96 | | 101 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 91 | | 98 | | 40-140 | 7 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG423929-2 | WG423929-3 | | | |
| DBOB | 81 | | 86 | | 30-150 | | | |
| BZ 198 | 90 | | 91 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG423929-2 | WG423929-3 | | | |
| Cl6-BZ#153 | 80 | | 86 | | 40-140 | 7 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 81 | | 86 | | 30-150 |
| BZ 198 | 90 | | 91 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010588

**Report Date:** 10/14/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 04 Batch: WG433629-2 WG433629-3 | | | | | | | | |
| Cl2-BZ#8 | 62 | | 72 | | 40-140 | 15 | | 30 |
| Cl3-BZ#18 | 65 | | 84 | | 40-140 | 26 | | 30 |
| Cl3-BZ#28 | 65 | | 90 | | 40-140 | **32** | Q | 30 |
| Cl4-BZ#52 | 70 | | 84 | | 40-140 | 18 | | 30 |
| Cl4-BZ#44 | 73 | | 82 | | 40-140 | 12 | | 30 |
| Cl4-BZ#66 | 71 | | 82 | | 40-140 | 14 | | 30 |
| Cl5-BZ#101 | 71 | | 82 | | 40-140 | 14 | | 30 |
| Cl5-BZ#118 | 74 | | 91 | | 40-140 | 21 | | 30 |
| Cl5-BZ#105 | 70 | | 82 | | 40-140 | 16 | | 30 |
| Cl6-BZ#138 | 73 | | 86 | | 40-140 | 16 | | 30 |
| Cl7-BZ#187 | 70 | | 80 | | 40-140 | 13 | | 30 |
| Cl6-BZ#128 | 72 | | 84 | | 40-140 | 15 | | 30 |
| Cl7-BZ#180 | 72 | | 85 | | 40-140 | 17 | | 30 |
| Cl7-BZ#170 | 71 | | 87 | | 40-140 | 20 | | 30 |
| Cl8-BZ#195 | 71 | | 86 | | 40-140 | 19 | | 30 |
| Cl9-BZ#206 | 78 | | 92 | | 40-140 | 16 | | 30 |
| Cl10-BZ#209 | 72 | | 85 | | 40-140 | 17 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 04 Batch: WG433629-2 WG433629-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 75 | | 88 | | 30-150 |
| DBOB | 72 | | 83 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 04 Batch: WG433629-2 WG433629-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 66 | | 82 | | 40-140 | 22 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 75 | | 88 | | 30-150 |
| DBOB | 72 | | 83 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

## SAMPLE RESULTS

Lab ID: L1010588-01
Client ID: S-10L-G001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/14/10 09:45
Date Received: 07/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.34 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.33 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.400 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 1.10 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.70 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 23.0 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 27.4 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 20.6 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 20.9 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 3.70 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 95.4 | | % | 0.100 | -- | 1 | - | 07/16/10 16:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 35.6 | | % | 0.100 | NA | 1 | - | 07/14/10 17:25 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

## SAMPLE RESULTS

Lab ID: L1010588-02
Client ID: S-10L-G002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/14/10 12:00
Date Received: 07/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.38 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.35 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.700 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 1.90 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 21.0 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 15.3 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 9.20 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 13.1 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 32.4 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 6.20 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 90.1 | | % | 0.100 | -- | 1 | - | 07/16/10 16:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 27.0 | | % | 0.100 | NA | 1 | - | 07/14/10 17:25 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

## SAMPLE RESULTS

Lab ID: L1010588-03
Client ID: S-10L-G002-0-0 REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/14/10 12:00
Date Received: 07/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.28 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.10 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.400 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 1.90 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 15.9 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 13.8 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 8.70 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 14.0 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 38.2 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 7.00 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 87.4 | | % | 0.100 | -- | 1 | - | 07/16/10 16:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 26.5 | | % | 0.100 | NA | 1 | - | 07/14/10 17:25 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

## SAMPLE RESULTS

Lab ID: L1010588-04
Client ID: S-10L-G003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/14/10 14:15
Date Received: 07/14/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.07 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.18 | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 1.60 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 12.6 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 11.9 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 10.1 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 9.40 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 17.0 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 33.1 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 3.90 | | % | 0.100 | NA | 1 | - | 07/16/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 85.9 | | % | 0.100 | -- | 1 | - | 07/16/10 16:20 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 31.4 | | % | 0.100 | NA | 1 | - | 07/14/10 17:25 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588

**Project Number:** TO-0010-03 **Report Date:** 10/14/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG423076-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 07/19/10 12:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG423076-4 QC Sample: L1010588-02 Client ID: S-10L-G002-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.38 | 1.92 | 7.30 | 100 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 5.35 | 1.92 | 5.70 | **18** | Q | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG423075-1 QC Sample: L1010588-02 Client ID: S-10L-G002-0-0 | | | | | | |
| Gravel (>2.00mm) | 0.7 | 0.300 | % | **80** | Q | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 1.9 | 6.80 | % | **113** | Q | 20 |
| Coarse Sand (0.50-1.00 mm) | 21.0 | 9.50 | % | **75** | Q | 20 |
| Medium Sand (0.25-0.50 mm) | 15.3 | 9.60 | % | **46** | Q | 20 |
| Fine Sand (0.125-0.25 mm) | 9.2 | 7.40 | % | **22** | Q | 20 |
| Very Fine Sand (0.063-0.125 mm) | 13.1 | 15.8 | % | 19 | | 20 |
| Silt - (1.95-62.5 um) | 32.4 | 42.4 | % | **27** | Q | 20 |
| Clay - (<1.95 um) | 6.2 | 8.10 | % | **27** | Q | 20 |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG423076-3 QC Sample: L1010588-02 Client ID: S-10L-G002-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 5.38 | 5.24 | % | 3 | | 25 |
| Total Organic Carbon (Rep2) | 5.35 | 4.98 | % | 7 | | 25 |
| General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG423200-1 QC Sample: L1010588-02 Client ID: S-10L-G002-0-0 | | | | | | |
| Solids, Total | 90.1 | 90.3 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010588
**Project Number:** TO-0010-03 **Report Date:** 10/14/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG423076-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 112 | | 75-125 |
| Total Organic Carbon (Rep2) | 114 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1010588-01A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1010588-01B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1010588-01C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1010588-01D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1010588-02A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1010588-02B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1010588-02C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010588-02D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1010588-02E | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1010588-03A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1010588-03C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1010588-03D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1010588-04A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1010588-04B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1010588-04C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010588
**Report Date:** 10/14/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010588-04D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |

**Container Comments**

L1010588-01D

L1010588-02D

L1010588-03D

L1010588-04D

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1010588 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/14/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

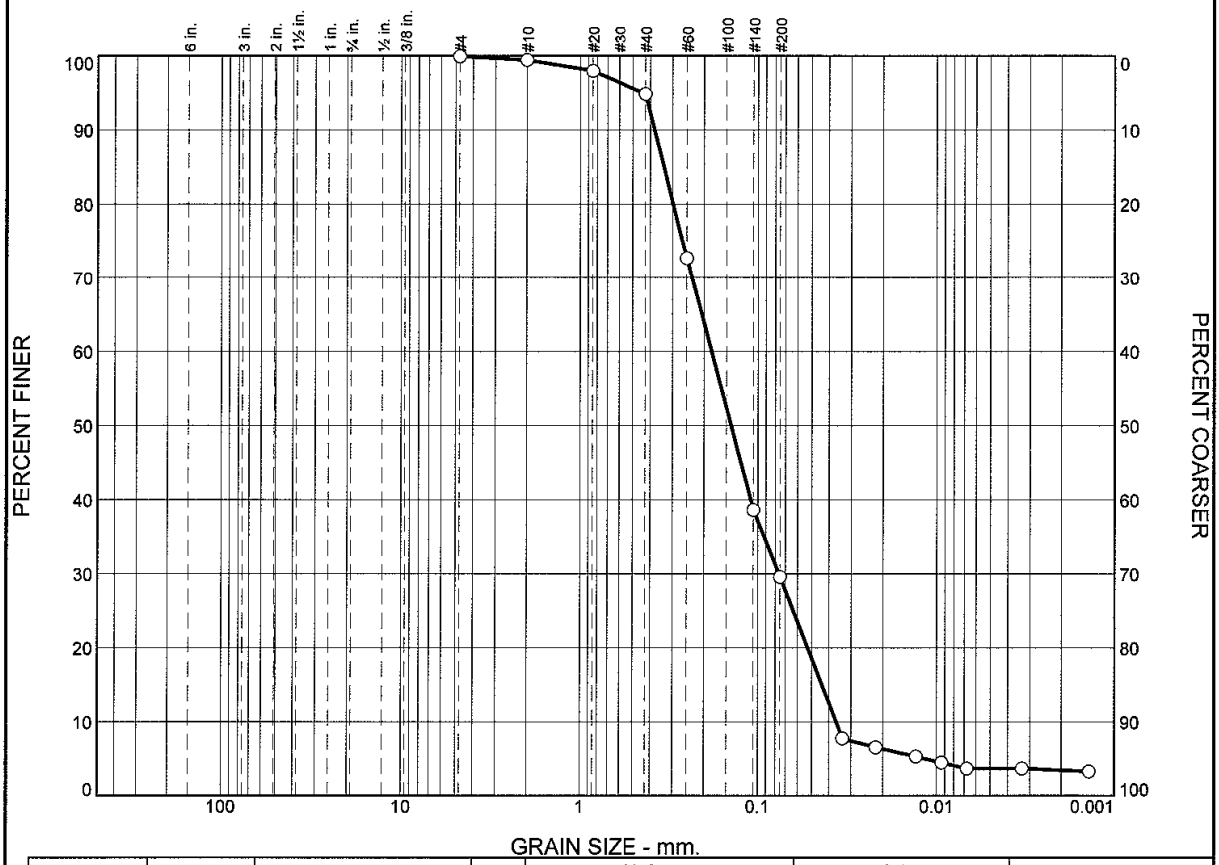

## LIMITATION OF LIABILITIES

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.

# Wet Sieve Hydrometer
# ASTM D422

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 0.4 | 1.1 | 2.7 | 23.0 | 27.4 | 20.6 | 17.1 | 1.8 | 1.7 | 0.3 | 3.7 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3359 | 0.1817 | 0.1412 | 0.0762 | 0.0438 | 0.0364 | 0.88 | 4.99 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010733 **Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-G001-0-0 **Sample Number:** L1010588-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/26/2010

**Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010733
**Location:** S-10L-G001-0-0
**Sample Number:** L1010588-01

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 98.30
Tare Wt. = 7.60
Minus #200 from wash = 21.9%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 116.07 | 0.00 | #4 | 528.21 | 528.13 | 99.9 | 0.1 |
| | | #10 | 493.94 | 493.38 | 99.4 | 0.6 |
| | | #20 | 419.77 | 418.08 | 98.0 | 2.0 |
| | | #40 | 380.26 | 376.61 | 94.8 | 5.2 |
| | | #60 | 391.83 | 366.06 | 72.6 | 27.4 |
| | | #140 | 382.58 | 343.10 | 38.6 | 61.4 |
| | | #200 | 324.90 | 314.39 | 29.6 | 70.4 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 29.6
**Weight of hydrometer sample =**116.07
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0190 | 1.0189 | 0.0136 | 16.0 | 12.1 | 0.0335 | 7.8 | 92.2 |
| 5.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0219 | 6.5 | 93.5 |
| 15.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0130 | 5.3 | 94.7 |
| 30.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0094 | 4.5 | 95.5 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 3.7 | 96.3 |
| 250.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0033 | 3.7 | 96.3 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 3.2 | 96.8 |

### Fractional Components

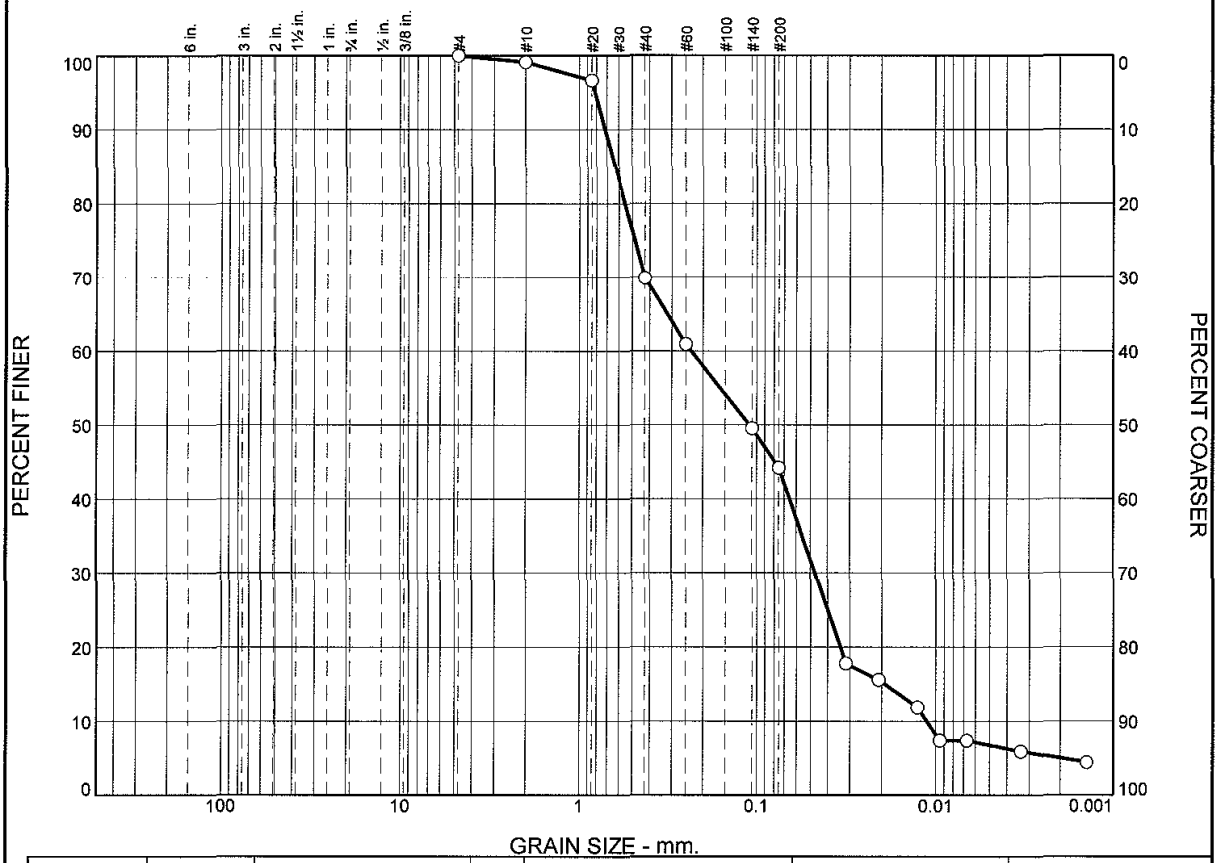
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 0.4 | 1.1 | 2.7 | 23.0 | 27.4 | 20.6 | 74.8 | 17.1 | 1.8 | 1.7 | 0.3 | 20.9 | 3.7 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0364 | 0.0438 | 0.0527 | 0.0762 | 0.1412 | 0.1817 | 0.2980 | 0.3359 | 0.3785 | 0.4395 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.73 | 4.99 | 0.88 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.2 | 0.7 | 1.9 | 21.0 | 15.3 | 9.2 | 13.1 | 20.9 | 4.3 | 6.0 | 1.2 | 6.2 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.6283 | 0.2337 | 0.1099 | 0.0472 | 0.0193 | 0.0112 | 0.85 | 20.83 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010733 **Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-G002-0-0 **Sample Number:** L1010588-02

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/26/2010

**Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010733
**Location:** S-10L-G002-0-0
**Sample Number:** L1010588-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 65.23
Tare Wt. = 7.64
Minus #200 from wash = 39.8%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 95.59 | 0.00 | #4 | 528.13 | 528.13 | 100.0 | 0.0 |
| | | #10 | 494.20 | 493.38 | 99.1 | 0.9 |
| | | #20 | 420.43 | 418.08 | 96.7 | 3.3 |
| | | #40 | 402.22 | 376.61 | 69.9 | 30.1 |
| | | #60 | 374.66 | 366.06 | 60.9 | 39.1 |
| | | #140 | 353.97 | 343.10 | 49.5 | 50.5 |
| | | #200 | 324.49 | 319.39 | 44.2 | 55.8 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 44.2
Weight of hydrometer sample =95.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0240 | 1.0239 | 0.0136 | 21.0 | 10.7 | 0.0316 | 17.8 | 82.2 |
| 5.00 | 20.0 | 1.0210 | 1.0209 | 0.0136 | 18.0 | 11.5 | 0.0207 | 15.5 | 84.5 |
| 15.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0126 | 11.8 | 88.2 |
| 30.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0095 | 7.4 | 92.6 |
| 60.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0067 | 7.4 | 92.6 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 5.9 | 94.1 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 4.4 | 95.6 |

### Fractional Components

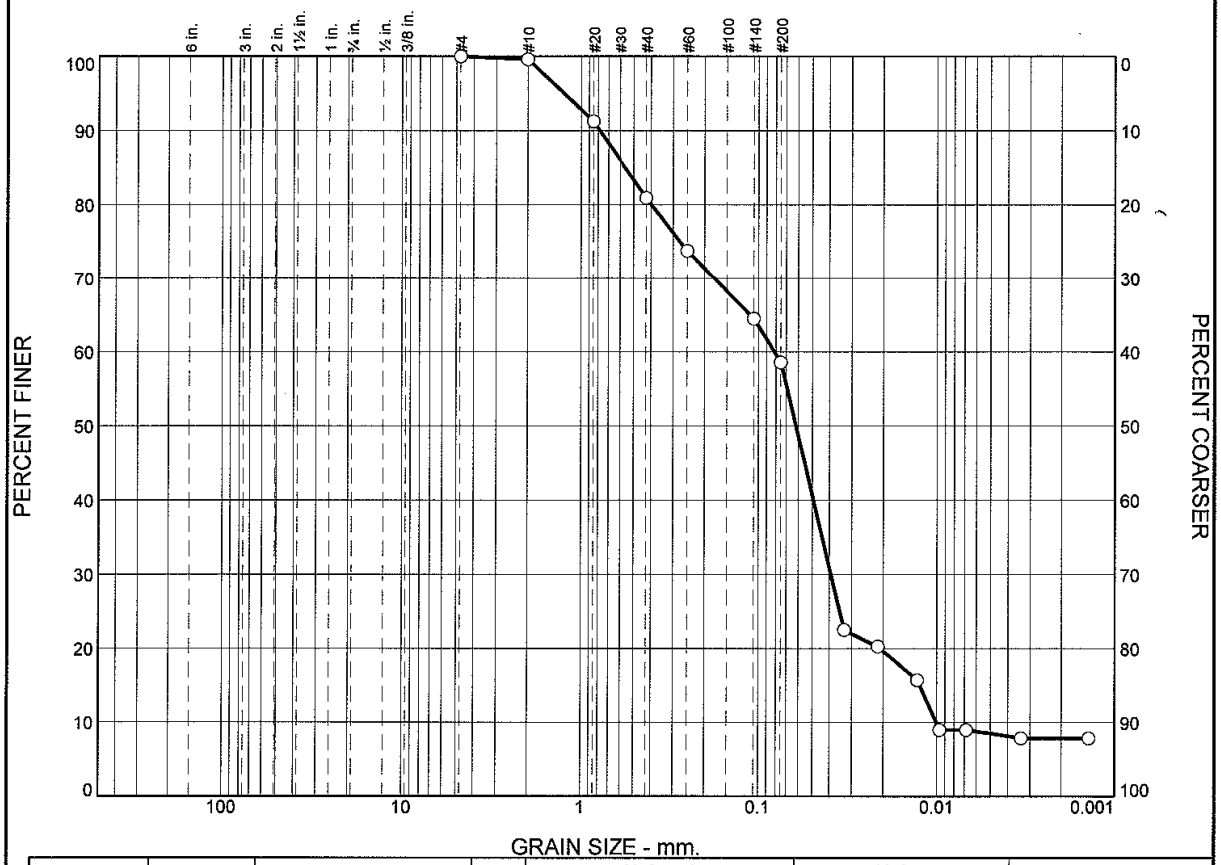
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.2 | 0.7 | 1.9 | 21.0 | 15.3 | 9.2 | 13.1 | 60.5 | 20.9 | 4.3 | 6.0 | 1.2 | 32.4 | 6.2 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0112 | 0.0193 | 0.0340 | 0.0472 | 0.1099 | 0.2337 | 0.5520 | 0.6283 | 0.7150 | 0.8138 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.02 | 20.83 | 0.85 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.3 | 6.8 | 9.5 | 9.6 | 7.4 | 15.8 | 28.4 | 4.7 | 8.4 | 0.9 | 8.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.5589 | 0.0816 | 0.0618 | 0.0393 | 0.0125 | 0.0101 | 1.88 | 8.09 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010733 **Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-G002-0-0 **Sample Number:** WG423075-1

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/26/2010

**Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010733
**Location:** S-10L-G002-0-0
**Sample Number:** WG423075-1

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 56.30
**Tare Wt. =** 7.64
**Minus #200 from wash =** 41.7%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 83.42 | 0.00 | #4 | 527.66 | 527.66 | 100.0 | 0.0 |
| | | #10 | 494.03 | 493.70 | 99.6 | 0.4 |
| | | #20 | 430.44 | 423.47 | 91.2 | 8.8 |
| | | #40 | 383.43 | 374.81 | 80.9 | 19.1 |
| | | #60 | 366.82 | 360.83 | 73.7 | 26.3 |
| | | #140 | 345.09 | 337.37 | 64.5 | 35.5 |
| | | #200 | 324.72 | 319.78 | 58.6 | 41.4 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 58.6
**Weight of hydrometer sample =**83.42
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0200 | 1.0199 | 0.0136 | 17.0 | 11.8 | 0.0331 | 22.5 | 77.5 |
| 5.00 | 20.0 | 1.0180 | 1.0179 | 0.0136 | 15.0 | 12.3 | 0.0214 | 20.2 | 79.8 |
| 15.00 | 20.0 | 1.0140 | 1.0139 | 0.0136 | 11.0 | 13.4 | 0.0129 | 15.7 | 84.3 |
| 30.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0096 | 9.0 | 91.0 |
| 60.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0068 | 9.0 | 91.0 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 7.8 | 92.2 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 7.8 | 92.2 |

### Fractional Components

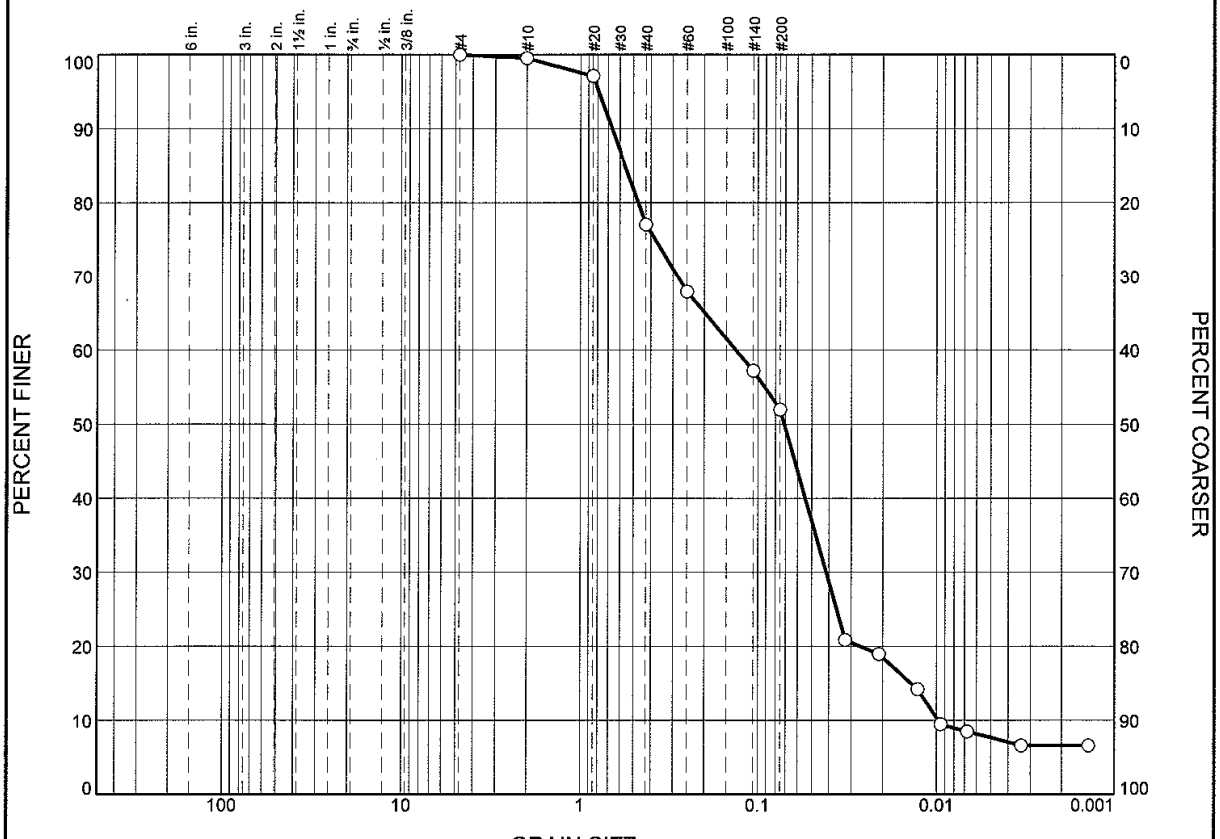
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.3 | 6.8 | 9.5 | 9.6 | 7.4 | 15.8 | 49.1 | 28.4 | 4.7 | 8.4 | 0.9 | 42.4 | 8.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0101 | 0.0125 | 0.0209 | 0.0393 | 0.0618 | 0.0816 | 0.3972 | 0.5589 | 0.7817 | 1.2481 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.75 | 8.09 | 1.88 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.4 | 1.9 | 15.9 | 13.8 | 8.7 | 14.0 | 24.6 | 4.5 | 7.2 | 1.9 | 7.0 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.5596 | 0.1329 | 0.0711 | 0.0415 | 0.0139 | 0.0098 | 1.32 | 13.54 |

| | Material Description | USCS | AASHTO |
|---|---|---|---|
| ○ | | | |

**Project No.** L1010733 **Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-G002-0-0 REP **Sample Number:** L1010588-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/26/2010

**Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010733
**Location:** S-10L-G002-0-0 REP
**Sample Number:** L1010588-03

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 55.98
Tare Wt. = 7.58
Minus #200 from wash = 45.0%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 87.96 | 0.00 | #4 | 527.66 | 527.66 | 100.0 | 0.0 |
| | | #10 | 494.10 | 493.70 | 99.5 | 0.5 |
| | | #20 | 425.60 | 423.47 | 97.1 | 2.9 |
| | | #40 | 392.49 | 374.81 | 77.0 | 23.0 |
| | | #60 | 368.88 | 360.83 | 67.9 | 32.1 |
| | | #140 | 346.77 | 337.37 | 57.2 | 42.8 |
| | | #200 | 324.37 | 319.78 | 52.0 | 48.0 |

### Hydrometer Test Data

**Hydrometer test uses material passing #230**
**Percent passing #230 based upon complete sample =** 52.0
**Weight of hydrometer sample =**87.96
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0220 | 1.0219 | 0.0136 | 19.0 | 11.3 | 0.0324 | 20.8 | 79.2 |
| 5.00 | 20.0 | 1.0200 | 1.0199 | 0.0136 | 17.0 | 11.8 | 0.0210 | 18.9 | 81.1 |
| 15.00 | 20.0 | 1.0150 | 1.0149 | 0.0136 | 12.0 | 13.1 | 0.0128 | 14.2 | 85.8 |
| 30.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0095 | 9.4 | 90.6 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 8.5 | 91.5 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 6.6 | 93.4 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 6.6 | 93.4 |

### Fractional Components

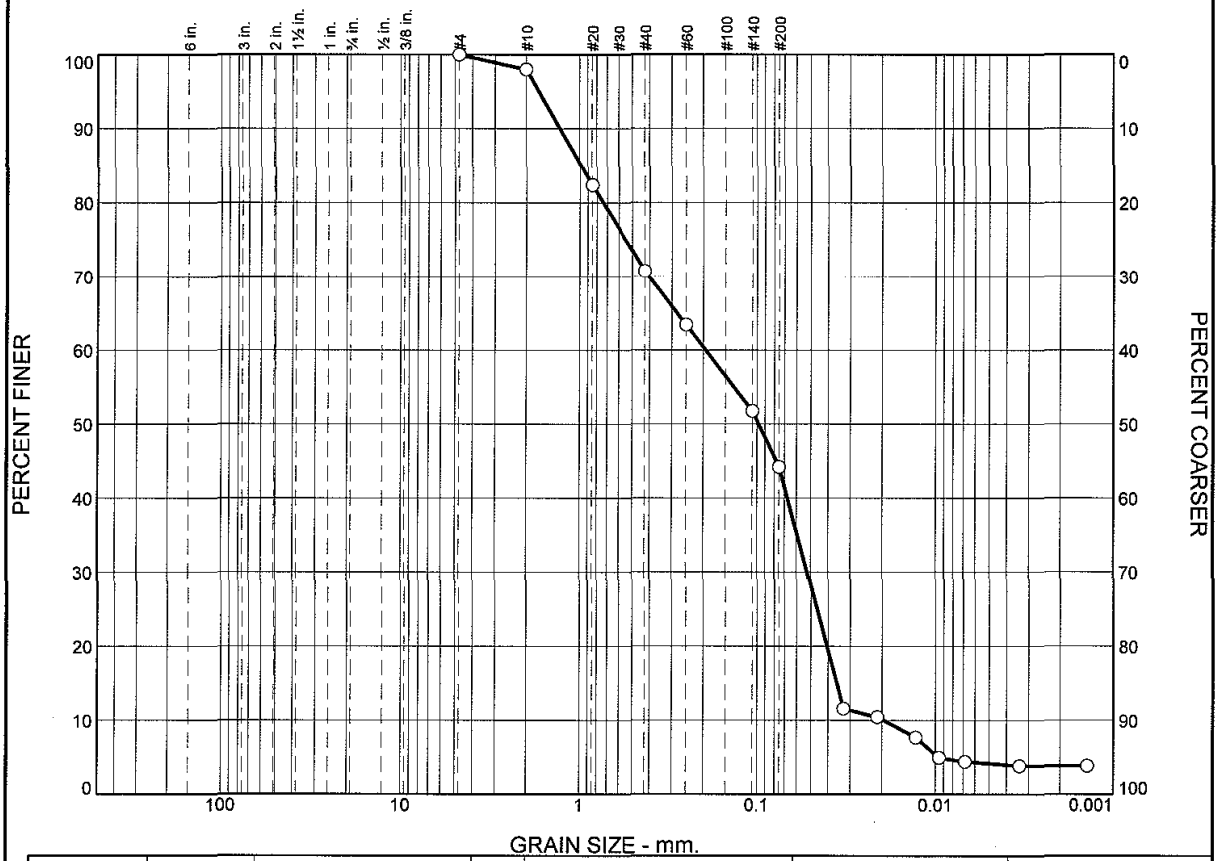
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.4 | 1.9 | 15.9 | 13.8 | 8.7 | 14.0 | 54.3 | 24.6 | 4.5 | 7.2 | 1.9 | 38.2 | 7.0 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0098 | 0.0139 | 0.0268 | 0.0415 | 0.0711 | 0.1329 | 0.4709 | 0.5596 | 0.6649 | 0.7900 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.83 | 13.54 | 1.32 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.4 | 1.6 | 12.6 | 11.9 | 10.1 | 9.4 | 17.0 | 25.6 | 2.7 | 4.1 | 0.7 | 3.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.9793 | 0.1943 | 0.0979 | 0.0523 | 0.0358 | 0.0196 | 0.72 | 9.93 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010733 **Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-G003-0-0 **Sample Number:** L1010588-04

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/26/2010

**Client:** Wood Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010733
**Location:** S-10L-G003-0-0
**Sample Number:** L1010588-04

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 93.30
Tare Wt. = 7.63
Minus #200 from wash = 33.5%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 128.74 | 0.00 | #4 | 527.66 | 527.66 | 100.0 | 0.0 |
| | | #10 | 496.27 | 493.70 | 98.0 | 2.0 |
| | | #20 | 443.53 | 423.47 | 82.4 | 17.6 |
| | | #40 | 389.88 | 374.81 | 70.7 | 29.3 |
| | | #60 | 370.20 | 360.83 | 63.4 | 36.6 |
| | | #140 | 352.80 | 337.73 | 51.7 | 48.3 |
| | | #200 | 324.51 | 314.78 | 44.2 | 55.8 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 44.2
Weight of hydrometer sample =128.74
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0210 | 1.0209 | 0.0136 | 18.0 | 11.5 | 0.0328 | 11.5 | 88.5 |
| 5.00 | 20.0 | 1.0190 | 1.0189 | 0.0136 | 16.0 | 12.1 | 0.0212 | 10.4 | 89.6 |
| 15.00 | 20.0 | 1.0140 | 1.0139 | 0.0136 | 11.0 | 13.4 | 0.0129 | 7.7 | 92.3 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 4.9 | 95.1 |
| 60.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0068 | 4.4 | 95.6 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 3.8 | 96.2 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 3.8 | 96.2 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.4 | 1.6 | 12.6 | 11.9 | 10.1 | 9.4 | 17.0 | 61.0 | 25.6 | 2.7 | 4.1 | 0.7 | 33.1 | 3.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0196 | 0.0358 | 0.0406 | 0.0523 | 0.0979 | 0.1943 | 0.7364 | 0.9793 | 1.2887 | 1.6959 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.14 | 9.93 | 0.72 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab:

ALPHA Job #: L10 10588


ALPHA ANALYTICAL

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 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

**Project Information**

Project Name: New Bedford Harbor Env. Mon.
Project Location: New Bedford, MA
Project #: TO-0010-03
Project Manager: ~~dwalsh@wh~~ Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data report & project specific EDD

**SAMPLE HANDLING**

*Filtration*
☐ Done
☒ Not needed
☐ Lab to do
*Preservation*
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB congeners | TOC | grainsize (w/ hydro) | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|
| -1 | S-1ΦL-GΦΦ1-Φ-Φ | 7/14/10 | 09:45 | SE | KGM | X | | | Potentially high PCB Concentrations | 2 |
| | S-1ΦL-GΦΦ1-Φ-Φ | | 09:45 | | | | X | | | 1 |
| | S-1ΦL-GΦΦ1-Φ-Φ | | 09:45 | | | | | X | | 1 |
| -2 | S-1ΦL-GΦΦ2-Φ-Φ | | 12:00 | | | X | | | | 2 |
| | S-1ΦL-GΦΦ2-Φ-Φ | | 12:00 | | | | X | | | 1 |
| | S-1ΦL-GΦΦ2-Φ-Φ | | 12:00 | | | | | X | | 1 |
| -2 | S-1ΦL-GΦΦ2-Φ-Φ MS/MSD | | 12:00 | | | X | | | | 1 |
| -3 | S-1ΦL-GΦΦ2-Φ-ΦREP | | 12:00 | | | X | | | | 1 |
| | S-1ΦL-GΦΦ2-Φ-ΦREP | | 12:00 | | | | X | | | 1 |
| | S-1ΦL-GΦΦ2-Φ-ΦREP | | 12:00 | | | | | X | | 1 |

| | | | |
|---|---|---|---|
| Container Type | G | G | O |
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 7/14/10 15:00 | [signature] | 7/14/10 1500 |
| [signature] | 7/14/10 16:00 | [signature] | 7/14/10 1620 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1010588

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: New Bedford Harbor Envi. mon.

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data reports, project specific EDD

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB congeners | TOC | Grainsize (w/ hydro) | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|
| -4 | S-1ΦL-6ΦΦ3-Φ-Φ | 7/14/10 | 14:15 | SE | KGM | X | | | Potentially high PCB Concentration | 2 |
| | S-1ΦL-6ΦΦ3-Φ-Φ | ↓ | 14:15 | ↓ | ↓ | | X | | ↓ | 1 |
| | S-1ΦL-6ΦΦ3-Φ-Φ | ↓ | 14:15 | ↓ | ↓ | | | X | ↓ | 1 |
| 2 | | | | | | | | | | |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |

**SAMPLE HANDLING**

Filtration ☐ Done ☒ Not needed ☐ Lab to do

Preservation ☐ Lab to do

(Please specify below)

| | | | |
|---|---|---|---|
| Container Type | G | G | O |
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 7/14/10 1500 | [signature] | 7/14/10 1500 |
| [signature] | 7/14/10 1620 | [signature] | 7/14/10 1620 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

Serial_No:10141012:33

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1010911 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 08/01/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1010911-01 | S-10L-T001-0-0 | NEW BEDFORD, MA | 07/15/10 13:20 |
| L1010911-02 | S-10L-T002-0-0 | NEW BEDFORD, MA | 07/15/10 13:50 |
| L1010911-03 | S-10L-T003-0-0 | NEW BEDFORD, MA | 07/15/10 15:00 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010911 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 08/01/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on July 19, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until July22, 2010 when they were removed to extract samples for PCB Congener analysis.

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.

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010911 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 08/01/10 |

**Case Narrative (continued)**

L1010911-01 was re-analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

L1010911-01, 02, 03 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.'

The WG424862-1 Laboratory Duplicate RPD, performed on L1010911-03, is outside the acceptance criteria for Gravel (111%), % Very coarse sand (39%),% Very fine sand (54%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate. See attached scans

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: 08/01/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-01 | D2 | Date Collected: | 07/15/10 13:20 |
| Client ID: | S-10L-T001-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 16:57 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 81% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 6800 | | ug/kg | 2000 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-01 | D2 | Date Collected: | 07/15/10 13:20 |
| Client ID: | S-10L-T001-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 16:57 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 81% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 8100 | | ug/kg | 2000 | -- | 200 |
| Cl4-BZ#52 | 10500 | | ug/kg | 2000 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-01 | D | Date Collected: | 07/15/10 13:20 |
| Client ID: | S-10L-T001-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 23:47 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 81% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2030 | | ug/kg | 200 | -- | 20 |
| Cl3-BZ#18 | 6080 | E | ug/kg | 200 | -- | 20 |
| Cl5-BZ#118 | 1310 | | ug/kg | 200 | -- | 20 |
| Cl6-BZ#138 | 1290 | | ug/kg | 200 | -- | 20 |
| Cl6-BZ#128 | 246 | | ug/kg | 200 | -- | 20 |
| Cl7-BZ#180 | 250 | | ug/kg | 200 | -- | 20 |
| Cl7-BZ#170 | 211 | | ug/kg | 200 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 200 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 200 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 200 | -- | 20 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-01 | D | Date Collected: | 07/15/10 13:20 |
| Client ID: | S-10L-T001-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 23:47 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 81% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9710 | E | ug/kg | 200 | -- | 20 |
| Cl4-BZ#52 | 11600 | E | ug/kg | 200 | -- | 20 |
| Cl4-BZ#44 | 3070 | | ug/kg | 200 | -- | 20 |
| Cl4-BZ#66 | 2950 | | ug/kg | 200 | -- | 20 |
| Cl5-BZ#101 | 2100 | | ug/kg | 200 | -- | 20 |
| Cl6-BZ#153 | 1950 | | ug/kg | 200 | -- | 20 |
| Cl5-BZ#105 | 273 | | ug/kg | 200 | -- | 20 |
| Cl7-BZ#187 | 427 | | ug/kg | 200 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-02 | D | Date Collected: | 07/15/10 13:50 |
| Client ID: | S-10L-T002-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 17:38 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4970 | | ug/kg | 1740 | -- | 200 |
| Cl3-BZ#18 | 14800 | | ug/kg | 1740 | -- | 200 |
| Cl5-BZ#118 | 2780 | | ug/kg | 1740 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 1740 | -- | 200 |
| Cl6-BZ#138 | 2710 | | ug/kg | 1740 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 1740 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 1740 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 1740 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 1740 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 1740 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 1740 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 96 | | 30-150 |
| BZ 198 | 85 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-02 | D | Date Collected: | 07/15/10 13:50 |
| Client ID: | S-10L-T002-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/27/10 17:38 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 17400 | | ug/kg | 1740 | -- | 200 |
| Cl4-BZ#52 | 25400 | | ug/kg | 1740 | -- | 200 |
| Cl4-BZ#44 | 6880 | | ug/kg | 1740 | -- | 200 |
| Cl4-BZ#66 | 6200 | | ug/kg | 1740 | -- | 200 |
| Cl5-BZ#101 | 4570 | | ug/kg | 1740 | -- | 200 |
| Cl6-BZ#153 | 3910 | | ug/kg | 1740 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 1740 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 96 | | 30-150 |
| BZ 198 | 85 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-03 | D | Date Collected: | 07/15/10 15:00 |
| Client ID: | S-10L-T003-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/28/10 01:10 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 91% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 270 | | ug/kg | 180 | -- | 20 |
| Cl3-BZ#18 | 623 | | ug/kg | 180 | -- | 20 |
| Cl4-BZ#52 | 1980 | | ug/kg | 180 | -- | 20 |
| Cl4-BZ#66 | 1440 | | ug/kg | 180 | -- | 20 |
| Cl5-BZ#118 | 1300 | | ug/kg | 180 | -- | 20 |
| Cl6-BZ#138 | 940 | | ug/kg | 180 | -- | 20 |
| Cl6-BZ#128 | 242 | | ug/kg | 180 | -- | 20 |
| Cl7-BZ#180 | 202 | | ug/kg | 180 | -- | 20 |
| Cl7-BZ#170 | ND | | ug/kg | 180 | -- | 20 |
| Cl8-BZ#195 | ND | | ug/kg | 180 | -- | 20 |
| Cl9-BZ#206 | ND | | ug/kg | 180 | -- | 20 |
| Cl10-BZ#209 | ND | | ug/kg | 180 | -- | 20 |

| | | |
|---|---|---|
| DBOB | 83 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1010911-03 | D | Date Collected: | 07/15/10 15:00 |
| Client ID: | S-10L-T003-0-0 | | Date Received: | 07/19/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 07/22/10 14:54 |
| Analytical Date: | 07/28/10 01:10 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 07/27/10 |
| Percent Solids: | 91% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1770 | | ug/kg | 180 | -- | 20 |
| Cl4-BZ#44 | 797 | | ug/kg | 180 | -- | 20 |
| Cl5-BZ#101 | 1330 | | ug/kg | 180 | -- | 20 |
| Cl6-BZ#153 | 1120 | | ug/kg | 180 | -- | 20 |
| Cl5-BZ#105 | 338 | | ug/kg | 180 | -- | 20 |
| Cl7-BZ#187 | 205 | | ug/kg | 180 | -- | 20 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911
**Project Number:** TO-0010-03 **Report Date:** 08/01/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 07/27/10 10:47
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 07/22/10 14:54
Cleanup Method1: EPA 3630
Cleanup Date1: 07/27/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG423929-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 07/27/10 10:47
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 07/22/10 14:54
Cleanup Method1: EPA 3630
Cleanup Date1: 07/27/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG423929-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 94 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1010911

**Report Date:** 08/01/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG423929-2 WG423929-3 | | | | | | | | |
| Cl2-BZ#8 | 63 | | 73 | | 40-140 | 15 | | 30 |
| Cl3-BZ#18 | 106 | | 83 | | 40-140 | 24 | | 30 |
| Cl3-BZ#28 | 77 | | 79 | | 40-140 | 3 | | 30 |
| Cl4-BZ#52 | 99 | | 85 | | 40-140 | 15 | | 30 |
| Cl4-BZ#44 | 79 | | 80 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 75 | | 82 | | 40-140 | 9 | | 30 |
| Cl5-BZ#101 | 82 | | 84 | | 40-140 | 2 | | 30 |
| Cl5-BZ#118 | 81 | | 90 | | 40-140 | 11 | | 30 |
| Cl5-BZ#105 | 75 | | 86 | | 40-140 | 14 | | 30 |
| Cl6-BZ#138 | 85 | | 89 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 90 | | 92 | | 40-140 | 2 | | 30 |
| Cl6-BZ#128 | 83 | | 88 | | 40-140 | 6 | | 30 |
| Cl7-BZ#180 | 92 | | 94 | | 40-140 | 2 | | 30 |
| Cl7-BZ#170 | 86 | | 92 | | 40-140 | 7 | | 30 |
| Cl8-BZ#195 | 88 | | 107 | | 40-140 | 19 | | 30 |
| Cl9-BZ#206 | 96 | | 101 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | 91 | | 98 | | 40-140 | 7 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG423929-2 | WG423929-3 | | | |
| DBOB | 81 | | 86 | | 30-150 | | | |
| BZ 198 | 90 | | 91 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG423929-2 | WG423929-3 | | | |
| Cl6-BZ#153 | 80 | | 86 | | 40-140 | 7 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 81 | | 86 | | 30-150 |
| BZ 198 | 90 | | 91 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

## SAMPLE RESULTS

Lab ID: L1010911-01
Client ID: S-10L-T001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/15/10 13:20
Date Received: 07/19/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 6.30 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 5.95 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 2.80 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 12.2 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 8.20 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 5.00 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.10 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 22.2 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 32.9 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 11.9 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 81.2 | | % | 0.100 | -- | 1 | - | 07/22/10 17:15 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 27.6 | | % | 0.100 | NA | 1 | - | 07/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

## SAMPLE RESULTS

Lab ID: L1010911-02
Client ID: S-10L-T002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/15/10 13:50
Date Received: 07/19/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.66 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 4.50 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 5.00 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 14.3 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 9.00 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.80 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.40 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 12.4 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 38.4 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 11.9 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 93.7 | | % | 0.100 | -- | 1 | - | 07/22/10 17:15 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.4 | | % | 0.100 | NA | 1 | - | 07/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

## SAMPLE RESULTS

Lab ID: L1010911-03
Client ID: S-10L-T003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 07/15/10 15:00
Date Received: 07/19/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.14 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 3.92 | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.200 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 5.70 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 8.80 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 6.70 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.70 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 20.9 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 43.4 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 11.6 | | % | 0.100 | NA | 1 | - | 07/28/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 91.4 | | % | 0.100 | -- | 1 | - | 07/22/10 17:15 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 36.2 | | % | 0.100 | NA | 1 | - | 07/20/10 11:30 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911

**Project Number:** TO-0010-03 **Report Date:** 08/01/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-03 Batch: WG424393-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 07/27/10 14:50 | 1,9060 | ES |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG424041-1 QC Sample: L1010911-03 Client ID: S-10L-T003-0-0 | | | | | | |
| Solids, Total | 91.4 | 93.0 | % | 2 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG424862-1 QC Sample: L1010911-03 Client ID: S-10L-T003-0-0 | | | | | | |
| Gravel (>2.00mm) | 0.2 | 0.700 | % | **111** | Q | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 5.7 | 8.50 | % | **39** | Q | 20 |
| Coarse Sand (0.50-1.00 mm) | 8.8 | 9.50 | % | 8 | | 20 |
| Medium Sand (0.25-0.50 mm) | 6.7 | 5.90 | % | 13 | | 20 |
| Fine Sand (0.125-0.25 mm) | 2.7 | 2.20 | % | 20 | | 20 |
| Very Fine Sand (0.063-0.125 mm) | 20.9 | 12.0 | % | **54** | Q | 20 |
| Silt - (1.95-62.5 um) | 43.4 | 47.8 | % | 10 | | 20 |
| Clay - (<1.95 um) | 11.6 | 13.2 | % | 13 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1010911
**Project Number:** TO-0010-03 **Report Date:** 08/01/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG424393-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 88 | | 75-125 |
| Total Organic Carbon (Rep2) | 117 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1010911-01A | Glass 500ml unpreserved | A | N/A | 4 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |
| L1010911-02A | Glass 500ml unpreserved | A | N/A | 4 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1010911
**Report Date:** 08/01/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1010911-03A | Glass 1000ml unpreserved | A | N/A | 4 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010911 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 08/01/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1010911 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 08/01/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1010911 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 08/01/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

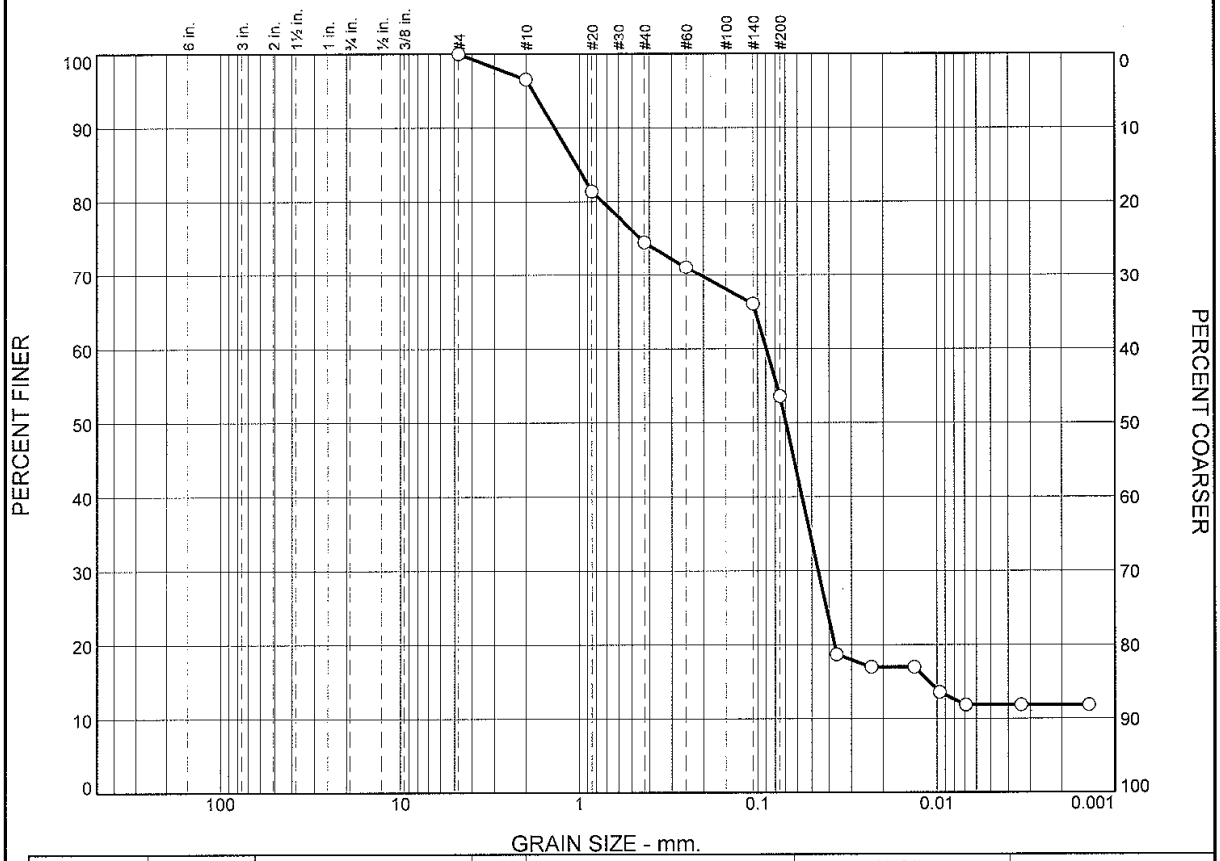

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand V. Crs. | % Sand Crs. | % Sand Med. | % Sand Fine | % Sand V. Fine | % Silt Crs. | % Silt Med. | % Silt Fine | % Silt V. Fine | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | 0.0 | 0.0 | 0.7 | 2.8 | 12.2 | 8.2 | 5.0 | 4.1 | 22.2 | 26.7 | 1.1 | 4.5 | 0.6 | 11.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.0416 | 0.0896 | 0.0696 | 0.0460 | 0.0111 | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010911 **Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-T001-0-0 **Sample Number:** L1010911-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/31/2010

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010911
**Location:** S-10L-T001-0-0
**Sample Number:** L1010911-01

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 28.21
Tare Wt. = 7.33
Minus #200 from wash = 58.5%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 50.33 | 0.00 | #4 | 527.63 | 527.63 | 100.0 | 0.0 |
| | | #10 | 495.38 | 493.64 | 96.5 | 3.5 |
| | | #20 | 431.13 | 423.51 | 81.4 | 18.6 |
| | | #40 | 378.36 | 374.87 | 74.5 | 25.5 |
| | | #60 | 362.51 | 360.81 | 71.1 | 28.9 |
| | | #140 | 339.92 | 337.39 | 66.1 | 33.9 |
| | | #200 | 341.09 | 334.80 | 53.6 | 46.4 |

### Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 53.6
Weight of hydrometer sample =50.33
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 18.7 | 81.3 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 17.0 | 83.0 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 17.0 | 83.0 |
| 30.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0096 | 13.6 | 86.4 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 11.9 | 88.1 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 11.9 | 88.1 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 11.9 | 88.1 |

### Fractional Components

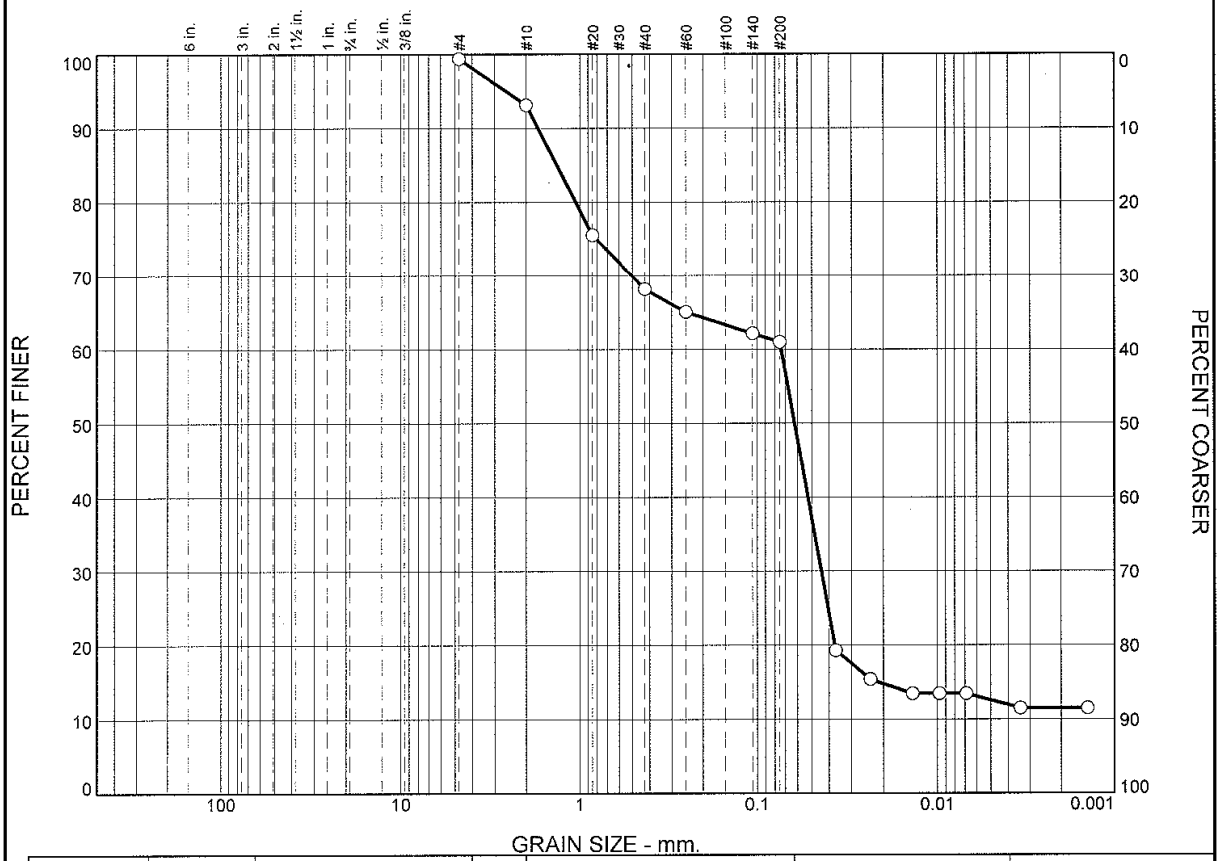
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.7 | 2.8 | 12.2 | 8.2 | 5.0 | 4.1 | 22.2 | 51.7 | 26.7 | 1.1 | 4.5 | 0.6 | 32.9 | 11.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0111 | 0.0373 | 0.0460 | 0.0696 | 0.0896 | 0.7388 | 1.0416 | 1.3818 | 1.8330 |

| Fineness Modulus |
|---|
| 0.97 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 5.0 | 14.3 | 9.0 | 4.8 | 2.4 | 12.4 | 32.5 | 3.9 | 0.5 | 1.5 | 11.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.3457 | 0.0737 | 0.0621 | 0.0441 | 0.0213 | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010911 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-T002-0-0 **Sample Number:** L1010911-02

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/31/2010

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010911
**Location:** S-10L-T002-0-0
**Sample Number:** L1010911-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 29.52
Tare Wt. = 7.32
Minus #200 from wash = 56.1%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 50.54 | 0.00 | #4 | 528.45 | 528.15 | 99.4 | 0.6 |
| | | #10 | 496.55 | 493.39 | 93.2 | 6.8 |
| | | #20 | 426.91 | 418.01 | 75.5 | 24.5 |
| | | #40 | 380.29 | 376.56 | 68.2 | 31.8 |
| | | #60 | 367.55 | 365.98 | 65.1 | 34.9 |
| | | #140 | 344.60 | 343.13 | 62.1 | 37.9 |
| | | #200 | 338.08 | 337.49 | 61.0 | 39.0 |

### Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 61.0
Weight of hydrometer sample =50.54
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0367 | 19.3 | 80.7 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 15.4 | 84.6 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 13.4 | 86.6 |
| 30.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0097 | 13.4 | 86.6 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 13.4 | 86.6 |
| 250.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0034 | 11.5 | 88.5 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 11.5 | 88.5 |

### Fractional Components

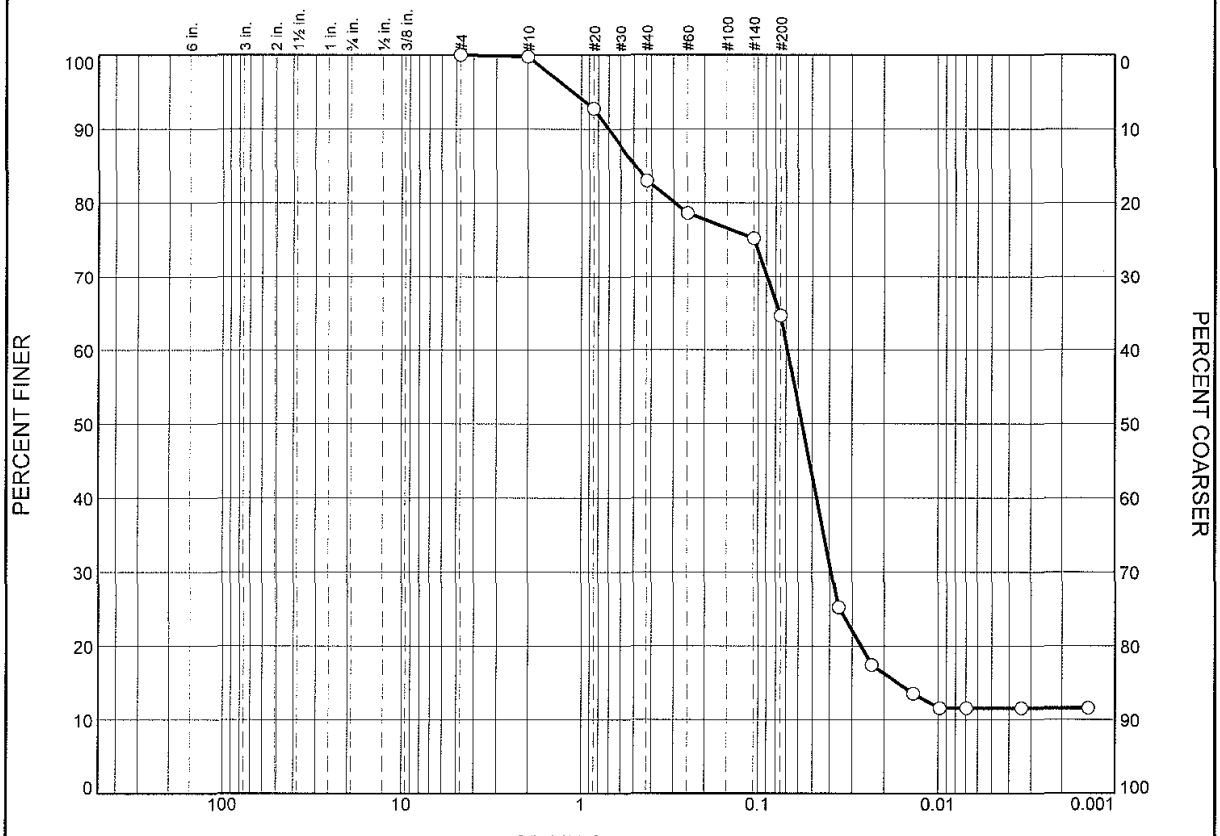
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 5.0 | 14.3 | 9.0 | 4.8 | 2.4 | 12.4 | 42.9 | 32.5 | 3.9 | 0.5 | 1.5 | 38.4 | 11.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0213 | 0.0371 | 0.0441 | 0.0621 | 0.0737 | 1.0555 | 1.3457 | 1.7158 | 2.5819 |

| Fineness Modulus |
|---|
| 1.23 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.2 | 5.7 | 8.8 | 6.7 | 2.7 | 20.9 | 32.4 | 8.2 | 2.8 | | 11.6 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.4905 | 0.0687 | 0.0569 | 0.0390 | 0.0168 | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1010911 **Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-T003-0-0 **Sample Number:** L1010911-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

Page 36 of 42

## GRAIN SIZE DISTRIBUTION TEST DATA

7/31/2010

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010911
**Location:** S-10L-T003-0-0
**Sample Number:** L1010911-03

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 23.00
Tare Wt. = 7.39
Minus #200 from wash = 70.7%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 53.22 | 0.00 | #4 | 527.63 | 527.63 | 100.0 | 0.0 |
| | | #10 | 493.75 | 493.64 | 99.8 | 0.2 |
| | | #20 | 427.25 | 423.51 | 92.8 | 7.2 |
| | | #40 | 380.08 | 374.87 | 83.0 | 17.0 |
| | | #60 | 363.14 | 360.81 | 78.6 | 21.4 |
| | | #140 | 339.20 | 337.39 | 75.2 | 24.8 |
| | | #200 | 340.43 | 334.80 | 64.6 | 35.4 |

### Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 64.6
Weight of hydrometer sample =53.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0356 | 25.2 | 74.8 |
| 5.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0234 | 17.4 | 82.6 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 13.5 | 86.5 |
| 30.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0098 | 11.6 | 88.4 |
| 60.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0069 | 11.6 | 88.4 |
| 250.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0034 | 11.6 | 88.4 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 11.6 | 88.4 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.2 | 5.7 | 8.8 | 6.7 | 2.7 | 20.9 | 44.8 | 32.4 | 8.2 | 2.8 | | 43.4 | 11.6 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0168 | 0.0269 | 0.0390 | 0.0569 | 0.0687 | 0.2963 | 0.4905 | 0.6988 | 1.1157 |

| Fineness Modulus |
|---|
| 0.60 |

**Alpha Analytical**

# Particle Size Distribution Report

| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.2 | 0.7 | 8.5 | 9.5 | 5.9 | 2.2 | 12.0 | 34.4 | 7.8 | 5.6 | 0.0 | 13.2 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.6588 | 0.0614 | 0.0516 | 0.0364 | 0.0112 | | | |

| | Material Description | USCS | AASHTO |
|---|---|---|---|
| ○ | | | |

**Project No.** L1010911 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Enviromental Monitoring

○ **Source of Sample:** S-10L-T003-0-0 **Sample Number:** WG424862-1

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

7/31/2010

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Enviromental Monitoring
**Project Number:** L1010911
**Location:** S-10L-T003-0-0
**Sample Number:** WG424862-1

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 22.80
Tare Wt. = 7.34
Minus #200 from wash = 70.0%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.57 | 0.00 | #4 | 528.15 | 528.15 | 100.0 | 0.0 |
| | | #10 | 493.83 | 493.39 | 99.1 | 0.9 |
| | | #20 | 423.46 | 418.01 | 88.6 | 11.4 |
| | | #40 | 381.58 | 376.56 | 78.8 | 21.2 |
| | | #60 | 367.84 | 365.98 | 75.2 | 24.8 |
| | | #140 | 344.55 | 343.13 | 72.5 | 27.5 |
| | | #200 | 337.99 | 337.49 | 71.5 | 28.5 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #200
**Percent passing #200 based upon complete sample =** 71.5
**Weight of hydrometer sample =**51.57
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0356 | 28.8 | 71.2 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 22.1 | 77.9 |
| 15.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0136 | 17.7 | 82.3 |
| 30.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0098 | 13.2 | 86.8 |
| 60.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0069 | 13.2 | 86.8 |
| 250.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0034 | 13.2 | 86.8 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 13.2 | 86.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.2 | 0.7 | 8.5 | 9.5 | 5.9 | 2.2 | 12.0 | 38.1 | 34.4 | 7.8 | 5.6 | 0.0 | 47.8 | 13.2 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0112 | 0.0180 | 0.0364 | 0.0516 | 0.0614 | 0.4615 | 0.6588 | 0.9537 | 1.4296 |

| Fineness Modulus |
|---|
| 0.74 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: L1010911

## CHAIN OF CUSTODY DOCUMENTATION

Serial No:08011021:24

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: New Bedford Harbor Environ. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Drive | Project Number: T-Ø-ØØ1Ø-Ø3 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: DWALSH@WHGRP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| L1010911-1 | S-1ØL-TØØ1-Ø-Ø | 7/15/10 | 1320 | JL | C | 16oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -2 | S-1ØL-TØØ2-Ø-Ø | 7/15/10 | 1350 | JL | C | 16oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -3 | S-1ØL-TØØ3-Ø-Ø | 7/15/10 | 1500 | JL | C | 32oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |

| | | | |
|---|---|---|---|
| Relinquished By: | Date: 7/19/10 Time: 1230 | Received By: | Date: 7/19/10 Time: 1230 |
| Relinquished By: | Date: 7/19/10 Time: | Received at Lab By: | Date: 7/19/10 Time: 17:50 |

Comments: To Alpha

P. Gilbert 7/19/10 19:00

COC Doc No: 3901

7/19/10 17:00

Sample Delivery Group No: Page of

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1013129 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 09/16/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1013129-01 | S-10G-G001-0-0 | NEW BEDFORD, MA | 08/25/10 10:45 |
| L1013129-02 | S-10G-G002-0-0 | NEW BEDFORD, MA | 08/25/10 12:00 |
| L1013129-03 | S-10G-G002-0-0 REP | NEW BEDFORD, MA | 08/25/10 12:00 |
| L1013129-04 | S-10G-G003-0-0 | NEW BEDFORD, MA | 08/25/10 13:30 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

**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.

---

Sample Receipt

Sediment samples were received intact on August 25, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on August 30 until September 8, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.
L1013129-01 through -04 were analyzed at a dilution due to the elevated concentrations of target compounds in the samples.
The WG431395-3 LCS/LCSD RPD(s), associated with L1013129-01 through -04, are above the acceptance criteria for Cl2-BZ#8 (33%); however, the individual LCS/LCSD recoveries are within method limits.
The WG431395-4/-5 MS/MSD recoveries and the associated %RPDs, performed on L1013129-02, are outside the acceptance criteria for several compounds. In most cases, the native sample concentrations were more than 4 times the spike concentration thereby effectively diluting out the spike.

Total Organic Carbon

The WG430056-4 MS recoveries, performed on L1013129-01, are outside the 125% acceptance criteria for Total Organic Carbon (rep1)(28%)/(rep2)(28%), possibly due to sample matrix. The associated LCS recoveries are within criteria indicating the sample batch was in control, and all sample results were accepted.

Grain Size

The WG432529-1 Laboratory Duplicate RPD, performed on L1013129-01, is outside the acceptance criteria for Gravel(36%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: 09/16/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-01 | Date Collected: | 08/25/10 10:45 |
| Client ID: | S-10G-G001-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 04:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 954 | | ug/kg | 137 | -- | 100 |
| Cl3-BZ#18 | 2070 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#118 | 649 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#138 | 617 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#180 | 140 | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 137 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 137 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 137 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 137 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 59 | | 30-150 |
| BZ 198 | 55 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-01 | Date Collected: | 08/25/10 10:45 |
| Client ID: | S-10G-G001-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 04:36 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#44 | 1280 | | ug/kg | 137 | -- | 100 |
| Cl4-BZ#66 | 1220 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#101 | 931 | | ug/kg | 137 | -- | 100 |
| Cl6-BZ#153 | 831 | | ug/kg | 137 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 137 | -- | 100 |
| Cl7-BZ#187 | 189 | | ug/kg | 137 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 59 | 30-150 |
| BZ 198 | 55 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013129-01 | D | Date Collected: | 08/25/10 10:45 |
| Client ID: | S-10G-G001-0-0 | | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/10/10 22:27 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5030 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#52 | 7000 | | ug/kg | 1370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-02 | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/10/10 23:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 21100 | | ug/kg | 1370 | -- | 1000 |
| Cl5-BZ#118 | 11400 | | ug/kg | 1370 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1370 | -- | 1000 |
| Cl6-BZ#138 | 6520 | | ug/kg | 1370 | -- | 1000 |
| Cl7-BZ#187 | 2180 | | ug/kg | 1370 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1370 | -- | 1000 |
| Cl7-BZ#180 | 1600 | | ug/kg | 1370 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1370 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1370 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1370 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1370 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 107 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-02 | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/10/10 23:08 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#44 | 21600 | | ug/kg | 1370 | -- | 1000 |
| Cl4-BZ#66 | 23300 | | ug/kg | 1370 | -- | 1000 |
| Cl5-BZ#101 | 19800 | | ug/kg | 1370 | -- | 1000 |
| Cl6-BZ#153 | 13400 | | ug/kg | 1370 | -- | 1000 |

| | | |
|---|---|---|
| DBOB | 97 | 30-150 |
| BZ 198 | 107 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013129-02 | D | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 | | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/13/10 13:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 48500 | | ug/kg | 6840 | -- | 5000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013129-02 | D | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 | | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/13/10 13:56 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 67900 | | ug/kg | 6840 | -- | 5000 |
| Cl4-BZ#52 | 75300 | | ug/kg | 6840 | -- | 5000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-03 | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 REP | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 01:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 19800 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#118 | 12400 | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#138 | 6980 | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#187 | 2340 | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#180 | 1740 | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1360 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 108 | | 30-150 |
| BZ 198 | 107 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-03 | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 REP | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 01:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#44 | 20000 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#66 | 21100 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#101 | 19300 | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#153 | 13500 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1360 | -- | 1000 |

| | | |
|---|---|---|
| DBOB | 108 | 30-150 |
| BZ 198 | 107 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-03 D | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 REP | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/13/10 15:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 50900 | | ug/kg | 6830 | -- | 5000 |
| Cl4-BZ#52 | 77500 | | ug/kg | 6830 | -- | 5000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-03 D | Date Collected: | 08/25/10 12:00 |
| Client ID: | S-10G-G002-0-0 REP | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/13/10 15:59 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 69800 | | ug/kg | 6830 | -- | 5000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-04 | Date Collected: | 08/25/10 13:30 |
| Client ID: | S-10G-G003-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/10/10 21:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 266 | | ug/kg | 140 | -- | 100 |
| Cl3-BZ#18 | 593 | | ug/kg | 140 | -- | 100 |
| Cl4-BZ#52 | 1840 | | ug/kg | 140 | -- | 100 |
| Cl5-BZ#118 | 1030 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#138 | 762 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#128 | 194 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#180 | 171 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 140 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 140 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 140 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 140 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013129-04 | Date Collected: | 08/25/10 13:30 |
| Client ID: | S-10G-G003-0-0 | Date Received: | 08/25/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/10/10 21:46 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1470 | | ug/kg | 140 | -- | 100 |
| Cl4-BZ#44 | 677 | | ug/kg | 140 | -- | 100 |
| Cl4-BZ#66 | 1110 | | ug/kg | 140 | -- | 100 |
| Cl5-BZ#101 | 1040 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#153 | 881 | | ug/kg | 140 | -- | 100 |
| Cl5-BZ#105 | 257 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#187 | 169 | | ug/kg | 140 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129
**Project Number:** TO-0010-03 **Report Date:** 09/16/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 09/10/10 19:43
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/08/10 00:00
Cleanup Method1: EPA 3630
Cleanup Date1: 09/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG431395-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 09/10/10 19:43
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/08/10 00:00
Cleanup Method1: EPA 3630
Cleanup Date1: 09/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG431395-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1013129
**Report Date:** 09/16/10

| 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): 01-04 QC Batch ID: WG431395-4 WG431395-5 QC Sample: L1013129-02 Client ID: S-10G-G002-0-0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 21100 | 1910 | 26300 | **272** | Q | 18400 | **0** | Q | 40-140 | **35** | Q | 30 |
| Cl3-BZ#18 | 48500 | 1910 | 71600 | **1210** | Q | 36900 | **0** | Q | 40-140 | **64** | Q | 30 |
| Cl5-BZ#118 | 11400 | 1910 | 15200 | **199** | Q | 10700 | **0** | Q | 40-140 | **35** | Q | 30 |
| Cl6-BZ#138 | 6520 | 1910 | 9720 | **167** | Q | 6950 | **23** | Q | 40-140 | **33** | Q | 30 |
| Cl7-BZ#187 | 2180 | 1910 | 4470 | 120 | | 3250 | 56 | | 40-140 | **32** | Q | 30 |
| Cl6-BZ#128 | ND | 1910 | 3330 | **174** | Q | 2390 | 125 | | 40-140 | **33** | Q | 30 |
| Cl7-BZ#180 | 1600 | 1910 | 3830 | 117 | | 2780 | 62 | | 40-140 | **32** | Q | 30 |
| Cl7-BZ#170 | ND | 1910 | 3190 | **167** | Q | 2260 | 118 | | 40-140 | **34** | Q | 30 |
| Cl8-BZ#195 | ND | 1910 | 2300 | 120 | | 1620 | 85 | | 40-140 | **35** | Q | 30 |
| Cl9-BZ#206 | ND | 1910 | 2510 | 131 | | 1790 | 94 | | 40-140 | **33** | Q | 30 |
| Cl10-BZ#209 | ND | 1910 | 2160 | 113 | | 1540 | 81 | | 40-140 | **34** | Q | 30 |
| Cl3-BZ#28 | 67900 | 1910 | 78000 | **528** | Q | 51800 | **0** | Q | 40-140 | **40** | Q | 30 |
| Cl4-BZ#52 | 75300 | 1910 | 87900 | **658** | Q | 57900 | **0** | Q | 40-140 | **41** | Q | 30 |
| Cl4-BZ#44 | 21600 | 1910 | 25600 | **209** | Q | 18700 | **0** | Q | 40-140 | **31** | Q | 30 |
| Cl4-BZ#66 | 23300 | 1910 | 27400 | **214** | Q | 19600 | **0** | Q | 40-140 | **33** | Q | 30 |
| Cl5-BZ#101 | 19800 | 1910 | 23500 | **193** | Q | 17300 | **0** | Q | 40-140 | 30 | | 30 |
| Cl6-BZ#153 | 13400 | 1910 | 16400 | **157** | Q | 12200 | **0** | Q | 40-140 | 29 | | 30 |
| Cl5-BZ#105 | ND | 1910 | 3230 | **169** | Q | 2280 | 119 | | 40-140 | **34** | Q | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1013129
**Report Date:** 09/16/10

| 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): 01-04 QC Batch ID: WG431395-4 WG431395-5 QC Sample: L1013129-02 Client ID: S-10G-G002-0-0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 114 | | 86 | | 30-150 |
| DBOB | 107 | | 82 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1013129

**Report Date:** 09/16/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG431395-2 WG431395-3 | | | | | | | | |
| Cl2-BZ#8 | 59 | | 82 | | 40-140 | **33** | Q | 30 |
| Cl3-BZ#18 | 64 | | 83 | | 40-140 | 26 | | 30 |
| Cl3-BZ#28 | 70 | | 91 | | 40-140 | 26 | | 30 |
| Cl4-BZ#52 | 69 | | 88 | | 40-140 | 24 | | 30 |
| Cl4-BZ#44 | 77 | | 89 | | 40-140 | 14 | | 30 |
| Cl4-BZ#66 | 70 | | 94 | | 40-140 | 29 | | 30 |
| Cl5-BZ#101 | 73 | | 91 | | 40-140 | 22 | | 30 |
| Cl5-BZ#118 | 78 | | 95 | | 40-140 | 20 | | 30 |
| Cl5-BZ#105 | 75 | | 88 | | 40-140 | 16 | | 30 |
| Cl6-BZ#138 | 79 | | 94 | | 40-140 | 17 | | 30 |
| Cl7-BZ#187 | 78 | | 94 | | 40-140 | 19 | | 30 |
| Cl6-BZ#128 | 80 | | 95 | | 40-140 | 17 | | 30 |
| Cl7-BZ#180 | 80 | | 92 | | 40-140 | 14 | | 30 |
| Cl7-BZ#170 | 81 | | 98 | | 40-140 | 19 | | 30 |
| Cl8-BZ#195 | 78 | | 98 | | 40-140 | 23 | | 30 |
| Cl9-BZ#206 | 89 | | 109 | | 40-140 | 20 | | 30 |
| Cl10-BZ#209 | 82 | | 99 | | 40-140 | 19 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG431395-2 | WG431395-3 | | | |
| DBOB | 78 | | 88 | | 30-150 | | | |
| BZ 198 | 91 | | 98 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG431395-2 | WG431395-3 | | | |
| Cl6-BZ#153 | 81 | | 95 | | 40-140 | 16 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 78 | | 88 | | 30-150 |
| BZ 198 | 91 | | 98 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

## SAMPLE RESULTS

Lab ID: L1013129-01
Client ID: S-10G-G001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/25/10 10:45
Date Received: 08/25/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.56 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.28 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 5.30 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 9.00 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 8.80 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 15.6 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 16.8 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 13.9 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 21.5 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 5.90 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 95.6 | | % | 0.100 | -- | 1 | - | 08/30/10 14:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 29.5 | | % | 0.100 | NA | 1 | - | 08/26/10 16:36 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

## SAMPLE RESULTS

Lab ID: L1013129-02
Client ID: S-10G-G002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/25/10 12:00
Date Received: 08/25/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.10 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.01 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 13.9 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 13.4 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 10.2 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 9.30 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 8.10 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 10.6 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 19.3 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 5.30 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 95.7 | | % | 0.100 | -- | 1 | - | 08/30/10 14:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.8 | | % | 0.100 | NA | 1 | - | 08/26/10 16:36 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

## SAMPLE RESULTS

Lab ID: L1013129-03
Client ID: S-10G-G002-0-0 REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/25/10 12:00
Date Received: 08/25/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.09 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.87 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 7.40 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 13.7 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 11.7 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 11.0 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 9.80 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 12.2 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 22.1 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 7.10 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 95.8 | | % | 0.100 | -- | 1 | - | 08/30/10 14:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.5 | | % | 0.100 | NA | 1 | - | 08/26/10 16:36 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

## SAMPLE RESULTS

Lab ID: L1013129-04
Client ID: S-10G-G003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/25/10 13:30
Date Received: 08/25/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.58 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.53 | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 13.7 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 9.40 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 6.50 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.80 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.60 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 8.30 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 20.5 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 6.00 | | % | 0.100 | NA | 1 | - | 09/15/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 93.5 | | % | 0.100 | -- | 1 | - | 08/30/10 14:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 26.4 | | % | 0.100 | NA | 1 | - | 08/26/10 16:36 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129

**Project Number:** TO-0010-03 **Report Date:** 09/16/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG430056-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 08/30/10 09:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG430056-4 QC Sample: L1013129-01 Client ID: S-10G-G001-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.56 | 1.4 | 5.95 | **28** | Q | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 4.28 | 1.97 | 6.11 | **28** | Q | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG430056-3 QC Sample: L1013129-01 Client ID: S-10G-G001-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 5.56 | 4.79 | % | 15 | | 25 |
| Total Organic Carbon (Rep2) | 4.28 | 4.69 | % | 9 | | 25 |
| General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG430062-1 QC Sample: L1013129-01 Client ID: S-10G-G001-0-0 | | | | | | |
| Solids, Total | 95.6 | 95.1 | % | 1 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG432529-1 QC Sample: L1013129-01 Client ID: S-10G-G001-0-0 | | | | | | |
| Gravel (>2.00mm) | 5.3 | 7.60 | % | **36** | Q | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 9.0 | 9.80 | % | 9 | | 20 |
| Coarse Sand (0.50-1.00 mm) | 8.8 | 8.70 | % | 1 | | 20 |
| Medium Sand (0.25-0.50 mm) | 15.6 | 14.7 | % | 6 | | 20 |
| Fine Sand (0.125-0.25 mm) | 16.8 | 14.9 | % | 12 | | 20 |
| Very Fine Sand (0.063-0.125 mm) | 13.9 | 12.6 | % | 10 | | 20 |
| Silt - (1.95-62.5 um) | 21.5 | 19.5 | % | 10 | | 20 |
| Clay - (<1.95 um) | 5.9 | 5.90 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013129
**Project Number:** TO-0010-03 **Report Date:** 09/16/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG430056-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 100 | | 75-125 |
| Total Organic Carbon (Rep2) | 112 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1013129-01A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1013129-01B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1013129-01C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1013129-01D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1013129-02A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1013129-02B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1013129-02C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1013129-02D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1013129-02E | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1013129-03A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1013129-03C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1013129-03D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1013129-04A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1013129-04B | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1013129-04C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013129
**Report Date:** 09/16/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1013129-04D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1013129 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/16/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## LIMITATION OF LIABILITIES

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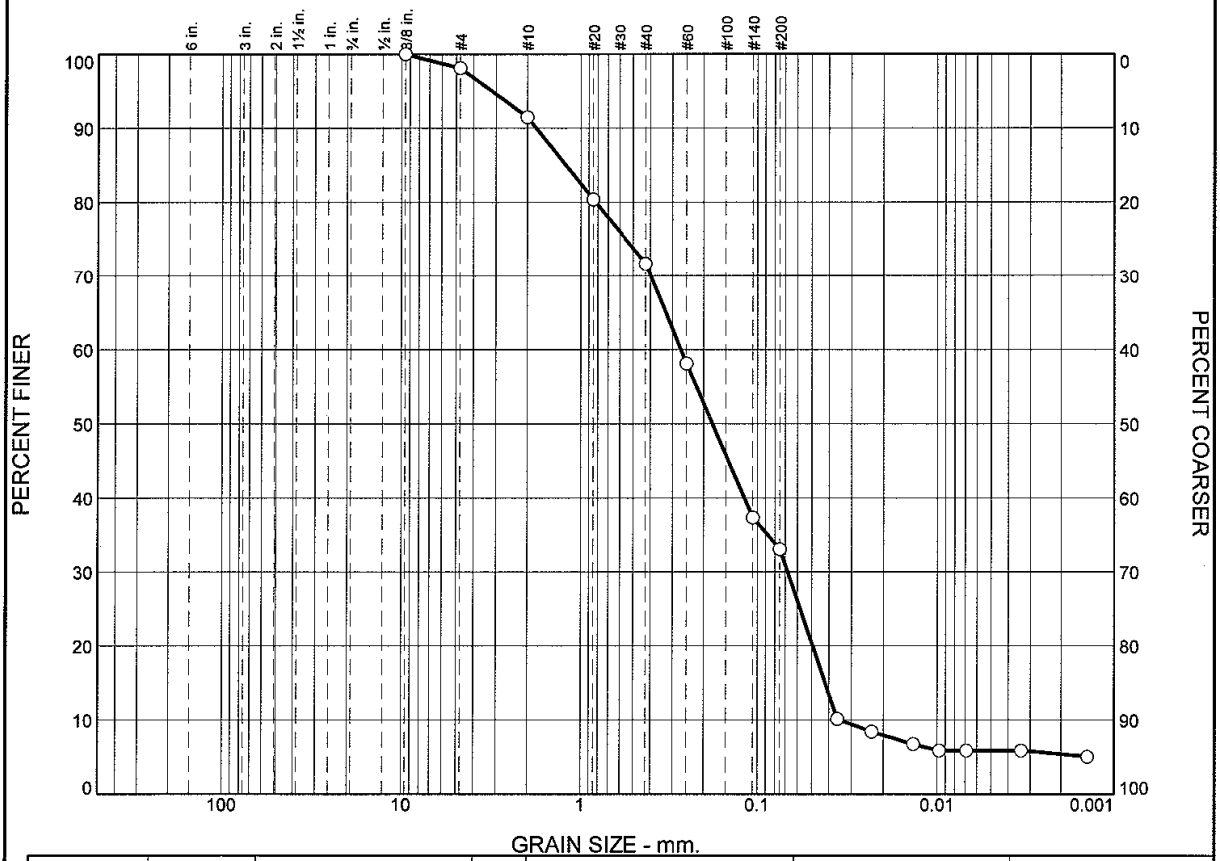
We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 3.2 | 5.3 | 9.0 | 8.8 | 15.6 | 16.8 | 13.9 | 17.9 | 2.4 | 1.2 | | 5.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.2133 | 0.2692 | 0.1788 | 0.0680 | 0.0421 | 0.0352 | 0.49 | 7.66 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013129 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10G-G001-0-0 **Sample Number:** L1013129-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1013129
**Location:** S-10G-G001-0-0
**Sample Number:** L1013129-01

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 53.85
Tare Wt. = 8.70
Minus #200 from wash = 28.1%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 62.81 | 0.00 | 0.375 | 566.10 | 566.10 | 100.0 | 0.0 |
| | | #4 | 528.72 | 527.53 | 98.1 | 1.9 |
| | | #10 | 497.81 | 493.65 | 91.5 | 8.5 |
| | | #20 | 430.31 | 423.34 | 80.4 | 19.6 |
| | | #40 | 380.38 | 374.91 | 71.7 | 28.3 |
| | | #60 | 369.24 | 360.72 | 58.1 | 41.9 |
| | | #140 | 350.38 | 337.34 | 37.4 | 62.6 |
| | | #200 | 342.38 | 339.69 | 33.1 | 66.9 |

### Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.1
Weight of hydrometer sample =62.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0360 | 10.1 | 89.9 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 8.4 | 91.6 |
| 15.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0136 | 6.7 | 93.3 |
| 30.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0097 | 5.9 | 94.1 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 5.9 | 94.1 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 5.9 | 94.1 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 5.0 | 95.0 |

### Fractional Components

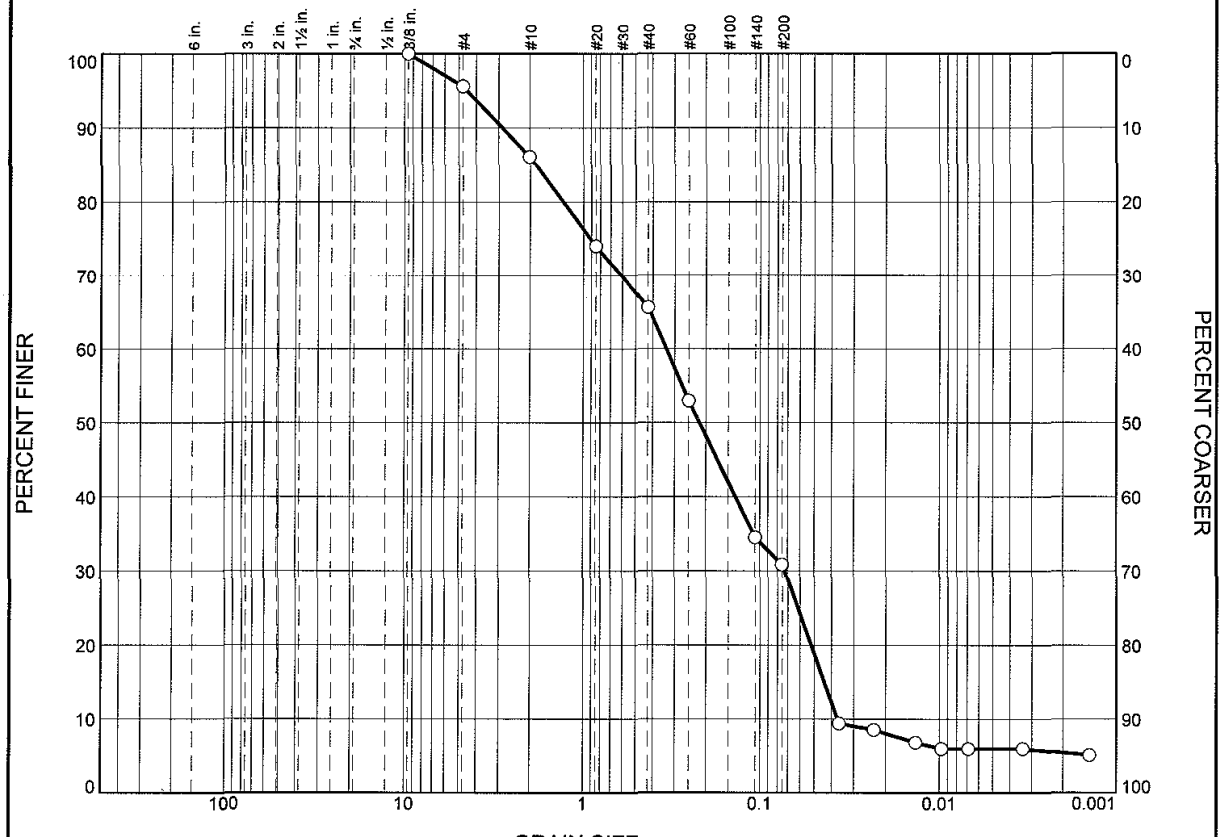
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 3.2 | 5.3 | 9.0 | 8.8 | 15.6 | 16.8 | 13.9 | 64.1 | 17.9 | 2.4 | 1.2 | | 21.5 | 5.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0352 | 0.0421 | 0.0494 | 0.0680 | 0.1788 | 0.2692 | 0.8243 | 1.2133 | 1.7840 | 3.1663 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.40 | 7.66 | 0.49 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 6.3 | 7.6 | 9.8 | 8.7 | 14.7 | 14.9 | 12.6 | 16.3 | 1.9 | 1.3 | | 5.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.8527 | 0.3358 | 0.2181 | 0.0729 | 0.0440 | 0.0371 | 0.43 | 9.05 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013129 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10G-G001-0-0 **Sample Number:** WG432529-1

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1013129
**Location:** S-10G-G001-0-0
**Sample Number:** WG432529-1

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 51.42
**Tare Wt. =** 8.95
**Minus #200 from wash =** 26.5%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 57.81 | 0.00 | 0.375 | 566.10 | 566.10 | 100.0 | 0.0 |
| | | #4 | 530.10 | 527.56 | 95.6 | 4.4 |
| | | #10 | 499.02 | 493.51 | 86.1 | 13.9 |
| | | #20 | 430.34 | 423.39 | 74.1 | 25.9 |
| | | #40 | 379.67 | 374.81 | 65.6 | 34.4 |
| | | #60 | 368.15 | 360.80 | 52.9 | 47.1 |
| | | #140 | 347.95 | 337.29 | 34.5 | 65.5 |
| | | #200 | 341.81 | 339.69 | 30.8 | 69.2 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #200
**Percent passing #200 based upon complete sample =** 30.8
**Weight of hydrometer sample =**57.81
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 9.4 | 90.6 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 8.5 | 91.5 |
| 15.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0136 | 6.8 | 93.2 |
| 30.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0097 | 5.9 | 94.1 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 5.9 | 94.1 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 5.9 | 94.1 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 5.1 | 94.9 |

### Fractional Components

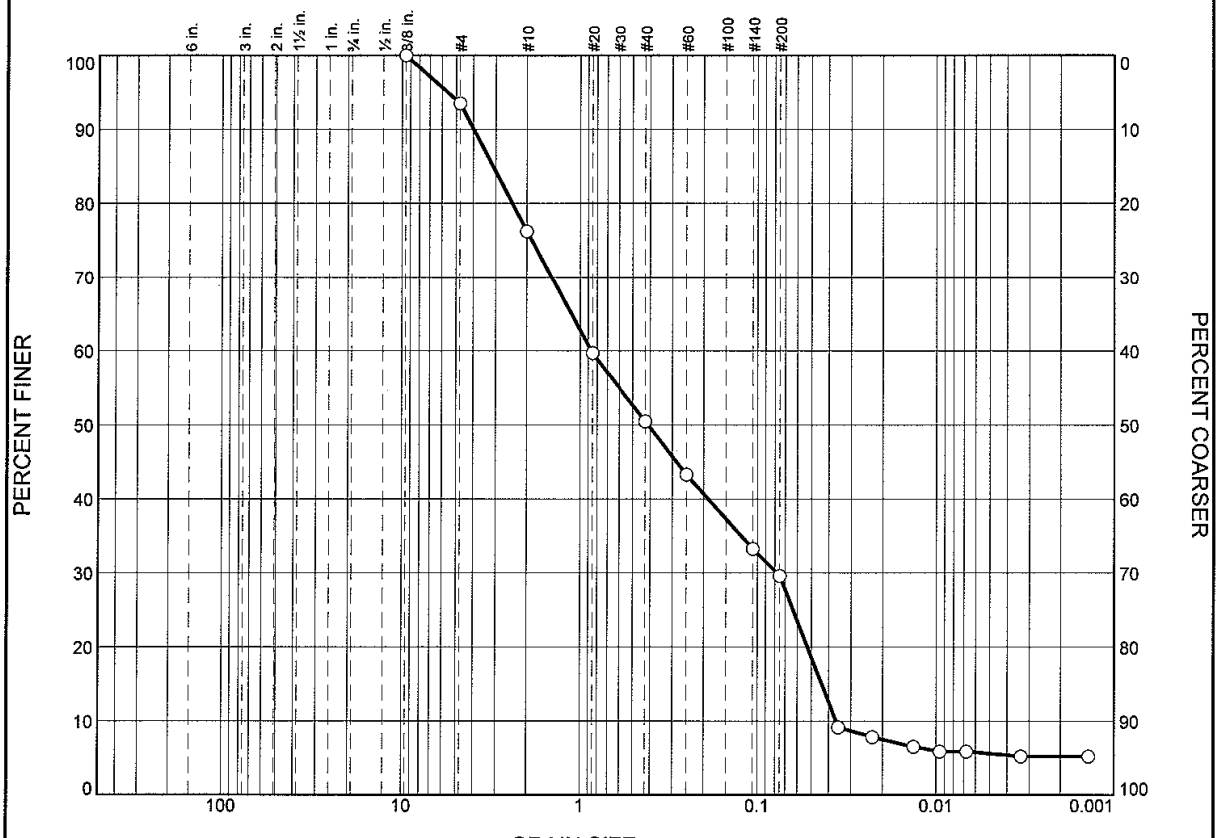
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 6.3 | 7.6 | 9.8 | 8.7 | 14.7 | 14.9 | 12.6 | 60.7 | 16.3 | 1.9 | 1.3 | | 19.5 | 5.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0371 | 0.0440 | 0.0520 | 0.0729 | 0.2181 | 0.3358 | 1.2979 | 1.8527 | 2.8558 | 4.4957 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.69 | 9.05 | 0.43 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 9.9 | 13.9 | 13.4 | 10.2 | 9.3 | 8.1 | 10.6 | 15.9 | 1.8 | 1.0 | 0.6 | 5.3 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 3.1075 | 0.8651 | 0.4100 | 0.0782 | 0.0438 | 0.0364 | 0.19 | 23.74 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013129 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10G-G002-0-0 **Sample Number:** L1013129-02

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1013129
**Location:** S-10G-G002-0-0
**Sample Number:** L1013129-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 61.73
Tare Wt. = 8.26
Minus #200 from wash = 26.2%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 72.41 | 0.00 | 0.375 | 566.10 | 566.10 | 100.0 | 0.0 |
| | | #4 | 532.85 | 528.14 | 93.5 | 6.5 |
| | | #10 | 505.90 | 493.36 | 76.2 | 23.8 |
| | | #20 | 429.97 | 418.01 | 59.7 | 40.3 |
| | | #40 | 383.04 | 376.40 | 50.5 | 49.5 |
| | | #60 | 371.18 | 365.95 | 43.3 | 56.7 |
| | | #140 | 350.31 | 343.04 | 33.2 | 66.8 |
| | | #200 | 340.11 | 337.45 | 29.6 | 70.4 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #200
**Percent passing #200 based upon complete sample =** 29.6
**Weight of hydrometer sample =**72.41
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0140 | 1.0139 | 0.0136 | 11.0 | 13.4 | 0.0353 | 9.1 | 90.9 |
| 5.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0228 | 7.8 | 92.2 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 6.5 | 93.5 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 5.9 | 94.1 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 5.9 | 94.1 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 5.2 | 94.8 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 5.2 | 94.8 |

### Fractional Components

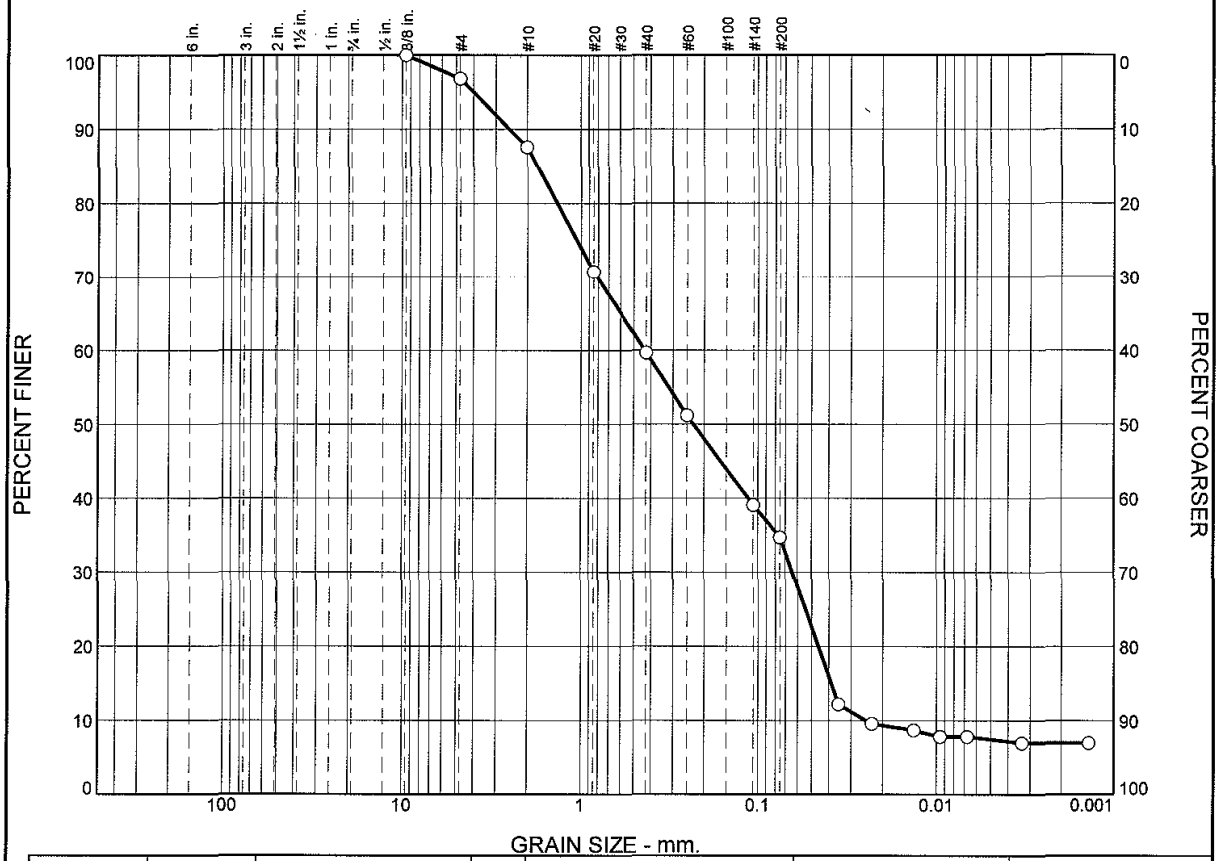
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 9.9 | 13.9 | 13.4 | 10.2 | 9.3 | 8.1 | 10.6 | 51.6 | 15.9 | 1.8 | 1.0 | 0.6 | 19.3 | 5.3 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0364 | 0.0438 | 0.0527 | 0.0782 | 0.4100 | 0.8651 | 2.4208 | 3.1075 | 3.9891 | 5.5794 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 2.23 | 23.74 | 0.19 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 5.0 | 7.4 | 13.7 | 11.7 | 11.0 | 9.8 | 12.2 | 17.8 | 2.5 | 1.1 | 0.7 | 7.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.7566 | 0.4350 | 0.2304 | 0.0641 | 0.0388 | 0.0247 | 0.38 | 17.58 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013129 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10G-G002-0-0REP **Sample Number:** L1013129-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1013129
**Location:** S-10G-G002-0-0REP
**Sample Number:** L1013129-03

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 52.75
**Tare Wt. =** 8.33
**Minus #200 from wash =** 30.4%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 63.81 | 0.00 | 0.375 | 566.10 | 566.10 | 100.0 | 0.0 |
| | | #4 | 529.55 | 527.55 | 96.9 | 3.1 |
| | | #10 | 499.50 | 493.56 | 87.6 | 12.4 |
| | | #20 | 434.15 | 423.39 | 70.7 | 29.3 |
| | | #40 | 381.83 | 374.77 | 59.6 | 40.4 |
| | | #60 | 366.16 | 360.75 | 51.2 | 48.8 |
| | | #140 | 345.02 | 337.29 | 39.0 | 61.0 |
| | | #200 | 342.47 | 339.70 | 34.7 | 65.3 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #200
**Percent passing #200 based upon complete sample =** 34.7
**Weight of hydrometer sample =**63.81
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0140 | 1.0139 | 0.0136 | 11.0 | 13.4 | 0.0353 | 12.2 | 87.8 |
| 5.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0230 | 9.5 | 90.5 |
| 15.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0134 | 8.7 | 91.3 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 7.8 | 92.2 |
| 60.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0068 | 7.8 | 92.2 |
| 250.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0033 | 6.9 | 93.1 |
| 1440.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0014 | 6.9 | 93.1 |

### Fractional Components

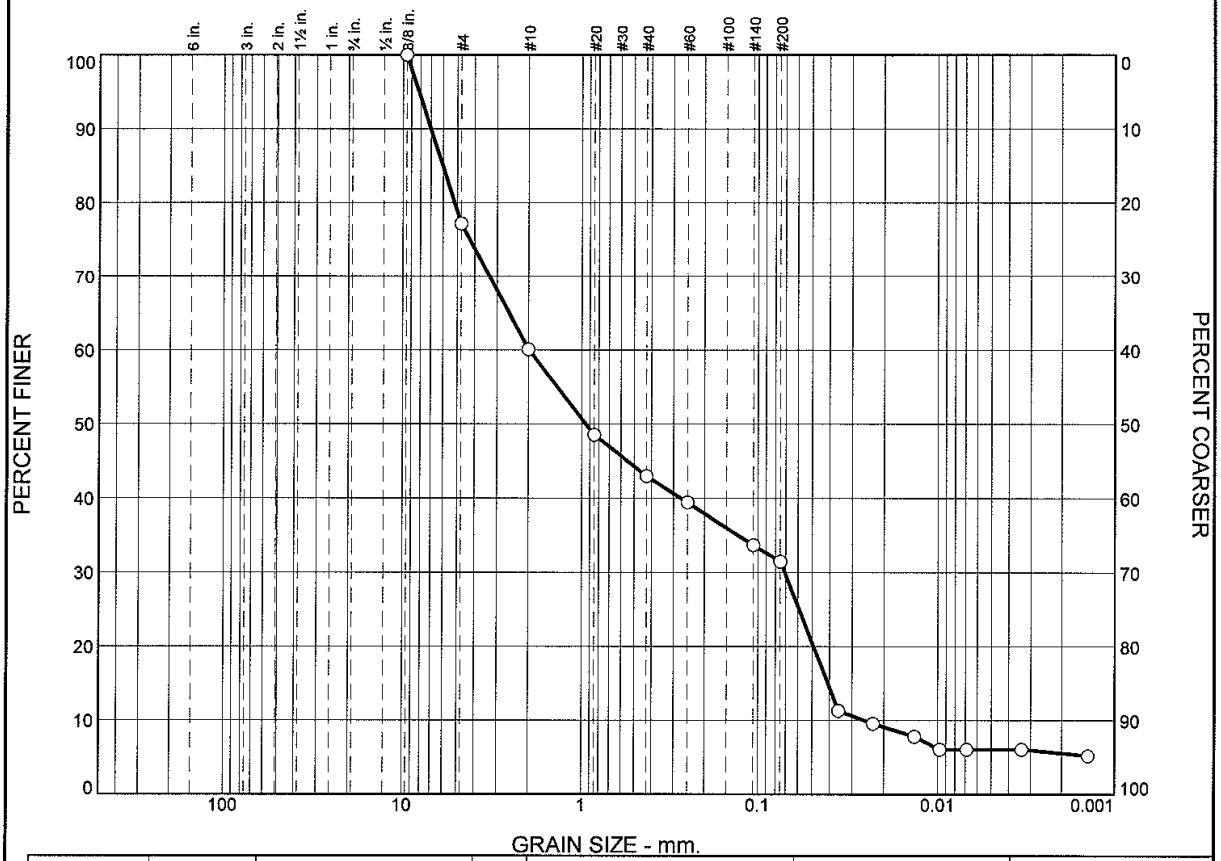
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 5.0 | 7.4 | 13.7 | 11.7 | 11.0 | 9.8 | 12.2 | 58.4 | 17.8 | 2.5 | 1.1 | 0.7 | 22.1 | 7.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0247 | 0.0388 | 0.0459 | 0.0641 | 0.2304 | 0.4350 | 1.3630 | 1.7566 | 2.5097 | 3.9940 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 1.73 | 17.58 | 0.38 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 26.2 | 13.7 | 9.4 | 6.5 | 4.8 | 4.6 | 8.3 | 15.8 | 2.4 | 2.3 | 0.0 | 6.0 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 6.0299 | 1.9898 | 0.9497 | 0.0711 | 0.0409 | 0.0259 | 0.10 | 76.86 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013129 **Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10G-G003-0-0 **Sample Number:** L1013129-04

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1013129
**Location:** S-10G-G003-0-0
**Sample Number:** L1013129-04

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 43.62
Tare Wt. = 7.90
Minus #200 from wash = 38.4%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 58.00 | 0.00 | 0.375 | 566.10 | 566.10 | 100.0 | 0.0 |
| | | #4 | 541.40 | 528.16 | 77.2 | 22.8 |
| | | #10 | 503.27 | 493.35 | 60.1 | 39.9 |
| | | #20 | 424.70 | 417.99 | 48.5 | 51.5 |
| | | #40 | 379.62 | 376.40 | 42.9 | 57.1 |
| | | #60 | 368.00 | 365.95 | 39.4 | 60.6 |
| | | #140 | 346.39 | 343.05 | 33.7 | 66.3 |
| | | #200 | 338.72 | 337.45 | 31.5 | 68.5 |

### Hydrometer Test Data

**Hydrometer test uses material passing #200**
**Percent passing #200 based upon complete sample =** 31.5
**Weight of hydrometer sample =**58.00
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0356 | 11.3 | 88.7 |
| 5.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0230 | 9.5 | 90.5 |
| 15.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0135 | 7.8 | 92.2 |
| 30.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0097 | 6.0 | 94.0 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 6.0 | 94.0 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 6.0 | 94.0 |
| 1440.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0014 | 5.2 | 94.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 26.2 | 13.7 | 9.4 | 6.5 | 4.8 | 4.6 | 8.3 | 33.6 | 15.8 | 2.4 | 2.3 | 0.0 | 20.5 | 6.0 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0259 | 0.0409 | 0.0492 | 0.0711 | 0.9497 | 1.9898 | 5.1775 | 6.0299 | 7.0225 | 8.1786 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 2.84 | 76.86 | 0.10 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1013129

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: NBH Envir. Monitoring

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:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.

(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data report & project specific EDDs

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB congeners | TOC | Grainsize (w/ hydrometer) | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|
| L1013129-1 | S-1Φ6-GΦΦ1-Φ-Φ | 8/25/10 | 10:45 | SE | KGM | X | | | > 50 ppm | 2 |
| | S-1Φ6-GΦΦ1-Φ-Φ | | 10:45 | | | | X | | > 50 ppm | 1 |
| | S-1Φ6-GΦΦ1-Φ-Φ | | 10:45 | | | | | X | > 50 ppm | 1 |
| -2 | S-1Φ6-GΦΦ2-Φ-Φ | | 12:00 | | | X | | | > 100 ppm | 2 |
| | S-1Φ6-GΦΦ2-Φ-Φ | | 12:00 | | | | X | | > 100 ppm | 1 |
| | S-1Φ6-GΦΦ2-Φ-Φ | | 12:00 | | | | | X | > 100 ppm | 1 |
| -3 | S-1Φ6-GΦΦ2-Φ-ΦREP | | 12:00 | | | X | | | > 100 ppm | 1 |
| | S-1Φ6-GΦΦ2-Φ-ΦREP | | 12:00 | | | | X | | > 100 ppm | 1 |
| | S-1Φ6-GΦΦ2-Φ-ΦREP | | 12:00 | | | | | X | > 100 ppm | 1 |
| -2 | S-1Φ6-GΦΦ2-Φ-ΦMS/MSD | | 12:00 | | | X | | | > 100 ppm | 1 |

Container Type: G G O

Preservative: A A A

**SAMPLE HANDLING**

*Filtration*

☐ Done

☐ Not needed

☐ Lab to do

*Preservation*

☐ Lab to do

(Please specify below)

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP *or* CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 8/25/10 1445 | [signature] | 8/25/10 1445 |
| [signature] | 8/25/10 1540 | [signature] | 8/25/10 15:40 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

Serial No:09161010:03

# CHAIN OF CUSTODY

PAGE 2 OF 2

Serial No:09161010:03

ALPHA ANALYTICAL LABS

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1013129

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: NBH Environ. Monitoring

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

Level III data report & project specific EDDs

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PLB congeners | TOC | Grain size (w/ hydrometer) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|
| L1013129-41 | S-106-G003-0-0 | 8/25/10 | 13:30 | SE | KGM | X | | | ~~>100 ppm~~ <50 ppm | 2 |
| | S-106-G003-0-0 | ↓ | 13:30 | ↓ | ↓ | | X | | ~~>100 ppm~~ <50 ppm | 1 |
| | S-106-G003-0-0 | ↓ | 13:30 | ↓ | ↓ | | | X | ~~>100 ppm~~ <50 ppm | 1 |

SAMPLE HANDLING

*Filtration*
☐ Done
☐ Not needed
☐ Lab to do

*Preservation*
☐ Lab to do
(Please specify below)

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

| Container Type | G | G | O |
|---|---|---|---|
| Preservative | A | A | A |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 8/25/10 1445 | [signature] | 8/25/10 1445 |
| [signature] | 8/25/10 1540 | [signature] | 8/25/10 15:40 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1013379 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 09/20/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1013379-01 | S-10G-T001-0-0 | NEW BEDFORD, MA | 08/26/10 13:30 |
| L1013379-02 | S-10G-T002-0-0 | NEW BEDFORD, MA | 08/26/10 14:00 |
| L1013379-03 | S-10G-T003-0-0 | NEW BEDFORD, MA | 08/26/10 14:30 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on August 28, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on September 3, 2010 until September 8, 2010 when they were removed to extract samples for PCB Congener analysis. Samples L1013379-01 and L1013379-03 had insufficient sample volume to perform grain size analysis. These samples were analyzed for PCB Congeners and TOC only.

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 | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

**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.
L1013379-01 - 03 were analyzed at dilution due to the high concentrations of target compounds in the sample.

The WG431395-3 LCS/LCSD RPD(s), associated with L1013379-01 through -03 are above the acceptance criteria for Cl2-BZ#8 (33%); however, the individual LCS/LCSD recoveries are within method limits.

.

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: 09/20/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-01 | Date Collected: | 08/26/10 13:30 |
| Client ID: | S-10G-T001-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 08:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#118 | 1910 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#138 | 1970 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#180 | 377 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#170 | 295 | | ug/kg | 140 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 140 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 140 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 140 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 86 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-01 | Date Collected: | 08/26/10 13:30 |
| Client ID: | S-10G-T001-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 08:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#101 | 2580 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#153 | 2470 | | ug/kg | 140 | -- | 100 |
| Cl5-BZ#105 | 329 | | ug/kg | 140 | -- | 100 |
| Cl7-BZ#187 | 633 | | ug/kg | 140 | -- | 100 |
| Cl6-BZ#128 | 313 | | ug/kg | 140 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 104 | 30-150 |
| BZ 198 | 86 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013379-01 | D | Date Collected: | 08/26/10 13:30 |
| Client ID: | S-10G-T001-0-0 | | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 01:52 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 10900 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#52 | 22800 | | ug/kg | 1400 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013379-01 | D | Date Collected: | 08/26/10 13:30 |
| Client ID: | S-10G-T001-0-0 | | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 01:52 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4060 | | ug/kg | 1400 | -- | 1000 |
| Cl3-BZ#28 | 15600 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#44 | 5780 | | ug/kg | 1400 | -- | 1000 |
| Cl4-BZ#66 | 5670 | | ug/kg | 1400 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-02 | Date Collected: | 08/26/10 14:00 |
| Client ID: | S-10G-T002-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 08:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 85% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#118 | 2780 | | ug/kg | 154 | -- | 100 |
| Cl6-BZ#138 | 2390 | | ug/kg | 154 | -- | 100 |
| Cl7-BZ#187 | 718 | | ug/kg | 154 | -- | 100 |
| Cl7-BZ#180 | 542 | | ug/kg | 154 | -- | 100 |
| Cl7-BZ#170 | 402 | | ug/kg | 154 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 154 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 154 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 154 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 69 | | 30-150 |
| BZ 198 | 58 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-02 | Date Collected: | 08/26/10 14:00 |
| Client ID: | S-10G-T002-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 08:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 85% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl5-BZ#105 | 395 | | ug/kg | 154 | -- | 100 |
| Cl6-BZ#128 | 328 | | ug/kg | 154 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 69 | 30-150 |
| BZ 198 | 58 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013379-02 | D | Date Collected: | 08/26/10 14:00 |
| Client ID: | S-10G-T002-0-0 | | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 02:33 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 85% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7180 | | ug/kg | 1540 | -- | 1000 |
| Cl3-BZ#18 | 18400 | | ug/kg | 1540 | -- | 1000 |
| Cl4-BZ#52 | 26200 | | ug/kg | 1540 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1013379-02 | D | Date Collected: | 08/26/10 14:00 |
| Client ID: | S-10G-T002-0-0 | | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 02:33 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 85% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 23400 | | ug/kg | 1540 | -- | 1000 |
| Cl4-BZ#44 | 7530 | | ug/kg | 1540 | -- | 1000 |
| Cl4-BZ#66 | 6910 | | ug/kg | 1540 | -- | 1000 |
| Cl5-BZ#101 | 5990 | | ug/kg | 1540 | -- | 1000 |
| Cl6-BZ#153 | 5020 | | ug/kg | 1540 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-03 | Date Collected: | 08/26/10 14:30 |
| Client ID: | S-10G-T003-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 09:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 317 | | ug/kg | 136 | -- | 100 |
| Cl3-BZ#18 | 735 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#52 | 1910 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#118 | 1130 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#138 | 831 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#128 | 218 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#180 | 171 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 136 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 136 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 136 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 136 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 80 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1013379-03 | Date Collected: | 08/26/10 14:30 |
| Client ID: | S-10G-T003-0-0 | Date Received: | 08/28/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3570 |
| Analytical Method: | 1,8082 | Extraction Date: | 09/08/10 00:00 |
| Analytical Date: | 09/11/10 09:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 09/10/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 1600 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#44 | 667 | | ug/kg | 136 | -- | 100 |
| Cl4-BZ#66 | 1100 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#101 | 1010 | | ug/kg | 136 | -- | 100 |
| Cl6-BZ#153 | 872 | | ug/kg | 136 | -- | 100 |
| Cl5-BZ#105 | 269 | | ug/kg | 136 | -- | 100 |
| Cl7-BZ#187 | 166 | | ug/kg | 136 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 80 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379
**Project Number:** TO-0010-03 **Report Date:** 09/20/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 09/10/10 19:43
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/08/10 00:00
Cleanup Method1: EPA 3630
Cleanup Date1: 09/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG431395-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 09/10/10 19:43
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 09/08/10 00:00
Cleanup Method1: EPA 3630
Cleanup Date1: 09/10/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG431395-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1013379
**Report Date:** 09/20/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG431395-2 WG431395-3 | | | | | | | | |
| Cl2-BZ#8 | 59 | | 82 | | 40-140 | **33** | Q | 30 |
| Cl3-BZ#18 | 64 | | 83 | | 40-140 | 26 | | 30 |
| Cl3-BZ#28 | 70 | | 91 | | 40-140 | 26 | | 30 |
| Cl4-BZ#52 | 69 | | 88 | | 40-140 | 24 | | 30 |
| Cl4-BZ#44 | 77 | | 89 | | 40-140 | 14 | | 30 |
| Cl4-BZ#66 | 70 | | 94 | | 40-140 | 29 | | 30 |
| Cl5-BZ#101 | 73 | | 91 | | 40-140 | 22 | | 30 |
| Cl5-BZ#118 | 78 | | 95 | | 40-140 | 20 | | 30 |
| Cl5-BZ#105 | 75 | | 88 | | 40-140 | 16 | | 30 |
| Cl6-BZ#138 | 79 | | 94 | | 40-140 | 17 | | 30 |
| Cl7-BZ#187 | 78 | | 94 | | 40-140 | 19 | | 30 |
| Cl6-BZ#128 | 80 | | 95 | | 40-140 | 17 | | 30 |
| Cl7-BZ#180 | 80 | | 92 | | 40-140 | 14 | | 30 |
| Cl7-BZ#170 | 81 | | 98 | | 40-140 | 19 | | 30 |
| Cl8-BZ#195 | 78 | | 98 | | 40-140 | 23 | | 30 |
| Cl9-BZ#206 | 89 | | 109 | | 40-140 | 20 | | 30 |
| Cl10-BZ#209 | 82 | | 99 | | 40-140 | 19 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG431395-2 WG431395-3 | | | | | | | | |
| DBOB | 78 | | 88 | | 30-150 | | | |
| BZ 198 | 91 | | 98 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG431395-2 WG431395-3 | | | | | | | | |
| Cl6-BZ#153 | 81 | | 95 | | 40-140 | 16 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 78 | | 88 | | 30-150 |
| BZ 198 | 91 | | 98 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

## SAMPLE RESULTS

Lab ID: L1013379-01
Client ID: S-10G-T001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/26/10 13:30
Date Received: 08/28/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.01 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 5.00 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.0 | | % | 0.100 | -- | 1 | - | 09/01/10 15:50 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 24.7 | | % | 0.100 | NA | 1 | - | 08/31/10 17:57 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

## SAMPLE RESULTS

Lab ID: L1013379-02
Client ID: S-10G-T002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/26/10 14:00
Date Received: 08/28/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.95 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 4.00 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.500 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 3.80 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 3.70 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 3.10 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.70 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 15.4 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 52.5 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 18.2 | | % | 0.100 | NA | 1 | - | 09/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 84.9 | | % | 0.100 | -- | 1 | - | 09/01/10 15:50 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.6 | | % | 0.100 | NA | 1 | - | 08/31/10 17:57 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

## SAMPLE RESULTS

Lab ID: L1013379-03
Client ID: S-10G-T003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 08/26/10 14:30
Date Received: 08/28/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.17 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | 4.11 | | % | 0.010 | -- | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 96.1 | | % | 0.100 | -- | 1 | - | 09/01/10 15:50 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 35.3 | | % | 0.100 | NA | 1 | - | 08/31/10 17:57 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379

**Project Number:** TO-0010-03 **Report Date:** 09/20/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-03 Batch: WG430978-1 | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | 1 | - | 09/03/10 08:00 | 1,9060 | ES |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | 1 | - | 09/03/10 08:00 | 1,9060 | ES |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG430771-1 QC Sample: L1013379-02 Client ID: S-10G-T002-0-0 | | | | | | |
| Solids, Total | 84.9 | 85.3 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1013379
**Project Number:** TO-0010-03 **Report Date:** 09/20/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG430978-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 116 | | 75-125 |
| Total Organic Carbon (Rep2) | 100 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1013379
**Report Date:** 09/20/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1013379-01A | Glass 500ml unpreserved | A | N/A | 4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1013379-02A | Glass 500ml unpreserved | A | N/A | 4 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |
| L1013379-03A | Glass 250ml unpreserved | A | N/A | 4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1013379 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 09/20/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

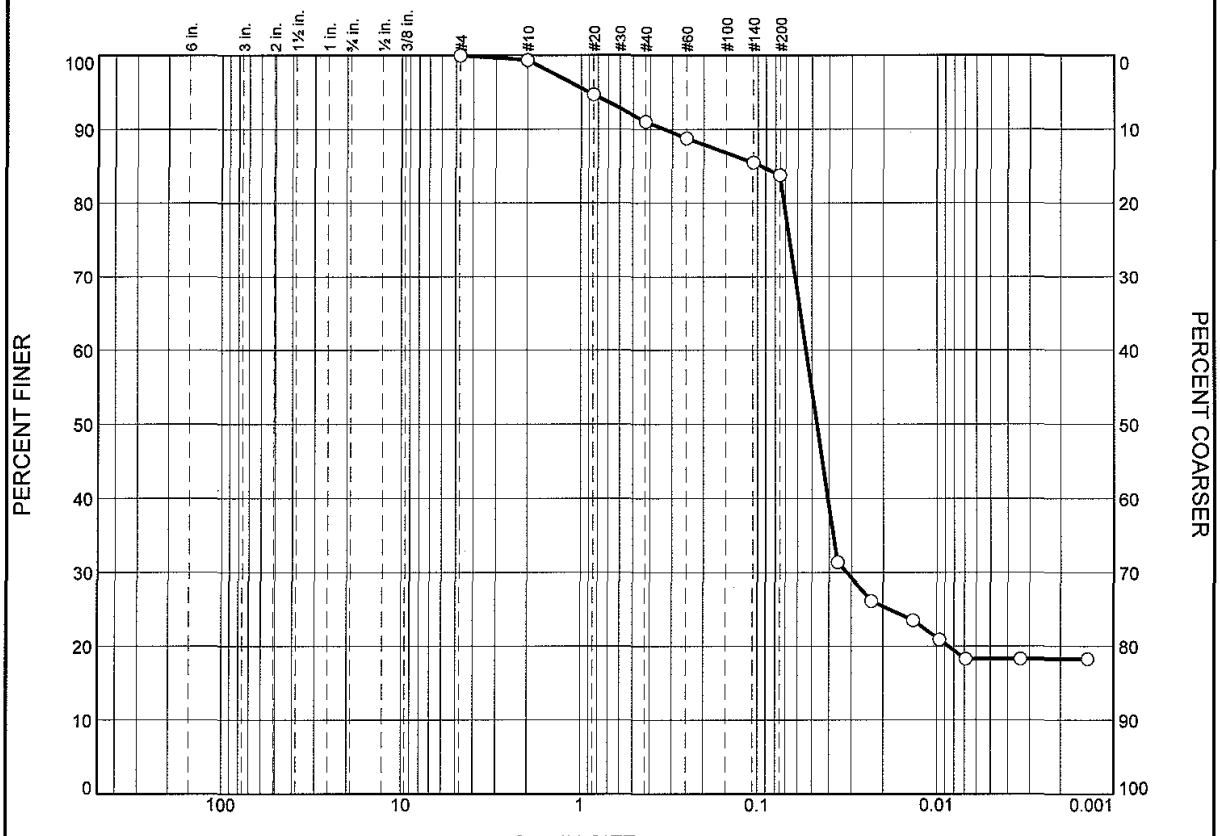

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 0.5 | 3.8 | 3.7 | 3.1 | 2.7 | 15.4 | 41.1 | 5.4 | 5.0 | 1.0 | 18.2 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0966 | 0.0538 | 0.0467 | 0.0321 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1013379 **Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring

○ **Source of Sample:** S-10G-T002-0-0 **Sample Number:** L1013379-02

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

9/20/2010

**Client:** Woods Hole Group
**Project:** NBH Environmental Monitoring
**Project Number:** L1013379
**Location:** S-10G-T002-0-0
**Sample Number:** L1013379-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 16.82
**Tare Wt. =** 7.63
**Minus #200 from wash =** 82.0%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.16 | 0.00 | #4 | 528.06 | 528.05 | 100.0 | 0.0 |
| | | #10 | 493.67 | 493.36 | 99.4 | 0.6 |
| | | #20 | 420.32 | 417.93 | 94.7 | 5.3 |
| | | #40 | 378.37 | 376.49 | 91.0 | 9.0 |
| | | #60 | 367.03 | 365.88 | 88.8 | 11.2 |
| | | #140 | 344.70 | 343.00 | 85.5 | 14.5 |
| | | #200 | 338.29 | 337.42 | 83.8 | 16.2 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #200
**Percent passing #200 based upon complete sample =** 83.8
**Weight of hydrometer sample =**51.16
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0120 | 1.0119 | 0.0136 | 9.0 | 13.9 | 0.0360 | 31.4 | 68.6 |
| 5.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0232 | 26.1 | 73.9 |
| 15.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0135 | 23.5 | 76.5 |
| 30.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0096 | 20.9 | 79.1 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 18.2 | 81.8 |
| 250.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0034 | 18.2 | 81.8 |
| 1440.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0014 | 18.2 | 81.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 0.5 | 3.8 | 3.7 | 3.1 | 2.7 | 15.4 | 28.7 | 41.1 | 5.4 | 5.0 | 1.0 | 52.5 | 18.2 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0086 | 0.0321 | 0.0467 | 0.0538 | 0.0712 | 0.0966 | 0.3334 | 0.8975 |

| Fineness Modulus |
|---|
| 0.35 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: L1013379

## CHAIN OF CUSTODY DOCUMENTATION

Serial No:09201009-56

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NBH Environ. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Drive | Project Number: T0-0017-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: DWALSH@WHGRP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| L1013379-1 | S-10G-T001-0-0 | 8/26/10 | 1330 | JL | C | 16 oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -2 | S-10G-T002-0-0 | 8/26/10 | 1400 | JL | C | 16 oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -3 | S-10G-T003-0-0 | 8/26/10 | 1430 | JL | C | 9 oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |

| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 8/27/10 Time: 1335 | Received By: [signature] | Date: 8/27/10 Time: 1335 |
| Relinquished By: [signature] | Date: 8/27/10 Time: 1715 | Received at Lab By: [signature] | Date: 8/27/10 Time: 1715 |

Comments: To Alpha

Rel: 8/27/10 - Thel must Fedex [signature] 8-27 1812
[signature] 8-27 1900

COC Doc No: 3898

Sample Delivery Group No: Page of

Rec: [signature] 8/28/10 9:30

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1015314 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 10/21/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1015314-01 | S-10S-G001-0-0 | NEW BEDFORD, MA | 09/30/10 12:05 |
| L1015314-02 | S-10S-G002-0-0 | NEW BEDFORD, MA | 09/30/10 11:15 |
| L1015314-03 | S-10S-G002-0-0 REP | NEW BEDFORD, MA | 09/30/10 11:15 |
| L1015314-04 | S-10S-G003-0-0 | NEW BEDFORD, MA | 09/30/10 10:06 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

## 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.

---

Sample Receipt

Sediment samples were received intact on September 30, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on October 4 until October 7, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1015314-01 through 04 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1015314-01 through 04 were re-analyzed on further dilution in order to quantitate the samples within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compounds that exceeded the calibration range.

The WG436233-4/-5 MS/MSD recoveries, performed on L1015314-02, were above the acceptance criteria for Cl3-BZ#28 (226%)/(159%), Cl3-BZ#18 (829%)/(199%), Cl4-BZ#52 (446%)/(261%), Cl4-BZ#66 (282%)/(221%), Cl3-BZ#28 (242%)/(148%), Cl4-BZ#44 (MS 145%); these results are due to the high concentrations detected in the native sample. In addition, the %RPD was above the criteria for Cl3-BZ#18 (33%).

Grain Size

The WG436945-1 Laboratory Duplicate RPD, performed on L1015314-02, is outside the acceptance criteria for % Very Coarse Sand (80%), % Coarse Sand (42%), % Medium Sand (25%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: 10/21/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-01 | Date Collected: | 09/30/10 12:05 |
| Client ID: | S-10S-G001-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 18:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2170 | | ug/kg | 347 | -- | 100 |
| Cl3-BZ#18 | 3860 | | ug/kg | 347 | -- | 100 |
| Cl4-BZ#52 | 9810 | E | ug/kg | 347 | -- | 100 |
| Cl4-BZ#66 | 2980 | | ug/kg | 347 | -- | 100 |
| Cl5-BZ#118 | 1440 | | ug/kg | 347 | -- | 100 |
| Cl6-BZ#138 | 1340 | | ug/kg | 347 | -- | 100 |
| Cl6-BZ#128 | 355 | | ug/kg | 347 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 347 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 347 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 347 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 347 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 347 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 121 | | 30-150 |
| BZ 198 | 110 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-01 | Date Collected: | 09/30/10 12:05 |
| Client ID: | S-10S-G001-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 18:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6730 | | ug/kg | 347 | -- | 100 |
| Cl4-BZ#44 | 2650 | | ug/kg | 347 | -- | 100 |
| Cl5-BZ#101 | 1950 | | ug/kg | 347 | -- | 100 |
| Cl6-BZ#153 | 1830 | | ug/kg | 347 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 347 | -- | 100 |
| Cl7-BZ#187 | 444 | | ug/kg | 347 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 121 | | 30-150 |
| BZ 198 | 110 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015314-01 | D | Date Collected: | 09/30/10 12:05 |
| Client ID: | S-10S-G001-0-0 | | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 13:43 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 15900 | | ug/kg | 3470 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-02 | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 19:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 7260 | E | ug/kg | 356 | -- | 100 |
| Cl3-BZ#18 | 17700 | E | ug/kg | 356 | -- | 100 |
| Cl4-BZ#52 | 27200 | E | ug/kg | 356 | -- | 100 |
| Cl4-BZ#66 | 7660 | E | ug/kg | 356 | -- | 100 |
| Cl5-BZ#118 | 4020 | | ug/kg | 356 | -- | 100 |
| Cl6-BZ#138 | 3350 | | ug/kg | 356 | -- | 100 |
| Cl7-BZ#187 | 1060 | | ug/kg | 356 | -- | 100 |
| Cl6-BZ#128 | 710 | | ug/kg | 356 | -- | 100 |
| Cl7-BZ#180 | 888 | | ug/kg | 356 | -- | 100 |
| Cl7-BZ#170 | 642 | | ug/kg | 356 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 356 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 356 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 356 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 99 | | 30-150 |
| BZ 198 | 92 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-02 | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 19:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 92% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 19200 | E | ug/kg | 356 | -- | 100 |
| Cl4-BZ#44 | 6950 | | ug/kg | 356 | -- | 100 |
| Cl5-BZ#101 | 5670 | | ug/kg | 356 | -- | 100 |
| Cl6-BZ#153 | 5140 | | ug/kg | 356 | -- | 100 |
| Cl5-BZ#105 | 624 | | ug/kg | 356 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 99 | 30-150 |
| BZ 198 | 92 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015314-02 | D | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 | | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 14:24 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 92% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 12000 | | ug/kg | 3560 | -- | 1000 |
| Cl3-BZ#18 | 24600 | | ug/kg | 3560 | -- | 1000 |
| Cl4-BZ#52 | 46000 | | ug/kg | 3560 | -- | 1000 |
| Cl4-BZ#66 | 12400 | | ug/kg | 3560 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015314-02 | D | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 | | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 14:24 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 92% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 38100 | | ug/kg | 3560 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-03 | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 REP | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 21:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 11500 | E | ug/kg | 358 | -- | 100 |
| Cl3-BZ#18 | 27200 | E | ug/kg | 358 | -- | 100 |
| Cl4-BZ#52 | 36300 | E | ug/kg | 358 | -- | 100 |
| Cl4-BZ#44 | 9680 | E | ug/kg | 358 | -- | 100 |
| Cl4-BZ#66 | 10300 | E | ug/kg | 358 | -- | 100 |
| Cl5-BZ#118 | 5050 | | ug/kg | 358 | -- | 100 |
| Cl6-BZ#138 | 4130 | | ug/kg | 358 | -- | 100 |
| Cl7-BZ#187 | 1290 | | ug/kg | 358 | -- | 100 |
| Cl6-BZ#128 | 860 | | ug/kg | 358 | -- | 100 |
| Cl7-BZ#180 | 1070 | | ug/kg | 358 | -- | 100 |
| Cl7-BZ#170 | 776 | | ug/kg | 358 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 358 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 358 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 358 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 109 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-03 | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 REP | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 21:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 23300 | E | ug/kg | 358 | -- | 100 |
| Cl5-BZ#101 | 6850 | | ug/kg | 358 | -- | 100 |
| Cl6-BZ#153 | 6010 | | ug/kg | 358 | -- | 100 |
| Cl5-BZ#105 | 744 | | ug/kg | 358 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 104 | 30-150 |
| BZ 198 | 109 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-03 D | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 REP | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 16:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 18300 | | ug/kg | 3580 | -- | 1000 |
| Cl3-BZ#18 | 43500 | | ug/kg | 3580 | -- | 1000 |
| Cl4-BZ#52 | 58600 | | ug/kg | 3580 | -- | 1000 |
| Cl4-BZ#66 | 16100 | | ug/kg | 3580 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-03 D | Date Collected: | 09/30/10 11:15 |
| Client ID: | S-10S-G002-0-0 REP | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 16:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 91% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 50100 | | ug/kg | 3580 | -- | 1000 |
| Cl4-BZ#44 | 17600 | | ug/kg | 3580 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-04 | Date Collected: | 09/30/10 10:06 |
| Client ID: | S-10S-G003-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 21:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 462 | | ug/kg | 340 | -- | 100 |
| Cl3-BZ#18 | 1170 | | ug/kg | 340 | -- | 100 |
| Cl4-BZ#52 | 3020 | | ug/kg | 340 | -- | 100 |
| Cl4-BZ#66 | 2360 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#118 | 1920 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#138 | 1290 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#128 | 352 | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 340 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 340 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 340 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 340 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 125 | | 30-150 |
| BZ 198 | 111 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015314-04 | Date Collected: | 09/30/10 10:06 |
| Client ID: | S-10S-G003-0-0 | Date Received: | 09/30/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/07/10 16:36 |
| Analytical Date: | 10/19/10 21:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/15/10 |
| Percent Solids: | 96% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3100 | | ug/kg | 340 | -- | 100 |
| Cl4-BZ#44 | 1280 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#101 | 1870 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#153 | 1580 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#105 | 500 | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 340 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 125 | | 30-150 |
| BZ 198 | 111 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314
**Project Number:** TO-0010-03 **Report Date:** 10/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/19/10 10:59
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 10/07/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 10/15/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG436233-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 87 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/19/10 10:59
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 10/07/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 10/15/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG436233-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 81 | | 30-150 |
| BZ 198 | 87 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015314
**Report Date:** 10/21/10

| 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): 01-04 QC Batch ID: WG436233-4 WG436233-5 QC Sample: L1015314-02 Client ID: S-10S-G002-0-0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 12000 | 1770 | 16000 | **226** | Q | 14800 | **159** | Q | 40-140 | 8 | | 30 |
| Cl3-BZ#18 | 24600 | 1770 | 39300 | **829** | Q | 28100 | **199** | Q | 40-140 | **33** | Q | 30 |
| Cl4-BZ#52 | 46000 | 1770 | 53900 | **446** | Q | 50600 | **261** | Q | 40-140 | 6 | | 30 |
| Cl4-BZ#66 | 12400 | 1770 | 17400 | **282** | Q | 16300 | **221** | Q | 40-140 | 7 | | 30 |
| Cl5-BZ#118 | 4020 | 1770 | 6340 | 131 | | 6230 | 125 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 3350 | 1770 | 5380 | 114 | | 5340 | 113 | | 40-140 | 1 | | 30 |
| Cl7-BZ#187 | 1060 | 1770 | 2730 | 94 | | 2700 | 93 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 710 | 1770 | 2500 | 101 | | 2470 | 100 | | 40-140 | 1 | | 30 |
| Cl7-BZ#180 | 888 | 1770 | 2620 | 98 | | 2600 | 97 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 642 | 1770 | 2360 | 97 | | 2340 | 96 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | ND | 1770 | 1900 | 107 | | 1880 | 107 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | ND | 1770 | 2080 | 117 | | 2020 | 115 | | 40-140 | 3 | | 30 |
| Cl10-BZ#209 | ND | 1770 | 1730 | 98 | | 1700 | 97 | | 40-140 | 2 | | 30 |
| Cl3-BZ#28 | 38100 | 1770 | 42400 | **242** | Q | 40700 | **148** | Q | 40-140 | 4 | | 30 |
| Cl4-BZ#44 | 6950 | 1770 | 9520 | **145** | Q | 9130 | 124 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 5670 | 1770 | 8040 | 134 | | 7770 | 119 | | 40-140 | 3 | | 30 |
| Cl6-BZ#153 | 5140 | 1770 | 7300 | 122 | | 7050 | 108 | | 40-140 | 3 | | 30 |
| Cl5-BZ#105 | 624 | 1770 | 2310 | 95 | | 2230 | 91 | | 40-140 | 4 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1015314
**Report Date:** 10/21/10

| 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): 01-04 QC Batch ID: WG436233-4 WG436233-5 QC Sample: L1015314-02 Client ID: S-10S-G002-0-0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 103 | | 101 | | 30-150 |
| DBOB | 96 | | 110 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015314

**Report Date:** 10/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG436233-2 WG436233-3 | | | | | | | | |
| Cl2-BZ#8 | 66 | | 57 | | 40-140 | 15 | | 30 |
| Cl3-BZ#18 | 65 | | 57 | | 40-140 | 13 | | 30 |
| Cl3-BZ#28 | 71 | | 64 | | 40-140 | 10 | | 30 |
| Cl4-BZ#52 | 71 | | 67 | | 40-140 | 6 | | 30 |
| Cl4-BZ#44 | 70 | | 64 | | 40-140 | 9 | | 30 |
| Cl4-BZ#66 | 76 | | 69 | | 40-140 | 10 | | 30 |
| Cl5-BZ#101 | 74 | | 67 | | 40-140 | 10 | | 30 |
| Cl5-BZ#118 | 78 | | 72 | | 40-140 | 8 | | 30 |
| Cl5-BZ#105 | 73 | | 68 | | 40-140 | 7 | | 30 |
| Cl6-BZ#138 | 77 | | 71 | | 40-140 | 8 | | 30 |
| Cl7-BZ#187 | 75 | | 65 | | 40-140 | 14 | | 30 |
| Cl6-BZ#128 | 81 | | 73 | | 40-140 | 10 | | 30 |
| Cl7-BZ#180 | 79 | | 74 | | 40-140 | 7 | | 30 |
| Cl7-BZ#170 | 78 | | 73 | | 40-140 | 7 | | 30 |
| Cl8-BZ#195 | 76 | | 70 | | 40-140 | 8 | | 30 |
| Cl9-BZ#206 | 84 | | 79 | | 40-140 | 6 | | 30 |
| Cl10-BZ#209 | 77 | | 73 | | 40-140 | 5 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG436233-2 | WG436233-3 | | | |
| DBOB | 72 | | 69 | | 30-150 | | | |
| BZ 198 | 81 | | 78 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG436233-2 | WG436233-3 | | | |
| Cl6-BZ#153 | 76 | | 75 | | 40-140 | 1 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 72 | | 69 | | 30-150 |
| BZ 198 | 81 | | 78 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

## SAMPLE RESULTS

Lab ID: L1015314-01
Client ID: S-10S-G001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/30/10 12:05
Date Received: 09/30/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.70 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.00 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.200 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.900 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.40 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 18.0 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 13.9 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 8.80 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 48.5 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 7.30 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.1 | | % | 0.100 | -- | 1 | - | 10/08/10 10:40 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 29.8 | | % | 0.100 | NA | 1 | - | 10/01/10 09:00 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

## SAMPLE RESULTS

Lab ID: L1015314-02
Client ID: S-10S-G002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/30/10 11:15
Date Received: 09/30/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.70 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.86 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.700 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 3.20 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.90 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.10 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 7.10 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 69.6 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 10.4 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 92.3 | | % | 0.100 | -- | 1 | - | 10/08/10 10:40 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 29.2 | | % | 0.100 | NA | 1 | - | 10/01/10 09:00 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

## SAMPLE RESULTS

Lab ID: L1015314-03
Client ID: S-10S-G002-0-0 REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/30/10 11:15
Date Received: 09/30/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.02 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.06 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.300 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.600 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.00 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 18.1 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 13.7 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 9.00 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 47.1 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 9.10 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 91.3 | | % | 0.100 | -- | 1 | - | 10/08/10 10:40 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 29.9 | | % | 0.100 | NA | 1 | - | 10/01/10 09:00 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

## SAMPLE RESULTS

Lab ID: L1015314-04
Client ID: S-10S-G003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/30/10 10:06
Date Received: 09/30/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.29 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 3.25 | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 1.50 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 3.90 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 3.70 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.10 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 6.90 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 8.70 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 60.2 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 9.00 | | % | 0.100 | NA | 1 | - | 10/12/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 95.7 | | % | 0.100 | -- | 1 | - | 10/08/10 10:40 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.0 | | % | 0.100 | NA | 1 | - | 10/01/10 09:00 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314

**Project Number:** TO-0010-03 **Report Date:** 10/21/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG436946-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 10/12/10 07:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG436946-4 QC Sample: L1015314-02 Client ID: S-10S-G002-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.70 | 1.86 | 6.69 | 106 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 4.86 | 2.41 | 7.52 | 117 | | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG436432-1 QC Sample: L1015314-01 Client ID: S-10S-G001-0-0 | | | | | | |
| Solids, Total | 94.1 | 94.4 | % | 0 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG436945-1 QC Sample: L1015314-02 Client ID: S-10S-G002-0-0 | | | | | | |
| Gravel (>2.00mm) | ND | 0.100 | % | NC | | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 0.7 | 0.300 | % | **80** | Q | 20 |
| Coarse Sand (0.50-1.00 mm) | 3.2 | 2.10 | % | **42** | Q | 20 |
| Medium Sand (0.25-0.50 mm) | 4.9 | 3.80 | % | **25** | Q | 20 |
| Fine Sand (0.125-0.25 mm) | 4.1 | 3.60 | % | 13 | | 20 |
| Very Fine Sand (0.063-0.125 mm) | 7.1 | 6.60 | % | 7 | | 20 |
| Silt - (1.95-62.5 um) | 69.6 | 72.6 | % | 4 | | 20 |
| Clay - (<1.95 um) | 10.4 | 10.9 | % | 5 | | 20 |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG436946-3 QC Sample: L1015314-02 Client ID: S-10S-G002-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 4.70 | 4.84 | % | 3 | | 25 |
| Total Organic Carbon (Rep2) | 4.86 | 4.77 | % | 2 | | 25 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015314
**Project Number:** TO-0010-03 **Report Date:** 10/21/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG436946-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 101 | | 75-125 |
| Total Organic Carbon (Rep2) | 117 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1015314-01A | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-01B | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-01C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-01D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1015314-02A | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-02B | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015314-02C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-02D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1015314-02E | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-03A | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-03B | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | - |
| L1015314-03C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-03D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1015314-04A | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015314
**Report Date:** 10/21/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015314-04B | Glass 500ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-04C | Glass 100ml unpreserved | A | N/A | 3 | Y | Absent | A2-HYDROMETER(),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1015314-04D | Bag | A | N/A | 3 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1015314 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 10/21/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

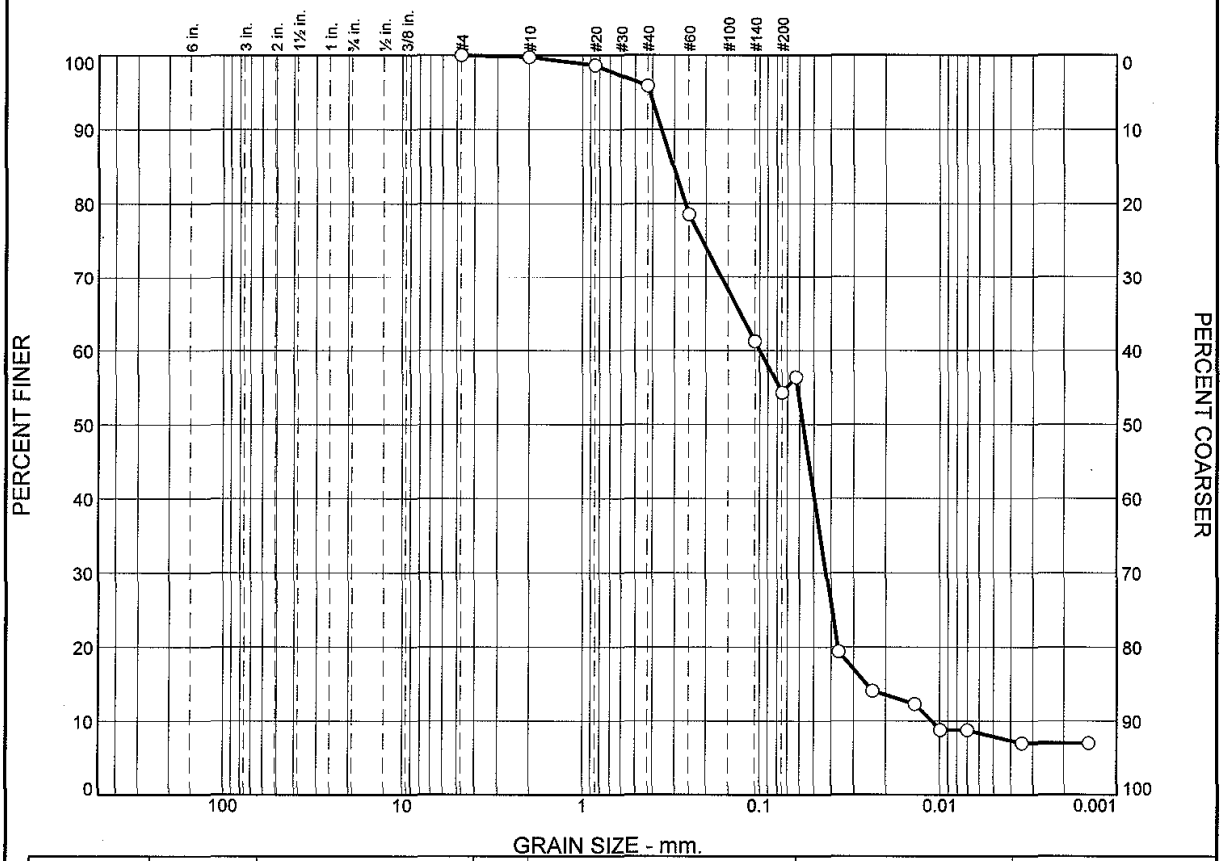

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 2.4 | 18.0 | 13.9 | 8.8 | 38.4 | 4.7 | 4.0 | 1.4 | 7.3 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3046 | 0.0996 | 0.0573 | 0.0425 | 0.0255 | 0.0111 | 1.64 | 8.96 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015314 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-G001-0-0 **Sample Number:** L1015314-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

10/21/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015314
**Location:** S-10S-G001-0-0
**Sample Number:** L1015314-01

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 30.65
Tare Wt. = 7.31
Minus #200 from wash = 54.3%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.07 | 0.00 | #4 | 527.82 | 527.82 | 100.0 | 0.0 |
| | | #10 | 493.10 | 492.98 | 99.8 | 0.2 |
| | | #20 | 418.18 | 417.61 | 98.6 | 1.4 |
| | | #40 | 377.54 | 376.13 | 95.9 | 4.1 |
| | | #60 | 374.65 | 365.79 | 78.5 | 21.5 |
| | | #140 | 351.59 | 342.76 | 61.2 | 38.8 |
| | | #230 | 322.20 | 319.71 | 56.4 | 43.6 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 56.4
**Weight of hydrometer sample =**51.07
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 19.4 | 80.6 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 14.1 | 85.9 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 12.3 | 87.7 |
| 30.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0099 | 8.7 | 91.3 |
| 60.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0070 | 8.7 | 91.3 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 7.0 | 93.0 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 7.0 | 93.0 |

### Fractional Components

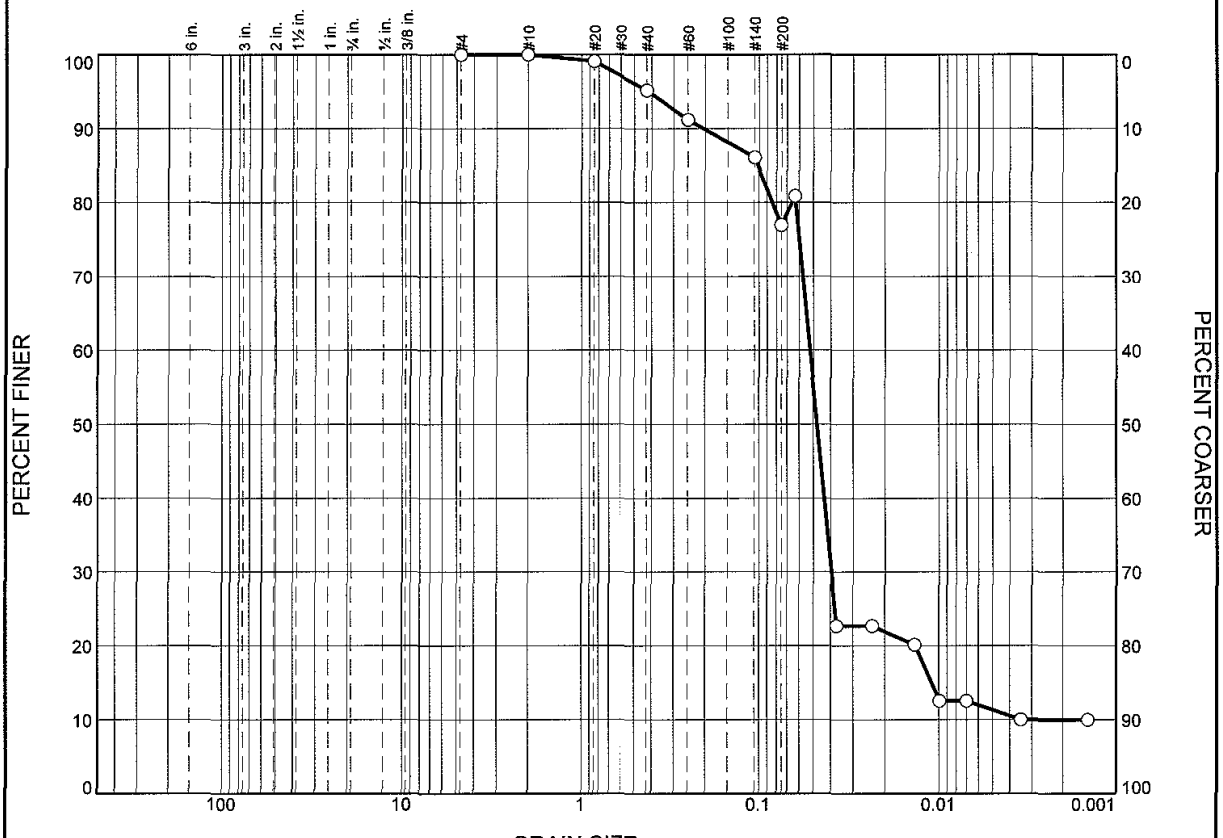
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 2.4 | 18.0 | 13.9 | 8.8 | 44.0 | 38.4 | 4.7 | 4.0 | 1.4 | 48.5 | 7.3 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0111 | 0.0255 | 0.0367 | 0.0425 | 0.0573 | 0.0996 | 0.2614 | 0.3046 | 0.3550 | 0.4136 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.51 | 8.96 | 1.64 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 3.2 | 4.9 | 4.1 | 7.1 | 57.4 | 1.9 | 8.2 | 2.1 | 10.4 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.1018 | 0.0521 | 0.0475 | 0.0396 | 0.0110 | 0.0035 | 8.64 | 14.95 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015314 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-G002-0-0 **Sample Number:** L1015314-02

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

10/21/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015314
**Location:** S-10S-G002-0-0
**Sample Number:** L1015314-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 19.15
Tare Wt. = 7.32
Minus #200 from wash = 76.9%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.22 | 0.00 | #4 | 527.28 | 527.28 | 100.0 | 0.0 |
| | | #10 | 493.24 | 493.24 | 100.0 | 0.0 |
| | | #20 | 423.56 | 423.10 | 99.1 | 0.9 |
| | | #40 | 376.42 | 374.41 | 95.2 | 4.8 |
| | | #60 | 362.65 | 360.60 | 91.2 | 8.8 |
| | | #140 | 339.70 | 337.09 | 86.1 | 13.9 |
| | | #230 | 321.95 | 319.27 | 80.8 | 19.2 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 80.8
Weight of hydrometer sample =51.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0370 | 22.6 | 77.4 |
| 5.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0234 | 22.6 | 77.4 |
| 15.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0136 | 20.1 | 79.9 |
| 30.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0099 | 12.5 | 87.5 |
| 60.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0070 | 12.5 | 87.5 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 10.0 | 90.0 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 10.0 | 90.0 |

### Fractional Components

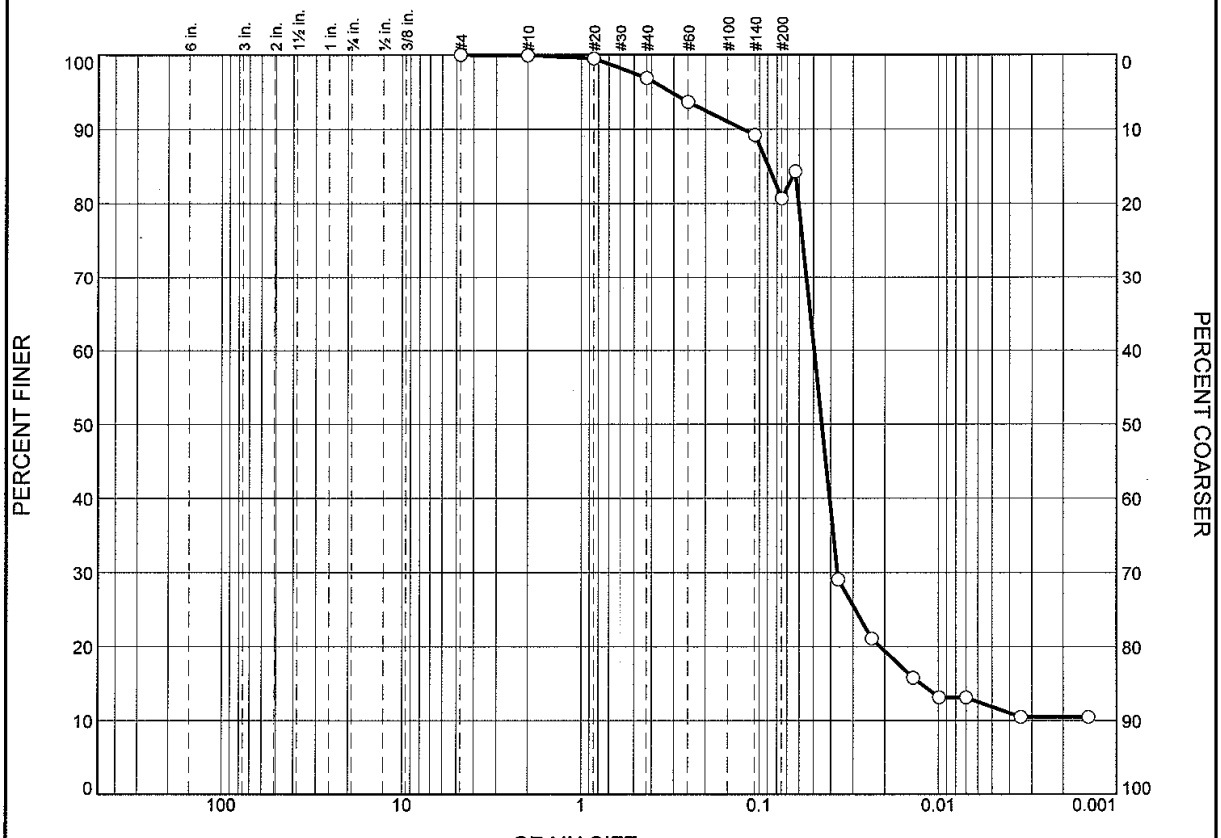
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 3.2 | 4.9 | 4.1 | 7.1 | 20.0 | 57.4 | 1.9 | 8.2 | 2.1 | 69.6 | 10.4 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0035 | 0.0110 | 0.0136 | 0.0396 | 0.0475 | 0.0521 | 0.0625 | 0.1018 | 0.2051 | 0.4151 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.23 | 14.95 | 8.64 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 2.1 | 3.8 | 3.6 | 6.6 | 57.4 | 9.2 | 3.8 | 2.2 | 10.9 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0894 | 0.0495 | 0.0448 | 0.0367 | 0.0126 | | | |

| | Material Description | USCS | AASHTO |
|---|---|---|---|
| ○ | | | |

**Project No.** L1015314 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-G002-0-0 **Sample Number:** WG436945-1

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

10/21/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015314
**Location:** S-10S-G002-0-0
**Sample Number:** WG436945-1

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 17.30
Tare Wt. = 7.44
Minus #200 from wash = 80.6%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 50.95 | 0.00 | #4 | 527.28 | 527.28 | 100.0 | 0.0 |
| | | #10 | 493.27 | 493.24 | 99.9 | 0.1 |
| | | #20 | 423.32 | 423.10 | 99.5 | 0.5 |
| | | #40 | 375.74 | 374.41 | 96.9 | 3.1 |
| | | #60 | 362.25 | 360.60 | 93.7 | 6.3 |
| | | #140 | 339.35 | 337.09 | 89.2 | 10.8 |
| | | #230 | 321.78 | 319.27 | 84.3 | 15.7 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 84.3
Weight of hydrometer sample =50.95
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0110 | 1.0109 | 0.0136 | 8.0 | 14.2 | 0.0363 | 29.1 | 70.9 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 21.1 | 78.9 |
| 15.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0139 | 15.8 | 84.2 |
| 30.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0099 | 13.1 | 86.9 |
| 60.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0070 | 13.1 | 86.9 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 10.5 | 89.5 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 10.5 | 89.5 |

### Fractional Components

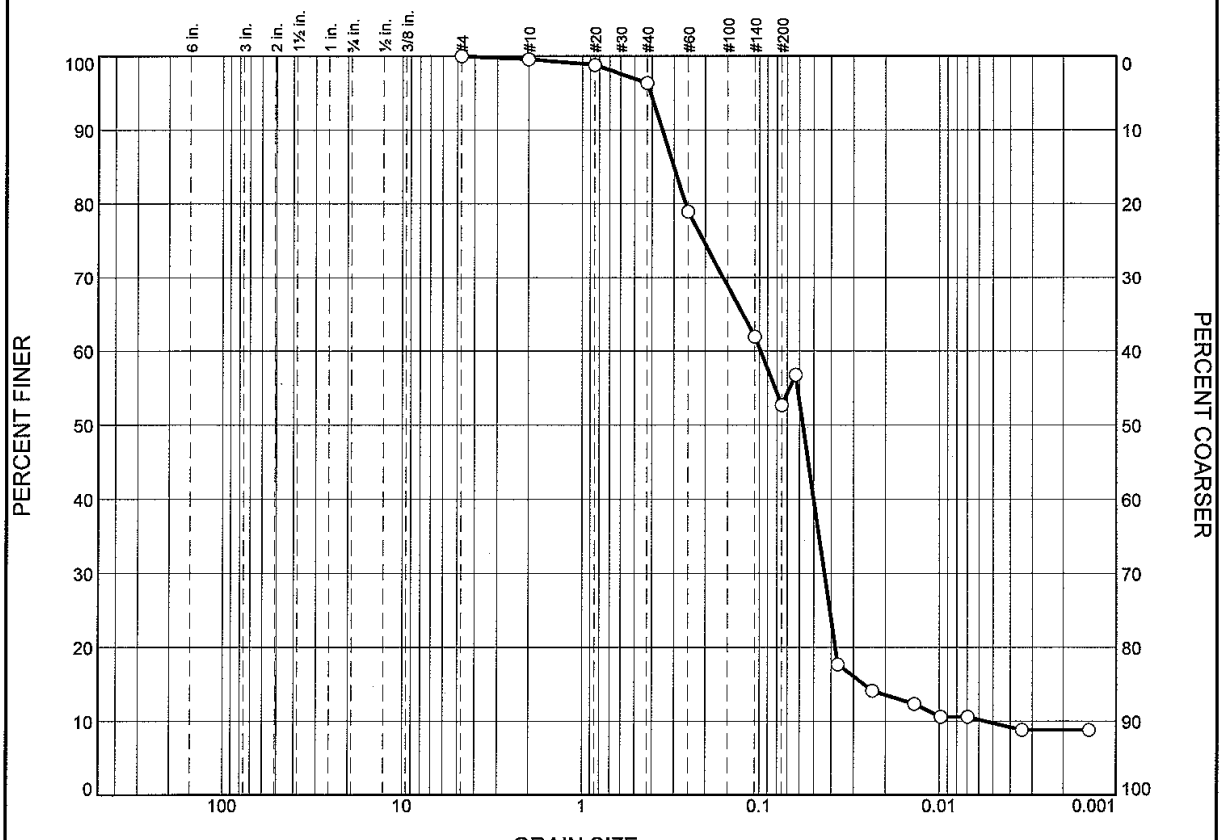
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 2.1 | 3.8 | 3.6 | 6.6 | 16.4 | 57.4 | 9.2 | 3.8 | 2.2 | 72.6 | 10.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0126 | 0.0212 | 0.0367 | 0.0448 | 0.0495 | 0.0604 | 0.0894 | 0.1231 | 0.3114 |

| Fineness Modulus |
|---|
| 0.16 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 2.0 | 18.1 | 13.7 | 9.0 | 39.9 | 3.5 | 2.2 | 1.5 | 9.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3007 | 0.0987 | 0.0574 | 0.0435 | 0.0263 | 0.0056 | 3.45 | 17.77 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015314 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-G003-0-0REP **Sample Number:** L1015314-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

10/21/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015314
**Location:** S-10S-G003-0-0REP
**Sample Number:** L1015314-03

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 31.60
Tare Wt. = 7.34
Minus #200 from wash = 52.6%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.23 | 0.00 | #4 | 527.82 | 527.82 | 100.0 | 0.0 |
| | | #10 | 493.19 | 492.98 | 99.6 | 0.4 |
| | | #20 | 418.00 | 417.61 | 98.8 | 1.2 |
| | | #40 | 377.38 | 376.13 | 96.4 | 3.6 |
| | | #60 | 374.74 | 365.79 | 78.9 | 21.1 |
| | | #140 | 351.48 | 342.76 | 61.9 | 38.1 |
| | | #230 | 322.34 | 319.71 | 56.8 | 43.2 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 56.8
**Weight of hydrometer sample =**51.23
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0100 | 1.0099 | 0.0136 | 7.0 | 14.4 | 0.0367 | 17.7 | 82.3 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 14.1 | 85.9 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 12.3 | 87.7 |
| 30.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0098 | 10.6 | 89.4 |
| 60.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0069 | 10.6 | 89.4 |
| 250.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0034 | 8.8 | 91.2 |
| 1440.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0014 | 8.8 | 91.2 |

### Fractional Components

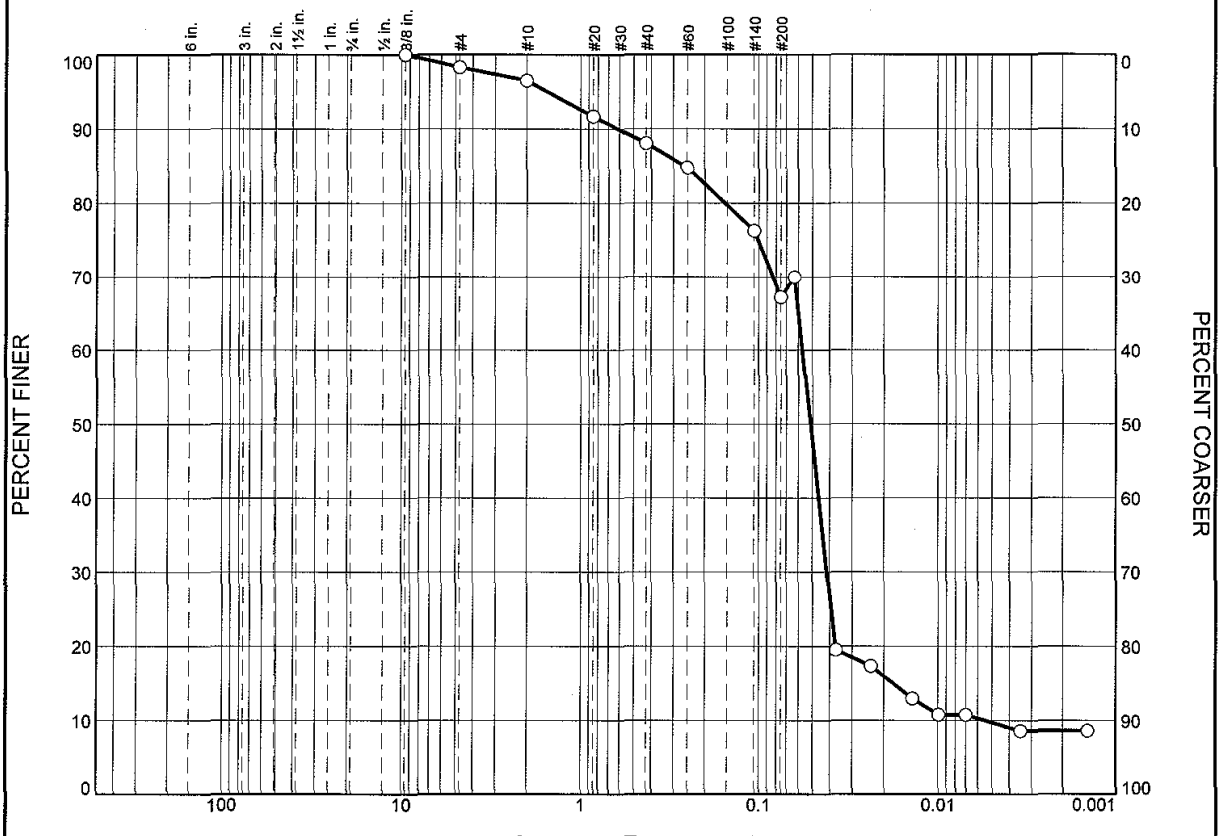
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 2.0 | 18.1 | 13.7 | 9.0 | 43.4 | 39.9 | 3.5 | 2.2 | 1.5 | 47.1 | 9.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0056 | 0.0263 | 0.0379 | 0.0435 | 0.0574 | 0.0987 | 0.2583 | 0.3007 | 0.3500 | 0.4074 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.50 | 17.77 | 3.45 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 2.0 | 1.5 | 3.9 | 3.7 | 4.1 | 6.9 | 8.7 | 50.6 | 4.7 | 3.1 | 1.8 | 9.0 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.2589 | 0.0567 | 0.0510 | 0.0413 | 0.0178 | 0.0055 | 5.52 | 10.40 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015314 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-G003-0-0 **Sample Number:** L1015314-04

**Remarks:**
○ ONE SHELL ON SIEVE #4

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

10/21/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015314
**Location:** S-10S-G003-0-0
**Sample Number:** L1015314-04
**Testing Remarks:** ONE SHELL ON SIEVE #4

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** **Dry Sample and Tare =** 24.28
**Tare Wt. =** 7.38
**Minus #200 from wash =** 67.2%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.46 | 0.00 | 0.375 | 565.10 | 565.10 | 100.0 | 0.0 |
| | | #4 | 528.69 | 527.82 | 98.3 | 1.7 |
| | | #10 | 493.90 | 492.98 | 96.5 | 3.5 |
| | | #20 | 420.10 | 417.61 | 91.7 | 8.3 |
| | | #40 | 378.00 | 376.13 | 88.0 | 12.0 |
| | | #60 | 367.47 | 365.79 | 84.8 | 15.2 |
| | | #140 | 347.14 | 342.76 | 76.3 | 23.7 |
| | | #230 | 322.97 | 319.71 | 69.9 | 30.1 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 69.9
**Weight of hydrometer sample =**51.46
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0370 | 19.5 | 80.5 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 17.3 | 82.7 |
| 15.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0139 | 13.0 | 87.0 |
| 30.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0099 | 10.8 | 89.2 |
| 60.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0070 | 10.8 | 89.2 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 8.6 | 91.4 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 8.6 | 91.4 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 2.0 | 1.5 | 3.9 | 3.7 | 4.1 | 6.9 | 8.7 | 27.3 | 50.6 | 4.7 | 3.1 | 1.8 | 60.2 | 9.0 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0055 | 0.0178 | 0.0372 | 0.0413 | 0.0510 | 0.0567 | 0.1543 | 0.2589 | 0.6166 | 1.5282 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.56 | 10.40 | 5.52 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015314

**Client Information**

Client: Woods Hole Group

Address: 81 Technology Park Drive, E. 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: NBH Environ. Monitoring

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD.
Please homogenize each sample before analysis

**SAMPLE HANDLING**

Filtration
☐ Done
☒ Not needed
☐ Lab to do

Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB cong. | TOC | Grainsize (w/ hydro) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|
| L1015314-1 | S-10S-~~EDD~~ EM G001-0-0 | 9/30/10 | 12:05 | SE | KGM | X | | | high PCBs (50ppm) | 2 |
| | S-10S-G001-0-0 | | 12:05 | | | | X | | | 1 |
| | S-10S-G001-0-0 | | 12:05 | | | | | X | | 1 |
| -2 | S-10S-G002-0-0 | | 11:15 | | | X | | | very high PCBs (>100ppm) | 2 |
| | S-10S-G002-0-0 | | 11:15 | | | | X | | | 1 |
| | S-10S-G002-0-0 | | 11:15 | | | | | X | | 1 |
| -3 | S-10S-G002-0-0REP | | 11:15 | | | X | | | | 1 |
| | S-10S-G002-0-0REP | | 11:15 | | | | X | | | 1 |
| | S-10S-G002-0-0REP | | 11:15 | | | | | X | | 1 |
| -2 | S-10S-G002-0-0MSMSD | | 11:15 | | | X | | | MS/MSD sample | 1 |

| | | | |
|---|---|---|---|
| Container Type | G | G | O |
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 9/30/2010 1430 | [illegible] | 9/30/10 14:30 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial No:10211015:33

# CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1015314

**Client Information**

Client: Woods Hole Group

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

**Project Information**

Project Name: NBH Environ. Monitoring

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:

**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

**MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS**

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

please homogenize each sample before analysis

**SAMPLE HANDLING**

Filtration ☐ Done ☒ Not needed ☐ Lab to do

Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB cong. | TOC | grainsize (wet/wet w/ hydro) | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|---|
| L1015314-4 | S-10S-G003-0-0 | 9/30/10 | 10:06 | SE | KGM | X | | | lower PCBs (0<x<50ppm) | 2 |
| | S-10S-G003-0-0 | 9/30/10 | 10:06 | SE | KGM | | X | | " | 1 |
| | S-10S-G003-0-0 | 9/30/10 | 10:06 | SE | KGM | | | X | " | 1 |

| | | | |
|---|---|---|---|
| Container Type | G | G | O |
| Preservative | A | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 9/30/2010 1430 | [signature] | 9/30/10 14:30 |

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.

FORM NO: 01-01 (rev. 14-OCT-07)

Serial No:10211015:33

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1015903 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 11/04/10 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1015903-01 | S-10S-T001-0-0 | NEW BEDFORD, MA | 10/01/10 10:50 |
| L1015903-02 | S-10S-T002-0-0 | NEW BEDFORD, MA | 10/01/10 11:30 |
| L1015903-03 | S-10S-T003-0-0 | NEW BEDFORD, MA | 10/01/10 13:10 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/04/10 |

**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.

---

Sample Receipt

Sediment samples were received intact on October 8, 2010. Aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage on October 11 until October 20, 2010 when they were removed to extract samples for PCB Congener analysis.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/04/10 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1015903-01, 02, 03 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L1015903-01, 02 were re-analyzed on additional dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

Grain Size

The WG440952-1 Laboratory Duplicate RPD, performed on L1015903-03, is outside the acceptance criteria for % Medium Sand (133%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: 11/04/10

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-01 | Date Collected: | 10/01/10 10:50 |
| Client ID: | S-10S-T001-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 14:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 7210 | E | ug/kg | 348 | -- | 100 |
| Cl4-BZ#52 | 15200 | E | ug/kg | 348 | -- | 100 |
| Cl4-BZ#66 | 4320 | | ug/kg | 348 | -- | 100 |
| Cl5-BZ#118 | 2080 | | ug/kg | 348 | -- | 100 |
| Cl6-BZ#138 | 2240 | | ug/kg | 348 | -- | 100 |
| Cl7-BZ#170 | 397 | | ug/kg | 348 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 348 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 348 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 348 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 89 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-01 | Date Collected: | 10/01/10 10:50 |
| Client ID: | S-10S-T001-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 14:30 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 94% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3560 | | ug/kg | 348 | -- | 100 |
| Cl3-BZ#28 | 10200 | E | ug/kg | 348 | -- | 100 |
| Cl4-BZ#44 | 3820 | | ug/kg | 348 | -- | 100 |
| Cl5-BZ#101 | 2580 | | ug/kg | 348 | -- | 100 |
| Cl6-BZ#153 | 3060 | | ug/kg | 348 | -- | 100 |
| Cl5-BZ#105 | 387 | | ug/kg | 348 | -- | 100 |
| Cl7-BZ#187 | 904 | | ug/kg | 348 | -- | 100 |
| Cl6-BZ#128 | 508 | | ug/kg | 348 | -- | 100 |
| Cl7-BZ#180 | 552 | | ug/kg | 348 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 88 | 30-150 |
| BZ 198 | 89 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015903-01 | D | Date Collected: | 10/01/10 10:50 |
| Client ID: | S-10S-T001-0-0 | | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 11:46 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 9060 | | ug/kg | 3480 | -- | 1000 |
| Cl4-BZ#52 | 16100 | | ug/kg | 3480 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015903-01 | D | Date Collected: | 10/01/10 10:50 |
| Client ID: | S-10S-T001-0-0 | | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 11:46 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 94% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 10800 | | ug/kg | 3480 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-02 | Date Collected: | 10/01/10 11:30 |
| Client ID: | S-10S-T002-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 15:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 4530 | | ug/kg | 340 | -- | 100 |
| Cl3-BZ#18 | 9920 | E | ug/kg | 340 | -- | 100 |
| Cl4-BZ#52 | 19500 | E | ug/kg | 340 | -- | 100 |
| Cl4-BZ#66 | 5760 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#118 | 2950 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#138 | 2590 | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#180 | 667 | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#170 | 491 | | ug/kg | 340 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 340 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 340 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 340 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 75 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-02 | Date Collected: | 10/01/10 11:30 |
| Client ID: | S-10S-T002-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 15:11 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 15100 | E | ug/kg | 340 | -- | 100 |
| Cl4-BZ#44 | 5440 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#101 | 4340 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#153 | 4000 | | ug/kg | 340 | -- | 100 |
| Cl5-BZ#105 | 500 | | ug/kg | 340 | -- | 100 |
| Cl7-BZ#187 | 868 | | ug/kg | 340 | -- | 100 |
| Cl6-BZ#128 | 394 | | ug/kg | 340 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 85 | 30-150 |
| BZ 198 | 75 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015903-02 | D | Date Collected: | 10/01/10 11:30 |
| Client ID: | S-10S-T002-0-0 | | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 12:27 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 13600 | | ug/kg | 3400 | -- | 1000 |
| Cl4-BZ#52 | 22400 | | ug/kg | 3400 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1015903-02 | D | Date Collected: | 10/01/10 11:30 |
| Client ID: | S-10S-T002-0-0 | | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 12:27 | | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 17400 | | ug/kg | 3400 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-03 | Date Collected: | 10/01/10 13:10 |
| Client ID: | S-10S-T003-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 15:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 88% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 859 | | ug/kg | 374 | -- | 100 |
| Cl4-BZ#52 | 2330 | | ug/kg | 374 | -- | 100 |
| Cl4-BZ#66 | 1680 | | ug/kg | 374 | -- | 100 |
| Cl5-BZ#118 | 1360 | | ug/kg | 374 | -- | 100 |
| Cl6-BZ#138 | 993 | | ug/kg | 374 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 374 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 374 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 374 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 374 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 374 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 76 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1015903-03 | Date Collected: | 10/01/10 13:10 |
| Client ID: | S-10S-T003-0-0 | Date Received: | 10/08/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 10/20/10 10:53 |
| Analytical Date: | 10/27/10 15:52 | Cleanup Method1: | EPA 3630 |
| Analyst: | JS | Cleanup Date1: | 10/25/10 |
| Percent Solids: | 88% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 740 | | ug/kg | 374 | -- | 100 |
| Cl3-BZ#28 | 2050 | | ug/kg | 374 | -- | 100 |
| Cl4-BZ#44 | 887 | | ug/kg | 374 | -- | 100 |
| Cl5-BZ#101 | 1250 | | ug/kg | 374 | -- | 100 |
| Cl6-BZ#153 | 1160 | | ug/kg | 374 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 374 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 374 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 374 | -- | 100 |

| | | |
|---|---|---|
| DBOB | 76 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903
**Project Number:** TO-0010-03 **Report Date:** 11/04/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/27/10 09:43
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 10/20/10 10:53
Cleanup Method1: EPA 3630
Cleanup Date1: 10/25/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG438391-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 10/27/10 09:43
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 10/20/10 10:53
Cleanup Method1: EPA 3630
Cleanup Date1: 10/25/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG438391-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 68 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR

**Project Number:** TO-0010-03

**Lab Number:** L1015903

**Report Date:** 11/04/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG438391-2 WG438391-3 | | | | | | | | |
| Cl2-BZ#8 | 61 | | 70 | | 40-140 | 14 | | 30 |
| Cl3-BZ#18 | 71 | | 70 | | 40-140 | 1 | | 30 |
| Cl3-BZ#28 | 74 | | 76 | | 40-140 | 3 | | 30 |
| Cl4-BZ#52 | 72 | | 70 | | 40-140 | 3 | | 30 |
| Cl4-BZ#44 | 74 | | 73 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 79 | | 75 | | 40-140 | 5 | | 30 |
| Cl5-BZ#101 | 79 | | 75 | | 40-140 | 5 | | 30 |
| Cl5-BZ#118 | 78 | | 80 | | 40-140 | 3 | | 30 |
| Cl5-BZ#105 | 79 | | 78 | | 40-140 | 1 | | 30 |
| Cl6-BZ#138 | 80 | | 80 | | 40-140 | 0 | | 30 |
| Cl7-BZ#187 | 76 | | 74 | | 40-140 | 3 | | 30 |
| Cl6-BZ#128 | 79 | | 79 | | 40-140 | 0 | | 30 |
| Cl7-BZ#180 | 80 | | 80 | | 40-140 | 0 | | 30 |
| Cl7-BZ#170 | 79 | | 80 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | 75 | | 77 | | 40-140 | 3 | | 30 |
| Cl9-BZ#206 | 85 | | 87 | | 40-140 | 2 | | 30 |
| Cl10-BZ#209 | 80 | | 80 | | 40-140 | 0 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG438391-2 WG438391-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 70 | | 71 | | 30-150 |
| BZ 198 | 80 | | 80 | | 30-150 |

| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG438391-2 WG438391-3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cl6-BZ#153 | 75 | | 73 | | 40-140 | 3 | | 30 |

| | | | | | |
|---|---|---|---|---|---|
| DBOB | 70 | | 71 | | 30-150 |
| BZ 198 | 80 | | 80 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

## SAMPLE RESULTS

Lab ID: L1015903-01
Client ID: S-10S-T001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/01/10 10:50
Date Received: 10/08/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.72 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.70 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 5.20 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 23.1 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 18.9 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 10.7 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 25.4 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 16.7 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 93.9 | | % | 0.100 | -- | 1 | - | 10/20/10 16:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 26.8 | | % | 0.100 | NA | 1 | - | 10/11/10 18:56 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

## SAMPLE RESULTS

Lab ID: L1015903-02
Client ID: S-10S-T002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/01/10 11:30
Date Received: 10/08/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.93 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.49 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.100 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 28.9 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 0.600 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 9.00 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 36.1 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 25.3 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 96.6 | | % | 0.100 | -- | 1 | - | 10/20/10 16:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.8 | | % | 0.100 | NA | 1 | - | 10/11/10 18:56 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

## SAMPLE RESULTS

Lab ID: L1015903-03
Client ID: S-10S-T003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 10/01/10 13:10
Date Received: 10/08/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 3.71 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 3.85 | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | ND | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 0.400 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 0.500 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 0.500 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 13.8 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 63.1 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 21.7 | | % | 0.100 | NA | 1 | - | 11/03/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 88.2 | | % | 0.100 | -- | 1 | - | 10/20/10 16:10 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.2 | | % | 0.100 | NA | 1 | - | 10/11/10 18:56 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903

**Project Number:** TO-0010-03 **Report Date:** 11/04/10

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-03 Batch: WG437374-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 10/20/10 09:54 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG437374-4 QC Sample: L1015903-01 Client ID: S-10S-T001-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.72 | 2.69 | 7.70 | 110 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 4.70 | 1.65 | 6.26 | 95 | | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG437374-3 QC Sample: L1015903-01 Client ID: S-10S-T001-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 4.72 | 4.74 | % | 0 | | 25 |
| Total Organic Carbon (Rep2) | 4.70 | 4.82 | % | 3 | | 25 |
| General Chemistry - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG438469-1 QC Sample: L1015903-03 Client ID: S-10S-T003-0-0 | | | | | | |
| Solids, Total | 88.2 | 87.5 | % | 1 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG440952-1 QC Sample: L1015903-03 Client ID: S-10S-T003-0-0 | | | | | | |
| Gravel (>2.00mm) | ND | ND | % | NC | | 20 |
| Very Coarse Sand (1.00-2.00 mm) | ND | ND | % | NC | | 20 |
| Coarse Sand (0.50-1.00 mm) | 0.4 | ND | % | NC | | 20 |
| Medium Sand (0.25-0.50 mm) | 0.5 | 0.100 | % | **133** | Q | 20 |
| Fine Sand (0.125-0.25 mm) | 0.5 | ND | % | NC | | 20 |
| Very Fine Sand (0.063-0.125 mm) | 13.8 | 14.7 | % | 6 | | 20 |
| Silt - (1.95-62.5 um) | 63.1 | 62.1 | % | 2 | | 20 |
| Clay - (<1.95 um) | 21.7 | 23.1 | % | 6 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1015903
**Project Number:** TO-0010-03 **Report Date:** 11/04/10

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG437374-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 100 | | 75-125 |
| Total Organic Carbon (Rep2) | 100 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

**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(*) |
|---|---|---|---|---|---|---|---|
| L1015903-01A | Glass 250ml unpreserved | A | N/A | 5 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |
| L1015903-02A | Glass 500ml unpreserved | A | N/A | 5 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1015903
**Report Date:** 11/04/10

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1015903-03A | Glass 1000ml unpreserved | A | N/A | 5 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/04/10 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1015903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/04/10 |

***Data Qualifiers***

**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 | **Lab Number:** | L1015903 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 11/04/10 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## LIMITATION OF LIABILITIES

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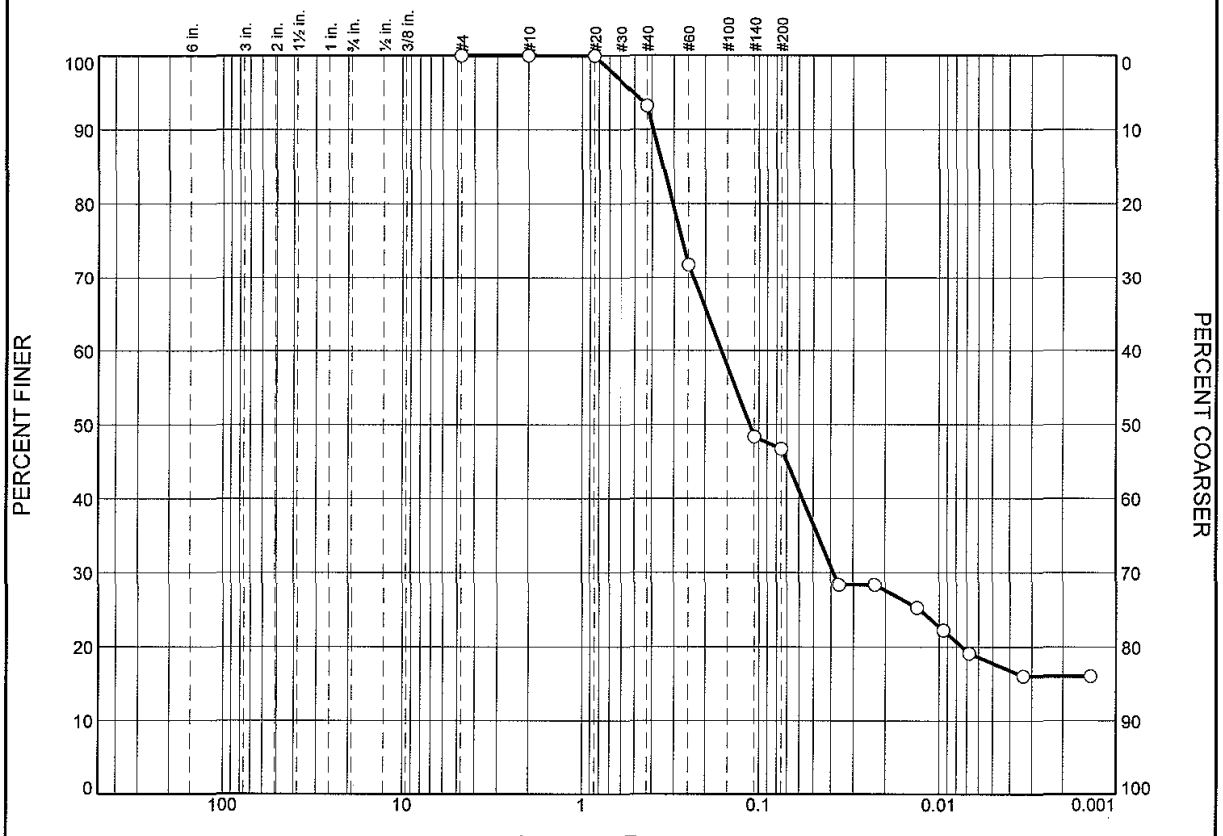
We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# ASTM D422-63
# Wet Sieve Hydrometer

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 23.1 | 18.9 | 10.7 | 13.7 | 2.2 | 5.8 | 3.7 | 16.7 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3469 | 0.1627 | 0.1127 | 0.0385 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015903 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-T001-0-0 **Sample Number:** L1015903-01

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

11/4/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015903
**Location:** S-10S-T001-0-0
**Sample Number:** L1015903-01

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 8.31
Tare Wt. = 7.41
Minus #200 from wash = 96.3%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 24.36 | 0.00 | #4 | 527.18 | 527.18 | 100.0 | 0.0 |
| | | #10 | 493.17 | 493.17 | 100.0 | 0.0 |
| | | #20 | 423.11 | 423.10 | 100.0 | 0.0 |
| | | #40 | 376.10 | 374.46 | 93.2 | 6.8 |
| | | #60 | 365.75 | 360.51 | 71.7 | 28.3 |
| | | #140 | 342.73 | 337.03 | 48.3 | 51.7 |
| | | #200 | 319.70 | 319.30 | 46.7 | 53.3 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 46.7
Weight of hydrometer sample =24.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0361 | 28.4 | 71.6 |
| 5.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0228 | 28.4 | 71.6 |
| 15.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0133 | 25.3 | 74.7 |
| 30.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0095 | 22.2 | 77.8 |
| 60.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0068 | 19.1 | 80.9 |
| 250.00 | 22.0 | 1.0050 | 1.0052 | 0.0133 | 2.0 | 15.8 | 0.0033 | 16.0 | 84.0 |
| 1440.00 | 22.0 | 1.0050 | 1.0052 | 0.0133 | 2.0 | 15.8 | 0.0014 | 16.0 | 84.0 |

### Fractional Components

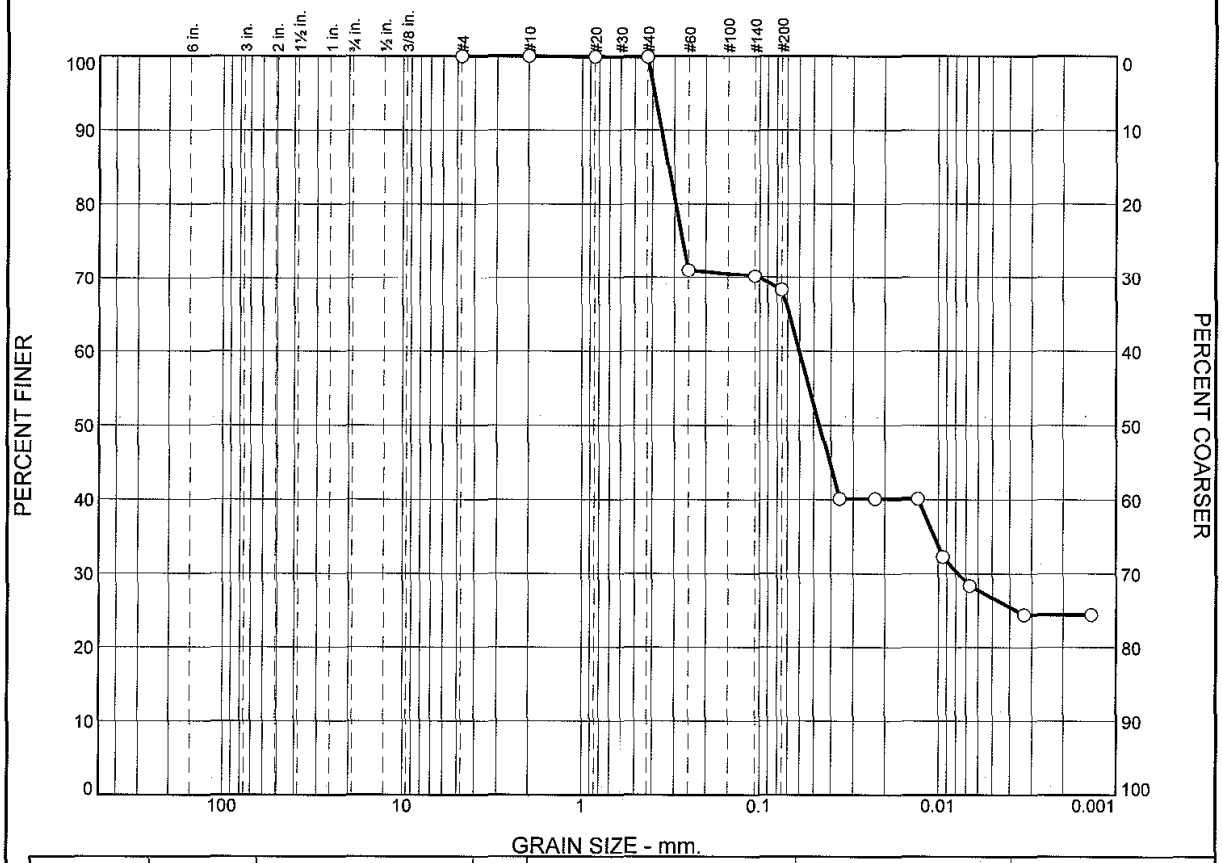
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 23.1 | 18.9 | 10.7 | 57.9 | 13.7 | 2.2 | 5.8 | 3.7 | 25.4 | 16.7 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0074 | 0.0385 | 0.1127 | 0.1627 | 0.3067 | 0.3469 | 0.3925 | 0.5101 |

| Fineness Modulus |
|---|
| 0.67 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 28.9 | 0.6 | 9.0 | 21.3 | 0.0 | 10.0 | 4.8 | 25.3 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.3232 | 0.0603 | 0.0464 | 0.0077 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015903 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-T002-0-0 **Sample Number:** L1015903-02

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

11/4/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015903
**Location:** S-10S-T002-0-0
**Sample Number:** L1015903-02

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 8.52
Tare Wt. = 7.49
Minus #200 from wash = 96.3%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 27.92 | 0.00 | #4 | 527.65 | 527.65 | 100.0 | 0.0 |
| | | #10 | 492.94 | 492.94 | 100.0 | 0.0 |
| | | #20 | 423.12 | 423.10 | 99.9 | 0.1 |
| | | #40 | 374.48 | 374.47 | 99.9 | 0.1 |
| | | #60 | 368.65 | 360.59 | 71.0 | 29.0 |
| | | #140 | 337.52 | 337.30 | 70.2 | 29.8 |
| | | #200 | 320.16 | 319.62 | 68.3 | 31.7 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 68.3
Weight of hydrometer sample =27.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0100 | 1.0102 | 0.0133 | 7.0 | 14.4 | 0.0358 | 40.1 | 59.9 |
| 5.00 | 22.0 | 1.0100 | 1.0102 | 0.0133 | 7.0 | 14.4 | 0.0226 | 40.1 | 59.9 |
| 15.00 | 22.0 | 1.0100 | 1.0102 | 0.0133 | 7.0 | 14.4 | 0.0131 | 40.1 | 59.9 |
| 30.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0094 | 32.3 | 67.7 |
| 60.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0067 | 28.3 | 71.7 |
| 250.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0033 | 24.4 | 75.6 |
| 1440.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0014 | 24.4 | 75.6 |

### Fractional Components

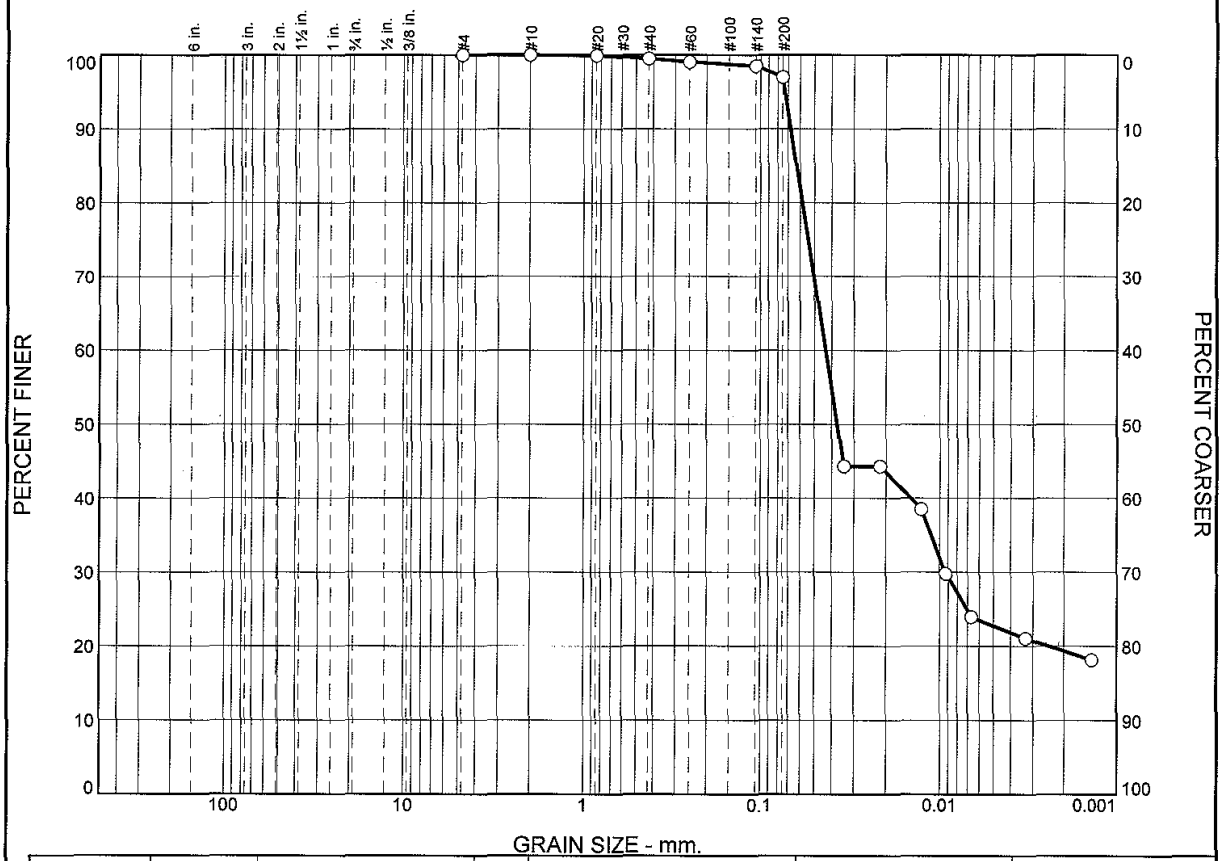
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 28.9 | 0.6 | 9.0 | 38.6 | 21.3 | 0.0 | 10.0 | 4.8 | 36.1 | 25.3 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.0077 | 0.0464 | 0.0603 | 0.2948 | 0.3232 | 0.3543 | 0.3884 |

| Fineness Modulus |
|---|
| 0.49 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.5 | 13.8 | 40.5 | 3.6 | 14.0 | 5.0 | 21.7 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0627 | 0.0431 | 0.0371 | 0.0093 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015903 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-T003-0-0 **Sample Number:** L1015903-03

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

11/4/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015903
**Location:** S-10S-T003-0-0
**Sample Number:** L1015903-03

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 9.23
Tare Wt. = 7.48
Minus #200 from wash = 96.7%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 53.49 | 0.00 | #4 | 527.14 | 527.14 | 100.0 | 0.0 |
| | | #10 | 493.11 | 493.11 | 100.0 | 0.0 |
| | | #20 | 423.07 | 423.04 | 99.9 | 0.1 |
| | | #40 | 374.68 | 374.45 | 99.5 | 0.5 |
| | | #60 | 360.79 | 360.56 | 99.1 | 0.9 |
| | | #140 | 337.33 | 337.03 | 98.5 | 1.5 |
| | | #200 | 320.15 | 319.33 | 97.0 | 3.0 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 97.0
Weight of hydrometer sample =53.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0150 | 1.0152 | 0.0133 | 12.0 | 13.1 | 0.0341 | 44.3 | 55.7 |
| 5.00 | 22.0 | 1.0150 | 1.0152 | 0.0133 | 12.0 | 13.1 | 0.0216 | 44.3 | 55.7 |
| 15.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0127 | 38.5 | 61.5 |
| 30.00 | 22.0 | 1.0100 | 1.0102 | 0.0133 | 7.0 | 14.4 | 0.0092 | 29.7 | 70.3 |
| 60.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0067 | 23.9 | 76.1 |
| 250.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0033 | 21.0 | 79.0 |
| 1440.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0014 | 18.1 | 81.9 |

### Fractional Components

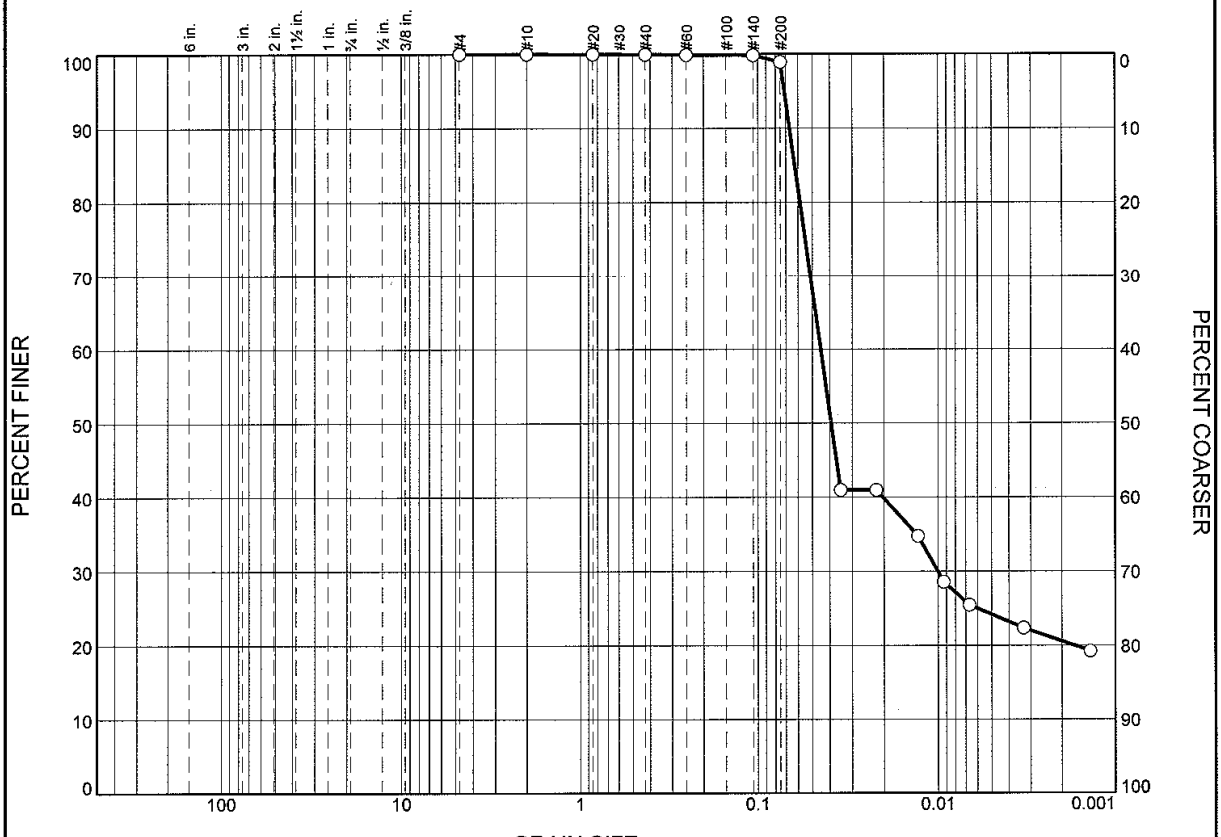
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.5 | 13.8 | 15.2 | 40.5 | 3.6 | 14.0 | 5.0 | 63.1 | 21.7 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0024 | 0.0093 | 0.0371 | 0.0431 | 0.0582 | 0.0627 | 0.0676 | 0.0728 |

| Fineness Modulus |
|---|
| 0.02 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 14.7 | 44.3 | 4.0 | 10.0 | 3.8 | 23.1 |

| | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0624 | 0.0448 | 0.0392 | 0.0101 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1015903 **Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring

○ **Source of Sample:** S-10S-T003-0-0 **Sample Number:** WG440952-1

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

11/4/2010

**Client:** Woods Hole Group
**Project:** NBH Environ-Monitoring
**Project Number:** L1015903
**Location:** S-10S-T003-0-0
**Sample Number:** WG440952-1

### Sieve Test Data

**Post #200 Wash Test Weights (grams):** Dry Sample and Tare = 8.53
Tare Wt. = 7.62
Minus #200 from wash = 98.2%

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.26 | 0.00 | #4 | 527.27 | 527.27 | 100.0 | 0.0 |
| | | #10 | 493.25 | 493.25 | 100.0 | 0.0 |
| | | #20 | 423.16 | 423.15 | 100.0 | 0.0 |
| | | #40 | 374.53 | 374.51 | 99.9 | 0.1 |
| | | #60 | 360.68 | 360.65 | 99.9 | 0.1 |
| | | #140 | 337.20 | 337.18 | 99.8 | 0.2 |
| | | #200 | 319.90 | 319.42 | 98.9 | 1.1 |

### Hydrometer Test Data

Hydrometer test uses material passing #230
Percent passing #230 based upon complete sample = 98.9
Weight of hydrometer sample =51.26
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0348 | 40.9 | 59.1 |
| 5.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0220 | 40.9 | 59.1 |
| 15.00 | 22.0 | 1.0110 | 1.0112 | 0.0133 | 8.0 | 14.2 | 0.0129 | 34.7 | 65.3 |
| 30.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0093 | 28.5 | 71.5 |
| 60.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0067 | 25.4 | 74.6 |
| 250.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0033 | 22.3 | 77.7 |
| 1440.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0014 | 19.2 | 80.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 14.7 | 14.8 | 44.3 | 4.0 | 10.0 | 3.8 | 62.1 | 23.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0017 | 0.0101 | 0.0392 | 0.0448 | 0.0584 | 0.0624 | 0.0666 | 0.0712 |

| Fineness Modulus |
|---|
| 0.00 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

Serial No:1104101809

# ESI

EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: L1015903

## CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: NBH Environmental monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: T0-0010-03 | |
| Invoice to: Cathy Morey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: DWALSH@WHGRP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | S-10S-T001-0-0 | 10/1/10 | 1050 | JL | C | 9oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -2 | S-10S-T002-0-0 | 10/1/10 | 1130 | JL | C | 16oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -3 | S-10S-T003-0-0 | 10/1/10 | 1310 | JL | C | 32oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |

| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 10/8/10 Time: 1035 | Received By: [signature] | Date: 10/8/10 Time: 10:35 |
| Relinquished By: [signature] | Date: 10/8/10 Time: 12:00 | Received at Lab By: [signature] | Date: 10/8/10 Time: 12:00 |

Comments: To Alpha cc: TFry 10/

P. Gillett 10/8/10 18:55
Rel: P. Gillett 10/8/10 19:25 Rec'd: Sullivan 10/8/10 19:25

Sample Delivery Group No: Page of

COC Doc No: 3915

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018719 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 01/03/11 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018719-01 | S-10N-G001-0-0 | NEW BEDFORD, MA | 11/22/10 09:10 |
| L1018719-02 | S-10N-G002-0-0 | NEW BEDFORD, MA | 11/22/10 10:00 |
| L1018719-03 | S-10N-G002-0-0 REP | NEW BEDFORD, MA | 11/22/10 10:00 |
| L1018719-04 | S-10N-G003-0-0 | NEW BEDFORD, MA | 11/22/10 11:05 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 22, 2010 and placed in frozen storage until December 06, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage until they were removed December 15, 2010 to extract samples for PCB Congener analysis and analyze for air-dried percent solids.

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

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

**Case Narrative (continued)**

whether it was the higher or lower value.

L1018719-01 through -03 were re-analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

The WG447894-4/-5 MS/MSD recoveries for several congeners, performed on L1018719-02, are invalid because the sample concentration is greater than four times the spike amount added.

Grain Size

The WG445681-1 Laboratory Duplicate RPD, performed on L1018719-01, is outside the acceptance criteria for % Very Coarse Sand (59%), % Coarse Sand (27%) and Clay(24%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: 01/03/11

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-01 | Date Collected: | 11/22/10 09:10 |
| Client ID: | S-10N-G001-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 17:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1600 | | ug/kg | 168 | -- | 50 |
| Cl3-BZ#18 | 2710 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#52 | 6270 | E | ug/kg | 168 | -- | 50 |
| Cl4-BZ#66 | 1980 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#118 | 1100 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#138 | 905 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#187 | 264 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#180 | 191 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 168 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 168 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 100 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-01 | Date Collected: | 11/22/10 09:10 |
| Client ID: | S-10N-G001-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 17:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5520 | E | ug/kg | 168 | -- | 50 |
| Cl4-BZ#44 | 1800 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#101 | 1340 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#153 | 1210 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#105 | 222 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 168 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 100 | 30-150 |
| BZ 198 | 69 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018719-01 | D | Date Collected: | 11/22/10 09:10 |
| Client ID: | S-10N-G001-0-0 | | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 13:07 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl4-BZ#52 | 6960 | | ug/kg | 674 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018719-01 | D | Date Collected: | 11/22/10 09:10 |
| Client ID: | S-10N-G001-0-0 | | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 13:07 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5820 | | ug/kg | 674 | -- | 200 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-02 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 19:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 10300 | E | ug/kg | 168 | -- | 50 |
| Cl3-BZ#18 | 20200 | E | ug/kg | 168 | -- | 50 |
| Cl4-BZ#52 | 35600 | E | ug/kg | 168 | -- | 50 |
| Cl4-BZ#44 | 9830 | E | ug/kg | 168 | -- | 50 |
| Cl4-BZ#66 | 12200 | E | ug/kg | 168 | -- | 50 |
| Cl5-BZ#118 | 6660 | E | ug/kg | 168 | -- | 50 |
| Cl6-BZ#138 | 4490 | E | ug/kg | 168 | -- | 50 |
| Cl7-BZ#187 | 1450 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#128 | 796 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#180 | 1100 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#170 | 791 | | ug/kg | 168 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 50 |
| Cl9-BZ#206 | 202 | | ug/kg | 168 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 79 | | 30-150 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-02 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 19:22 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 16800 | E | ug/kg | 168 | -- | 50 |
| Cl5-BZ#101 | 7400 | E | ug/kg | 168 | -- | 50 |
| Cl6-BZ#153 | 5980 | E | ug/kg | 168 | -- | 50 |
| Cl5-BZ#105 | 617 | | ug/kg | 168 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 92 | 30-150 |
| BZ 198 | 79 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-02 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/31/10 14:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 17000 | | ug/kg | 3370 | -- | 1000 |
| Cl3-BZ#18 | 38200 | | ug/kg | 3370 | -- | 1000 |
| Cl4-BZ#52 | 53400 | | ug/kg | 3370 | -- | 1000 |
| Cl4-BZ#66 | 17300 | | ug/kg | 3370 | -- | 1000 |
| Cl5-BZ#118 | 9470 | | ug/kg | 3370 | -- | 1000 |
| Cl6-BZ#138 | 6170 | | ug/kg | 3370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-02 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/31/10 14:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 53900 | | ug/kg | 3370 | -- | 1000 |
| Cl4-BZ#44 | 16400 | | ug/kg | 3370 | -- | 1000 |
| Cl5-BZ#101 | 14000 | | ug/kg | 3370 | -- | 1000 |
| Cl6-BZ#153 | 11200 | | ug/kg | 3370 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-03 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 REP | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 20:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 8130 | E | ug/kg | 169 | -- | 50 |
| Cl3-BZ#18 | 20300 | E | ug/kg | 169 | -- | 50 |
| Cl4-BZ#52 | 27000 | E | ug/kg | 169 | -- | 50 |
| Cl4-BZ#44 | 7350 | E | ug/kg | 169 | -- | 50 |
| Cl4-BZ#66 | 9000 | E | ug/kg | 169 | -- | 50 |
| Cl5-BZ#118 | 4810 | E | ug/kg | 169 | -- | 50 |
| Cl6-BZ#138 | 3260 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#187 | 1050 | | ug/kg | 169 | -- | 50 |
| Cl6-BZ#128 | 613 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#180 | 786 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#170 | 567 | | ug/kg | 169 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 169 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 169 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 169 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 89 | | 30-150 |
| BZ 198 | 72 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-03 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 REP | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 20:03 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 16700 | E | ug/kg | 169 | -- | 50 |
| Cl5-BZ#101 | 5900 | E | ug/kg | 169 | -- | 50 |
| Cl6-BZ#153 | 4670 | E | ug/kg | 169 | -- | 50 |
| Cl5-BZ#105 | 486 | | ug/kg | 169 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 89 | 30-150 |
| BZ 198 | 72 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-03 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 REP | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/31/10 16:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 10900 | | ug/kg | 3380 | -- | 1000 |
| Cl3-BZ#18 | 27100 | | ug/kg | 3380 | -- | 1000 |
| Cl4-BZ#52 | 35000 | | ug/kg | 3380 | -- | 1000 |
| Cl4-BZ#66 | 11100 | | ug/kg | 3380 | -- | 1000 |
| Cl5-BZ#118 | 5940 | | ug/kg | 3380 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-03 | Date Collected: | 11/22/10 10:00 |
| Client ID: | S-10N-G002-0-0 REP | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/31/10 16:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 30100 | | ug/kg | 3380 | -- | 1000 |
| Cl4-BZ#44 | 10700 | | ug/kg | 3380 | -- | 1000 |
| Cl5-BZ#101 | 9180 | | ug/kg | 3380 | -- | 1000 |
| Cl6-BZ#153 | 7340 | | ug/kg | 3380 | -- | 1000 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-04 | Date Collected: | 11/22/10 11:05 |
| Client ID: | S-10N-G003-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 20:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 576 | | ug/kg | 168 | -- | 50 |
| Cl3-BZ#18 | 1070 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#52 | 3320 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#66 | 2440 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#118 | 2060 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#138 | 1420 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#180 | 281 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#170 | 216 | | ug/kg | 168 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 168 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 168 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 168 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 131 | | 30-150 |
| BZ 198 | 96 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018719-04 | Date Collected: | 11/22/10 11:05 |
| Client ID: | S-10N-G003-0-0 | Date Received: | 11/22/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 20:44 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 98% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2900 | | ug/kg | 168 | -- | 50 |
| Cl4-BZ#44 | 1180 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#101 | 1740 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#153 | 1450 | | ug/kg | 168 | -- | 50 |
| Cl5-BZ#105 | 489 | | ug/kg | 168 | -- | 50 |
| Cl7-BZ#187 | 278 | | ug/kg | 168 | -- | 50 |
| Cl6-BZ#128 | 226 | | ug/kg | 168 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 131 | 30-150 |
| BZ 198 | 96 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719
**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/29/10 13:13
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/15/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 12/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG447894-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/29/10 13:13
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/15/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 12/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG447894-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1018719
**Report Date:** 01/03/11

| 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): 01-04 QC Batch ID: WG447894-4 WG447894-5 QC Sample: L1018719-02 Client ID: S-10N-G002-0-0 | | | | | | | | | | | | |
| Cl2-BZ#8 | 17000 | 1690 | 12900 | **0** | Q | 12700 | **142** | Q | 40-140 | 2 | | 30 |
| Cl3-BZ#18 | 38200 | 1690 | 24400 | **0** | Q | 20700 | **30** | Q | 40-140 | 16 | | 30 |
| Cl4-BZ#52 | 53400 | 1690 | 40800 | **0** | Q | 41600 | **354** | Q | 40-140 | 2 | | 30 |
| Cl4-BZ#66 | 17300 | 1690 | 14200 | **0** | Q | 14100 | 112 | | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 9470 | 1690 | 8450 | **0** | Q | 8350 | 100 | | 40-140 | 1 | | 30 |
| Cl6-BZ#138 | 6170 | 1690 | 5950 | **0** | Q | 6250 | 104 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 1450 | 1690 | 2360 | 54 | | 2380 | 55 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 796 | 1690 | 1780 | 58 | | 1920 | 66 | | 40-140 | 8 | | 30 |
| Cl7-BZ#180 | 1100 | 1690 | 1980 | 52 | | 2070 | 57 | | 40-140 | 4 | | 30 |
| Cl7-BZ#170 | 791 | 1690 | 1770 | 58 | | 1870 | 64 | | 40-140 | 5 | | 30 |
| Cl8-BZ#195 | ND | 1690 | 1270 | 75 | | 1320 | 78 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | 202 | 1690 | 1420 | 72 | | 1490 | 76 | | 40-140 | 5 | | 30 |
| Cl10-BZ#209 | ND | 1690 | 1140 | 67 | | 1200 | 71 | | 40-140 | 5 | | 30 |
| Cl3-BZ#28 | 53900 | 1690 | 39200 | **0** | Q | 35000 | **1070** | Q | 40-140 | 11 | | 30 |
| Cl4-BZ#44 | 16400 | 1690 | 13400 | **0** | Q | 13700 | **335** | Q | 40-140 | 2 | | 30 |
| Cl5-BZ#101 | 14000 | 1690 | 12100 | **0** | Q | 12000 | **272** | Q | 40-140 | 1 | | 30 |
| Cl6-BZ#153 | 11200 | 1690 | 9760 | **0** | Q | 10000 | **237** | Q | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 617 | 1690 | 1490 | 52 | | 1570 | 56 | | 40-140 | 5 | | 30 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1018719
**Report Date:** 01/03/11

| 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): 01-04 QC Batch ID: WG447894-4 WG447894-5 QC Sample: L1018719-02 Client ID: S-10N-G002-0-0 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 67 | | 69 | | 30-150 |
| DBOB | 80 | | 63 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1018719
**Report Date:** 01/03/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG447894-2 WG447894-3 | | | | | | | | |
| Cl2-BZ#8 | 89 | | 70 | | 40-140 | 24 | | 30 |
| Cl3-BZ#18 | 91 | | 78 | | 40-140 | 15 | | 30 |
| Cl3-BZ#28 | 97 | | 85 | | 40-140 | 13 | | 30 |
| Cl4-BZ#52 | 92 | | 84 | | 40-140 | 9 | | 30 |
| Cl4-BZ#44 | 93 | | 96 | | 40-140 | 3 | | 30 |
| Cl4-BZ#66 | 96 | | 92 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 94 | | 91 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 100 | | 98 | | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 92 | | 92 | | 40-140 | 0 | | 30 |
| Cl6-BZ#138 | 95 | | 93 | | 40-140 | 2 | | 30 |
| Cl7-BZ#187 | 90 | | 89 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 90 | | 88 | | 40-140 | 2 | | 30 |
| Cl7-BZ#180 | 87 | | 86 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 87 | | 85 | | 40-140 | 2 | | 30 |
| Cl8-BZ#195 | 83 | | 80 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | 98 | | 92 | | 40-140 | 6 | | 30 |
| Cl10-BZ#209 | 87 | | 82 | | 40-140 | 6 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG447894-2 | WG447894-3 | | | |
| DBOB | 93 | | 76 | | 30-150 | | | |
| BZ 198 | 83 | | 79 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-04 | Batch: | WG447894-2 | WG447894-3 | | | |
| Cl6-BZ#153 | 87 | | 85 | | 40-140 | 2 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 93 | | 76 | | 30-150 |
| BZ 198 | 83 | | 79 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018719-01
Client ID: S-10N-G001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/22/10 09:10
Date Received: 11/22/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.47 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 3.50 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.100 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 1.10 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.50 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 11.7 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 24.7 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 13.9 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 40.9 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 5.10 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 97.0 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.6 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018719-02
Client ID: S-10N-G002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/22/10 10:00
Date Received: 11/22/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.80 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.05 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.100 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.900 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 2.80 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 3.40 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.60 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 7.10 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 59.3 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 21.8 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 97.3 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 28.9 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018719-03
Client ID: S-10N-G002-0-0 REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/22/10 10:00
Date Received: 11/22/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.12 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.10 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.200 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.400 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 1.70 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 3.10 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 4.00 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 6.80 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 64.7 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 19.0 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 97.2 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 30.0 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018719-04
Client ID: S-10N-G003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/22/10 11:05
Date Received: 11/22/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 2.94 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 3.15 | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | 0.300 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 2.90 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 4.70 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 4.30 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 5.20 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 7.00 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 57.7 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 17.8 | | % | 0.100 | NA | 1 | - | 12/01/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 98.1 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 30.0 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG446281-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 12/14/10 07:00 | 1,9060 | NR |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG446281-4 QC Sample: L1018719-02 Client ID: S-10N-G002-0-0 | | | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.80 | 1.83 | 6.52 | 94 | | - | - | | 75-125 | - | | 25 |
| Total Organic Carbon (Rep2) | 5.05 | 1.86 | 7.09 | 123 | | - | - | | 75-125 | - | | 25 |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG445681-1 QC Sample: L1018719-01 Client ID: S-10N-G001-0-0 | | | | | | |
| Gravel (>2.00mm) | 0.1 | ND | % | NC | | 20 |
| Very Coarse Sand (1.00-2.00 mm) | 1.1 | 0.600 | % | **59** | Q | 20 |
| Coarse Sand (0.50-1.00 mm) | 2.5 | 1.90 | % | **27** | Q | 20 |
| Medium Sand (0.25-0.50 mm) | 11.7 | 10.4 | % | 12 | | 20 |
| Fine Sand (0.125-0.25 mm) | 24.7 | 24.4 | % | 1 | | 20 |
| Very Fine Sand (0.063-0.125 mm) | 13.9 | 14.5 | % | 4 | | 20 |
| Silt - (1.95-62.5 um) | 40.9 | 41.7 | % | 2 | | 20 |
| Clay - (<1.95 um) | 5.1 | 6.50 | % | **24** | Q | 20 |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG446281-3 QC Sample: L1018719-02 Client ID: S-10N-G002-0-0 | | | | | | |
| Total Organic Carbon (Rep1) | 4.80 | 4.76 | % | 1 | | 25 |
| Total Organic Carbon (Rep2) | 5.05 | 4.80 | % | 5 | | 25 |
| General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG447965-1 QC Sample: L1018963-03 Client ID: DUP Sample | | | | | | |
| Solids, Total | 97.1 | 96.9 | % | 0 | | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018719
**Project Number:** TO-0010-03 **Report Date:** 01/03/11

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG446281-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 114 | | 75-125 |
| Total Organic Carbon (Rep2) | 101 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

**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(*) |
|---|---|---|---|---|---|---|---|
| L1018719-01A | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1018719-01B | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1018719-01C | Bag | A | N/A | 4.4 | Y | Absent | A2-HYDROMETER(),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |
| L1018719-01D | Bag | A | N/A | 4.4 | Y | Absent | - |
| L1018719-02A | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1018719-02B | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018719-02C | Bag | A | N/A | 4.4 | Y | Absent | A2-HYDROMETER(),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1018719-02D | Bag | A | N/A | 4.4 | Y | Absent | A2-PCBCONG-8082-NOAA(14) |
| L1018719-02E | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | - |
| L1018719-03A | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1018719-03C | Glass 100ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-HYDROMETER(),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#20(7) |
| L1018719-03D | Bag | A | N/A | 4.4 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1018719-04A | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |
| L1018719-04B | Glass 250ml unpreserved | A | N/A | 4.4 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018719
**Report Date:** 01/03/11

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018719-04C | Bag | A | N/A | 4.4 | Y | Absent | A2-HYDROMETER(),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7) |
| L1018719-04D | Bag | A | N/A | 4.4 | Y | Absent | - |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

***Data Qualifiers***

**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 | **Lab Number:** | L1018719 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

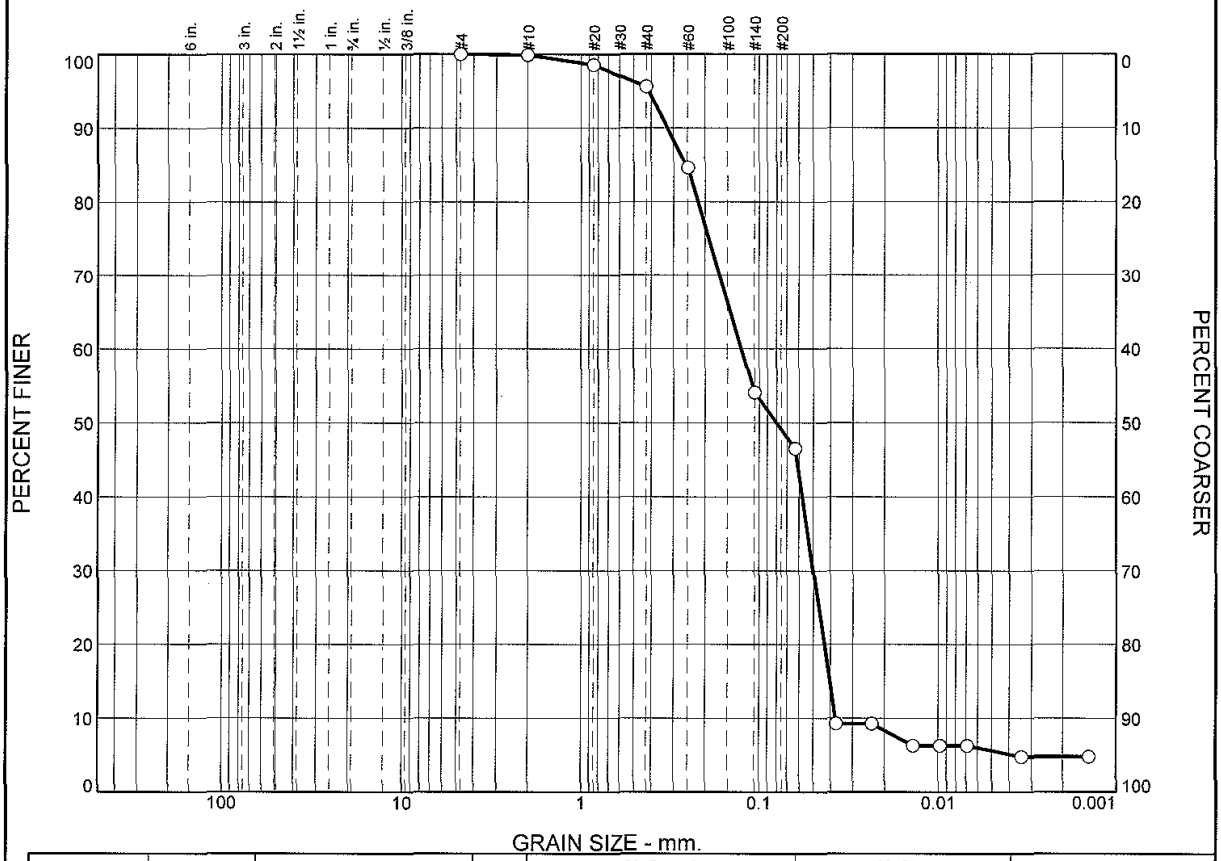

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer Analysis

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.1 | 1.1 | 2.5 | 11.7 | 24.7 | 13.9 | 36.8 | 2.2 | 0.7 | 1.2 | 5.1 |

| Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.2547 | 0.1252 | 0.0801 | 0.0498 | 0.0402 | 0.0375 | 0.53 | 3.34 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1018719 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10N-G001-0-0 **Sample Number:** L1018719-01

**Date:** ○

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

12/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1018719
**Location:** S-10N-G001-0-0
**Sample Number:** L1018719-01

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 50.31 | 0.00 | #4 | 527.08 | 527.08 | 100.0 | 0.0 |
| | | #10 | 493.12 | 493.07 | 99.9 | 0.1 |
| | | #20 | 423.67 | 423.00 | 98.6 | 1.4 |
| | | #40 | 375.83 | 374.34 | 95.6 | 4.4 |
| | | #60 | 366.02 | 360.49 | 84.6 | 15.4 |
| | | #140 | 352.33 | 336.96 | 54.1 | 45.9 |
| | | #230 | 323.35 | 319.55 | 46.5 | 53.5 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 46.5
**Weight of hydrometer sample =**50.31
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0371 | 9.2 | 90.8 |
| 5.00 | 22.0 | 1.0060 | 1.0062 | 0.0133 | 3.0 | 15.5 | 0.0234 | 9.2 | 90.8 |
| 15.00 | 22.0 | 1.0040 | 1.0042 | 0.0133 | 1.0 | 16.0 | 0.0138 | 6.3 | 93.7 |
| 30.00 | 22.0 | 1.0040 | 1.0042 | 0.0133 | 1.0 | 16.0 | 0.0097 | 6.3 | 93.7 |
| 60.00 | 22.0 | 1.0040 | 1.0042 | 0.0133 | 1.0 | 16.0 | 0.0069 | 6.3 | 93.7 |
| 250.00 | 22.0 | 1.0030 | 1.0032 | 0.0133 | 0.0 | 16.3 | 0.0034 | 4.8 | 95.2 |
| 1440.00 | 22.0 | 1.0030 | 1.0032 | 0.0133 | 0.0 | 16.3 | 0.0014 | 4.8 | 95.2 |

### Fractional Components

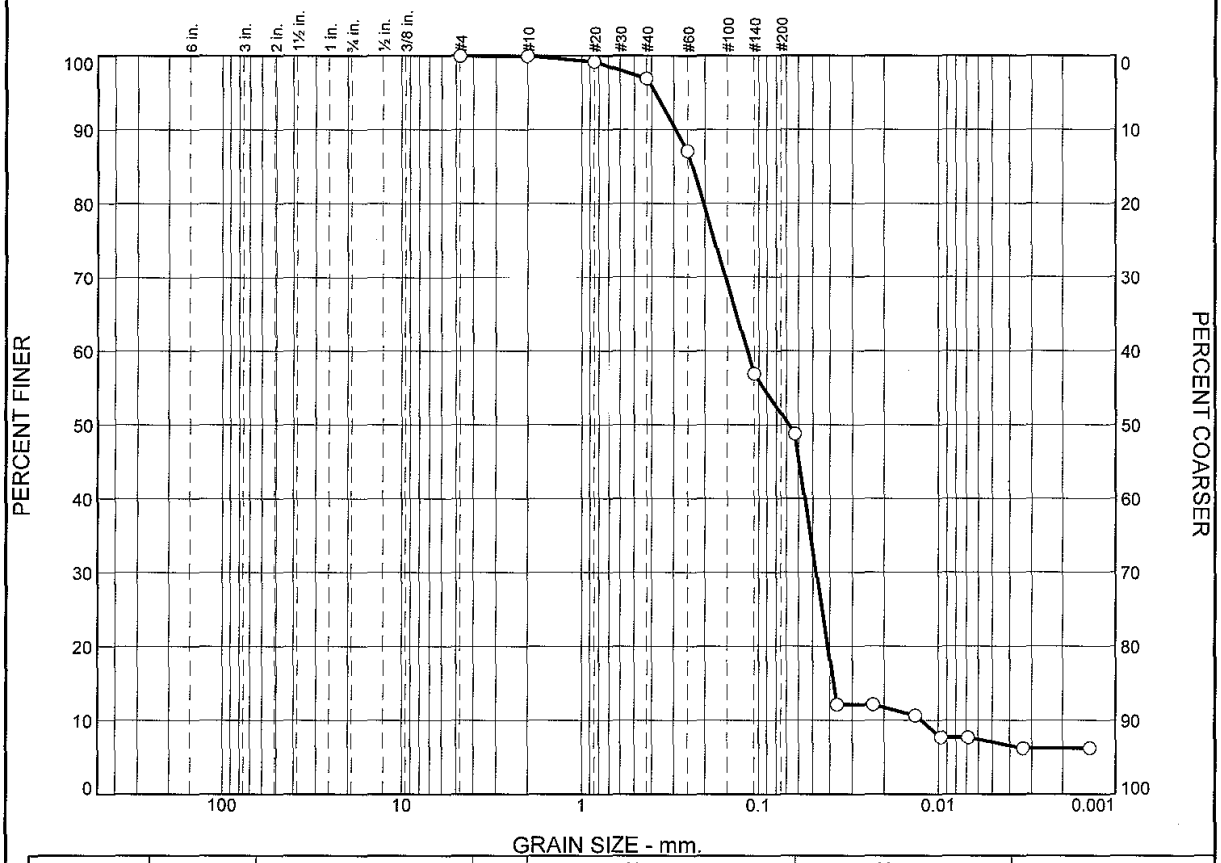
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.1 | 1.1 | 2.5 | 11.7 | 24.7 | 13.9 | 53.9 | 36.8 | 2.2 | 0.7 | 1.2 | 40.9 | 5.1 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0375 | 0.0402 | 0.0432 | 0.0498 | 0.0801 | 0.1252 | 0.2196 | 0.2547 | 0.3242 | 0.4127 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.49 | 3.34 | 0.53 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | | | | 0.0 | 0.6 | 1.9 | 10.4 | 24.4 | 14.5 | 36.1 | 1.1 | 3.3 | 1.2 | 6.5 |

| Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.2355 | 0.1157 | 0.0682 | 0.0476 | 0.0380 | 0.0125 | 1.56 | 9.24 |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1018719 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10N-G001-0-0 **Sample Number:** WG445681-1

**Date:** ○

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

12/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1018719
**Location:** S-10N-G001-0-0
**Sample Number:** WG445681-1

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 53.19 | 0.00 | #4 | 527.59 | 527.58 | 100.0 | 0.0 |
| | | #10 | 492.80 | 492.79 | 100.0 | 0.0 |
| | | #20 | 417.90 | 417.50 | 99.2 | 0.8 |
| | | #40 | 377.20 | 375.98 | 96.9 | 3.1 |
| | | #60 | 370.92 | 365.70 | 87.1 | 12.9 |
| | | #140 | 358.76 | 342.70 | 56.9 | 43.1 |
| | | #230 | 324.06 | 319.72 | 48.7 | 51.3 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 48.7
**Weight of hydrometer sample =**53.19
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0364 | 12.1 | 87.9 |
| 5.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0230 | 12.1 | 87.9 |
| 15.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0134 | 10.6 | 89.4 |
| 30.00 | 22.0 | 1.0050 | 1.0052 | 0.0133 | 2.0 | 15.8 | 0.0097 | 7.7 | 92.3 |
| 60.00 | 22.0 | 1.0050 | 1.0052 | 0.0133 | 2.0 | 15.8 | 0.0068 | 7.7 | 92.3 |
| 250.00 | 22.0 | 1.0040 | 1.0042 | 0.0133 | 1.0 | 16.0 | 0.0034 | 6.2 | 93.8 |
| 1440.00 | 22.0 | 1.0040 | 1.0042 | 0.0133 | 1.0 | 16.0 | 0.0014 | 6.2 | 93.8 |

### Fractional Components

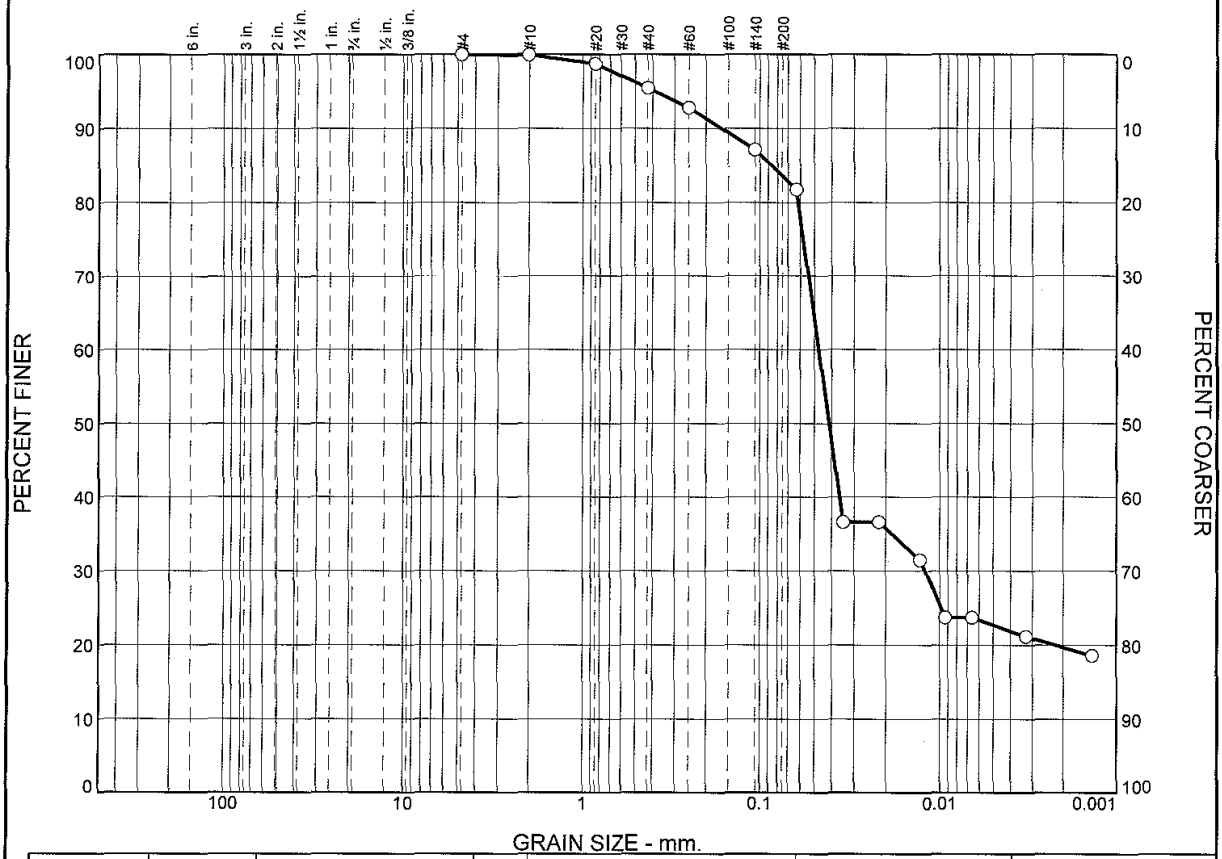
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| | | | 0.0 | 0.6 | 1.9 | 10.4 | 24.4 | 14.5 | 51.8 | 36.1 | 1.1 | 3.3 | 1.2 | 41.7 | 6.5 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0.0125 | 0.0380 | 0.0410 | 0.0476 | 0.0682 | 0.1157 | 0.2043 | 0.2355 | 0.2924 | 0.3832 |

| Fineness Modulus | $C_u$ | $C_c$ |
|---|---|---|
| 0.43 | 9.24 | 1.56 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.1 | 0.9 | 2.8 | 3.4 | 4.6 | 7.1 | 44.5 | 3.3 | 9.6 | 1.9 | 21.8 |

| | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.0863 | 0.0471 | 0.0412 | 0.0121 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1018719 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10N-G002-0-0 **Sample Number:** L1018719-02

**Date:** ○

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

12/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1018719
**Location:** S-10N-G002-0-0
**Sample Number:** L1018719-02

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 50.99 | 0.00 | #4 | 527.01 | 527.01 | 100.0 | 0.0 |
| | | #10 | 493.04 | 493.00 | 99.9 | 0.1 |
| | | #20 | 423.50 | 422.90 | 98.7 | 1.3 |
| | | #40 | 375.90 | 374.23 | 95.5 | 4.5 |
| | | #60 | 361.80 | 360.45 | 92.8 | 7.2 |
| | | #140 | 339.77 | 336.87 | 87.1 | 12.9 |
| | | #230 | 322.02 | 319.27 | 81.7 | 18.3 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 81.7
**Weight of hydrometer sample =**50.99
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C = -**.04
**Meniscus correction only = -**3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0140 | 1.0142 | 0.0133 | 11.0 | 13.4 | 0.0344 | 36.6 | 63.4 |
| 5.00 | 22.0 | 1.0140 | 1.0142 | 0.0133 | 11.0 | 13.4 | 0.0218 | 36.6 | 63.4 |
| 15.00 | 22.0 | 1.0120 | 1.0122 | 0.0133 | 9.0 | 13.9 | 0.0128 | 31.4 | 68.6 |
| 30.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0093 | 23.7 | 76.3 |
| 60.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0066 | 23.7 | 76.3 |
| 250.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0033 | 21.1 | 78.9 |
| 1440.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0014 | 18.6 | 81.4 |

### Fractional Components

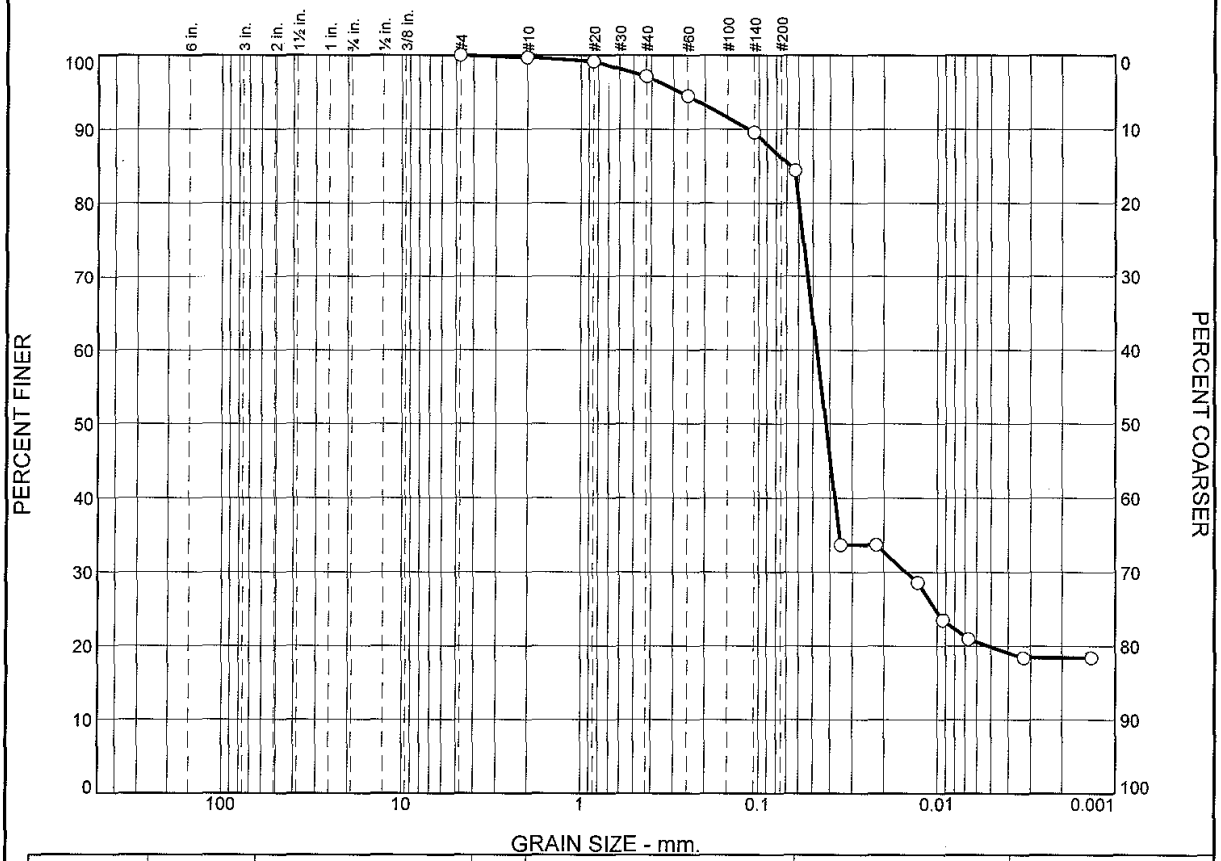
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.1 | 0.9 | 2.8 | 3.4 | 4.6 | 7.1 | 18.8 | 44.5 | 3.3 | 9.6 | 1.9 | 59.3 | 21.8 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0022 | 0.0121 | 0.0412 | 0.0471 | 0.0615 | 0.0863 | 0.1633 | 0.3868 |

| Fineness Modulus |
|---|
| 0.21 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 | 1.7 | 3.1 | 4.0 | 6.8 | 50.0 | 3.3 | 8.3 | 3.1 | 19.0 |

| | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.0668 | 0.0473 | 0.0421 | 0.0150 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1018719 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10N-G002-0-0 Rep **Sample Number:** L1018719-03

**Date:** ○

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

12/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1018719
**Location:** S-10N-G002-0-0 Rep
**Sample Number:** L1018719-03

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 53.20 | 0.00 | #4 | 527.40 | 527.40 | 100.0 | 0.0 |
| | | #10 | 492.76 | 492.61 | 99.7 | 0.3 |
| | | #20 | 417.55 | 417.26 | 99.2 | 0.8 |
| | | #40 | 376.93 | 375.86 | 97.2 | 2.8 |
| | | #60 | 366.90 | 365.50 | 94.5 | 5.5 |
| | | #140 | 345.20 | 342.57 | 89.6 | 10.4 |
| | | #230 | 322.30 | 319.55 | 84.4 | 15.6 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 84.4
**Weight of hydrometer sample =**53.20
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0348 | 33.7 | 66.3 |
| 5.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0220 | 33.7 | 66.3 |
| 15.00 | 22.0 | 1.0110 | 1.0112 | 0.0133 | 8.0 | 14.2 | 0.0129 | 28.6 | 71.4 |
| 30.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0093 | 23.5 | 76.5 |
| 60.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0067 | 20.9 | 79.1 |
| 250.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0033 | 18.4 | 81.6 |
| 1440.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0014 | 18.4 | 81.6 |

### Fractional Components

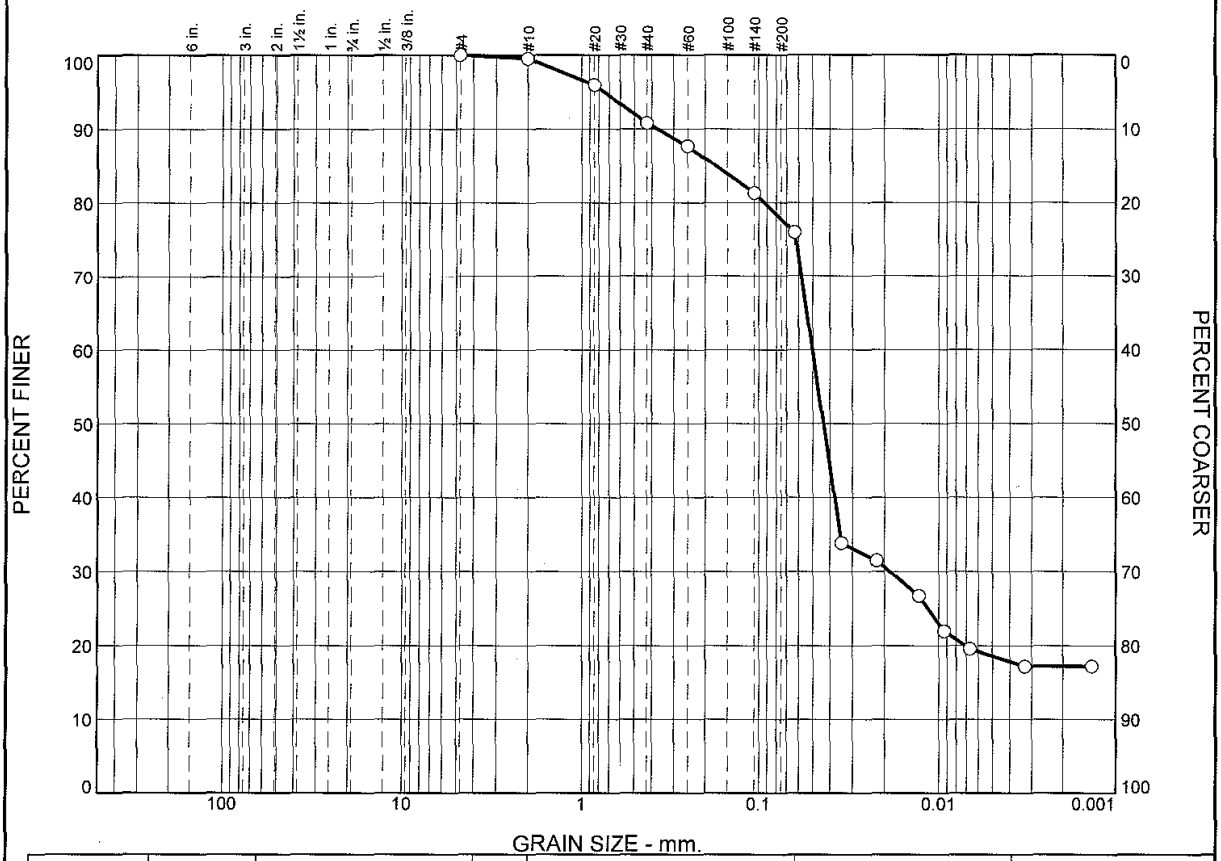
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.2 | 0.4 | 1.7 | 3.1 | 4.0 | 6.8 | 16.0 | 50.0 | 3.3 | 8.3 | 3.1 | 64.7 | 19.0 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0051 | 0.0150 | 0.0421 | 0.0473 | 0.0598 | 0.0668 | 0.1139 | 0.2748 |

| Fineness Modulus |
|---|
| 0.16 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.1 | 0.3 | 2.9 | 4.7 | 4.3 | 5.2 | 7.0 | 42.2 | 4.9 | 7.7 | 2.9 | 17.8 |

| | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.1743 | 0.0501 | 0.0434 | 0.0187 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** L1018719 **Client:** Woods Hole Group

**Project:** NBH Enviromental Monitoring

○ **Source of Sample:** S-10N-G003-0-0 **Sample Number:** L1018719-04

**Date:** ○

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

12/15/2010

**Client:** Woods Hole Group
**Project:** NBH Enviromental Monitoring
**Project Number:** L1018719
**Location:** S-10N-G003-0-0
**Sample Number:** L1018719-04

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 51.24 | 0.00 | #4 | 527.05 | 527.05 | 100.0 | 0.0 |
| | | #10 | 493.29 | 493.06 | 99.6 | 0.4 |
| | | #20 | 424.84 | 423.01 | 96.0 | 4.0 |
| | | #40 | 376.98 | 374.33 | 90.8 | 9.2 |
| | | #60 | 362.08 | 360.47 | 87.7 | 12.3 |
| | | #140 | 340.15 | 336.90 | 81.3 | 18.7 |
| | | #230 | 322.03 | 319.31 | 76.0 | 24.0 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 76.0
**Weight of hydrometer sample =**51.24
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 22.0 | 1.0140 | 1.0142 | 0.0133 | 11.0 | 13.4 | 0.0344 | 33.9 | 66.1 |
| 5.00 | 22.0 | 1.0130 | 1.0132 | 0.0133 | 10.0 | 13.6 | 0.0220 | 31.5 | 68.5 |
| 15.00 | 22.0 | 1.0110 | 1.0112 | 0.0133 | 8.0 | 14.2 | 0.0129 | 26.7 | 73.3 |
| 30.00 | 22.0 | 1.0090 | 1.0092 | 0.0133 | 6.0 | 14.7 | 0.0093 | 21.9 | 78.1 |
| 60.00 | 22.0 | 1.0080 | 1.0082 | 0.0133 | 5.0 | 15.0 | 0.0067 | 19.6 | 80.4 |
| 250.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0033 | 17.2 | 82.8 |
| 1440.00 | 22.0 | 1.0070 | 1.0072 | 0.0133 | 4.0 | 15.2 | 0.0014 | 17.2 | 82.8 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.1 | 0.3 | 2.9 | 4.7 | 4.3 | 5.2 | 7.0 | 24.1 | 42.2 | 4.9 | 7.7 | 2.9 | 57.7 | 17.8 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0071 | 0.0187 | 0.0434 | 0.0501 | 0.0931 | 0.1743 | 0.3708 | 0.7454 |

| Fineness Modulus |
|---|
| 0.37 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1018719

**Client Information**

Client: Woods Hole Group
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

**Project Information**

Project Name: NBH Environ. Monitoring
Project Location: New Bedford, MA
Project #: TD-0010-03
Project Manager: Dave Walsh
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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:
Level III data report & project specific EDDs

**PLEASE NOTE**
MS/MSD (at unit cost) will be omitted unless you check here: ☐

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | NOAA 18 PCB Cong. | TOC | Grainsize (hydrometer/wet sieve) | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S-1ØN-GØØ1-Ø-Ø | 11/22/10 | 09:10 | SE | KGM | X | X | | | 2 |
| ↓ | S-1ØN-GØØ1-Ø-Ø | ↓ | 09:10 | ↓ | ↓ | | | X | | 1 |
| 2 | S-1ØN-GØØ2-Ø-Ø | | 10:00 | | | X | X | | | 2 |
| ↓ | S-1ØN-GØØ2-Ø-Ø | | 10:00 | | | | | X | | 1 |
| -3 | S-1ØN-GØØ2-Ø-ØREP | | 10:00 | | | X | X | | | 1 |
| ↓ | S-1ØN-GØØ2-Ø-ØREP | | 10:00 | | | | | X | | 1 |
| -2 | S-1ØN-GØØ2-Ø-ØMSMSD | | 10:00 | | | X | | | | 1 |
| -4 | S-1ØN-GØØ3-Ø-Ø | | 11:05 | | | X | X | | | 2 |
| ↓ | S-1ØN-GØØ3-Ø-Ø | ↓ | 11:05 | ↓ | ↓ | | | X | | 1 |

**SAMPLE HANDLING**
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| | | | |
|---|---|---|---|
| Container Type | A | O | |
| Preservative | A | A | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Michael Walsh | 11/22/10 1430 | [signature] | 11/22/10 1430 |

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.

FORM NO: 101-09 (rev. 27-SEP-10)



Serial_No:01031114:07

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1018963 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NEW BEDFORD HARBOR |
| Project Number: | TO-0010-03 |
| Report Date: | 01/03/11 |

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.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1018963-01 | S-10N-T001-0-0 | NEW BEDFORD, MA | 11/23/10 11:20 |
| L1018963-02 | S-10N-T002-0-0 | NEW BEDFORD, MA | 11/23/10 12:20 |
| L1018963-03 | S-10N-T003-0-0 | NEW BEDFORD, MA | 11/23/10 13:30 |

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018963 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## 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.

---

Sample Receipt

Sediment samples were received intact on November 24, 2010 and placed in frozen storage on November 29, 2010 until December 07, 2010 when aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in frozen storage until they were removed December 15, 2010 to extract samples for PCB Congener analysis and analyze for air-dried percent solids.

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 | **Lab Number:** | L1018963 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

**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.

L1018963-01 and -02 were re-analyzed on dilution in order to quantitate the samples 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 analyses. The re-analyses were performed only for the compounds that exceeded the calibration range.

Grain Size

The WG449668-1 Laboratory Duplicate RPD, performed on L1018963-03, is outside the acceptance criteria for % Coarse Sand (40%), % Medium Sand (52%), % Fine Sand (22%), % Very Fine Sand (35%), Clay (48%) and Sand (35%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: 01/03/11

# ORGANICS

# PCBS

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-01 | Date Collected: | 11/23/10 11:20 |
| Client ID: | S-10N-T001-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 15:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1710 | | ug/kg | 170 | -- | 50 |
| Cl3-BZ#18 | 4420 | E | ug/kg | 170 | -- | 50 |
| Cl4-BZ#52 | 9810 | E | ug/kg | 170 | -- | 50 |
| Cl4-BZ#66 | 2800 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#118 | 1530 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#138 | 1500 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#128 | 314 | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#180 | 309 | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#170 | 241 | | ug/kg | 170 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 170 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 170 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 170 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 92 | | 30-150 |
| BZ 198 | 67 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-01 | Date Collected: | 11/23/10 11:20 |
| Client ID: | S-10N-T001-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 15:16 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 6710 | E | ug/kg | 170 | -- | 50 |
| Cl4-BZ#44 | 2440 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#101 | 1800 | | ug/kg | 170 | -- | 50 |
| Cl6-BZ#153 | 2080 | | ug/kg | 170 | -- | 50 |
| Cl5-BZ#105 | 292 | | ug/kg | 170 | -- | 50 |
| Cl7-BZ#187 | 513 | | ug/kg | 170 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 92 | 30-150 |
| BZ 198 | 67 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018963-01 | D | Date Collected: | 11/23/10 11:20 |
| Client ID: | S-10N-T001-0-0 | | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 11:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4630 | | ug/kg | 1700 | -- | 500 |
| Cl4-BZ#52 | 12000 | | ug/kg | 1700 | -- | 500 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018963-01 | D | Date Collected: | 11/23/10 11:20 |
| Client ID: | S-10N-T001-0-0 | | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 11:45 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 9070 | | ug/kg | 1700 | -- | 500 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-02 | Date Collected: | 11/23/10 12:20 |
| Client ID: | S-10N-T002-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 15:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3740 | E | ug/kg | 174 | -- | 50 |
| Cl3-BZ#18 | 10400 | E | ug/kg | 174 | -- | 50 |
| Cl4-BZ#52 | 20600 | E | ug/kg | 174 | -- | 50 |
| Cl4-BZ#44 | 5260 | E | ug/kg | 174 | -- | 50 |
| Cl4-BZ#66 | 6450 | E | ug/kg | 174 | -- | 50 |
| Cl5-BZ#118 | 3650 | E | ug/kg | 174 | -- | 50 |
| Cl6-BZ#138 | 2960 | | ug/kg | 174 | -- | 50 |
| Cl7-BZ#187 | 876 | | ug/kg | 174 | -- | 50 |
| Cl6-BZ#128 | 672 | | ug/kg | 174 | -- | 50 |
| Cl7-BZ#180 | 681 | | ug/kg | 174 | -- | 50 |
| Cl7-BZ#170 | 509 | | ug/kg | 174 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 174 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 174 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 174 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 73 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-02 | Date Collected: | 11/23/10 12:20 |
| Client ID: | S-10N-T002-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 15:57 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 95% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 11900 | E | ug/kg | 174 | -- | 50 |
| Cl5-BZ#101 | 4050 | E | ug/kg | 174 | -- | 50 |
| Cl6-BZ#153 | 3520 | E | ug/kg | 174 | -- | 50 |
| Cl5-BZ#105 | 497 | | ug/kg | 174 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 104 | 30-150 |
| BZ 198 | 73 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018963-02 | D | Date Collected: | 11/23/10 12:20 |
| Client ID: | S-10N-T002-0-0 | | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 12:26 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 5420 | | ug/kg | 1740 | -- | 500 |
| Cl3-BZ#18 | 14900 | | ug/kg | 1740 | -- | 500 |
| Cl4-BZ#52 | 25800 | | ug/kg | 1740 | -- | 500 |
| Cl4-BZ#66 | 8010 | | ug/kg | 1740 | -- | 500 |
| Cl5-BZ#118 | 4590 | | ug/kg | 1740 | -- | 500 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | | |
|---|---|---|---|---|
| Lab ID: | L1018963-02 | D | Date Collected: | 11/23/10 12:20 |
| Client ID: | S-10N-T002-0-0 | | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | | Field Prep: | Not Specified |
| Matrix: | Sediment | | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/30/10 12:26 | | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 95% | | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 22700 | | ug/kg | 1740 | -- | 500 |
| Cl4-BZ#44 | 7970 | | ug/kg | 1740 | -- | 500 |
| Cl5-BZ#101 | 6580 | | ug/kg | 1740 | -- | 500 |
| Cl6-BZ#153 | 5840 | | ug/kg | 1740 | -- | 500 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-03 | Date Collected: | 11/23/10 13:30 |
| Client ID: | S-10N-T003-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 16:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 465 | | ug/kg | 169 | -- | 50 |
| Cl3-BZ#18 | 717 | | ug/kg | 169 | -- | 50 |
| Cl4-BZ#52 | 2940 | | ug/kg | 169 | -- | 50 |
| Cl4-BZ#66 | 2260 | | ug/kg | 169 | -- | 50 |
| Cl5-BZ#118 | 1940 | | ug/kg | 169 | -- | 50 |
| Cl6-BZ#138 | 1310 | | ug/kg | 169 | -- | 50 |
| Cl6-BZ#128 | 350 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#180 | 269 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#170 | 202 | | ug/kg | 169 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 169 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 169 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 169 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 123 | | 30-150 |
| BZ 198 | 86 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1018963-03 | Date Collected: | 11/23/10 13:30 |
| Client ID: | S-10N-T003-0-0 | Date Received: | 11/24/10 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 12/15/10 16:36 |
| Analytical Date: | 12/29/10 16:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 12/18/10 |
| Percent Solids: | 97% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2530 | | ug/kg | 169 | -- | 50 |
| Cl4-BZ#44 | 1050 | | ug/kg | 169 | -- | 50 |
| Cl5-BZ#101 | 1550 | | ug/kg | 169 | -- | 50 |
| Cl6-BZ#153 | 1320 | | ug/kg | 169 | -- | 50 |
| Cl5-BZ#105 | 452 | | ug/kg | 169 | -- | 50 |
| Cl7-BZ#187 | 252 | | ug/kg | 169 | -- | 50 |

| | | |
|---|---|---|
| DBOB | 123 | 30-150 |
| BZ 198 | 86 | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963
**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/29/10 13:13
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/15/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 12/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG447894-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 12/29/10 13:13
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 12/15/10 16:36
Cleanup Method1: EPA 3630
Cleanup Date1: 12/18/10
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-03 Batch: WG447894-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 82 | | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03
**Lab Number:** L1018963
**Report Date:** 01/03/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-03 Batch: WG447894-2 WG447894-3 | | | | | | | | |
| Cl2-BZ#8 | 89 | | 70 | | 40-140 | 24 | | 30 |
| Cl3-BZ#18 | 91 | | 78 | | 40-140 | 15 | | 30 |
| Cl3-BZ#28 | 97 | | 85 | | 40-140 | 13 | | 30 |
| Cl4-BZ#52 | 92 | | 84 | | 40-140 | 9 | | 30 |
| Cl4-BZ#44 | 93 | | 96 | | 40-140 | 3 | | 30 |
| Cl4-BZ#66 | 96 | | 92 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 94 | | 91 | | 40-140 | 3 | | 30 |
| Cl5-BZ#118 | 100 | | 98 | | 40-140 | 2 | | 30 |
| Cl5-BZ#105 | 92 | | 92 | | 40-140 | 0 | | 30 |
| Cl6-BZ#138 | 95 | | 93 | | 40-140 | 2 | | 30 |
| Cl7-BZ#187 | 90 | | 89 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 90 | | 88 | | 40-140 | 2 | | 30 |
| Cl7-BZ#180 | 87 | | 86 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 87 | | 85 | | 40-140 | 2 | | 30 |
| Cl8-BZ#195 | 83 | | 80 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | 98 | | 92 | | 40-140 | 6 | | 30 |
| Cl10-BZ#209 | 87 | | 82 | | 40-140 | 6 | | 30 |

# Lab Control Sample Analysis

**Batch Quality Control**

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG447894-2 | WG447894-3 | | | |
| DBOB | 93 | | 76 | | 30-150 | | | |
| BZ 198 | 83 | | 79 | | 30-150 | | | |
| PCB Congeners (NOAA List) - Mansfield Lab | Associated sample(s): | 01-03 | Batch: | WG447894-2 | WG447894-3 | | | |
| Cl6-BZ#153 | 87 | | 85 | | 40-140 | 2 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 93 | | 76 | | 30-150 |
| BZ 198 | 83 | | 79 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018963-01
Client ID: S-10N-T001-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/23/10 11:20
Date Received: 11/24/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 6.34 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.97 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.100 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 0.100 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 0.500 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 1.60 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 4.20 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 73.2 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 20.3 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 97.2 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.7 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018963-02
Client ID: S-10N-T002-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/23/10 12:20
Date Received: 11/24/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 5.52 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 5.31 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | 0.200 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 1.00 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 2.00 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 2.60 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 2.90 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 80.4 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 10.9 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 94.5 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 33.4 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

## SAMPLE RESULTS

Lab ID: L1018963-03
Client ID: S-10N-T003-0-0
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 11/23/10 13:30
Date Received: 11/24/10
Field Prep: Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon - Mansfield Lab** | | | | | | | | | | |
| Total Organic Carbon (Rep1) | 4.27 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | 4.57 | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| **Grain Size (Wentworth Method) - Mansfield Lab** | | | | | | | | | | |
| Gravel (>2.00mm) | ND | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Coarse Sand (1.00-2.00 mm) | ND | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Coarse Sand (0.50-1.00 mm) | 0.400 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Medium Sand (0.25-0.50 mm) | 1.00 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Fine Sand (0.125-0.25 mm) | 1.60 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Very Fine Sand (0.063-0.125 mm) | 3.30 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Silt - (1.95-62.5 um) | 81.1 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| Clay - (<1.95 um) | 12.6 | | % | 0.100 | NA | 1 | - | 12/29/10 00:00 | 12,D422(M) | SE |
| **General Chemistry - Mansfield Lab** | | | | | | | | | | |
| Solids, Total | 97.1 | | % | 0.100 | -- | 1 | - | 12/15/10 13:30 | 30,2540G | KB |
| Solids, Total (Pre-Dried) | 34.7 | | % | 0.100 | NA | 1 | - | 12/07/10 14:45 | 30,2540G | KB |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963

**Project Number:** TO-0010-03 **Report Date:** 01/03/11

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-03 Batch: WG446282-1 | | | | | | | | | | |
| Total Organic Carbon (Rep1) | ND | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |
| Total Organic Carbon (Rep2) | ND | | % | 0.010 | -- | 1 | - | 12/14/10 12:00 | 1,9060 | NR |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG447965-1 QC Sample: L1018963-03 Client ID: S-10N-T003-0-0 | | | | | | |
| Solids, Total | 97.1 | 96.9 | % | 0 | | 20 |
| Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG449668-1 QC Sample: L1018963-03 Client ID: S-10N-T003-0-0 | | | | | | |
| Gravel (>2.00mm) | ND | ND | % | NC | | 20 |
| Very Coarse Sand (1.00-2.00 mm) | ND | ND | % | NC | | 20 |
| Coarse Sand (0.50-1.00 mm) | 0.4 | 0.600 | % | **40** | Q | 20 |
| Medium Sand (0.25-0.50 mm) | 1.0 | 1.70 | % | **52** | Q | 20 |
| Fine Sand (0.125-0.25 mm) | 1.6 | 2.00 | % | **22** | Q | 20 |
| Very Fine Sand (0.063-0.125 mm) | 3.3 | 4.70 | % | **35** | Q | 20 |
| Silt - (1.95-62.5 um) | 81.1 | 70.5 | % | 14 | | 20 |
| Clay - (<1.95 um) | 12.6 | 20.5 | % | **48** | Q | 20 |

**Project Name:** NEW BEDFORD HARBOR **Lab Number:** L1018963
**Project Number:** TO-0010-03 **Report Date:** 01/03/11

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG446282-2

| Parameter | % Recovery | Qual | QC Criteria |
|---|---|---|---|
| Total Organic Carbon (Rep1) | 114 | | 75-125 |
| Total Organic Carbon (Rep2) | 101 | | 75-125 |

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

**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(*) |
|---|---|---|---|---|---|---|---|
| L1018963-01A | Glass 500ml unpreserved | A | N/A | 2.0 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |
| L1018963-02A | Glass 500ml unpreserved | A | N/A | 2.0 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR
**Project Number:** TO-0010-03

**Lab Number:** L1018963
**Report Date:** 01/03/11

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1018963-03A | Glass 1000ml unpreserved | A | N/A | 2.0 | Y | Absent | A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-SIEVE_#20(W)(7),A2-HYDRO-FSAND(W)(),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#60(W)(7),A2-TOC-9060-2REPS(28),A2-TS-PREDRIED(7),A2-SIEVE_#4(W)(7) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018963 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## 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. |
| 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. |

***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. |
| **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. |
| **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. |
| **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. |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NEW BEDFORD HARBOR | **Lab Number:** | L1018963 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

***Data Qualifiers***

**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 | **Lab Number:** | L1018963 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 01/03/11 |

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

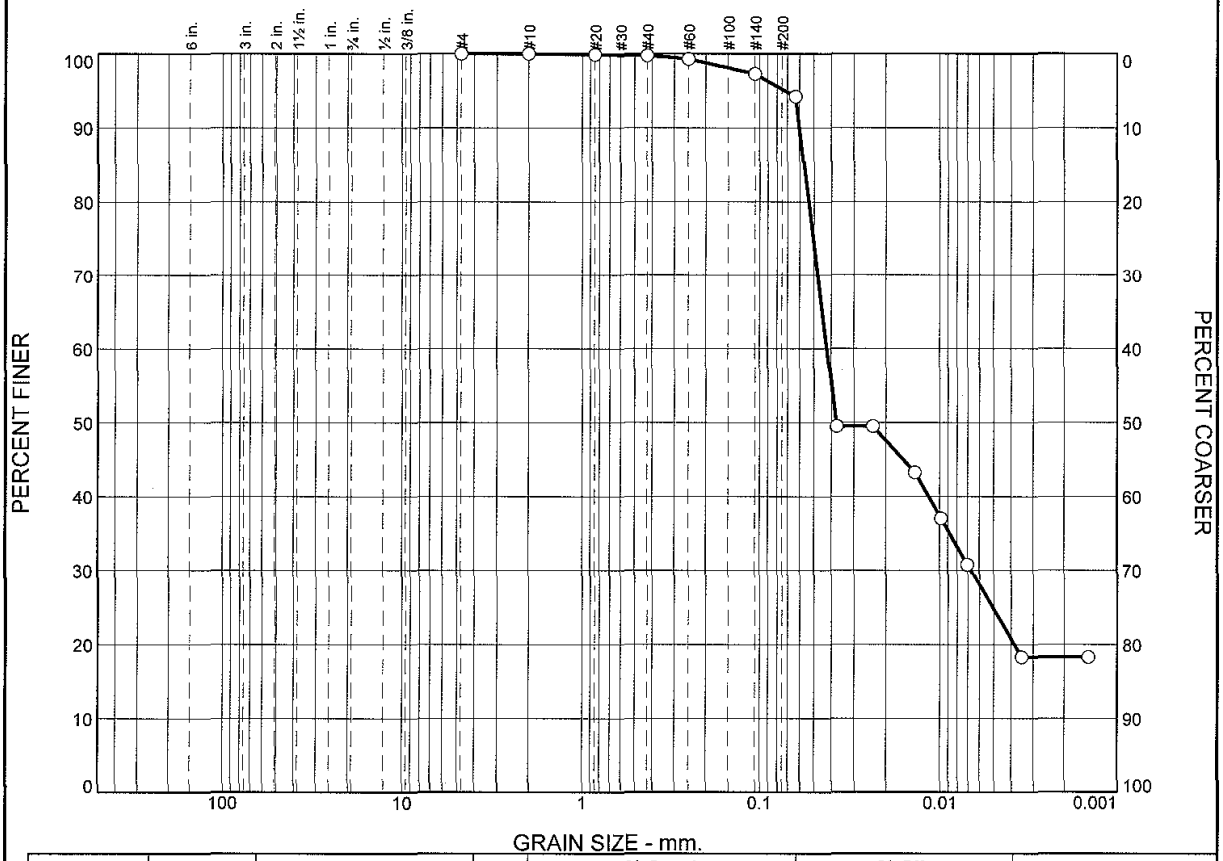

## LIMITATION OF LIABILITIES

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.

# ASTM D422-63
# Wet Sieve Hydrometer Analysis

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.5 | 1.6 | 4.2 | 44.0 | 4.8 | 11.9 | 12.5 | 20.3 |

| | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.0566 | 0.0422 | 0.0376 | 0.0067 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** T0-0010-03 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Env. Monitoring

○ **Source of Sample:** S-10N-T001-0-0 **Sample Number:** L1018963-01

**Date:** ○

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

1/3/2011

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Env. Monitoring
**Project Number:** T0-0010-03
**Location:** S-10N-T001-0-0
**Sample Number:** L1018963-01

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 24.26 | 0.00 | #4 | 527.43 | 527.43 | 100.0 | 0.0 |
| | | #10 | 492.63 | 492.63 | 100.0 | 0.0 |
| | | #20 | 417.43 | 417.41 | 99.9 | 0.1 |
| | | #40 | 376.00 | 375.96 | 99.8 | 0.2 |
| | | #60 | 365.81 | 365.70 | 99.3 | 0.7 |
| | | #140 | 343.20 | 342.71 | 97.3 | 2.7 |
| | | #230 | 320.50 | 319.76 | 94.2 | 5.8 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 94.2
**Weight of hydrometer sample =**24.26
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -0.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0373 | 49.5 | 50.5 |
| 5.00 | 20.0 | 1.0080 | 1.0079 | 0.0136 | 5.0 | 15.0 | 0.0236 | 49.5 | 50.5 |
| 15.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0138 | 43.3 | 56.7 |
| 30.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0098 | 37.0 | 63.0 |
| 60.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0070 | 30.8 | 69.2 |
| 250.00 | 20.0 | 1.0030 | 1.0029 | 0.0136 | 0.0 | 16.3 | 0.0035 | 18.3 | 81.7 |
| 1440.00 | 20.0 | 1.0030 | 1.0029 | 0.0136 | 0.0 | 16.3 | 0.0015 | 18.3 | 81.7 |

### Fractional Components

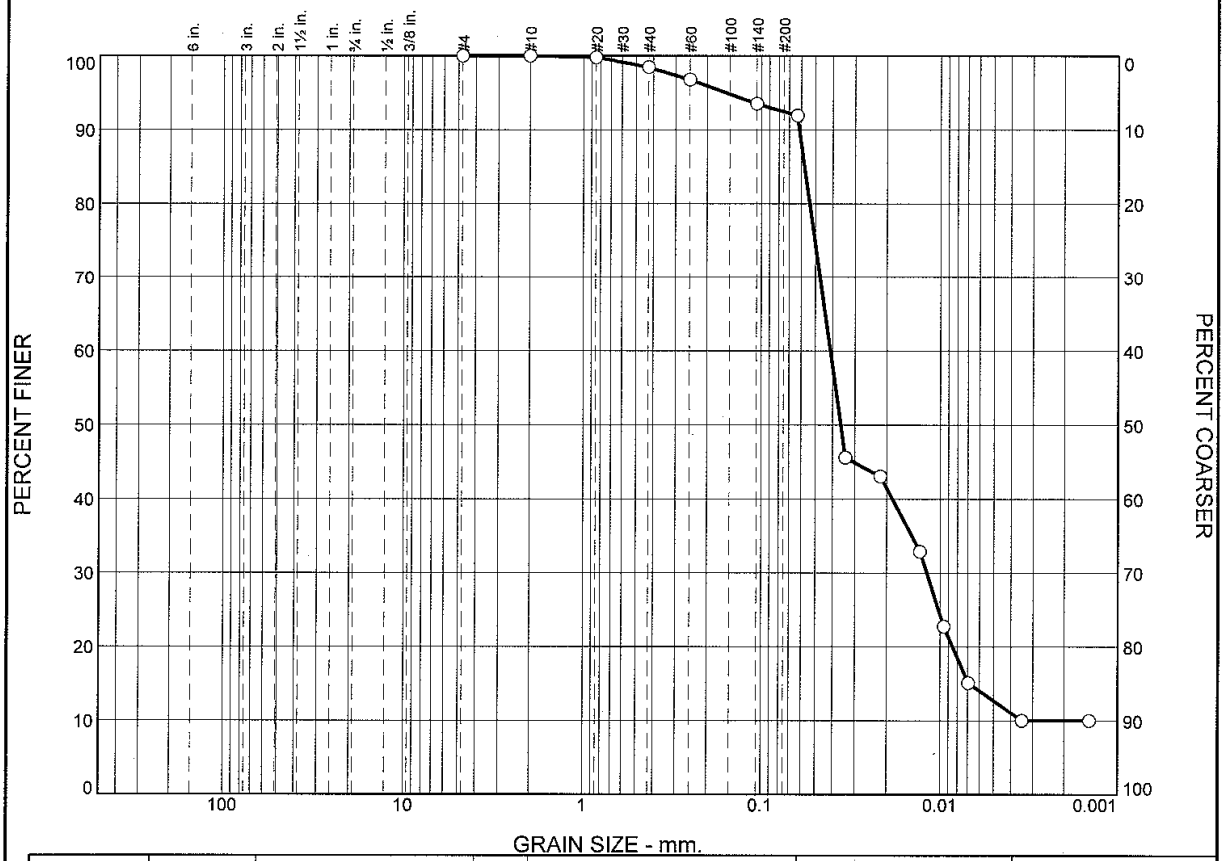
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.5 | 1.6 | 4.2 | 6.5 | 44.0 | 4.8 | 11.9 | 12.5 | 73.2 | 20.3 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0038 | 0.0067 | 0.0376 | 0.0422 | 0.0533 | 0.0566 | 0.0600 | 0.0719 |

| Fineness Modulus |
|---|
| 0.03 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 1.0 | 2.0 | 2.6 | 2.9 | 46.2 | 8.6 | 18.6 | 7.0 | 10.9 |

| Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.0574 | 0.0411 | 0.0359 | 0.0119 | 0.0069 | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** T0-0010-03 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Env. Monitoring

○ **Source of Sample:** S-10N-T002-0-0 **Sample Number:** L1018963-02

**Date:** ○

**Remarks:**

**Alpha Analytical**

**Mansfield, MA**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

1/3/2011

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Env. Monitoring
**Project Number:** T0-0010-03
**Location:** S-10N-T002-0-0
**Sample Number:** L1018963-02

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 58.08 | 0.00 | #4 | 527.00 | 527.00 | 100.0 | 0.0 |
| | | #10 | 492.99 | 492.99 | 100.0 | 0.0 |
| | | #20 | 423.05 | 422.94 | 99.8 | 0.2 |
| | | #40 | 375.15 | 374.37 | 98.5 | 1.5 |
| | | #60 | 361.45 | 360.48 | 96.8 | 3.2 |
| | | #140 | 338.88 | 336.98 | 93.5 | 6.5 |
| | | #230 | 321.82 | 320.90 | 91.9 | 8.1 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 91.9
**Weight of hydrometer sample =**58.08
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -0.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0180 | 1.0179 | 0.0136 | 15.0 | 12.3 | 0.0339 | 45.6 | 54.4 |
| 5.00 | 20.0 | 1.0170 | 1.0169 | 0.0136 | 14.0 | 12.6 | 0.0217 | 43.1 | 56.9 |
| 15.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0130 | 32.9 | 67.1 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 22.7 | 77.3 |
| 60.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0069 | 15.1 | 84.9 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 10.0 | 90.0 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 10.0 | 90.0 |

### Fractional Components

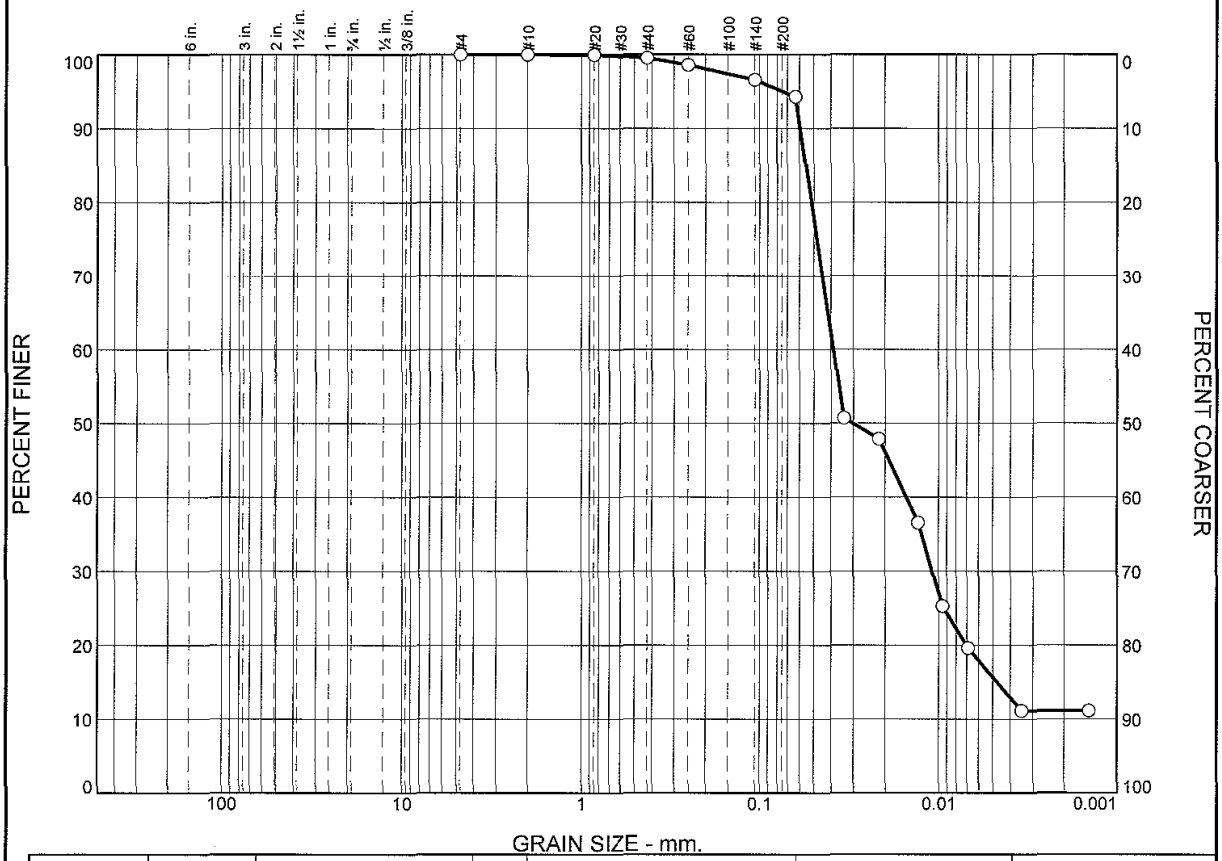
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 1.0 | 2.0 | 2.6 | 2.9 | 8.7 | 46.2 | 8.6 | 18.6 | 7.0 | 80.4 | 10.9 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0069 | 0.0085 | 0.0119 | 0.0359 | 0.0411 | 0.0537 | 0.0574 | 0.0614 | 0.1560 |

| Fineness Modulus |
|---|
| 0.09 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 1.0 | 1.6 | 3.3 | 43.6 | 9.5 | 18.8 | 9.2 | 12.6 |

| ☒ | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.0552 | 0.0387 | 0.0303 | 0.0109 | 0.0047 | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** T0-0010-03 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Env. Monitoring

○ **Source of Sample:** S-10N-T003-0-0 **Sample Number:** L1018963-03

**Date:** ○

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

1/3/2011

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Env. Monitoring
**Project Number:** T0-0010-03
**Location:** S-10N-T003-0-0
**Sample Number:** L1018963-03

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 53.57 | 0.00 | #4 | 527.00 | 527.00 | 100.0 | 0.0 |
| | | #10 | 492.99 | 492.99 | 100.0 | 0.0 |
| | | #20 | 422.95 | 422.94 | 100.0 | 0.0 |
| | | #40 | 374.61 | 374.37 | 99.5 | 0.5 |
| | | #60 | 360.99 | 360.48 | 98.6 | 1.4 |
| | | #140 | 338.04 | 336.98 | 96.6 | 3.4 |
| | | #230 | 321.64 | 320.40 | 94.3 | 5.7 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 94.3
**Weight of hydrometer sample =**53.57
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -0.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0180 | 1.0179 | 0.0136 | 15.0 | 12.3 | 0.0339 | 50.7 | 49.3 |
| 5.00 | 20.0 | 1.0170 | 1.0169 | 0.0136 | 14.0 | 12.6 | 0.0217 | 47.9 | 52.1 |
| 15.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0130 | 36.6 | 63.4 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 25.3 | 74.7 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 19.6 | 80.4 |
| 250.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0035 | 11.1 | 88.9 |
| 1440.00 | 20.0 | 1.0040 | 1.0039 | 0.0136 | 1.0 | 16.0 | 0.0014 | 11.1 | 88.9 |

### Fractional Components

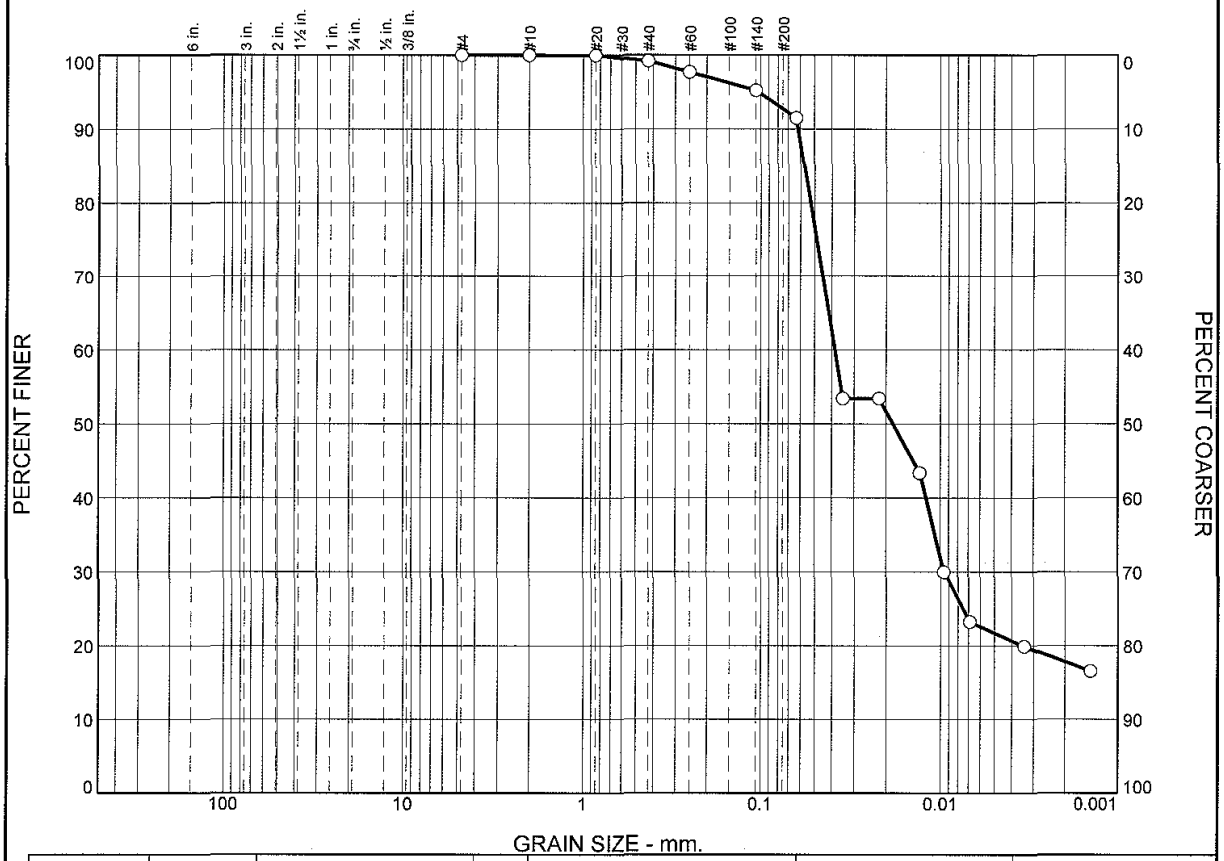
| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 1.0 | 1.6 | 3.3 | 6.3 | 43.6 | 9.5 | 18.8 | 9.2 | 81.1 | 12.6 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | 0.0047 | 0.0070 | 0.0109 | 0.0303 | 0.0387 | 0.0514 | 0.0552 | 0.0593 | 0.0739 |

| Fineness Modulus |
|---|
| 0.04 |

**Alpha Analytical**

# Particle Size Distribution Report




| | % Boulders | % Cobbles | % Pebbles | % Granules | % Sand | | | | | % Silt | | | | % Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Crs. | Med. | Fine | V. Fine | |
| ○ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.7 | 2.0 | 4.7 | 37.6 | 6.5 | 21.1 | 5.3 | 20.5 |

| | Colloids | LL | PL | $D_{85}$ | $D_{60}$ | $D_{50}$ | $D_{30}$ | $D_{15}$ | $D_{10}$ | $C_c$ | $C_u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | | | | 0.0569 | 0.0384 | 0.0183 | 0.0096 | | | | |

| Material Description | USCS | AASHTO |
|---|---|---|
| ○ | | |

**Project No.** T0-0010-03 **Client:** Woods Hole Group

**Project:** New Bedford Harbor Env. Monitoring

○ **Source of Sample:** S-10N-T003-0-0 **Sample Number:** WG449668-1

**Date:** ○

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

1/3/2011

**Client:** Woods Hole Group
**Project:** New Bedford Harbor Env. Monitoring
**Project Number:** T0-0010-03
**Location:** S-10N-T003-0-0
**Sample Number:** WG449668-1

### Sieve Test Data

| Dry Sample and Tare (grams) | Tare (grams) | Sieve Opening Size | Weight Retained (grams) | Sieve Weight (grams) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|
| 43.84 | 0.00 | #4 | 527.43 | 527.43 | 100.0 | 0.0 |
| | | #10 | 492.63 | 492.63 | 100.0 | 0.0 |
| | | #20 | 417.42 | 417.41 | 100.0 | 0.0 |
| | | #40 | 376.30 | 375.96 | 99.2 | 0.8 |
| | | #60 | 366.35 | 365.70 | 97.7 | 2.3 |
| | | #140 | 343.79 | 342.71 | 95.3 | 4.7 |
| | | #230 | 321.40 | 319.76 | 91.5 | 8.5 |

### Hydrometer Test Data

**Hydrometer test uses material passing** #230
**Percent passing #230 based upon complete sample =** 91.5
**Weight of hydrometer sample =**43.84
**Automatic temperature correction**
**Composite correction (fluid density and meniscus height) at 20 deg. C =** -0.04
**Meniscus correction only =** -3.0
**Specific gravity of solids =** 2.65
**Hydrometer type =** 151H
**Hydrometer effective depth equation: L =** 16.294964 - 0.2645 **x Rm**

| Elapsed Time (min.) | Temp. (deg. C.) | Actual Reading | Corrected Reading | K | Rm | Eff. Depth | Diameter (mm.) | Percent Finer | Percent Retained |
|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0346 | 53.4 | 46.6 |
| 5.00 | 20.0 | 1.0160 | 1.0159 | 0.0136 | 13.0 | 12.9 | 0.0219 | 53.4 | 46.6 |
| 15.00 | 20.0 | 1.0130 | 1.0129 | 0.0136 | 10.0 | 13.6 | 0.0130 | 43.4 | 56.6 |
| 30.00 | 20.0 | 1.0090 | 1.0089 | 0.0136 | 6.0 | 14.7 | 0.0096 | 30.0 | 70.0 |
| 60.00 | 20.0 | 1.0070 | 1.0069 | 0.0136 | 4.0 | 15.2 | 0.0069 | 23.2 | 76.8 |
| 250.00 | 20.0 | 1.0060 | 1.0059 | 0.0136 | 3.0 | 15.5 | 0.0034 | 19.9 | 80.1 |
| 1440.00 | 20.0 | 1.0050 | 1.0049 | 0.0136 | 2.0 | 15.8 | 0.0014 | 16.5 | 83.5 |

### Fractional Components

| Boulders | Cobbles | Pebbles | Granules | Sand | | | | | | Silt | | | | | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V. Crs. | Crs. | Med. | Fine | V. Fine | Total | Crs. | Med. | Fine | V. Fine | Total | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.7 | 2.0 | 4.7 | 9.0 | 37.6 | 6.5 | 21.1 | 5.3 | 70.5 | 20.5 |

| $D_{10}$ | $D_{15}$ | $D_{20}$ | $D_{30}$ | $D_{50}$ | $D_{60}$ | $D_{80}$ | $D_{85}$ | $D_{90}$ | $D_{95}$ |
|---|---|---|---|---|---|---|---|---|---|
| | | 0.0035 | 0.0096 | 0.0183 | 0.0384 | 0.0526 | 0.0569 | 0.0615 | 0.1023 |

| Fineness Modulus |
|---|
| 0.06 |

**Alpha Analytical**

## Certificate/Approval Program Summary

Last revised July 19, 2010 – 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, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. 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 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270, )

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

*Biological Tissue* (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

**Massachusetts Department of Environmental Protection** Certificate/Lab ID: M-MA030.

*Non-Potable Water* (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

**New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

**New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

*Atmospheric Organic Parameters* (EPA TO-15)

*Biological Tissue* (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. ***NELAP Accredited.***

*Non-Potable Water* (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 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 MA-DEP Certificate for Non-Potable Water.

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)

**U.S. Army Corps of Engineers**

**Department of Defense** Certificate/Lab ID: L2217.01.

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (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.

Serial No:01031115:26

# ESI

EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: L1018963

## CHAIN OF CUSTODY DOCUMENTATION

| | | | |
|---|---|---|---|
| Client: Woods Hole Group | Contact: Dave Walsh | Project Name: New Bedford Harbor Env. Monitoring | Page 1 of 1 |
| Report to: Dave Walsh | Address: 81 Technology Park Dr. | Project Number: TO-0010-03 | |
| Invoice to: Cathy Marey | Address: E. Falmouth, MA 02536 | Project Manager: Dave Walsh | |
| Voice: 508-540-8080 | Fax: 508-540-1001 | email: DWalsh@WHGRP.com | P.O. No: Quote No: |

Protocol: RCRA SDWA NPDES USCOE Other

| 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 (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 | Analyses Requested\ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| L1018963-1 | S-10N-T001-0-0 | 11/23/10 | 1120 | JEB | C | 16oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -2 | S-10N-T002-0-0 | 11/23/10 | 1220 | JEB | C | 16oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |
| -3 | S-10N-T003-0-0 | 11/23/10 | 1330 | JEB | C | 32oz | G | 4°C | S | N | Grain Size, TOC, PCB congeners |

| | | | |
|---|---|---|---|
| Relinquished By: [signature] | Date: 11/24/10 Time: 0909 | Received By: [signature] | Date: 11/24/10 Time: 09:10 |
| Relinquished By: [signature] | Date: 11/24/10 Time: 1315 | Rec'd [signature] 11/24/10 1325 | |
| | | Received at Lab By: [signature] | Date: 11/24/10 Time: 15:45 |

Comments: To Alpha Mansfield
Reli'd By [signature] 11-24-10 1545

[signature] 11/24/10 17:20
Reli [signature] 11/24/10 18:10 Rec: [signature] 11/24/10 18:10

Sample Delivery Group No: Page of

COC Doc No: 3897

# APPENDIX D. NEW ENVIRONMENTAL HORIZONS, INC. SATA VALIDATION REPORTS (ON CD)

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# APPENDIX D: NEW ENVIRONMENTAL HORIZONS, INC. DATA VALIDATION REPORTS

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# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1007001 |
| **Date(s) of Collection:** | May 11, 2010 |
| **Number / Type Samples & Analyses** | 4 sediment grab samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | August 24, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 1.0, prepared by Woods Hole Group, Inc., October 2009 (NBH OU1 QAPP Addendum 2009); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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.

*34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474*
*Phone: (908) 874-5686 ◊ (781) 643-4294*
*Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net*
*www.neh-inc.com*

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 comments 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[1] | Sample Type |
|---|---|---|---|---|---|
| S-10Y-G001-0-0 | L0910702-01 | 5/11/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10Y-G002-0-0 | L0910702-02 | 5/11/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| S-10YG002-0-0REP | L0910702-03 | 5/11/10 | Air-dried Sediment | 18 NOAA Congeners | Field Duplicate of S-10Y-G002-0-0 |
| S-10Y-G003-0-0 | L0910702-04 | 5/11/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

[1] Total Organic Carbon (TOC) and Grain Size analyses were also performed on these samples; however, data validation for these parameters was not required.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2009 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, five results were rejected (R) in sample S-01Y-G002-0-0 due to severe exceedance of QC criteria, as follows: 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105), 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ#170), 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ#195), 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206), and Decachlorobiphenyl (BZ#209).

All other results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2009 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 2009 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The sediment grab samples were received at the laboratory intact at 3.3°C on the day of collection, May 11, 2010. Aliquots of the "as received" samples were analyzed for TOC, Grain Size, and percent solids. All four samples had percent solids content of 24-33%; therefore, these sediment grab samples were air-dried, as required by the QAPP, prior to Congener analysis.

After air-drying, the percent solids content for all four samples was greater than 85%. These air-dried samples were extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all Congeners. There was no Equipment Blank required to be collected along with these grab samples.

The LCS and LCSD recovered all Congeners within criteria.

The MS/MSD analysis on sample S-10Y-G002-0-0 reported variable results. The spike level for the matrix spike was too low (i.e. unspiked sample contained the Congeners at a level over four times the matrix spike level) for several Congeners; therefore, for the affected Congeners, only MS/MSD precision was evaluated (see Precision section below). For other Congeners, the spike level was appropriate for the sample concentrations. Congeners 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105), 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ#170), 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ#195), 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206), and Decachlorobiphenyl (BZ#209), were non-detect in the unspiked sample but were not recovered in the MS and MSD (0% recoveries). Therefore, these five Congener results were rejected (R) in the unspiked sample and are not usable for project objectives. Two other Congeners, 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ128) and 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ#180), which were also non-detect in the unspiked sample, recovered above criteria in the MS (> 140% recovery) but were not recovered in the MSD (0% recovery). Therefore, these two Congener results were estimated (DUJ) with indeterminate bias due to variable MS and MSD recoveries (shown as Low MS recovery + High MS recovery in the database), as shown in Table 2.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

MS/MSD precision was unacceptable for 2,4'-Dichlorobiphenyl (BZ#8), 2,2',3,5'-Tetrachlorobiphenyl (BZ#44), 2,2',5,5'-Tetrachlorobiphenyl (BZ#52), 2,3',4,4'-Tetrachlorobiphenyl (BZ#66), and 2,2',4,5,5'-Pentachlorobiphenyl (BZ#101) in the MS/MSD analysis of S-10Y-G002-0-0. The results for these five Congeners were estimated (DJ) with indeterminate bias due to the observed imprecision, as shown in Table 2.

The field duplicate (FD) samples in this SDG were: S-10Y-G002-0-0 and S-10Y-G002-0-0REP. FD relative percent differences (RPD) were acceptable for all 18 NOAA Congeners. These results are an indication of acceptable precision and representativeness of these sediment grab samples to the site location for PCB Congener analysis.

**Sensitivity & Reporting**

Samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. All reporting limits (RLs) were increased as a consequence of the dilutions made (RLs were 50-250 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2009). However, Total PCBs (as the sum of all detected Congener results) were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier since all data were reported from analyses with DF > 1. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10Y-G002-0-0 | 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & DecaCB - Homologue | R | | Unusable: < 10% MS recovery |
| S-10Y-G002-0-0 | 2,4'-Dichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, & 2,2',4,5,5'-Pentachlorobiphenyl | DJ | I | MS/MSD imprecision |
| S-10Y-G002-0-0 | 2,2',3,3',4,4'-Hexachlorobiphenyl & 2,2',3,4,4',5,5'-Heptachlorobiphenyl | DUJ | I | Low MS recovery + High 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*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** L1010588

**Date(s) of Collection:** July 14, 2010

**Number / Type Samples & Analyses** 4 sediment grab samples for 18 NOAA Congeners by EPA SW-846 Method 8082

**Senior Data Reviewers:** Nancy C. Rothman, PhD, New Environmental Horizons, Inc.
Susan D. Chapnick, New Environmental Horizons, Inc.

**Date Completed:** September 13, 2010
**Revised:** October 27, 2010

***This report was revised since sample S-10L-G003-0-0 was re-extracted and re-analyzed by the laboratory, at the client's request, because the initial data reported by the laboratory for this sample did not compare to historical information on this location.***

This EPA Region I Tier I+ validation for PCB Congeners and 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. 1.0, prepared by Woods Hole Group, Inc., October 2009 (NBH OU1 QAPP Addendum 2009); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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[1] | Sample Type |
|---|---|---|---|---|---|
| S-10L-G001-0-0 | L1010588-01 | 7/14/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10L-G002-0-0 | L1010588-02 | 7/14/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| S-10L-G002-0-0REP | L1010588-03 | 7/14/10 | Air-dried Sediment | 18 NOAA Congeners | Field Duplicate of S-10L-G002-0-0 |
| S-10L-G003-0-0 | L1010588-04 | 7/14/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

[1] Total Organic Carbon (TOC) and Grain Size analyses were also performed on these samples; however, data validation for these parameters was not required.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2009 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, the result for Decachlorobiphenyl (BZ#209) was rejected (R) in sample S-01L-G002-0-0 due to severe exceedance of QC criteria.

All other results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2009 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 2009 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The sediment grab samples were received at the laboratory intact at 3°C on the day of collection, July 14, 2010. Aliquots of the "as received" samples were analyzed for TOC, Grain Size, and percent solids. All four samples had percent solids content of 26-36%; therefore, these sediment grab samples were air-dried, as required by the QAPP, prior to Congener analysis.

After air-drying, the percent solids content for all four samples was greater than 85%. Samples were initially extracted on 7/22/10 and analyzed by 7/30/10. The air-dried aliquots of all samples were frozen after the initial extraction of the samples. Review of the results for sample S-10L-G003-0-0 suggested that the initial analysis may have been in error since the data did not compare to historical information for this location. The frozen sample of S-10L-G003-0-0 was thawed and re-extracted on 9/23/10 and re-analyzed on 10/7/10. Therefore, these air-dried samples were extracted and analyzed within holding time.

**Accuracy**

The Method Blanks were non-detect for all Congeners. There was no Equipment Blank required to be collected along with these grab samples.

Both sets of LCS and LCSD recovered all Congeners within criteria.

The MS/MSD analysis on sample S-10L-G002-0-0 reported variable results. The spike level for the matrix spike was too low (i.e. unspiked sample contained the Congeners at a level over four times the matrix spike level) for several Congeners; therefore, recovery results were not meaningful for these data. For other Congeners, the spike level was appropriate for the sample concentrations. Decachlorobiphenyl (BZ#209), was non-detect in the unspiked sample but was not recovered in the MS and MSD (0% recoveries). Therefore, this one Congener result was rejected (R) in the unspiked sample and is not usable for project objectives. One Congener, 2,2',3,3',4,4',5,5',6-Nonachloro-biphenyl (BZ#206), was recovered within criteria in the MSD but was not recovered in the MS; therefore, this Congener was estimated (DUJ) due to low MS recovery, as shown in Table 2.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA except for 2,4,4'-Trichlorobiphenyl (BZ#28) in the LCS/LCSD associated with the re-extraction of sample S-10L-G003-0-0. This Congener was estimated (DJ) in this sample as a consequence of the observed LCS/LCSD imprecision, as shown in Table 2.

MS/MSD precision was unacceptable for 2,2',4,5,5'-Pentachlorobiphenyl (BZ#101), 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ#138), and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153) in the MS/MSD analysis of S-10L-G002-0-0. The results for these three Congeners were estimated (DJ) with indeterminate bias due to the observed imprecision, as shown in Table 2.

The field duplicate (FD) samples in this SDG were: S-10L-G002-0-0 and S-10L-G002-0-0REP. FD relative percent differences (RPD) were acceptable for all 18 NOAA Congeners. These results are an indication of acceptable precision and representativeness of these sediment grab samples to the site location for PCB Congener analysis. However, data users should note that the FD precision and

MS/MSD precision gave different indications of sample heterogeneity, which may be due to the complexity of these sediment samples.

**Sensitivity & Reporting**

All samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. All reporting limits (RLs) were increased as a consequence of the dilutions made (RLs were 20-200 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2009). However, Total PCBs (as the sum of all detected Congener results) were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier since all data were reported from analyses with DF > 1. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10L-G002-0-0 | DecaCB - Homologue | R | | Unusable: < 0% MS Recovery |
| S-10L-G002-0-0 | 2,2',4,5,5'-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl | DJ | I | MS/MSD imprecision |
| S-10L-G002-0-0 | 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl | DUJ | L | Low MS recovery |
| S-10L-G003-0-0 | 2,4,4'-Trichlorobiphenyl | DJ | I | LCS/LCSD 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*
*LCS= Laboratory Control Sample*
*LCSD = Laboratory Control Sample Duplicate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** L1013129

**Date(s) of Collection:** August 25, 2010

**Number / Type Samples & Analyses** 4 sediment grab samples for 18 NOAA Congeners by EPA SW-846 Method 8082

**Senior Data Reviewers:** Nancy C. Rothman, PhD, New Environmental Horizons, Inc.
Susan D. Chapnick, New Environmental Horizons, Inc.

**Date Completed:** October 26, 2010

This EPA Region I Tier I+ validation for PCB Congeners and 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. 1.0, prepared by Woods Hole Group, Inc., October 2009 (NBH OU1 QAPP Addendum 2009); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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[1] | Sample Type |
|---|---|---|---|---|---|
| S-10G-G001-0-0 | L1013129-01 | 8/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10G-G002-0-0 | L1013129-02 | 8/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| S-10G-G002-0-0REP | L1013129-03 | 8/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Duplicate of S-10G-G002-0-0 |
| S-10G-G003-0-0 | L1013129-04 | 8/25/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

[1] Total Organic Carbon (TOC) and Grain Size analyses were also performed on these samples; however, data validation for these parameters was not required.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2009 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.

All results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2009 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 2009 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The sediment grab samples were received at the laboratory intact at 3°C on the day of collection, August 25, 2010. Aliquots of the "as received" samples were analyzed for TOC, Grain Size, and percent solids. All four samples had percent solids content of 26-34%; therefore, these sediment grab samples were air-dried, as required by the QAPP, prior to Congener analysis.

After air-drying, the percent solids content for all four samples was greater than 90%. The air dried sediments were frozen to arrest holding time prior to extraction. Therefore, these air-dried samples were extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all Congeners. There was no Equipment Blank required to be collected along with these grab samples.

The LCS and LCSD recovered all Congeners within criteria

The MS/MSD analysis on sample S-10G-G002-0-0 reported variable results. The spike level for the matrix spike was too low (i.e. unspiked sample contained the Congeners at a level over four times the matrix spike level) for several Congeners; therefore, for the affected Congeners, only MS/MSD precision was evaluated (see Precision section below). For other Congeners, the spike level was appropriate for the sample concentrations. Three Congeners reported high MS recoveries; however, the unspiked sample was non-detect for these Congeners. Therefore, no action required.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,4'-Dichlorobiphenyl (BZ#8). The result for this Congener in all samples was estimated (DJ) due to the observed LCS/LCSD imprecision.

MS/MSD precision was unacceptable for all Congeners except 2,2',4,5,5'-Pentachlorobiphenyl (BZ#101) and 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153) in the MS/MSD analysis of S-10G-G002-0-0. The results for sixteen Congeners were estimated (DJ or DUJ) with indeterminate bias due to the observed imprecision, as shown in Table 2.

The field duplicate (FD) samples in this SDG were: S-10G-G002-0-0 and S-10G-G002-0-0REP. FD relative percent differences (RPD) were acceptable for all 18 NOAA Congeners. These results are an indication of acceptable precision and representativeness of these sediment grab samples to the site location for PCB Congener analysis. However, data users should note that the FD precision and MS/MSD precision gave different indications of sample heterogeneity, which may be due to the complexity of these sediment samples.

**Sensitivity & Reporting**

All samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. All reporting limits (RLs) were increased as a consequence of the dilutions made (RLs were 20 to 1500 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2009). However, Total PCBs (as the sum of all detected Congener results) were detected in

all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier since all data were reported from analyses with DF > 1. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10G-G002-0-0 | 2,2',5-Trichlorobiphenyl,<br>2,4,4'-Trichlorobiphenyl,<br>2,2',3,5'-Tetrachlorobiphenyl,<br>2,2',5,5'-Tetrachlorobiphenyl,<br>2,3',4,4'-Tetrachlorobiphenyl,<br>2,3,3',4,4'-Pentachlorobiphenyl,<br>2,3',4,4',5-Pentachlorobiphenyl,<br>2,2',3,3',4,4'-Hexachlorobiphenyl,<br>2,2',3,4,4',5'-Hexachlorobiphenyl,<br>2,2',3,3',4,4',5-Heptachlorobiphenyl,<br>2,2',3,4,4',5,5'-Heptachlorobiphenyl,<br>2,2',3,4',5,5',6-Heptachlorobiphenyl,<br>2,2',3,3',4,4',5,6-Octachlorobiphenyl,<br>2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, &<br>DecaCB - Homologue | DJ / DUJ | I | MS/MSD imprecision |
| S-10G-G002-0-0 | 2,4'-Dichlorobiphenyl | DJ | I | LCS/LCSD imprecision + MS/MSD imprecision |
| S-10G-G001-0-0,<br>S-10G-G002-0-0REP, &<br>S-10G-G003-0-0 | 2,4'-Dichlorobiphenyl | DJ | I | LCS/LCSD 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*
*LCS = Laboratory Control Sample*
*LCSD = Laboratory Control Sample Duplicate*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1015314 |
| **Date(s) of Collection:** | September 30, 2010 |
| **Number / Type: Samples & Analyses** | 4 sediment grab samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 31, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996, including *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:

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- 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[1] | Sample Type |
|---|---|---|---|---|---|
| S-10S-G001-0-0 | L1015314-01 | 9/30/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10S-G002-0-0 | L1015314-02 | 9/30/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| S-10S-G002-0-0REP | L1015314-03 | 9/30/10 | Air-dried Sediment | 18 NOAA Congeners | Field Duplicate of S-10S-G002-0-0 |
| S-10S-G003-0-0 | L1015314-04 | 9/30/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

[1] Total Organic Carbon (TOC) and Grain Size analyses were also performed on these samples; however, data validation for these parameters was not required.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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.

All results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The sediment grab samples were received at the laboratory intact at 3°C on the day of collection, September 30, 2010. Aliquots of the "as received" samples were analyzed for TOC, Grain Size, and percent solids. All four samples had percent solids content of 29-33%; therefore, these sediment grab samples were air-dried, as required by the QAPP, prior to Congener analysis.

After air-drying, the percent solids content for all four samples was greater than 91%. The air-dried sediments were frozen to arrest holding time prior to extraction. Therefore, these air-dried samples were extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all Congeners. There was no Equipment Blank required to be collected along with these grab samples.

The LCS and LCSD recovered all Congeners within criteria.

The MS/MSD analysis on sample S-10S-G002-0-0 reported variable results. The spike level for the matrix spike was not appropriate for several Congeners (i.e., Congener concentrations in the field sample were greater than four times the matrix spike level); therefore, for the affected Congeners, only MS/MSD precision was evaluated (see Precision section below). For other Congeners, the spike level was appropriate for the sample concentrations and these Congeners were all recovered within criteria; therefore, no action was required. Further details are presented in the Data Validation Checklist.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners.

MS/MSD precision was acceptable for all Congeners except 2,2',5-Trichlorobiphenyl (BZ#18) in the MS/MSD analysis of S-10S-G002-0-0. The result for this one Congener in this sample was estimated (DJ) with indeterminate bias due to the observed imprecision, as shown in Table 2.

The field duplicate (FD) samples in this SDG were: S-10S-G002-0-0 and S-10S-G002-0-0REP. FD relative percent differences (RPD) were acceptable for all 18 NOAA Congeners except 2,2',5-Trichlorobiphenyl (BZ#18) and 2,2',3,5'-Tetrachlorobiphenyl (BZ#44). The results for these two Congeners were estimated (DJ) in samples S-10S-G002-0-0 and S-10S-G002-0-0REP with indeterminate bias due to FD imprecision. These results are an indication of variable precision and representativeness of these sediment grab samples to the site location for PCB Congener analysis.

**Sensitivity & Reporting**

All samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. All reporting limits (RLs) were increased as a consequence of the dilutions made (RLs were 68 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier since all data were reported from analyses with DF > 1. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10S-G002-0-0 | 2,2',5-Trichlorobiphenyl | DJ | I | MS/MSD imprecision + FD imprecision |
| S-10S-G002-0-0 | 2,2',3,5'-Tetrachlorobiphenyl | DJ | I | FD imprecision |
| S-10S-G002-0-0REP | 2,2',5-Trichlorobiphenyl & 2,2',3,5'-Tetrachlorobiphenyl | 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*

# Data Validation Report
## EPA Region I Tier I+
## NOAA 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):** | L1018719 |
| **Date(s) of Collection:** | November 22, 2010 |
| **Number / Type: Samples & Analyses** | 4 sediment grab samples for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | January 31, 2011 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996, including *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 comments 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[1] | Sample Type |
|---|---|---|---|---|---|
| S-10N-G001-0-0 | L1018719-01 | 11/22/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-10N-G002-0-0 | L1018719-02 | 11/22/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| S-10N-G002-0-0REP | L1018719-03 | 11/22/10 | Air-dried Sediment | 18 NOAA Congeners | Field Duplicate of S-10N-G002-0-0 |
| S-10N-G003-0-0 | L1018719-04 | 11/22/10 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:
18 NOAA Congeners: *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.

[1] Total Organic Carbon (TOC) and Grain Size analyses were also performed on these samples; however, data validation for these parameters was not required.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2010 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.

All results were considered usable for project decisions based on a comparison to the NBH OU1 QAPP Addendum 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The sediment grab samples were received at the laboratory intact at 4.4°C on the day of collection, November 22, 2010. Aliquots of the "as received" samples were analyzed for TOC, Grain Size, and percent solids. All four samples had percent solids content of 28-33%; therefore, these sediment grab samples were air-dried, as required by the QAPP, prior to Congener analysis.

After air-drying, the percent solids content for all four samples was greater than 97%. The air-dried sediments were frozen to arrest holding time prior to extraction. Therefore, these air-dried samples were extracted and analyzed within holding time.

**Accuracy**

The Method Blank was non-detect for all Congeners. There was no Equipment Blank required to be collected along with these grab samples.

The LCS and LCSD recovered all Congeners within criteria.

The MS/MSD analysis on sample S-10N-G002-0-0 reported variable results. The spike level for the matrix spike was not appropriate for several Congeners (i.e., Congener concentrations in the field sample were greater than four times the matrix spike level); therefore, for the affected Congeners, only MS/MSD precision was evaluated (see Precision section below). For other Congeners, the spike level was appropriate for the sample concentrations and these Congeners were all recovered within criteria; therefore, no action was required. Further details are presented in the Data Validation Checklist.

**Precision**

LCS/LCSD precision was acceptable for all 18 NOAA Congeners.

MS/MSD precision was acceptable for all Congeners in the MS/MSD analysis of S-10S-G002-0-0.

The field duplicate (FD) samples in this SDG were: S-10N-G002-0-0 and S-10N-G002-0-0REP. FD relative percent differences (RPD) were acceptable for all 18 NOAA Congeners except 2,4,4'-Trichlorobiphenyl (BZ#28) and 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ#138). The results for these two Congeners were estimated (DJ) in samples S-10N-G002-0-0 and S-10N-G002-0-0REP with indeterminate bias due to FD imprecision.. These results are an indication of variable precision and representativeness of these sediment grab samples to the site location for PCB Congener analysis.

**Sensitivity & Reporting**

All samples were analyzed at various dilutions to report all Congeners within the instrument calibration range. All reporting limits (RLs) were increased as a consequence of the dilutions made (RLs were 34 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) were detected in all sediment samples at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results with a "D" qualifier since all data were reported from analyses with DF > 1. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-10N-G002-0-0 & S-10N-G002-0-0REP | 2,4,4'-Trichlorobiphenyl & 2,2',3,4,4',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:*
*FD = Field Duplicate*

# FINAL

# NORTH OF WOOD STREET POST-REMEDIATION MONITORING

# APRIL 2011 MONITORING EVENT

# NEW BEDFORD HARBOR SUPERFUND SITE, OU #1

## Contract No. W912WJ-09-D-0001-0010-03

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

Prepared By:
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth, MA 02536

July 13, 2011

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# FINAL

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# EXECUTIVE SUMMARY

Environmental sampling and analysis was performed for the area north of the Wood Street Bridge (NWS) in April 2011 in support of remedial dredging activities at the New Bedford Harbor Superfund Site. In 2002–2003, as part of a site remediation, approximately 15,000 cubic yards of contaminated material was removed from the NWS area. The primary contaminants of concern in the NWS area are polychlorinated biphenyls (PCBs). The NWS area was remediated using a dry excavation method to eliminate the potential for sediment resuspension and redistribution of contaminants. Annual investigations have been conducted since 2004 to assess the effectiveness of prior remediation and potential recontamination of this area due to sediment transport from unremediated areas. Post-remediation sampling conducted in 2004 identified a shoreline area in Acushnet that should have been included in the 2002–2003 clean-up but was inadvertently neglected; this area was remediated in 2005.

Twenty-one stations in the NWS area were sampled in April 2011, including eleven river sediment locations and ten marsh soil locations along the eastern and western shores of the Acushnet River. Many stations were sampled at the direction of the United States Army Corps of Engineers (USACE) and have been sampled throughout the eight year history of the post-remediation monitoring program. River sediments were generally comprised of a layer of fine black silt and organic detritus underlain by sand, clay or silt. River sediments located closer to the shore and farther upstream were comprised of brown organic sand and silt underlain by gravel and/or sand. Most shoreline soils were comprised of brown organic silt/fine sand underlain by coarse sand.

In 2011, analysis of total PCB concentrations in river sediment samples ranged from 9.91 milligrams per kilograms (mg/kg) to 179.17 mg/kg dry weight. These values are significantly larger than the concentrations observed during 2010 monitoring, but on par with previous years (2004, 2007-2008) of monitoring. The samples with the highest concentrations of total PCB (>50 mg/kg) were measured in sediment from stations in close proximity to the Wood Street Bridge, and towards the center of the river channel just south of a Combined Sewer Overflow (CSO). Total PCB concentrations in all 2011 shoreline soil samples were all below the applicable recreational cleanup criteria (25 mg/kg). All soil samples except one (30W) located in residential areas are below the applicable limit for residential areas (1 mg/kg).

Sediment data from the 2003–2011 monitoring period reveal that total PCB concentrations in river sediment at the NWS area are spatially and temporally variable. The heterogeneous distribution of the PCB concentrations reflects the differences in bulk sediment characteristics and the highly dynamic nature of the system. Total PCB concentrations in 2003 following the remediation of the NWS area in the winter of 2002-2003 were the lowest measured during 2003–2011. However, the total PCB concentrations measured since 2003 (except 2010) have increased and have remained higher than the concentrations measured in 2003.

Conditions in the river prior to the April 2011 sampling were different than in 2010. The April 2010 sampling event took place after the New Bedford region and Acushnet River

watershed experienced a series of extreme precipitation events in late March 2010. Although no analysis has been performed to support this hypothesis, the observed decrease in concentrations of PCBs in both river and shoreline sediment samples collected in April 2010 may be attributed to a natural "flushing" of the NWS area by the high flow conditions experienced in the Acushnet River during late March 2010. No such period of extreme precipitation was recorded in the weeks preceding 2011 sampling, and total PCB values during this time are more likely to represent average conditions of the study area.

The fluctuation of PCB measurements between the ten sampling events is thought to be caused by the result of natural tidal processes transporting contaminated sediment from the upper harbor source area, and countered by high spring river flows that flush contaminants downstream. Although the resuspension and transport of sediments is natural and unavoidable (e.g., tide and storms), the resuspension of contaminated sediment due to the New Bedford Superfund Site remediation activities is controllable. To that end, remediation dredging is performed using methods of minimal disturbance (e.g., hydraulic dredging), and a water quality monitoring program is used to ensure that excessive resuspension of sediment during remediation activities does not occur, or is limited. Annual sediment monitoring will continue at the NWS area as needed to assess the potential for recontamination from the unremediated harbor areas via natural and anthropogenic processes.

# 1.0 INTRODUCTION

## 1.1 NEW BEDFORD HARBOR SUPERFUND SITE

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.

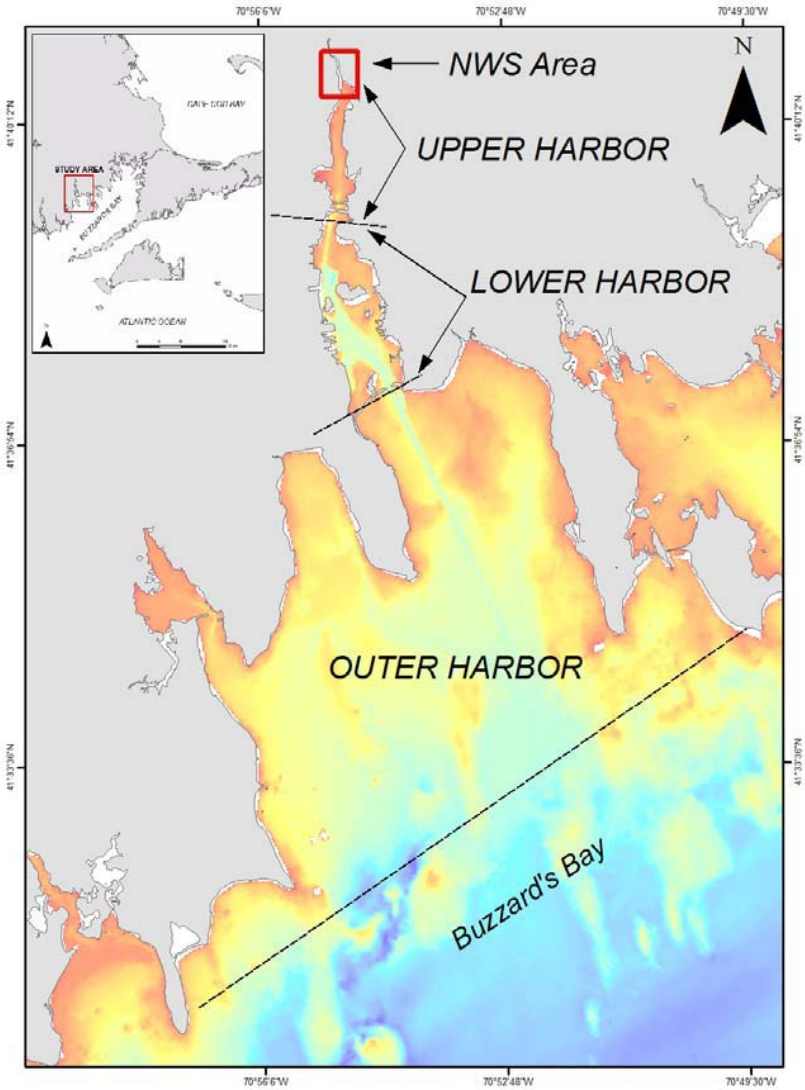


**Figure 1. Basemap of New Bedford Harbor Superfund Site in Southeastern, MA**

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 (VHB, 1996). 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 used PCBs 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, consistent with geographic features, basin morphology (Figure 1) and gradients of contamination. 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 current sediment PCB levels ranging from below detection to approximately 4,000 parts per million (ppm). Prior to removing 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 current 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 most contaminated sediments in the outer harbor were capped in 2005). 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).

Remediation of the Site involves the excavation and dredging of approximately 900,000 cubic yards of PCB-contaminated sediment. The majority of the contaminated material is being 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 is then pumped to the Area D Dewatering Facility located on Herman Melville Boulevard where it is mechanically dewatered and transported off-site for disposal.

## 1.2 NORTH OF WOOD STREET AREA

Located at the far northern end of the Upper Harbor is the North of Wood Street (NWS) area. This location was prioritized for restoration activities based on the high levels of PCB contamination (especially in intertidal and shoreline areas) and the proximity to shoreline residential and recreational land use areas. The NWS area includes in-river sediments and marsh soils on the eastern and western shores of the river. The NWS study area extends from approximately 250-ft south of the Wood Street bridge to approximately 0.25 miles north of the bridge.

Sediments and marsh soils at the NWS area previously had PCB concentrations as high as 46,000 mg/kg. The 1998 ROD clean-up criteria that apply to the NWS area are: 1 mg/kg for residential shoreline areas; 10 mg/kg for sub-tidal sediments and mudflats; 25 mg/kg for the top foot of recreational land use shoreline soils; and 50 mg/kg for shoreline soils deeper than the top foot in residential and recreational land use areas.

In the winter of 2002-2003 approximately 15,000 cubic yards of material was removed from the NWS area. The site was remediated using temporary dams and pumps to divert river water around the site. This allowed excavation activities to be conducted on dry sediments and soils, minimizing the potential for sediment resuspension and recontamination. Clean fill was used to restore the river banks, but sub-tidal areas were left at the depth of excavation (i.e., not backfilled). Marsh and upland vegetation was planted above the low water line to stabilize and restore the shoreline. In August of 2004 post-remediation sampling revealed elevated PCB concentrations on the eastern shoreline of the NWS area, and in certain sub-tidal locations. Elevated concentrations were found above the high tide line suggesting that incomplete remediation was a more likely cause than recontamination from in-river sources. Additional remediation and restoration efforts were conducted in December 2005 to remove the remaining contamination. Samples collected before and after this effort showed a reduction in shoreline PCB concentrations (ENSR, 2006). Additional sampling was conducted in 2006, 2007, 2008, and 2010.

## 1.3 PROJECT OBJECTIVES AND SCOPE

North of Wood Street sampling occurs on an annual, or as needed basis as part of an environmental monitoring program coordinated with the New Bedford Harbor Superfund Site. The objective of the NWS monitoring program is to assess the potential recontamination of this previously remediated area due to sediment transport from unremediated areas or from areas undergoing active remedial dredging. In 2011, sample stations included 11 sediment stations in the river, 4 soil locations in the remediated

marsh area on the east side of the river south of River View Park, and 6 shoreline stations on the lumber yard site on the west side of the river (Figure 2). These 21 stations were sampled April 14-15, 2011 as part of the 2010 Environmental Monitoring, Sampling, and Analysis of the New Bedford Superfund Site performed by Woods Hole Group under contract to the USACE NAE.

Twenty-one (21) locations have historically been sampled in the NWS area. At the request of the USEPA and USACE, WHG modified four of the 2011 sample collection stations from those sampled in previous years. The change in sample station location was performed to increase the spatial coverage of the monitoring effort. Sediment samples were not collected at shoreline stations NWS-30E, NWS-36 and NWS-38, and river station C009-038. These four stations were replaced by the addition of shoreline stations: NWS-40, NWS-41, NWS-42, and NWS-43 (Table 1).

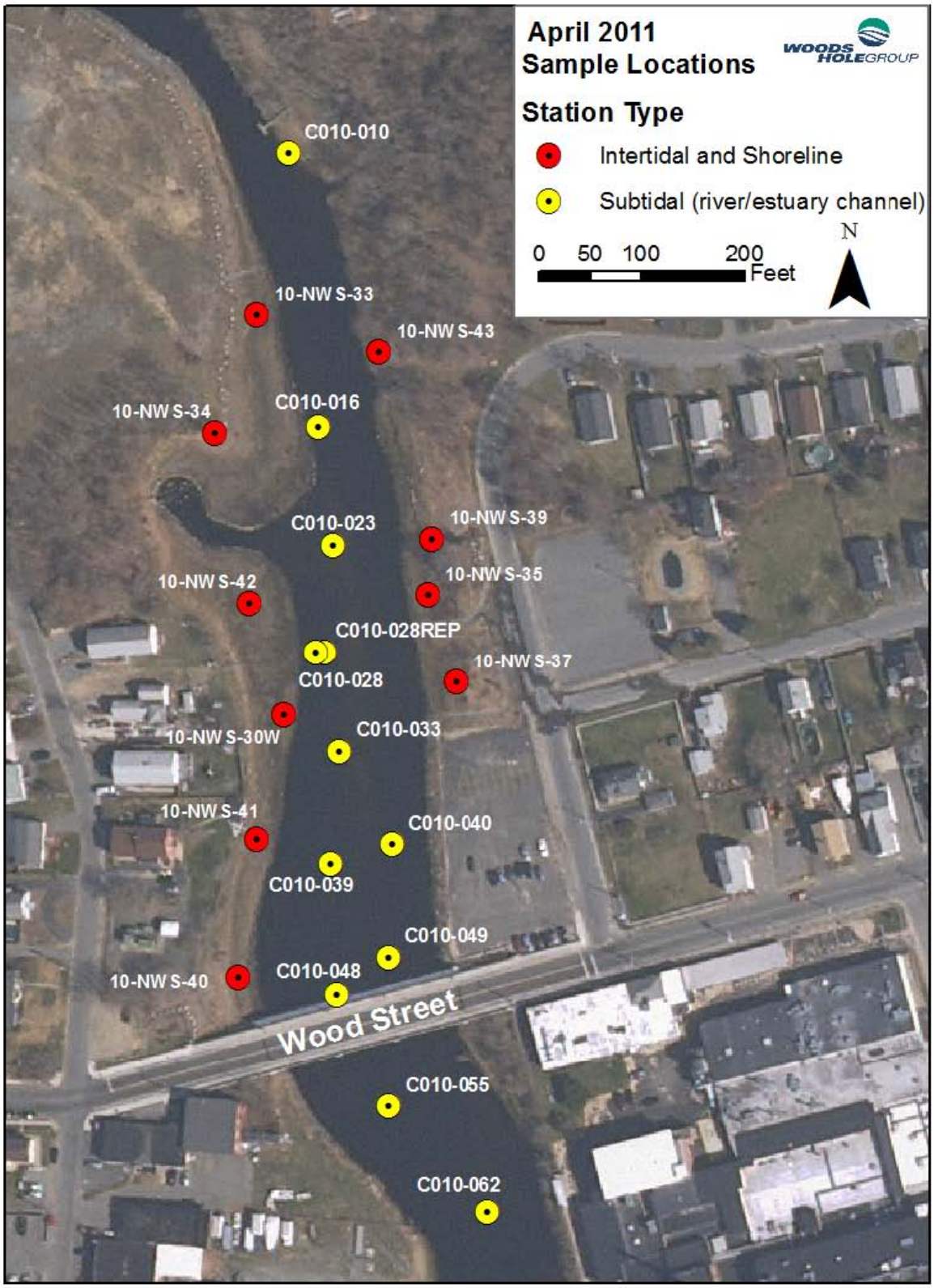


**Figure 2. Basemap of the North of Wood Street Area and April 2011 sample locations**

## Table 1. Summary of Samples Collected at NWS Area in April 2011

| Station | Sample ID | Sample Type | Easting (NAD83 MA ft) | Northing (NAD83 MA ft) |
|---|---|---|---|---|
| 10-NWS-35 | S-11A-C001-0-0.5 | shoreline soil | 815502.755 | 2708768.054 |
| | S-11A-C001-0.5-1.0 | | | |
| 10-NWS-39 | S-11A-C002-0-0.5 | shoreline soil | 815506.934 | 2708822.743 |
| | S-11A-C002-0.5-1.0 | | | |
| 10- NWS-37 | S-11A-C003-0-0.5 | shoreline soil | 815530.654 | 2708683.218 |
| | S-11A-C003-0.5-1.0 | | | |
| 10-NWS-43 | S-11A-C004-0-0.5 | shoreline soil | 815455.607 | 2709004.594 |
| | S-11A-C004-0.5-1.0 | | | |
| 10- NWS-33 | S-11A-C005-0-0.5 | shoreline soil | 815336.983 | 2709040.224 |
| | S-11A-C005-0.5-1.0 | | | |
| 10- NWS-34 | S-11A-C006-0-0.5 | shoreline soil | 815296.285 | 2708926.08 |
| | S-11A-C006-0.5-0.8 | | | |
| 10-NWS-30W | S-11A-C007-0-0.5 | shoreline soil | 815362.403 | 2708651.701 |
| | S-11A-C007-0.5-1.0 | | | |
| 10-NWS-40 | S-11A-C008-0-0.5 | shoreline soil | 815318.616 | 2708396.319 |
| | S-11A-C008-0.5-0.8 | | | |
| 10-NWS-41 | S-11A-C009-0-0.5 | shoreline soil | 815335.915 | 2708530.052 |
| | S-11A-C009-0.5-1.0 | | | |
| 10-NWS-42 | S-11A-C010-0-0.5 | shoreline soil | 815329.786 | 2708760.799 |
| | S-11A-C010-0.5-1.0 | | | |
| C010-033 | S-11A-C011-0-0.5 | river sediment | 815417.287 | 2708615.636 |
| | S-11A-C011-0.5-1.0 | | | |
| C010-023 | S-11A-C012-0-0.5 | river sediment | 815411.365 | 2708816.017 |
| | S-11A-C012-0.5-0.9 | | | |
| C010-010 | S-11A-C013-0-0.5 | river sediment | 815367.775 | 2709198.342 |
| | S-11A-C013-0-0.9 | | | |
| C010-016 | S-11A-C014-0-0.5 | river sediment | 815396.918 | 2708931.312 |
| | S-11A-C014-0.5-1.0 | | | |
| C010-028 | S-11A-C015-0-0.5 | river sediment | 815393.859 | 2708712.65 |
| | S-11A-C015-0.5-1.0 | | | |
| C010-028REP | S-11A-015-0-0.5-REP | river sediment | 815393.859 | 2708712.65 |
| C010-039 | S-11A-C016-0-0.5 | river sediment | 815408.929 | 2708506.257 |
| | S-11A-C016-0.5-1.0 | | | |
| C010-040 | S-11A-C017-0-0.5 | river sediment | 815467.993 | 2708524.881 |
| | S-11A-C017-0.5-0.9 | | | |
| C010-048 | S-1A-C018-0-0.5 | river sediment | 815414.353 | 2708378.753 |
| | S-11A-C018-0.5-1.0 | | | |
| C010-049 | S-11A-C019-0-0.5 | river sediment | 815464.187 | 2708415.534 |
| | S-11A-C019-0.5-1.0 | | | |
| C010-055 | S-11A-C020-0-0.5 | river sediment | 815465.183 | 2708269.78 |
| | S-11A-C020-0.5-1.0 | | | |
| C010-062 | S-11A-C021-0-0.5 | river sediment | 815561.503 | 2708167.191 |
| | S-11A-C021-0.5-1.0 | | | |

# 2.0 METHODS

Methods used to collect and analyze sediment samples are summarized below and described in detail in the project Field Sampling Plan (Woods Hole Group 2010a) and Quality Assurance Project Plan (Woods Hole Group 2010b). Twenty-one (21) locations were sampled in 2011, including 11 sediment stations in the river and 10 soil stations located at recreational land use shoreline soil areas along the east and west side of the river (Figure 2). To allow accurate comparisons over time, station locations were chosen based on locations sampled previously in 2006, 2007, 2008, and 2010.

## 2.1 SEDIMENT COLLECTION

All locations for the collection of sediment cores were approved by the USACE NAE and USEPA. Locations were provided in Massachusetts State Plane Mainland coordinates, and were converted into latitude and longitude using the program Corpscon 6. Woods Hole Group navigation system required all waypoints to be entered in geographic coordinates. Actual samples locations were recorded in geographic coordinates on the sediment sampling field logs and reentered into Corpscon 6 to convert the actual coordinates back into Massachusetts State Plane Mainland coordinates.

Sample collection data, including collection date and time, station coordinates, and sample ID, were documented on Sediment Sampling Log forms (Appendix A).

### *2.1.1 Shoreline Soils*

Shoreline soil samples were collected using a soil auger. When sampling with the soil auger, the auger head was pushed and rotated into the sediment to a depth of 6 inches, as determined by measuring tape or other measuring device. The sediment was removed from the auger using a cleaned spoon to push the soil into clean and labeled plastic re-sealable bags. The soil auger and spoon were decontaminated using site water (Acushnet River water collected upstream of sampling activity) and Liquinox. This process was repeated until the required core depth was reached, at least one foot, where each sample was placed into its own labeled plastic bag. Once all sampling was complete, samples were homogenized on-site in the plastic bags they were placed in then transferred to 8 oz. labeled glass jars and stored on ice. All samples were then shipped to Alpha Analytical Laboratories for PCB congener (NOAA 18) analysis or archiving.

The method described here, using plastic bags to contain discrete sample intervals, represents a deviation from the method proposed in the FSP. The method described here was adopted during field sampling procedures because it was a cleaner, more efficient and accurate way of collecting the samples. This method was subsequently discussed with, and approved by, USACE-NAE Project Chemist Mark Koenig and will be utilized in future auger sampling events.

### *2.1.2 River Sediments*

Sediment cores were collected using a push-core sampling device and a 2 5/8-inch inner diameter clear polycarbonate core barrel. A piston assembly inside the core barrel was used to create suction, thereby preventing excessive compaction during penetration and

loss of sediment from the bottom of the barrel during recovery. In all cases, a one foot core was targeted and obtained at every station except NWS-34, NWS-40, C010-023, C010-010 and C010-040.

The piston assembly was positioned just inside the leading end of the core liner and the piston line was held loosely on deck. The coring assembly was lowered into the water until the leading end of the core bore barrel was positioned at the sediment-water interface. At this point, the piston attachment line was secured to the vessel, fixing the elevation of the piston assembly and creating a suction point at the sediment-water interface. During core barrel retrieval the piston line was held tight to maintain suction in the barrel and to overcome the suction holding the penetrated core barrel in place. Upon recovery of the core onto the vessel, the bottom end of the barrel was capped with a plastic cap. After a rinse of the coring device using site water, the core liner was removed from the socket, the piston was removed from the core liner, and the top of the core liner was fitted with a plastic cap. The core barrel was stored in a vertical position until subsequent processing could take place.

## 2.2 SEDIMENT CORE PROCESSING

River sediment cores were brought back to the field laboratory at the Sawyer Street facility for documentation, internal inspection, and subsampling. The internal inspection process included: 1) splitting open the core barrel, 2) archival photography, and 3) a geological description of the core, where the transitions between each type of sediment were recorded on a log sheet.

To begin internal inspection, each core barrel was placed into a clean 4 inch gutter and split by cutting along the entire length of the polycarbonate barrel with power shears. Cuts were made on opposite sides of the core barrel, 180 degrees apart. A clean piece of stainless steel wire (18 gauge) was used to slice through the middle of the barrel, using the two cuts in the barrel as guidelines. Care was used to prevent the wire from pulling obstructions (shells, rocks) down the core barrel and potentially mixing sediment layers. After splitting, the cores were rolled 90 degrees and separated. Following separation, the core was photographed (Appendix A); each photograph contains the following elements in the frame:

- The sediment core
- A tape measure (or equivalent) marked in decimal feet lying parallel to length of the core. The sediment-water interface, or top of core should be aligned with the
- top (0-feet) of the tape measure.
- A whiteboard or equivalent was placed next to the core with the following written information:
    - Sample ID – an alpha numeric code that identifies sample matrix, sampling year, station location, and depth interval sampled
    - Sample Date
    - Core length

After photo documentation was complete, the core was geologically described by a trained technician. A description of the sediment texture, sorting, consistency/firmness,

color, and odor was noted on the Sediment Sampling Log forms (appendix A). An ASTM D 2488-06 soil classification was assigned to each sediment layer, and color descriptions followed the Munsell color classification.

Following description and photography, each core was subsampled for chemical analysis. Two 6-inch composite (0–0.5', 0.5–1.0') subsamples were taken from each core, homogenized, and placed into separate sample containers. The sample from the 0.0–0.5 foot interval was submitted for PCB analysis. The sample from the bottom interval (0.5–1.0') was archived until further notice by the USACE. Samples were collected into pre-cleaned, 8-oz glass jars with Teflon lined lids. All samples were held on ice while in the field and then sent to Alpha Analytical Laboratories for PCB congener (NOAA 18) analysis or archiving.

## 2.3 POLYCHLORINATED BIPHENYL ANALYSES

The methods used by AAL are summarized below and more details are in the Quality Assurance Project Plan (Woods Hole Group 2010b).

During sample preparation at the lab, an aliquot of a well-mixed, homogeneous sediment sample is accurately measured for sample preparation; generally, 5 grams (g) of sediment is extracted from a 30 g field sample. The New Bedford Harbor QAPP requires 30 g of field sample sediment for extraction by Method 3540C Soxhlet Extraction, which is air dried to a minimum of >50% solids and generally >90% solids. The sample is spiked with surrogate compounds and then extracted using methylene chloride. The extract is dried and exchanged to hexane during sample concentration. After extraction, 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 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 1-5mL.

After clean-up and re-concentration, the extracts are analyzed on a gas chromatograph (GC), fitted with two capillary columns of differing polarities each employing separate detectors. This process follows a modified USEPA Method 8082 (WHG 2010b). 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 kilogram (µg/kg) for the individual 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.

PCB congener results are reported here in mg/kg dry weight and to two significant figures in this report. Concentrations of total PCB were calculated using the congener results. Total PCB was calculated as the sum of the 18 NOAA congeners multiplied by the project-specific correction factor of 2.6. A value of zero (0) was used in the summation for non-detects.

## 2.4 QUALITY ASSURANCE/QUALITY CONTROL

### *2.4.1 Decontamination*

All of the sampling equipment was decontaminated prior to use in the field using the procedure specified in EPA Region II, CERCLA Quality Assurance Manual from October 1989, Revision 1 (WHG 2010b). The EPA Region II procedures used for decontamination are summarized below (solvents used during decontamination activities were collected and stored for disposal at the laboratory):

1) Rinse with tap water or site water for gross decontamination
2) Clean with non-phosphate detergent (e.g. Liquinox) and tap water
3) Rinse with Milli-Q or deionized water
4) Rinse with acetone[a]
5) Let air-dry

[a] Used if oily contamination is apparent and only on metal/stainless steel surfaces.

During field sampling all equipment was decontaminated between stations to prevent cross-contamination. However, the procedure described here was modified by using site water instead of tap water or deionized water at step 3 for equipment rinses. All equipment utilized a gross decontamination rinse with site water, cleaning with Liquinox, and hand rinse with fresh site water. There was no apparent need to use acetone for a final rinse of equipment.

Due to changes in shoreline soil sample collection procedures adopted in the field, equipment was also decontaminated between discrete samples intervals collected by the soil auger.

### *2.4.2 Field-Based Quality Control Samples*

One replicate or field duplicate sediment sample was collected during the April 2011 sampling event. The replicate sample was collected adjacent to the field sample collected at Station 028 (within 1 foot). The purpose of this sample was to ensure that field procedures did not affect the quality of the data. Field duplicates samples are used to evaluate the sampling procedure and analytical precision. The sample was collected using the same techniques, and was handled, containerized, preserved, stored and transported in the same manner as field samples.

An equipment blank sample was also collected. This sample was collected by pouring laboratory quality deionized water through the cleaned auger between two sample collections. The purpose of this sample was to verify that decontamination methods were adequate. All field-based QC samples were analyzed by the same laboratory.

### *2.4.3 Laboratory-Based Quality Control Samples*

A routine suite of laboratory-based quality control (QC) samples were prepared with each set of field samples to evaluate data quality in terms of accuracy and precision. For each batch of 20 or fewer samples, the approved QAPP calls for quality control samples for PCB analysis included one procedural blank (also called a method blank or procedural method blank), one laboratory control sample (LCS), one matrix spike (MS) and one matrix spike duplicate (MSD).

In addition, a quality assurance (QA) split sample was sent to ESS laboratory in Cranston, Rhode Island for comparison to the AAL analyzed field sample at Station 033. The QA split sample from Station 033 was analyzed and reported in the same manner as all AAL analyzed samples. The QA split sample result from ESS Laboratory was reported to the USACE Project Chemist, Mark Koenig.

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# 3.0 RESULTS

Results from the 2010-2011 NWS sediment monitoring activities are described below. Complete field data collection and description logs, along with digital photographs of the split cores are provided in Appendix A. Analytical reports from AAL are provided in Appendix B.

## 3.1 SEDIMENT AND SHORELINE SAMPLE COLLECTION

Twenty one (21) locations were sampled from the NWS area in April, 2011 (Figure 2). A total of 12 surface sediment samples (11 field samples + 1 field duplicate) were collected from the Acushnet River. A total of 10 shoreline soil samples were also collected; four samples were collected from the eastern shoreline and six from the western shoreline. Sample collection data, including station ID, sample IDs, sample type, and station coordinates are summarized in Table 1. All samples were collected on April 14–15, 2011 and cores were split open for internal description and subsampling on April 15, 2010.

## 3.2 PHYSICAL CHARACTERISTICS

River sediment cores were visually characterized and physical characteristics, including material type, color, consistency, particle size, and odor, are documented on the Sediment Sampling Log forms provided in Appendix A. Digital photographs of the cores are also provided in Appendix A.

The physical characteristics of surface sediments collected at most river stations were similar, and were characterized by a thin layer of fine black silt with organic debris underlain by sand, clay or silt. The physical characteristics of sediment located closer to the shoreline and farther upstream were different compared to in-river sediment locations. For example, Stations 010 and 016, located at the northern boundary of the NWS area, were comprised of fine to coarse, grey-brown sand and gravel.

Shoreline soils were not described since the sample collection differed from that used for coring.

## 3.3 POLYCHLORINATED BIPHENYLS

All NWS surface (0–0.5’) sediment samples were analyzed for the NOAA 18 PCB congeners. Determination of the total PCB concentration was calculated as the sum of the NOAA 18 congeners, multiplied by the site-specific correction factor of 2.6. A value of zero (0) was used in the case of non-detects. Total PCB concentrations are summarized in Table 2 and displayed in Figure 3. Complete laboratory analytical data are provided in Appendix B.

## Table 2. Total PCBs in Core Samples from NWS Area in April 2010

| River Sediment | | | Shoreline Soil | | |
|---|---|---|---|---|---|
| **Station ID** | **Sample ID** | **Total PCBs (mg/kg)** | **Station ID** | **Sample ID** | **Total PCBs (mg/kg)** |
| C010-033 | S-11A-C011-0-0.5 | 127.55 | 10-NWS-35 | S-11A-C001-0-0.5 | 0.26 |
| C010-023 | S-11A-C012-0-0.5 | 14.16 | 10-NWS-39 | S-11A-C002-0-0.5 | 0.40 |
| C010-010 | S-11A-C013-0-0.5 | 9.91 | 10-NWS-37 | S-11A-C003-0-0.5 | 0.07 |
| C010-016 | S-11A-C014-0-0.5 | 46.54 | 10-NWS-43 | S-11A-C004-0-0.5 | 0.15 |
| C010-028 | S-11A-C015-0-0.5 | 48.27 | 10-NWS-33 | S-11A-C005-0-0.5 | 0.09 |
| C010-028REP | S-11A-C015-0-0.5 REP | 111.94 | 10-NWS-34 | S-11A-C006-0-0.5 | 0.18 |
| C010-039 | S-11A-C016-0-0.5 | 179.17 | 10-NWS-30W | S-11A-C007-0-0.5 | 1.51 |
| C010-040 | S-11A-C017-0-0.5 | 29.87 | 10-NWS-40 | S-11A-C008-0-0.5 | 0.09 |
| C010-048 | S-11A-C018-0-0.5 | 55.76 | 10-NWS-41 | S-11A-C009-0-0.5 | 0.30 |
| C010-049 | S-11A-C019-0-0.5 | 12.99 | 10-NWS-42 | S-11A-C010-0-0.5 | 0.08 |
| C010-055 | S-11A-C020-0-0.5 | 157.27 | | | |
| C010-062 | S-11A-C021-0-0.5 | 19.92 | | | |

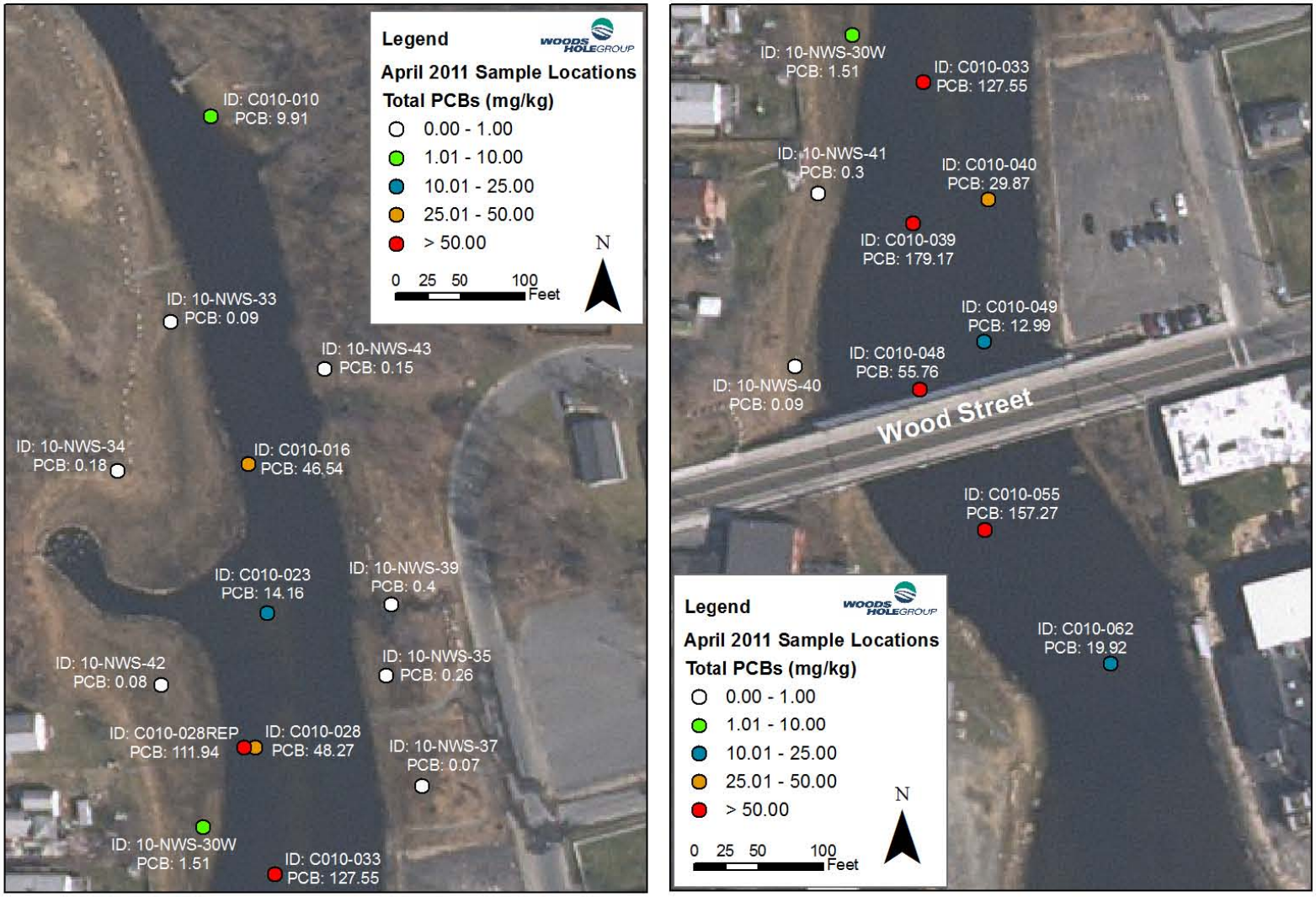


**Figure 3. Total PCBs in Core Samples from NWS Area in April 2011 (left-hand image shows northern stations, right-hand, southern)**

### *3.3.1 River Sediments*

Total PCB concentrations in river sediment samples ranged from 9.91 mg/kg to 179.17 mg/kg. The highest concentrations of total PCBs (>50 mg/kg) were measured in sediment samples from Stations 028-REP, 033, 039, 048 and 055, located towards the center of the river channel. Slightly lower concentrations (<50 mg/kg) of total PCBs were measured in sediment samples collected closest to the shoreline and at stations farthest upstream (Figure 3). Lower concentrations of PCBs were also measured in sediment collected at station 062.

### *3.3.2 Shoreline Soils*

Total PCB concentrations in the shoreline soils ranged from 0.07 mg/kg to 1.51 mg/kg. The highest concentration of total PCBs was measured in the soil from Station NWS-30W, located on the western shore (Figure 3). This station was not sampled in previous field seasons. The other shoreline samples contained less than 1 mg/kg total PCBs, and all shoreline soils were well within the 25 mg/kg PCB concentration limit for recreational areas, as dictated by the 1998 ROD. Three of four samples located in residential areas (40, 41 and 42 but not 30W) contained less than 1 mg/kg total PCBs, the 1998 ROD limit for residential areas.

## 3.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

### *3.4.1 Field Based Quality Control Samples*

Quality assurance/quality control samples were collected in the field to ensure that field methods did not affect the quality of the data. The field replicate sample was analyzed to evaluate the sampling procedure and analytical precision. The replicate sample had a higher concentration of total PCBs than the field sample: 111.94 mg/kg in the replicate (028-REP) compared to 48.27 mg/kg in the field sample (028). This discrepancy is likely based on the spatial heterogeneity of the sediments in this dynamic environment. The replicate core sample was collected approximately 1 foot from the field sample core.

The equipment blank sample collected from the auger after decontamination between soil sample collections contained 0.00 µg/L of the NOAA 18 PCB congeners (all non-detects).

### *3.4.2 Laboratory Based Quality Control Samples*

Laboratory-based QC results are reported with the sample data in Appendix B of this report. Results from the analysis of laboratory-based QC samples for PCBs were evaluated against the project measurement quality objectives for accuracy and precision, as defined in the project QAPP (WHG, 2010b). The evaluation is summarized in the QA/QC narrative of the AAL reports (Appendix B). Overall, results from the laboratory-based QC samples for all tests parameters indicate the laboratory methods were in control and the data is usable.

# 4.0 DISCUSSION

Several investigations have been conducted as part of the NWS monitoring program to characterize PCB contamination in the area since remediation activities were conducted in 2002-2003 (TTFW, 2004). A confirmatory sampling event was conducted by Tetra Tech FW, Inc. immediately following remediation in February 2003. ENSR conducted four sampling events in the area to evaluate changes in river sediment PCB concentrations that may have occurred due to seasonal influence and/or dredging and other remediation activities. The ENSR sampling events occurred in August 2004, May 2005, September 2005, and January 2006. Additionally, Battelle conducted sampling events in November 2006, November/December 2007, and November/December 2008 to further assess potential recontamination of the NWS area. Woods Hole Group completed a sampling event in April 2010. The NWS sample collection that occurred in April 2011 was the tenth event since remediation.

Long-term monitoring data indicate that total PCB concentrations are spatially and temporally variable in river sediments, whereas shoreline soil concentrations are not.

## 4.1 RIVER SEDIMENTS

Total PCB concentrations measured in river sediments at the NWS area between 2003 and 2011 are summarized in Table 3. Station-specific concentrations and system-wide averages of total PCBs between 2003 and 2011 (if applicable) are plotted in Figures 4 and 5, respectively. The system-wide average concentration was calculated as the average total PCB concentration across all stations within a given sampling event. Sediment data from the 2003–2011 monitoring period show that total PCB concentrations in river sediment at the NWS area are spatially and temporally variable (Figures 4 and 5), which makes it difficult to discern clear trends in the data.

The lowest concentrations of total PCB in river sediment were measured in 2003, immediately following the remediation of the NWS area in the winter of 2002–2003. A post-remediation increase in total PCB concentrations was observed in 2004. Post-remediation levels in 2011 have increased or otherwise showed little evidence of decrease at most stations. The increase between 2010 and 2011 was small (0–20 mg/kg) at some stations (C011-010, 023, 040, 049, 062) and larger (37–170 mg/kg) at other stations (C011-016, 028, 033, 039, 048, and 055). Post-remediation, the system-wide average concentrations of total PCBs in sediment at the NWS area have ranged between 3.7 mg/kg in 2003, to 67.8 mg/kg in 2011. This suggests that natural processes or remediation efforts down-river periodically may resuspend sediments (some containing PCBs), which have been redistributed in the river north of Wood Street. Natural events, such as precipitation, runoff and high river flow, also likely transport and scour sediments downstream south of Wood street.

## Table 3. Total PCBs in river sediments at NWS area

| Station ID | Total PCBs (mg/kg)* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Jan/Feb 2003 | Aug 2004 | May 2005 | Sept 2005 | Jan 2006 | Nov 2006 | Nov/Dec 2007 | Nov/Dec 2008 | Apr 2010 | Apr 2011 |
| C010-010 | 6.1 (D) | 20 | - | 81 | 0.99 | 2.4 | 4.5 | 2.3 | 1.2 | 9.91 |
| C010-016 | 4.6 (D) | 13 | - | 18 | 16 | 15 | 29/30 | 29 | 4.8 | 46.54 |
| C010-023 | 8.3 (D) | 22 | 3.8 | 2 | 6.6 | 8.5 | 23 | 44/51[b] | 4.29 | 14.16 |
| C010-028 | 0.49 (DU) | 63 | 9.8 | 0.22 | 11 | 18 | 78 | 76 | 11.52 | 48.27/111.94[a] |
| C010-030E | - | - | - | 0.7 | 88 | 0.72 | 0.44 | 1.1 | 2.98 | - |
| C010-030W | - | - | - | 0.4 | 5.2 | 0.16 | 0.4 | 0.98 | 3.3 | - |
| C010-033 | 0.39 (DU) | 64 | 22 | 1.1 | 17 | 93 | 120 | 74 | 0.23/3.01[a] | 127.55 |
| C010-038 | 0.45 (DU) | 36 | - | 4.7 | 8.6 | 1.8 | 68 | 33 | 6.64 | - |
| C010-039 | 0.54 (DU) | 64 | 4.6 | - | - | 13 | 270 | 140 | 8.66 | 179.17 |
| C0101-040 | 2.9 (D) | 72 | 79 | 73 | 190 | 47 | 20 | 24 | 9.35 | 29.87 |
| C010-048 | 0.43 (DU) | 23 | 9 | - | - | 100 | 43 | 46 | 18.97 | 55.76 |
| C010-049 | 12 (D) | 160 | 36 | 5.9 | 3.9 | 12 | 25 | 23/26[b] | 21.13 | 12.99 |
| C010-055 | 0.42 (DU) | 61 | - | 7 | 20 | 9.6 | 190 | 180/150[a] | 5.43 | 157.27 |
| C010-062 | 7.4 (D) | 19 | - | 0.87 | 1.3 | 40 | 23 | 58 | 5.11 | 19.92 |

* - The 1998 ROD clean-up criteria for subtidal sediments and mudflats is 10 mg/kg.
D: result from dilution analysis; U: non detects = detection limit reported (ENSR)
a – result for field replicate sample
b – total PCB result based on homologue analysis

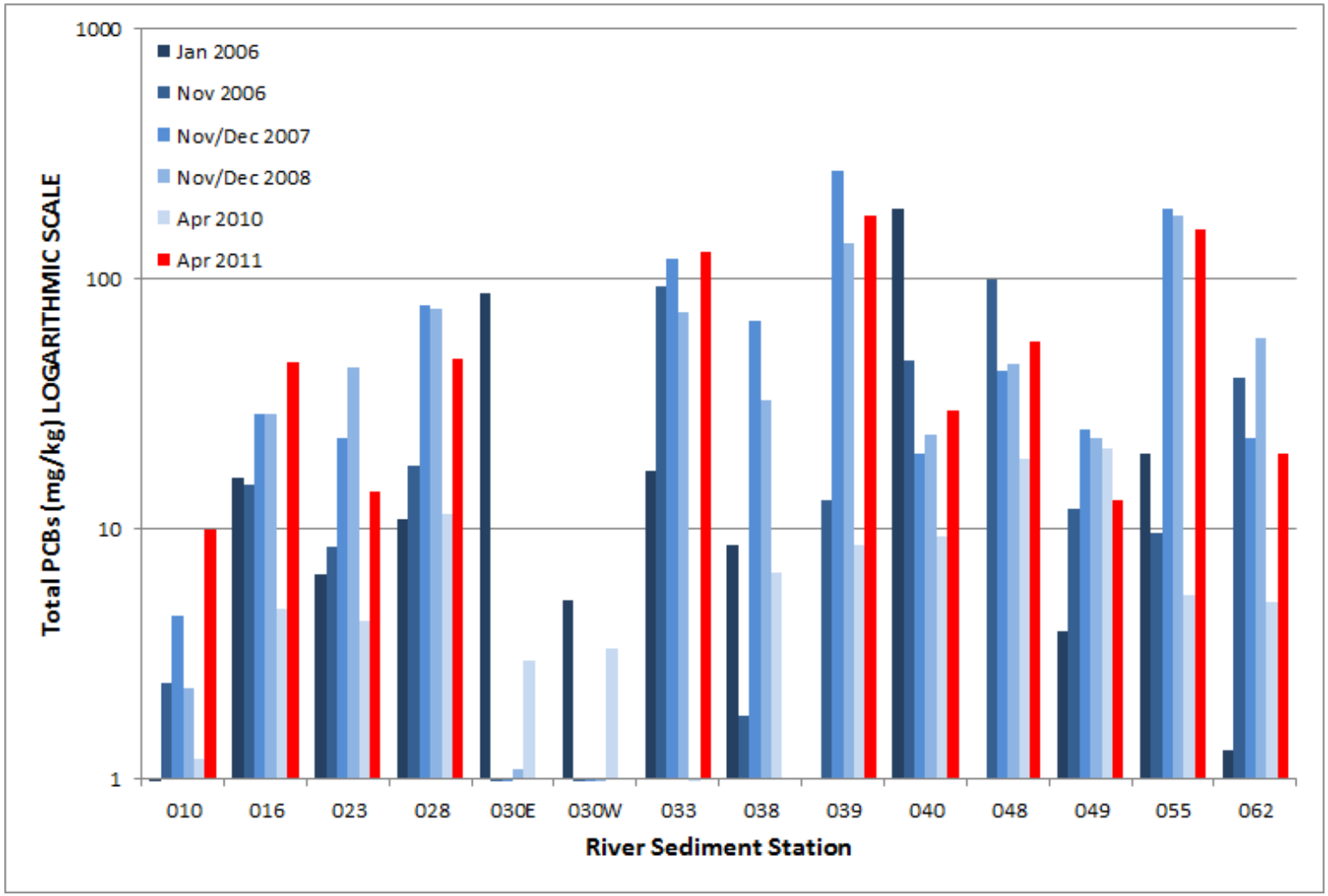


**Figure 4. Station specific trends in total PCBs for river sediments in NWS area**

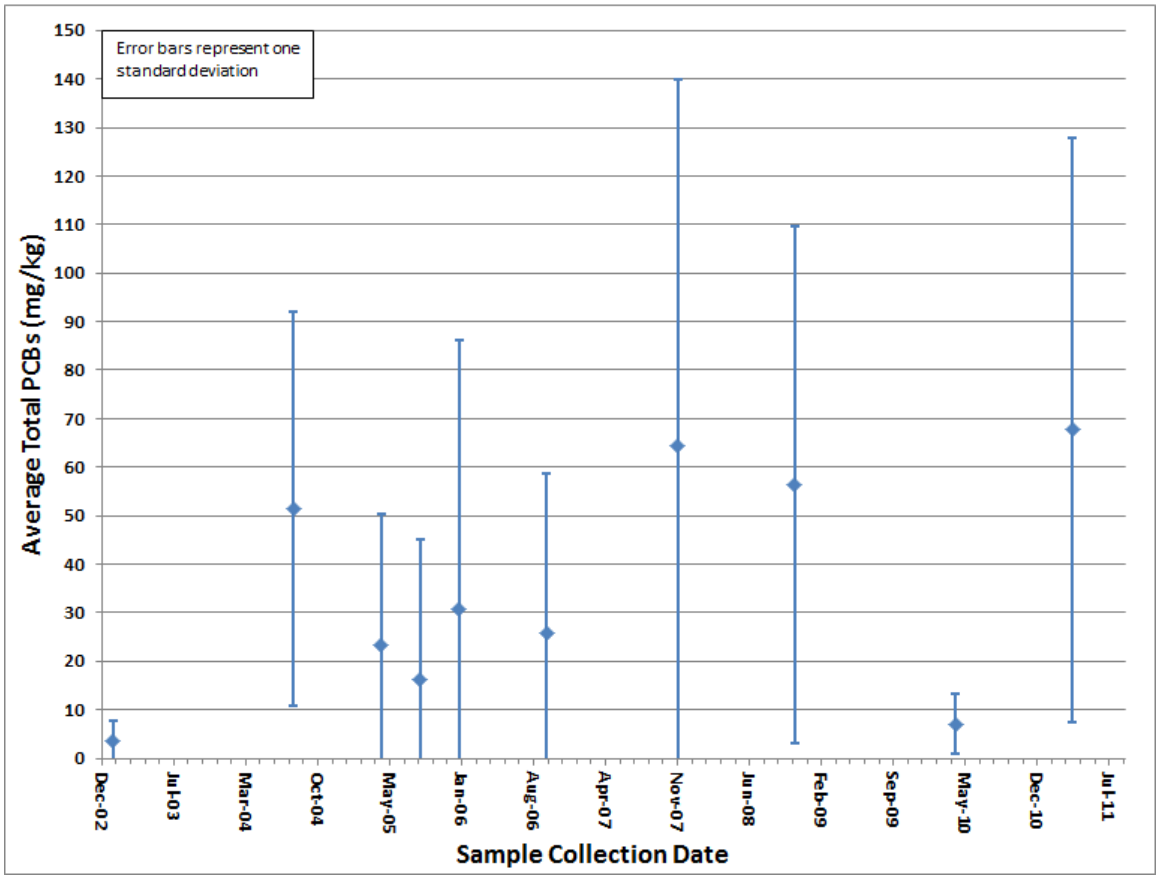


**Figure 5. System-wide trends in the average Total PCB concentration for river stations in NWS area**

The February 2003 confirmatory sampling dataset serves as the post-remediation baseline for comparison of PCB contamination levels in subsequent sampling events. Statistical analysis of variance (ANOVA) indicates that post-remediation monitoring data from all sampling events, are higher than the concentrations observed immediately following remediation in February 2003. The post-remediation increase in 2011 from 2010 could have resulted from contaminant transport from the upper harbor by natural processes or remediation activities, especially considering remediation activities during the 2010 season were in closest proximity to the NWS.

Although no analysis has been performed to support this hypothesis, the decrease in concentration of total PCBs in both river and shoreline sediment samples collected in April 2010 may be also attributed to a natural "flushing" of the NWS area by the extremely high flow conditions experienced in the Acushnet River during late March 2010 prior to sampling. The high flow conditions in the river were caused by extreme rainfall totals in the Acushnet River watershed over the course of 2–3 days. For example, the cumulative rainfall totals between 14:00 Sunday March 28, and 08:00 Wednesday March 31 (66 hours), were 5.27, 6.05, and 7.12 inches at New Bedford, Acushnet, and Taunton, respectively (NOAA, 2010). In the weeks leading up to the 2011 sampling

event there were no such periods of extreme precipitation: therefore, total PCB concentrations remain high in most subtidal areas. A sediment trap study (WHG, 2010c) conducted during the 2010 dredge season indicated that PCBs are actively transported and deposited in the NWS area during the active dredge season, and during periods of inactivity, which could partly explain the increase in total PCB concentrations observed in subtidal stations from 2010-2011.

Independent of the processes controlling contaminant distribution, the 2011 dataset indicates the NWS area presently contains subtidal total PCB concentrations comparable to those observed in 2007-2008 after remediation activities were well underway.

### 4.2 SHORELINE SOILS

Total PCB concentrations in shoreline soils are summarized in Table 4 and plotted in Figure 6. Analytical results of PCB concentrations from post-remediation sampling conducted in 2006, 2007, 2008, 2010 and 2011 suggest that the remediation was effective, and has been maintained. Total PCB concentrations from repeated sampling at all sampling stations, and five new stations sampled in 2011 for the first time, have measured below the 1998 ROD criteria of 25 mg/kg for recreational shoreline land use in the soil north of Wood Street. Furthermore, three of four samples located in residential areas (40, 41 and 42 but not 30W) contained less than 1 mg/kg total PCBs, the 1998 ROD limit for residential areas.

**Table 4. Total PCBs in Shoreline Soils at NWS Area**

| Station ID | Land Use | 1998 ROD criteria (mg/kg) | Total PCBs (mg/kg) | | | |
|---|---|---|---|---|---|---|
| | | | Nov/Dec 2007 | Nov/Dec 2008 | Apr 2010 | Apr 2011 |
| **Western Shoreline** | | | | | | |
| 10-NWS-33 | Recreational | 25 | 0.089 | 0.19 | 0.18 | 0.09 |
| 10-NWS-34 | Recreational | 25 | 7.4 | 0.2 | 1.36 | 0.18 |
| 10-NWS-30W | Residential | 1 | - | - | - | 1.51 |
| 10-NWS-40 | Residential | 1 | - | - | - | 0.09 |
| 10-NWS-41 | Residential | 1 | - | - | - | 0.30 |
| 10-NWS-42 | Residential | 1 | - | - | - | 0.08 |
| **Eastern Shoreline** | | | | | | |
| 10-NWS-35 | Recreational | 25 | 0.19 | 0.67 | 0.15 | 0.26 |
| 10-NWS-36 | Recreational | 25 | 0.31 | 0.18 | 0.1 | - |
| 10-NWS-37 | Recreational | 25 | 4.5 | 0.13 | 16.72 | 0.07 |
| 10-NWS-38 | Recreational | 25 | 0.26 | 0.076 | 0.06 | - |
| 10-NWS-39 | Recreational | 25 | 0.035/0.06[a] | 0.14 | 0.16 | 0.40 |
| 10-NWS-43 | Recreational | 25 | - | - | - | 0.15 |

a – result for field replicate sample

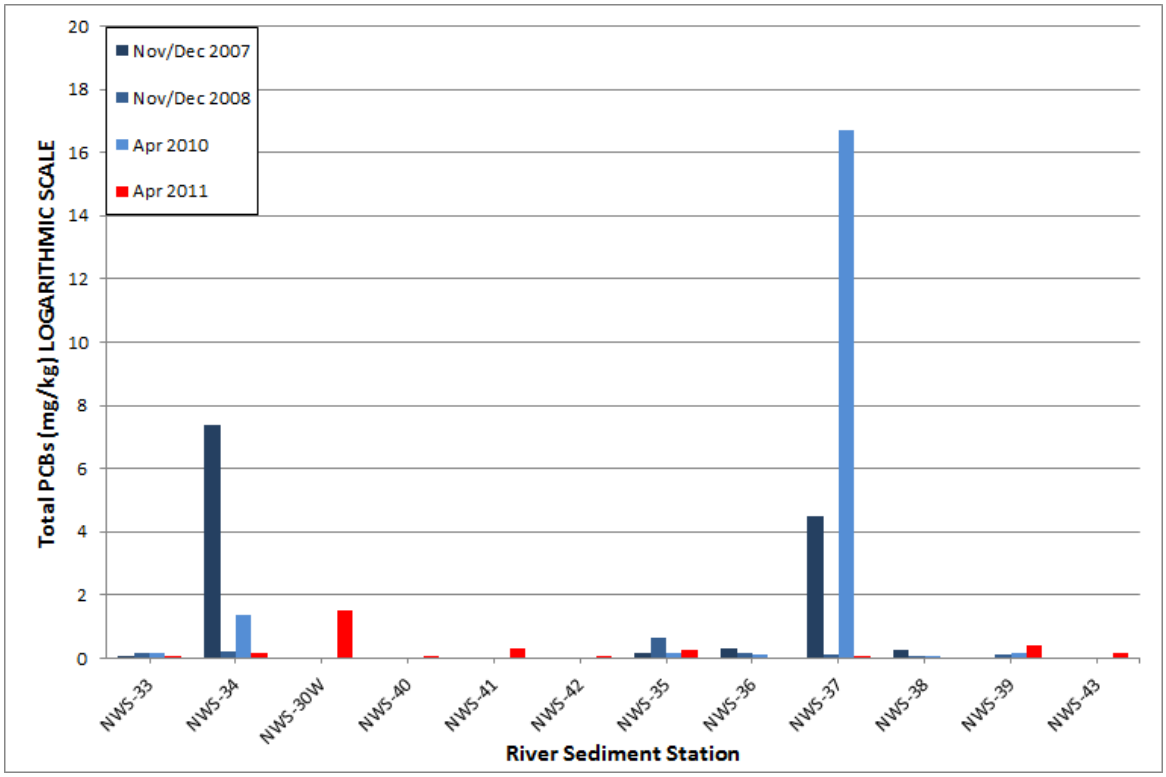


**Figure 6. Station-Specific Trends in Total PCBs for Shoreline Soils in NWS Area**

Substantive changes in shoreline PCB concentrations between 2007 and 2011 were not observed, except at stations NWS-34 and NWS-37 where the concentration decreased by an order of magnitude in 2011 compared to 2007 and 2010 results. The monitoring data indicate that concentrations of total PCBs in shoreline soils have been uniformly low both spatially and temporally.

The lower PCB concentrations between shoreline soils and river sediments may be due to differences in exposure to contaminated sediments transported by tidal currents. Most shoreline stations are located above MHW on the marsh surface and are only flooded during spring tides. Consequently, shoreline stations receive far less exposure to contaminated sediments suspended in river water, which reduces the likelihood of recontamination. Conversely, subtidal stations can be exposed to contaminated sediments during every tidal cycle, and have a greater opportunity to accumulate contaminated sediments.

Annual sediment monitoring will continue at the NWS area as needed to assess the potential for recontamination from the unremediated harbor areas via anthropogenic disturbances and natural sediment transport processes.

# 5.0 REFERENCES

Battelle. 2002. Existing Data Management Practices and Recommendations for a Comprehensive Data Management System New Bedford Harbor Superfund Site Operable Unit #1 New Bedford, Massachusetts. Prepared under Contract DACW33-94-D-0002 Task Order No 0017 for the U.S. Army Corps of Engineers New England District, Concord, MA. August.

ENSR Corporation. 2004. Field Sampling Plan Addendum New Bedford Harbor Superfund Site. Prepared Under USACE Contract No. DACW33-00-D-0003 Task 010. U.S. Army Corps of Engineers New England District Concord, Massachusetts. August.

ENSR Corporation. 2006. Progress Sediment Sampling at OMU-2 and OMU-4, Fall 2005. DACW33-00-D-0003. U.S. Army Corps Of Engineers New England District Concord, Massachusetts. June.

NOAA. 2010. http://www.hpc.ncep.noaa.gov/discussions/nfdscc1.html. Storm Summary Message. The Hydrometeorological Prediction Center. Camp Springs, MD.

Tetra Tech FW, Inc. (TTFW) 2004. North of Wood Street Confirmatory Sampling Report, New Bedford Harbor Superfund Site. August.

Woods Hole Group. 2010a. 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 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group. 2010b. Environmental Monitoring, Sampling, and Analysis Quality Assurance Project Plan Addendum New Bedford Harbor Superfund Site, New Bedford, Massachusetts. Prepared under Contract DACW33-03-D-0001 Task Order No 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

Woods Hole Group, 2010c. Sediment Trap Study Summary Report: 2010 Remedial Dredging, OU#1. New Bedford Harbor Superfund Site, New Bedford, MA. Prepared under Contract W912WJ-09-D-0001 Task Order No 0010-03 for the U.S. Army Corps of Engineers New England District, Concord, MA.

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# APPENDIX A. NORTH OF WOOD STREET CORE PHOTOGRAPHS AND FIELD LOGS (ON CD)

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# APPENDIX A. NORTH OF WOOD STREET CORE PHOTOGRAPHS AND FIELD LOGS

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Project Name: New Bedford Harbor Environmental Monitoring NWS Annual Monitoring
Location: New Bedford, MA
Client: USACE-NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist: DAVE WALSH

Date: 4/14/11
Station ID: NWS-35
All Measurements are ± 0.1 feet:

Logged By: M. WALSH
Core Sample ID: S-11A-C001
Water Depth (A):

Collection Mechanism: HA
Latitude: 41° 40.768'
Length of Push Core Assembly (B):

Time on Station: 1008
Longitude: 70° 55.004'
Water Surface to Tip of Handle (C):

Time of Collection: ~~1054~~ 1010 (AM)
GPS Accuracy:
Length of Core (from bottom) (D): 1.0'

Time Depart Station: 1015
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I + $I_2$ within + 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments
Two Samples Collected:
S-11A-C001-0-0.5, S-11A-C001-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist: Dave Walsh

Date: 4/14/11
Station ID: NWS-39
All Measurements are ± 0.1 feet
Logged By: M. Walsh
Core Sample ID: S-11A-C002
Water Depth (A):
Collection Mechanism: HA
Latitude: 41°40.777'
Length of Vibe Core Assembly (B):
Time on Station: 1018
Longitude: 70°55.003'
Water Surface to Top of Handle (C):
Time of Collection: 1022
GPS Accuracy:
Length of Core (from bottom) (D): 1.0'
Time Depart Station: 1031
Tide Elevation (from tide board) (E):

Calculations for Determination of E* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(E*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_A$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I + $I_A$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected:
S-11A-C002-0-0.5, S-11A-C002-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0020
Vessel:
Chief Scientist: DARE WALSH

Date: 4/14/11
Station ID: NWS-37
All Measurements are ± 0.1 feet
Logged By: M. WALSH
Core Sample ID: S-11A-C003
Water Depth (A):
Collection Mechanism: HA
Latitude: 41° 40.754'
Length of Push Core Assembly (B):
Time on Station: 0957
Longitude: 70° 54.998'
Water Surface to Top of Bundle (C):
Time of Collection: 0959
GPS Accuracy:
Length of Core (from bottom) (D):
Time Depart Station: 09~~59~~ 1006
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology – Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected: S-11A-C003-0-0.5, S-11A-C003-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring — Project #: W912WJ-09-D-0001, Task Order No. 0010

Location: New Bedford, MA — NWS Annual Monitoring (Year)

Client: USACE NAE — Chief Scientist: DAVE WAGH

| | | |
|---|---|---|
| Date: 4/14/11 | Station ID: NWS-43 | All Measurements are ± 0.1 feet |
| Logged By: M. WAGH | Core Sample ID: S-11A-C004 | Water Depth (A): |
| Collection Mechanism: HA | Latitude: 41° 40.507' | Length of Push Core Assembly (B): |
| Time on Station: 1034 | Longitude: 70° 55.014' | Water Surface to Top of Handle (C): |
| Time of Collection: 1037 | GPS Accuracy: | Length of Core (from bottom) (D): |
| Time Depart Station: 1045 | | Tide Elevation (from tide board) (E): |

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): _____

(H) Elevation of the bottom of the core (NGVD): G - (B - C) _____

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) _____

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D _____

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A _____

(Note if $I - I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments:

Two Samples Collected:
S-11A-C004-0-0.5, S-11A-C004-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist: Dave Walsh

Date: 4/14/11
Logged By: M. Walsh
Collection Mechanism: HA
Time on Station: 1109
Time of Collection: 1113
Time Depart Station: 1121

Station ID: NWS - 33
Core Sample ID: S - 11A - C005
Latitude: 41° 40.813
Longitude: 70° 55.040
GPS Accuracy:

All Measurements are ± 0.1 feet
Water Depth (A):
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D):
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected:
S - 11A - C005 - 0 - 0.5, S - 11A - C005 - 0.5 - 1.0

Project Name: New Bedford Harbor Environmental Monitoring
Project #: W912WJ-09-D-0001, Task Order No. 0010
Location: New Bedford, MA NWS Annual Monitoring
Visual:
Client: USACE NAE
Chief Scientist: Dave WALSH

Date: 4/14/11
Station ID: NWS - 34
All Measurements are ± 0.1 feet
Logged By: M. WALSH
Core Sample ID: S-11A-C006
Water Depth (A):
Collection Mechanism: HA
Latitude: 41° 40.794
Length of Full Core Assembly (B):
Time on Station: 11 24
Longitude: 70° 55. 040
Water Surface to Top of Bundle (C):
Time of Collection: 1128
GPS Accuracy:
Length of Core (from bottom) (D):
Time Depart Station: 11 36
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected:

S-11A-C006-0-0.5, S-11A-C006-0.5-0.8

Project Name: New Bedford Harbor Environmental Monitoring
Project #: W912WJ-09-D-0001, Task Order No. 0010
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE
Chief Scientist: Dave Walsh

| | | |
|---|---|---|
| Date: 4/14/11 | Station ID: Ø30 W | All Measurements are ± 0.1 feet |
| Logged By: M. WALSH | Core Sample ID: S-11A-C007 | Water Depth (A): |
| Odostan Mechanism: HA | Latitude: 41° 40.749 | Length of Push Core Assembly (B): |
| Time on Station: 1154 | Longitude: 70° 55.035 | Water Surface to Top of Handle (C): |
| Time of Collection: 1156 | GPS Accuracy: | Length of Core (from bottom) (D): |
| Time Depart Station: 1201 | | Tide Elevation (from tide board) (G): |

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected:
S-11A-C007-0-0.5, S-11A-C007-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist: DAVE WALSH

Date: 4/14/11
Logged By: M. WALSH
Collection Mechanism: HA
Time on Station: 1220
Time of Collection: 1223
Time Depart Station: 1228

Station ID: NWS-40
Core Sample ID: S-11A-C008
Latitude: 41° 40.707
Longitude: 70° 55.045
GPS Accuracy:

All Measurements are ± 0.1 feet
Water Depth (A):
Length of Full Core Attempt (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D):
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if $I - I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample ID# |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments:
Two Samples Collected;
S-11A-C008-0.-0.5, S-11A-C008-0.5-0.9

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NWS Annual Monitoring
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel:
Chief Scientist: Dave Walsh

Date: 4/14/11
Station ID: NWS-41
All Measurements are ± 0.1 feet
Logged By: M. WALSH
Core Sample ID: S-11A-C009
Water Depth (A):
Collection Mechanism: HA
Latitude: 41°40.729
Length of Push Core Assembly (B):
Time on Station: 1205
Longitude: 070° 55.041
Water Surface to Top of Handle (C):
Time of Collection: 1209
GPS Accuracy:
Length of Core (from bottom) (D):
Time Depart Station: 1213
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I + $I_2$ within ± 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

Two Samples Collected:
~~SA~~ (NW) ① S-11A-C009-0-0.5, S-11A-C009-0.5-1.0

Project Name: New Bedford Harbor Environmental Monitoring — Project #: W912WJ-09-D-0001, Task Order No. 0010

Location: New Bedford, MA NWS Annual Monitoring

Client: USACE NAE — Chief Scientist: Dave Walsh

| | | |
|---|---|---|
| Date: 4/14/11 | Station ID: NWS-42 | All Measurements are ± 0.1 feet |
| Logged By: M. WALSH | Core Sample ID: S-11A-C010 | Water Depth (A): |
| Collection Mechanism: HA | Latitude: 41° 40.767 | Length of Push Core Assembly (B): |
| Time on Station: 1140 | Longitude: 70°.55.042 | Water Surface to Top of Sample (C): |
| Time of Collection: 1144 | GPS Accuracy: | Length of Core (from bottom) (D): |
| Time Depart Station: 1151 | | Tide Elevation (from tide board) (G): |

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board): _____

(H) Elevation of the bottom of the core (NGVD): G - (B - C) _____

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition ) _____

($I_1$) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D _____

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A _____

(Note if $I_1$ - $I_2$ within + 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample ID# |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Comments

~~Two~~ Three Samples Collected:
S-11A-C010-0-0.5, S-11A-C010-0.5-1.0,
S-11A-C010-0-0.5 MSMSD

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA – NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Station ID: Ø33
All Measurements are ± 0.1 feet: 0.9
Logged By: DWALSH
Core Sample ID: S-11A-C011
Water Depth (A): 0.9 ft.
Collection Mechanism: PC
Latitude: 41° 40.743'
Length of Push Core Assembly (B):
Time on Station: 10:46
Longitude: 70° 55.023'
Water Surface to Top of Handle (C):
Time of Collection: 10:50
GPS Accuracy: 11 ft
Length of Core (from bottom) (D): 1.0 ft.
Time Depart Station: 10:55
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| ~~Elevation (NGVD)~~ (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.5 | OL | Organic SILT | BLACK | | | | |
| 0.5-1.0 | | SAND with SILT and gravel | Greyish Brown ~~ish~~ | | | | |

Comments

2 Samples : S-11A-C011-0-0.5, S-11A-C011-0.5-1.0

1 QA split sample : S-11A-C011-0-0.5QA

S-11A-C011
4/15/11
0.1-1.0'
033/030
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: D. WALSH

Date: 4/15/11
Station ID: Ø23
All Measurements are ± 0.1 feet
Logged By: DWALSH
Core Sample ID: S-11A-C012
Water Depth (A): 1.7 ft
Collection Method: PC
Latitude: 41° 40.776'
Length of Push Core Assembly (B):
Time on Station: 09:57
Longitude: 70° 55.024'
Water Surface to Top of Handle (C):
Time of Collection: 10:04
GPS Accuracy: 11 ft.
Length of Core (from bottom) (D): 0.9 ft
Time Depart Station: 10:09
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 - 0.3 | | SILTY SAND w/ HIGH ORGANIC CONTENT | BLACK - dark BROWN | LOSE | | | |
| 0.3 - 0.9 | | SILT w/ LOW % organic content | Dark BROWN | firm | | | |

Comments
2 samples: S-11A-C012-0-0.5, S-11A-C012-0.5-0.9

S-11A-C012
4/15/11
023/0-0.9
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA – NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: GEORGE THOMPSON
Chief Scientist: D. WALSH

Date: 4/15/11
Station ID: 010
All Measurements are ± 0.1 feet
Logged By: D. WALSH
Core Sample ID: S-11A-C013
Water Depth (A): 0.8 ft
Collection Methodist: P.C.
Latitude: 41° 40.839'
Length of Push Core Assembly (B):
Time on Station: 08:58
Longitude: 70° 55.033'
Water Surface to Top of Handle (C):
Time of Collection: 09:20
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): ~~0.85~~ ft → 0.9 ft Drew
Time Depart Station: 09:28
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I + $I_2$ within ± 1.0 feet, discard and resample)

| ~~Elevation (NGVD) (i.e. Bottom = H)~~ | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.4 | | FINE SAND | Light Brown - Brown | moderate | | | |
| 0.4-0.9 | | SANDY SILT w/ organics. | dark Brown | Loose | | | |

Comments
1st attempt was a "washout" with a large cobble and sand. It is very difficult to locate a suitable coring location at this station. The bottom substrate is cobbles, gravel – armoring the sandy material beneath it. NO SATISFACTORY LOCATION TO CORE @ TARGET STATION COORDINATES, SEARCH (09:10) FINDS A SUITABLE LOCATION TO NORTH, along the east shoreline in subtidal sandy sediments. Location (New) is approx. 70 feet NORTH from target.
TWO SAMPLES: S-11A-C013-0-0.5, S-11A-C013-0.5-0.9
↳ may want to analyze due to texture.

S-11A-C010
11/15/11
0.0-0.9
010/010
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA - NORTH OF WOOD ST. ANNUAL MONITORING
Client: USACE-NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: D. WALSH

Date: 4/15/11
Station ID: Ø16
All Measurements are ±0.1 feet
Logged By: D.WALSH
Core Sample ID: S-11A-C014
Water Depth (A): 1.6 ft
Collection Mechanism: PC
Latitude: 41° 40.795'
Length of Push Core Assembly (B):
Time on Station: 09:34
Longitude: 70° 55.027'
Water Surface to Top of Handle (C):
Time of Collection: 09:46
GPS Accuracy: 11 ft
Length of Core (from bottom) (D): 1.0 ft
Time Depart Station: 09.54
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board)

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within ± 1.0 feet, discard and resample)**

| ~~Elevation (NGVD) (i.e. Bottom = H)~~ | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.1 | | FINE SAND w/ Low % organics | BLACK | firm | | | |
| 0.1-0.4 | | SAND w SILT | very dark Brown | firm | | | |
| 0.4-1.0 | | SILT w/ POCKETS OF POORLY SORTED SAND (fine-coarse) | very dark Brown - dark Brown | firm | | | |

Comments

GOOD CORE SAMPLE LOCATION IN VICINITY (WITHIN 16') OF TARGET, JUST SOUTH OF LARGE OUTCROPPING ROCK.

~ TWO Samples: S-11A-C014-0-0.5, S-11A-C014-0.5-1.0

S-11A-C016
4/15/11
0.1-0.16
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA – NORTH OF WOOD ST. ANNUAL MONITORING
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Logged By: DWALSH
Collection Mechanism: PC
Time on Station: 10:14
Time of Collection: 10:19
Time Depart Station: 10:35

Station ID: Ø28
Core Sample ID: S-11A-C015
Latitude: 41° 40.759'
Longitude: 70° 55.028'
GPS Accuracy: 12 ft.

All Measurements are ± 0.1 feet
Water Depth (A): 0.9 ft
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 1.3 ft
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I + $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0 - 0.3 | OH | HIGH CONTENT ORGANICS | BLACK | loose | | | |
| 0.3 - 0.6 | | FINE-MED SAND w/ LOW % SILT | Dark Brown | MOD. Firm | | | |
| 0.6 - 1.3 | ML | SILT with thin FINE SAND lenses | Olive/grey/ Brown | moderate firm | | | |

Comments

* AFTER THIS FIELD SAMPLE WAS collected a REPLICATE CORE WAS collected @ 10:31.

- TWO SAMPLES: S-11A-C015-0-0.5, S-11A-C015-0.5-1.0

S-11A-C028
4/15/11
028/0-1.3
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA - NORTH OF WOOD ST. ANNUAL MONITORING
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: F/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Logged By: DW, MSH
Collection Mechanism: PC
Time on Station: 10:14
Time of Collection: 10:31
Time Depart Station: 10:35

Station ID: Ø28 REP
Core Sample ID: S-11A-C015
Latitude: 41° 40.759'
Longitude: 70° 55.020'
GPS Accuracy: 12 ft

All Measurements are ± 0.1 feet
Water Depth (A): 0.9 ft
Length of Push Core Assembly (E):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): ~~1.25 ft~~ 1.3 ft DRW
Tide Elevation (from tide board) (G):

Calculations for Determination of Z* Elevation

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_2$ within ± 1.0 feet, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0.-0.5 | ← | OL/OH organic detritus and sand. | Black | | | | |
| 0.5-0.7 | | Fine-medium sand w/ ~~<~~ 10% silt. | dark greyish Brown | | | | |
| 0.7-1.3 | ML | Silt w/fine sand lenses. | dark Brown | | | | |

Comments
* CORE WAS collected as a field REPLICATE (REP) to CORE Ø28. CORE WAS collected from a location one-foot adjacent to the field sample.
one sample: S-11A-C015-0-0.5REP

NWS
028/0-1.3
4/15/11
S-11A-C028-REP

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF HOWLAND ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPTON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Station ID: 039
All Measurements are ± 0.1 feet
Logged By: D. WALSH
Core Sample ID: S-11A-C016
Water Depth (A): 1.6 ft
Collection Mechanism: PC
Latitude: 41° 40.725'
Length of Push Core Assembly (B):
Time on Station: 10:58
Longitude: 70° 55.025'
Water Surface to Top of Handle (C):
Time of Collection: 11:01
GPS Accuracy: 13 ft.
Length of Core (from bottom) (D): 1.0 ft
Time Depart Station: 11:07
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within ± 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.5 | OL | organic detritus and silt | BLACK | very loose | | | |
| 0.5-1.0 | | SILT/SAND/GRAVEL (SILT MATRIX) | dark greyish brown | Loose-mod consolidated | | | |

Comments
Two samples: S-11A-C016-0-0.5, S-11A-C016-0.5-1.0

S-11A-C039-REP
4/15/11
039/0-1.3
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA - NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEOCORE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Logged By: D. WALSH
Collection Mechanism: D.C.
Time on Station: 11:12
Time of Collection: 11:16
Time Depart Station: 11:25

Station ID: 040
Core Sample ID: S-11A-C017
Latitude: 41°40.728'
Longitude: 70 55.012'
GPS Accuracy: 12 ft

All Measurements are ± 0.1 feet
Water Depth (A): 2.6 ft
Length of Push Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 0.9 ft.
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD(: H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within + 1.0 feet, discard and resample)**

| ~~Elevation (NGVD) (i.e. Bottom = H)~~ | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.36 | | FINE-MEDIUM SAND w/ organics | V. DARK Grey-BLACK | MOD-LOOSE | | | |
| 0.36-0.9 | | Fine SAND w/ low % silt, well sorted | Brown | Firm | | | |

Comments:
* Core penetrated ft refusal.
* Two samples - S-11A-C017-0-0.5, S-11A-C017-0.5-0.9

S-11A-C040
11/15/11
6.0-0/040
SMN

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Station ID: Q48
All Measurements are ±0.1 feet
Logged By: D WALSH
Core Sample ID: S-11A-C018
Water Depth (A): 1.2 ft.
Collection Mechanism: P.C.
Latitude: 41°40.704'
Length of Push Core Assembly (B):
Time on Station: 11:41
Longitude: 70°55.024'
Water Surface to Top of Handle (C):
Time of Collection: 11:46
GPS Accuracy: 14 ft.
Length of Core (from bottom) (D): 1.7 ft
Time Depart Station: 11:54
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - ( B - C )

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I + $I_2$ within ± 1.0 feet, discard and resample)**

| ~~Elevation (NGVD) (i.e. Bottom = H)~~ | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.4 | ← | OL ~~Det~~ organic detritus w/c.* & SAND | BLACK | Loose | | | |
| 0.4-1.7 | ML | SILT w/ fine-med coarse SAND LENSES. - Occasional gravel particle. - Low % organics (SANDY SILT) | dark brown grey | moderately consolidated | | | |

Comments
* Two samples: S-11A-C01B-0-0.5, S-11A-C01B-0.5-1.0

S-11A-C048
4/15/11
0-48/0-1.7
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF WILCO ST. ANNUAL MONITORING
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V George Hampson
Chief Scientist: DAVID WALSH

Date: 4/15/11
Logged By: D WALSH
Collection Mechanism: P.C.
Time on Station: 11:56
Time of Collection: 12:00
Time Depart Station: 12:10

Station ID: Ø49
Core Sample ID: S-11A-CØ19
Latitude: 41°40.710'
Longitude: 70°55.013'
GPS Accuracy: 12 ft.

All Measurements are ± 0.1 feet
Water Depth (A): 2.1 ft
Length of Path Core Assembly (B):
Water Surface to Top of Handle (C):
Length of Core (from bottom) (D): 1.0 ft.
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

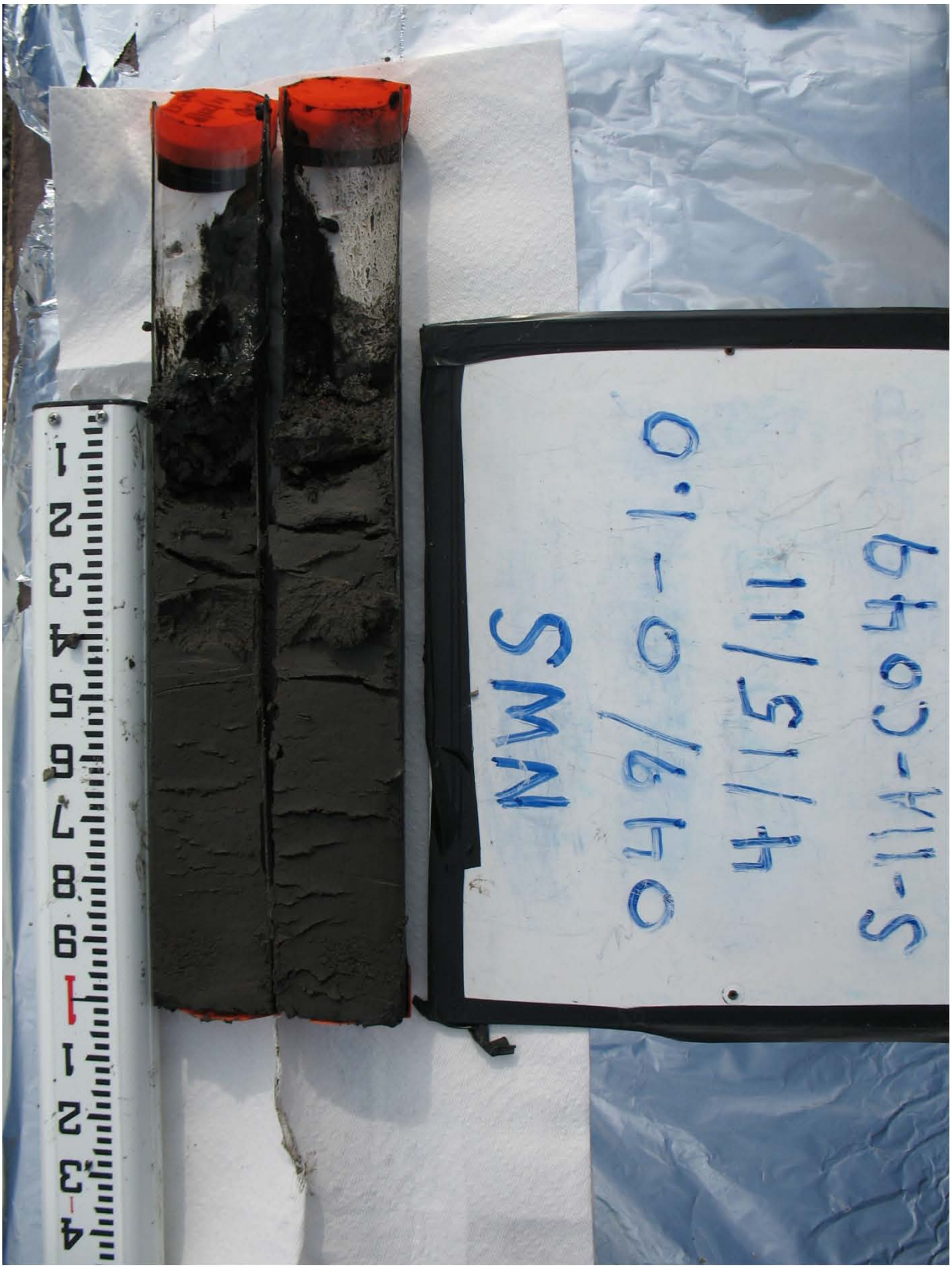
(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_A$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

(Note if I - $I_A$ within ± 1.0 foot, discard and resample)

| Elevation (NGVD) (i.e. Bottom = H) | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample ID# |
|---|---|---|---|---|---|---|---|
| 0.0 - 0.02 | | Organic silt | Black | Loose | | | |
| 0.02 - 0.9 | ML | SILT w/ fine SAND, - Occasional gravel frag | brownish grey | moderately well consolidated | | | |
| 0.9 - 1.0 | | SILTY SAND SILT w/ Med SAND | brownish grey | moderately well consolidated | | | |

Comments
* TWO samples: S-11A-C019-0-0.5, S-11A-C019-0.5-1.0


S-11A-C049
4/15/11
0.1-0.6/0
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF WOOD ST.
Client: USACE NAE ANNUAL MONITORING

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Station ID: Ø55
All Measurements are ± 0.1 feet
Logged By: D. WALSH
Core Sample ID: S-11A-C020
Water Depth (A): 2.5 ft.
Collection Mechanism: PC
Latitude: 41° 40.686'
Length of Push Core Assembly (B):
Time on Station: 1214
Longitude: 70° 55.013'
Water Surface to Top of Handle (C):
Time of Collection: 1216
GPS Accuracy: 12 ft.
Length of Core (from bottom) (D): 1.2 ft.
Time Departs Station: 1226
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I + $I_2$ within + 1.0 feet, discard and resample)**

| Elevation (NGVD) (i.e. Bottom = H) | Litology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.6 | OL | Organic silt | Black | Loose | | | |
| 0.6-1.2 | | Silty SAND, Sand is Fine-medium grained - low organic content. | dark grey | Firm | | | |

Comments

* two samples: S-11A-C020-0-0.5, S-11A-C020-0.5-1.0

S-11A-C0.5-5.5
4/15/11
0.5/0-1.2
NWS

Project Name: New Bedford Harbor Environmental Monitoring
Location: New Bedford, MA NORTH OF WOOD ST. ANNUAL MONITORING
Client: USACE NAE

Project #: W912WJ-09-D-0001, Task Order No. 0010
Vessel: R/V GEORGE HAMPSON
Chief Scientist: DAVID WALSH

Date: 4/15/11
Station ID: Ø62
All Measurements are ± 0.1 feet
Logged By: DWMSH
Core Sample ID: S-11A-C021
Water Depth (A): 1.9 ft.
Collection Mechanism: PC
Latitude: 41°40.669'
Length of Push Core Assembly (B):
Time on Station: 1238
Longitude: 70°54.992'
Water Surface to Top of Handle (C):
Time of Collection: 1240
GPS Accuracy: 12 ft
Length of Core (from bottom) (D): 1.2 ft
Time Depart Station: 1249
Tide Elevation (from tide board) (G):

**Calculations for Determination of Z* Elevation**

(G) Elevation of Water Surface (NVGD) (as read from tide board):

(H) Elevation of the bottom of the core (NGVD): G - (B - C)

(z*) Elevation of visual transition (NGVD): H + ( distance to visual transition )

(I) Elevation of the sediment-water interface as measured from bottom of core (NGVD): H + D

($I_2$) Elevation of the sediment-water interface as measured from water depth (NGVD): G - A

**(Note if I - $I_2$ within ± 1.0 feet, discard and resample)**

| ~~Elevation (NGVD) (i.e. Bottom = H)~~ | Lithology - Include USCS Code | Type | Color | Consistency | Maximum Particle Size | Odor | Sample IDs |
|---|---|---|---|---|---|---|---|
| 0-0.26 | | Organic detritus w/ silt and SAND. SAND is fine - coarse. | Black | Loose - med. | | | |
| 0.26 - 1.2 | | SANDY SILT, SILT MATRIX w/ organic detritus and fine - med sand - SAND lens @ 0.96-1.06, well sorted fine sand. | very dark grey | Firm | | | |

Comments
* TWO SAMPLES: S-11A-C021-0-0.5, S-11A-C021-0.5-1.0

S-11A-C069
4/15/11
069-0-1.2
NWS

# APPENDIX B. ALPHA ANALYTICAL LABORATORIES REPORTS AND ANALYTICAL DATA (ON CD)

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# APPENDIX B. ALPHA ANALYTICAL LABORATORIES REPORTS AND ANALYTICAL DATA

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ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1105174 |
| Client: | Woods Hole Group<br>81 Technology Park Drive<br>East Falmouth, MA 02536 |
| ATTN: | Dave Walsh |
| Phone: | (508) 540-8080 |
| Project Name: | NORTH OF WOOD STREET |
| Project Number: | TO-0010-03 |
| Report Date: | 04/28/11 |

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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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508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1105174-01 | S-11A-C001-0-0.5 | NEW BEDFORD, MA | 04/14/11 10:10 |
| L1105174-02 | S-11A-C002-0-0.5 | NEW BEDFORD, MA | 04/14/11 10:22 |
| L1105174-03 | S-11A-C003-0-0.5 | NEW BEDFORD, MA | 04/14/11 09:59 |
| L1105174-04 | S-11A-C004-0-0.5 | NEW BEDFORD, MA | 04/14/11 10:37 |
| L1105174-05 | S-11A-C005-0-0.5 | NEW BEDFORD, MA | 04/14/11 11:13 |
| L1105174-06 | S-11A-C006-0-0.5 | NEW BEDFORD, MA | 04/14/11 11:28 |
| L1105174-07 | S-11A-C007-0-0.5 | NEW BEDFORD, MA | 04/14/11 11:56 |
| L1105174-08 | S-11A-C008-0-0.5 | NEW BEDFORD, MA | 04/14/11 12:23 |
| L1105174-09 | S-11A-C009-0-0.5 | NEW BEDFORD, MA | 04/14/11 12:09 |
| L1105174-10 | S-11A-C010-0-0.5 | NEW BEDFORD, MA | 04/14/11 11:44 |
| L1105174-11 | EB-041411-01 | NEW BEDFORD, MA | 04/14/11 14:06 |
| L1105174-12 | S-11A-C011-0-0.5 | NEW BEDFORD, MA | 04/15/11 10:50 |
| L1105174-13 | S-11A-C012-0-0.5 | NEW BEDFORD, MA | 04/15/11 10:04 |
| L1105174-14 | S-11A-C013-0-0.5 | NEW BEDFORD, MA | 04/15/11 09:20 |
| L1105174-15 | S-11A-C014-0-0.5 | NEW BEDFORD, MA | 04/15/11 09:46 |
| L1105174-16 | S-11A-C015-0-0.5 | NEW BEDFORD, MA | 04/15/11 10:19 |
| L1105174-17 | S-11A-C015-0-0.5 REP | NEW BEDFORD, MA | 04/15/11 10:31 |
| L1105174-18 | S-11A-C016-0-0.5 | NEW BEDFORD, MA | 04/15/11 11:01 |
| L1105174-19 | S-11A-C017-0-0.5 | NEW BEDFORD, MA | 04/15/11 11:16 |
| L1105174-20 | S-11A-C018-0-0.5 | NEW BEDFORD, MA | 04/15/11 11:46 |
| L1105174-21 | S-11A-C019-0-0.5 | NEW BEDFORD, MA | 04/15/11 12:00 |
| L1105174-22 | S-11A-C020-0-0.5 | NEW BEDFORD, MA | 04/15/11 12:16 |
| L1105174-23 | S-11A-C021-0-0.5 | NEW BEDFORD, MA | 04/15/11 12:40 |
| L1105174-24 | S-11A-C001-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 10:10 |
| L1105174-25 | S-11A-C002-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 10:22 |
| L1105174-26 | S-11A-C003-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 09:59 |
| L1105174-27 | S-11A-C004-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 10:37 |
| L1105174-28 | S-11A-C005-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 11:13 |
| L1105174-29 | S-11A-C006-0.5-0.8 | NEW BEDFORD, MA | 04/14/11 11:28 |
| L1105174-30 | S-11A-C007-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 11:56 |
| L1105174-31 | S-11A-C008-0.5-0.9 | NEW BEDFORD, MA | 04/14/11 12:23 |

| Alpha Sample ID | Client ID | Sample Location | Collection Date/Time |
|---|---|---|---|
| L1105174-32 | S-11A-C009-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 12:09 |
| L1105174-33 | S-11A-C010-0.5-1.0 | NEW BEDFORD, MA | 04/14/11 11:44 |
| L1105174-34 | S-11A-C011-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 10:50 |
| L1105174-35 | S-11A-C012-0.5-0.9 | NEW BEDFORD, MA | 04/15/11 10:04 |
| L1105174-36 | S-11A-C013-0.5-0.9 | NEW BEDFORD, MA | 04/15/11 09:20 |
| L1105174-37 | S-11A-C014-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 09:46 |
| L1105174-38 | S-11A-C015-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 10:19 |
| L1105174-39 | S-11A-C016-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 11:01 |
| L1105174-40 | S-11A-C017-0.5-0.9 | NEW BEDFORD, MA | 04/15/11 11:16 |
| L1105174-41 | S-11A-C018-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 11:46 |
| L1105174-42 | S-11A-C019-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 12:00 |
| L1105174-43 | S-11A-C020-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 12:16 |
| L1105174-44 | S-11A-C021-0.5-1.0 | NEW BEDFORD, MA | 04/15/11 12:40 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174
**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## 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

Sediment samples were received intact on April 15, 2011 and placed in frozen storage immediately. Samples were removed from frozen storage on April 18, 2011 and aliquots of the samples were analyzed for percent solids. Based on the results of the percent solids, samples underwent air drying and were placed in refrigerated storage until April 21, 2011 and April 22, 2011 when they were removed to extract samples for PCB Congener analysis and analyze for air-dried percent solids.

PCB Congeners by 8082

L1105174-02 and -07 have elevated detection limits due to the dilution required by the concentrations of target compounds in the sample.

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174
**Project Number:** TO-0010-03 **Report Date:** 04/28/11

**Case Narrative (continued)**

L1105174-12 through-23 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample. Due to the dilution required for these samples, the surrogates were diluted out.

WG464094-4/5 MS/MSD perfromed on L1105174-10 were analyzed at dilution to get the target compounds in the calibration range. Surrogates were diluted out. Sample L1105174-10 was analyzed without dilution.

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: 04/28/11

# ORGANICS

# PCBS

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-01 | Date Collected: | 04/14/11 10:10 |
| Client ID: | S-11A-C001-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 16:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 4.75 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#52 | 15.4 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#138 | 8.27 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#128 | 2.12 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#180 | 1.37 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-01 | Date Collected: | 04/14/11 10:10 |
| Client ID: | S-11A-C001-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 16:15 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1.86 | | ug/kg | 1.32 | -- | 1 |
| Cl3-BZ#28 | 14.9 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#44 | 6.72 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#66 | 6.79 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#101 | 9.76 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#118 | 9.54 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#153 | 6.76 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#105 | 3.69 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#187 | 1.34 | | ug/kg | 1.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 85 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-02 | Date Collected: | 04/14/11 10:22 |
| Client ID: | S-11A-C002-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 16:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 8.40 | | ug/kg | 2.67 | -- | 2 |
| Cl3-BZ#18 | 12.9 | | ug/kg | 2.67 | -- | 2 |
| Cl6-BZ#138 | 7.12 | | ug/kg | 2.67 | -- | 2 |
| Cl6-BZ#128 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl7-BZ#170 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl8-BZ#195 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl9-BZ#206 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl10-BZ#209 | ND | | ug/kg | 2.67 | -- | 2 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 83 | | 30-150 |
| BZ 198 | 60 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-02 | Date Collected: | 04/14/11 10:22 |
| Client ID: | S-11A-C002-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 16:56 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 31.2 | | ug/kg | 2.67 | -- | 2 |
| Cl4-BZ#52 | 29.6 | | ug/kg | 2.67 | -- | 2 |
| Cl4-BZ#44 | 11.4 | | ug/kg | 2.67 | -- | 2 |
| Cl4-BZ#66 | 5.79 | | ug/kg | 2.67 | -- | 2 |
| Cl5-BZ#101 | 8.99 | | ug/kg | 2.67 | -- | 2 |
| Cl5-BZ#118 | 9.85 | | ug/kg | 2.67 | -- | 2 |
| Cl6-BZ#153 | 7.67 | | ug/kg | 2.67 | -- | 2 |
| Cl5-BZ#105 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl7-BZ#187 | ND | | ug/kg | 2.67 | -- | 2 |
| Cl7-BZ#180 | ND | | ug/kg | 2.67 | -- | 2 |

| | | |
|---|---|---|
| DBOB | 83 | 30-150 |
| BZ 198 | 60 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-03 | Date Collected: | 04/14/11 09:59 |
| Client ID: | S-11A-C003-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 17:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#44 | 1.75 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#118 | 1.69 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#138 | 1.56 | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| BZ 198 | 70 | | 30-150 |
| DBOB | 101 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-03 | Date Collected: | 04/14/11 09:59 |
| Client ID: | S-11A-C003-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 17:38 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2.19 | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#52 | 3.20 | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#66 | 1.71 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#101 | 1.89 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| BZ 198 | 70 | | 30-150 |
| DBOB | 101 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-04 | Date Collected: | 04/14/11 10:37 |
| Client ID: | S-11A-C004-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 18:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#66 | 6.03 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#118 | 8.93 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#180 | 1.30 | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 96 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-04 | Date Collected: | 04/14/11 10:37 |
| Client ID: | S-11A-C004-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 18:20 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 5.25 | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#52 | 6.27 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#101 | 6.40 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#153 | 6.61 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#105 | 1.60 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#138 | 5.28 | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 91 | | 30-150 |
| BZ 198 | 96 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-05 | Date Collected: | 04/14/11 11:13 |
| Client ID: | S-11A-C005-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 19:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl3-BZ#18 | 1.71 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#66 | 2.58 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#118 | 1.90 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#138 | 1.37 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.32 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 97 | 30-150 |
| BZ 198 | 69 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-05 | Date Collected: | 04/14/11 11:13 |
| Client ID: | S-11A-C005-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 19:01 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 4.58 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#52 | 4.82 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#101 | 2.37 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#153 | ND | | ug/kg | 1.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 69 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-06 | Date Collected: | 04/14/11 11:28 |
| Client ID: | S-11A-C006-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 19:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1.43 | | ug/kg | 1.32 | -- | 1 |
| Cl3-BZ#18 | 3.21 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#138 | 3.87 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.32 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 104 | 30-150 |
| BZ 198 | 74 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-06 | Date Collected: | 04/14/11 11:28 |
| Client ID: | S-11A-C006-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 19:43 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 10.9 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#52 | 11.8 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#44 | 4.82 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#66 | 6.60 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#101 | 6.34 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#118 | 5.87 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#153 | 4.21 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#105 | 1.84 | | ug/kg | 1.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 104 | | 30-150 |
| BZ 198 | 74 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-07 | Date Collected: | 04/14/11 11:56 |
| Client ID: | S-11A-C007-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 20:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 8.41 | | ug/kg | 6.66 | -- | 5 |
| Cl3-BZ#18 | 25.1 | | ug/kg | 6.66 | -- | 5 |
| Cl4-BZ#66 | 69.6 | | ug/kg | 6.66 | -- | 5 |
| Cl5-BZ#118 | 68.3 | | ug/kg | 6.66 | -- | 5 |
| Cl6-BZ#138 | 39.4 | | ug/kg | 6.66 | -- | 5 |
| Cl6-BZ#128 | 8.75 | | ug/kg | 6.66 | -- | 5 |
| Cl7-BZ#180 | 11.3 | | ug/kg | 6.66 | -- | 5 |
| Cl7-BZ#170 | 6.67 | | ug/kg | 6.66 | -- | 5 |
| Cl8-BZ#195 | ND | | ug/kg | 6.66 | -- | 5 |
| Cl9-BZ#206 | ND | | ug/kg | 6.66 | -- | 5 |
| Cl10-BZ#209 | ND | | ug/kg | 6.66 | -- | 5 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 89 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-07 | Date Collected: | 04/14/11 11:56 |
| Client ID: | S-11A-C007-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 20:25 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 73.2 | | ug/kg | 6.66 | -- | 5 |
| Cl4-BZ#52 | 82.2 | | ug/kg | 6.66 | -- | 5 |
| Cl4-BZ#44 | 35.8 | | ug/kg | 6.66 | -- | 5 |
| Cl5-BZ#101 | 61.6 | | ug/kg | 6.66 | -- | 5 |
| Cl6-BZ#153 | 54.0 | | ug/kg | 6.66 | -- | 5 |
| Cl5-BZ#105 | 9.57 | | ug/kg | 6.66 | -- | 5 |
| Cl7-BZ#187 | 8.09 | | ug/kg | 6.66 | -- | 5 |

| | | |
|---|---|---|
| DBOB | 89 | 30-150 |
| BZ 198 | 68 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-08 | Date Collected: | 04/14/11 12:23 |
| Client ID: | S-11A-C008-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 21:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#66 | 2.62 | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.30 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 100 | 30-150 |
| BZ 198 | 84 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-08 | Date Collected: | 04/14/11 12:23 |
| Client ID: | S-11A-C008-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 21:06 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2.33 | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#52 | 4.54 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#101 | 2.67 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#118 | 2.79 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#153 | 2.02 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#138 | 2.38 | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 100 | | 30-150 |
| BZ 198 | 84 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-09 | Date Collected: | 04/14/11 12:09 |
| Client ID: | S-11A-C009-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 21:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 7.08 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#66 | 13.0 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#118 | 9.23 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#138 | 8.35 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#128 | 1.99 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.32 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.32 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 86 | | 30-150 |
| BZ 198 | 68 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-09 | Date Collected: | 04/14/11 12:09 |
| Client ID: | S-11A-C009-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 21:48 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 100% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3.21 | | ug/kg | 1.32 | -- | 1 |
| Cl3-BZ#28 | 16.3 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#52 | 18.9 | | ug/kg | 1.32 | -- | 1 |
| Cl4-BZ#44 | 7.92 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#101 | 10.6 | | ug/kg | 1.32 | -- | 1 |
| Cl6-BZ#153 | 6.65 | | ug/kg | 1.32 | -- | 1 |
| Cl5-BZ#105 | 3.49 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#187 | 1.36 | | ug/kg | 1.32 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.32 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 86 | 30-150 |
| BZ 198 | 68 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-10 | Date Collected: | 04/14/11 11:44 |
| Client ID: | S-11A-C010-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 22:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#66 | 2.58 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#138 | 1.69 | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/kg | 1.30 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/kg | 1.30 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 67 | 30-150 |
| BZ 198 | 49 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-10 | Date Collected: | 04/14/11 11:44 |
| Client ID: | S-11A-C010-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:52 |
| Analytical Date: | 04/25/11 22:29 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/22/11 |
| Percent Solids: | 99% | Cleanup Method2: | - - - - |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 2.88 | | ug/kg | 1.30 | -- | 1 |
| Cl4-BZ#52 | 3.28 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#101 | 2.73 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#118 | 2.10 | | ug/kg | 1.30 | -- | 1 |
| Cl6-BZ#153 | 1.43 | | ug/kg | 1.30 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/kg | 1.30 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 67 | | 30-150 |
| BZ 198 | 49 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-11 | Date Collected: | 04/14/11 14:06 |
| Client ID: | EB-041411-01 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:25 |
| Analytical Date: | 04/21/11 20:23 | Cleanup Method1: | - - - - |
| Analyst: | AW | | - - - - |
| | | Cleanup Method2: | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl3-BZ#18 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl3-BZ#28 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#52 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#44 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl4-BZ#66 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#101 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#118 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl5-BZ#105 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#138 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#187 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl6-BZ#128 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#180 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl7-BZ#170 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl8-BZ#195 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl9-BZ#206 | ND | | ug/l | 0.00105 | -- | 1 |
| Cl10-BZ#209 | ND | | ug/l | 0.00105 | -- | 1 |

| | | |
|---|---|---|
| DBOB | 88 | 30-150 |
| BZ 198 | 78 | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-11 | Date Collected: | 04/14/11 14:06 |
| Client ID: | EB-041411-01 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Water | Extraction Method: | EPA 3510C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/21/11 15:25 |
| Analytical Date: | 04/21/11 20:23 | Cleanup Method1: | - - - - |
| Analyst: | AW | | - - - - |
| | | Cleanup Method2: | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl6-BZ#153 | ND | | ug/l | 0.00105 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 78 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-12 | Date Collected: | 04/15/11 10:50 |
| Client ID: | S-11A-C011-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 22:05 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5100 | | ug/kg | 666 | -- | 500 |
| Cl4-BZ#66 | 3750 | | ug/kg | 666 | -- | 500 |
| Cl6-BZ#138 | 1570 | | ug/kg | 666 | -- | 500 |
| Cl6-BZ#128 | ND | | ug/kg | 666 | -- | 500 |
| Cl7-BZ#180 | ND | | ug/kg | 666 | -- | 500 |
| Cl7-BZ#170 | ND | | ug/kg | 666 | -- | 500 |
| Cl8-BZ#195 | ND | | ug/kg | 666 | -- | 500 |
| Cl9-BZ#206 | ND | | ug/kg | 666 | -- | 500 |
| Cl10-BZ#209 | ND | | ug/kg | 666 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-12 | Date Collected: | 04/15/11 10:50 |
| Client ID: | S-11A-C011-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 22:05 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2260 | | ug/kg | 666 | -- | 500 |
| Cl3-BZ#28 | 10300 | | ug/kg | 666 | -- | 500 |
| Cl4-BZ#52 | 10000 | | ug/kg | 666 | -- | 500 |
| Cl4-BZ#44 | 3520 | | ug/kg | 666 | -- | 500 |
| Cl5-BZ#101 | 2870 | | ug/kg | 666 | -- | 500 |
| Cl5-BZ#118 | 2030 | | ug/kg | 666 | -- | 500 |
| Cl6-BZ#153 | 2330 | | ug/kg | 666 | -- | 500 |
| Cl5-BZ#105 | ND | | ug/kg | 666 | -- | 500 |
| Cl7-BZ#187 | ND | | ug/kg | 666 | -- | 500 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-13 | Date Collected: | 04/15/11 10:04 |
| Client ID: | S-11A-C012-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 14:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 804 | | ug/kg | 67.0 | -- | 50 |
| Cl5-BZ#118 | 206 | | ug/kg | 67.0 | -- | 50 |
| Cl6-BZ#138 | 142 | | ug/kg | 67.0 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 67.0 | -- | 50 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-13 | Date Collected: | 04/15/11 10:04 |
| Client ID: | S-11A-C012-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 14:27 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 420 | | ug/kg | 67.0 | -- | 50 |
| Cl3-BZ#28 | 1100 | | ug/kg | 67.0 | -- | 50 |
| Cl4-BZ#52 | 1010 | | ug/kg | 67.0 | -- | 50 |
| Cl4-BZ#44 | 357 | | ug/kg | 67.0 | -- | 50 |
| Cl4-BZ#66 | 393 | | ug/kg | 67.0 | -- | 50 |
| Cl5-BZ#101 | 266 | | ug/kg | 67.0 | -- | 50 |
| Cl6-BZ#153 | 212 | | ug/kg | 67.0 | -- | 50 |
| Cl5-BZ#105 | ND | | ug/kg | 67.0 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 67.0 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-14 | Date Collected: | 04/15/11 09:20 |
| Client ID: | S-11A-C013-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 15:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 45% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1080 | | ug/kg | 148 | -- | 50 |
| Cl4-BZ#66 | 544 | | ug/kg | 148 | -- | 50 |
| Cl5-BZ#118 | 234 | | ug/kg | 148 | -- | 50 |
| Cl5-BZ#105 | ND | | ug/kg | 148 | -- | 50 |
| Cl6-BZ#138 | 228 | | ug/kg | 148 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 148 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 148 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 148 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 148 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 148 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 148 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 148 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-14 | Date Collected: | 04/15/11 09:20 |
| Client ID: | S-11A-C013-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 15:09 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 45% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1100 | | ug/kg | 148 | -- | 50 |
| Cl3-BZ#28 | 945 | | ug/kg | 148 | -- | 50 |
| Cl4-BZ#52 | 1940 | | ug/kg | 148 | -- | 50 |
| Cl4-BZ#44 | 552 | | ug/kg | 148 | -- | 50 |
| Cl5-BZ#101 | 355 | | ug/kg | 148 | -- | 50 |
| Cl6-BZ#153 | 285 | | ug/kg | 148 | -- | 50 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-15 | Date Collected: | 04/15/11 09:46 |
| Client ID: | S-11A-C014-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 15:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 988 | | ug/kg | 268 | -- | 200 |
| Cl3-BZ#18 | 3630 | | ug/kg | 268 | -- | 200 |
| Cl5-BZ#118 | 500 | | ug/kg | 268 | -- | 200 |
| Cl6-BZ#138 | 313 | | ug/kg | 268 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 268 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 268 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 268 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 268 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 268 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 268 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 268 | -- | 200 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-15 | Date Collected: | 04/15/11 09:46 |
| Client ID: | S-11A-C014-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 15:50 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 3860 | | ug/kg | 268 | -- | 200 |
| Cl4-BZ#52 | 2760 | | ug/kg | 268 | -- | 200 |
| Cl4-BZ#44 | 1310 | | ug/kg | 268 | -- | 200 |
| Cl4-BZ#66 | 1470 | | ug/kg | 268 | -- | 200 |
| Cl5-BZ#101 | 593 | | ug/kg | 268 | -- | 200 |
| Cl6-BZ#153 | 331 | | ug/kg | 268 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 268 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-16 | Date Collected: | 04/15/11 10:19 |
| Client ID: | S-11A-C015-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 16:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 1680 | | ug/kg | 269 | -- | 200 |
| Cl6-BZ#138 | 561 | | ug/kg | 269 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 269 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 269 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 269 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 269 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 269 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 269 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-16 | Date Collected: | 04/15/11 10:19 |
| Client ID: | S-11A-C015-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 16:32 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 930 | | ug/kg | 269 | -- | 200 |
| Cl3-BZ#28 | 3690 | | ug/kg | 269 | -- | 200 |
| Cl4-BZ#52 | 4040 | | ug/kg | 269 | -- | 200 |
| Cl4-BZ#44 | 1360 | | ug/kg | 269 | -- | 200 |
| Cl4-BZ#66 | 1450 | | ug/kg | 269 | -- | 200 |
| Cl5-BZ#101 | 1060 | | ug/kg | 269 | -- | 200 |
| Cl5-BZ#118 | 758 | | ug/kg | 269 | -- | 200 |
| Cl6-BZ#153 | 883 | | ug/kg | 269 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 269 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 269 | -- | 200 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-17 | Date Collected: | 04/15/11 10:31 |
| Client ID: | S-11A-C015-0-0.5 REP | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 17:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 3530 | | ug/kg | 659 | -- | 500 |
| Cl4-BZ#66 | 3490 | | ug/kg | 659 | -- | 500 |
| Cl6-BZ#138 | 1290 | | ug/kg | 659 | -- | 500 |
| Cl6-BZ#128 | ND | | ug/kg | 659 | -- | 500 |
| Cl7-BZ#180 | ND | | ug/kg | 659 | -- | 500 |
| Cl7-BZ#170 | ND | | ug/kg | 659 | -- | 500 |
| Cl8-BZ#195 | ND | | ug/kg | 659 | -- | 500 |
| Cl9-BZ#206 | ND | | ug/kg | 659 | -- | 500 |
| Cl10-BZ#209 | ND | | ug/kg | 659 | -- | 500 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-17 | Date Collected: | 04/15/11 10:31 |
| Client ID: | S-11A-C015-0-0.5 REP | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 17:14 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2180 | | ug/kg | 659 | -- | 500 |
| Cl3-BZ#28 | 8640 | | ug/kg | 659 | -- | 500 |
| Cl4-BZ#52 | 8960 | | ug/kg | 659 | -- | 500 |
| Cl4-BZ#44 | 3270 | | ug/kg | 659 | -- | 500 |
| Cl5-BZ#101 | 2600 | | ug/kg | 659 | -- | 500 |
| Cl5-BZ#118 | 1790 | | ug/kg | 659 | -- | 500 |
| Cl6-BZ#153 | 2030 | | ug/kg | 659 | -- | 500 |
| Cl5-BZ#105 | ND | | ug/kg | 659 | -- | 500 |
| Cl7-BZ#187 | ND | | ug/kg | 659 | -- | 500 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-18 | Date Collected: | 04/15/11 11:01 |
| Client ID: | S-11A-C016-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 17:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 3390 | | ug/kg | 1300 | -- | 1000 |
| Cl3-BZ#18 | 6370 | | ug/kg | 1300 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl6-BZ#138 | 2040 | | ug/kg | 1300 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1300 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1300 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-18 | Date Collected: | 04/15/11 11:01 |
| Client ID: | S-11A-C016-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 17:55 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#28 | 12800 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#52 | 14900 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#44 | 5220 | | ug/kg | 1300 | -- | 1000 |
| Cl4-BZ#66 | 4860 | | ug/kg | 1300 | -- | 1000 |
| Cl5-BZ#101 | 3550 | | ug/kg | 1300 | -- | 1000 |
| Cl5-BZ#118 | 2390 | | ug/kg | 1300 | -- | 1000 |
| Cl6-BZ#153 | 2990 | | ug/kg | 1300 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-19 | Date Collected: | 04/15/11 11:16 |
| Client ID: | S-11A-C017-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 18:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 912 | | ug/kg | 265 | -- | 200 |
| Cl4-BZ#66 | 811 | | ug/kg | 265 | -- | 200 |
| Cl5-BZ#118 | 411 | | ug/kg | 265 | -- | 200 |
| Cl6-BZ#138 | 363 | | ug/kg | 265 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 265 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 265 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 265 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 265 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 265 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 265 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 265 | -- | 200 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-19 | Date Collected: | 04/15/11 11:16 |
| Client ID: | S-11A-C017-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 18:37 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 496 | | ug/kg | 265 | -- | 200 |
| Cl3-BZ#28 | 2080 | | ug/kg | 265 | -- | 200 |
| Cl4-BZ#52 | 2370 | | ug/kg | 265 | -- | 200 |
| Cl4-BZ#44 | 835 | | ug/kg | 265 | -- | 200 |
| Cl5-BZ#101 | 578 | | ug/kg | 265 | -- | 200 |
| Cl6-BZ#153 | 512 | | ug/kg | 265 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 265 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-20 | Date Collected: | 04/15/11 11:46 |
| Client ID: | S-11A-C018-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 19:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 98% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 2120 | | ug/kg | 271 | -- | 200 |
| Cl6-BZ#138 | 659 | | ug/kg | 271 | -- | 200 |
| Cl6-BZ#128 | ND | | ug/kg | 271 | -- | 200 |
| Cl7-BZ#180 | ND | | ug/kg | 271 | -- | 200 |
| Cl7-BZ#170 | ND | | ug/kg | 271 | -- | 200 |
| Cl8-BZ#195 | ND | | ug/kg | 271 | -- | 200 |
| Cl9-BZ#206 | ND | | ug/kg | 271 | -- | 200 |
| Cl10-BZ#209 | ND | | ug/kg | 271 | -- | 200 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-20 | Date Collected: | 04/15/11 11:46 |
| Client ID: | S-11A-C018-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 19:19 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 98% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 1030 | | ug/kg | 271 | -- | 200 |
| Cl3-BZ#28 | 4360 | | ug/kg | 271 | -- | 200 |
| Cl4-BZ#52 | 4920 | | ug/kg | 271 | -- | 200 |
| Cl4-BZ#44 | 1740 | | ug/kg | 271 | -- | 200 |
| Cl4-BZ#66 | 1550 | | ug/kg | 271 | -- | 200 |
| Cl5-BZ#101 | 1150 | | ug/kg | 271 | -- | 200 |
| Cl5-BZ#118 | 797 | | ug/kg | 271 | -- | 200 |
| Cl6-BZ#153 | 951 | | ug/kg | 271 | -- | 200 |
| Cl5-BZ#105 | ND | | ug/kg | 271 | -- | 200 |
| Cl7-BZ#187 | ND | | ug/kg | 271 | -- | 200 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-21 | Date Collected: | 04/15/11 12:00 |
| Client ID: | S-11A-C019-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 20:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 502 | | ug/kg | 67.2 | -- | 50 |
| Cl4-BZ#66 | 352 | | ug/kg | 67.2 | -- | 50 |
| Cl6-BZ#138 | 156 | | ug/kg | 67.2 | -- | 50 |
| Cl7-BZ#187 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl6-BZ#128 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl7-BZ#180 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl7-BZ#170 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl8-BZ#195 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl9-BZ#206 | ND | | ug/kg | 67.2 | -- | 50 |
| Cl10-BZ#209 | ND | | ug/kg | 67.2 | -- | 50 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-21 | Date Collected: | 04/15/11 12:00 |
| Client ID: | S-11A-C019-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 20:00 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 99% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 224 | | ug/kg | 67.2 | -- | 50 |
| Cl3-BZ#28 | 1010 | | ug/kg | 67.2 | -- | 50 |
| Cl4-BZ#52 | 1190 | | ug/kg | 67.2 | -- | 50 |
| Cl4-BZ#44 | 373 | | ug/kg | 67.2 | -- | 50 |
| Cl5-BZ#101 | 249 | | ug/kg | 67.2 | -- | 50 |
| Cl5-BZ#118 | 172 | | ug/kg | 67.2 | -- | 50 |
| Cl6-BZ#153 | 232 | | ug/kg | 67.2 | -- | 50 |
| Cl5-BZ#105 | ND | | ug/kg | 67.2 | -- | 50 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-22 | Date Collected: | 04/15/11 12:16 |
| Client ID: | S-11A-C020-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 98% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 5120 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#105 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#138 | 1900 | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#187 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#128 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#180 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl7-BZ#170 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl8-BZ#195 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl9-BZ#206 | ND | | ug/kg | 1360 | -- | 1000 |
| Cl10-BZ#209 | ND | | ug/kg | 1360 | -- | 1000 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-22 | Date Collected: | 04/15/11 12:16 |
| Client ID: | S-11A-C020-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 20:42 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 98% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 2390 | | ug/kg | 1360 | -- | 1000 |
| Cl3-BZ#28 | 10500 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#52 | 13400 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#44 | 4710 | | ug/kg | 1360 | -- | 1000 |
| Cl4-BZ#66 | 3840 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#101 | 3000 | | ug/kg | 1360 | -- | 1000 |
| Cl5-BZ#118 | 2030 | | ug/kg | 1360 | -- | 1000 |
| Cl6-BZ#153 | 2720 | | ug/kg | 1360 | -- | 1000 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-23 | Date Collected: | 04/15/11 12:40 |
| Client ID: | S-11A-C021-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 21:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl3-BZ#18 | 867 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#105 | ND | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#138 | 206 | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#187 | ND | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#128 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#180 | ND | | ug/kg | 133 | -- | 100 |
| Cl7-BZ#170 | ND | | ug/kg | 133 | -- | 100 |
| Cl8-BZ#195 | ND | | ug/kg | 133 | -- | 100 |
| Cl9-BZ#206 | ND | | ug/kg | 133 | -- | 100 |
| Cl10-BZ#209 | ND | | ug/kg | 133 | -- | 100 |

| | | | |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## SAMPLE RESULTS

| | | | |
|---|---|---|---|
| Lab ID: | L1105174-23 | Date Collected: | 04/15/11 12:40 |
| Client ID: | S-11A-C021-0-0.5 | Date Received: | 04/15/11 |
| Sample Location: | NEW BEDFORD, MA | Field Prep: | Not Specified |
| Matrix: | Sediment | Extraction Method: | EPA 3540C |
| Analytical Method: | 1,8082 | Extraction Date: | 04/22/11 14:29 |
| Analytical Date: | 04/26/11 21:23 | Cleanup Method1: | EPA 3630 |
| Analyst: | AW | Cleanup Date1: | 04/24/11 |
| Percent Solids: | 100% | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab | | | | | | |
| Cl2-BZ#8 | 343 | | ug/kg | 133 | -- | 100 |
| Cl3-BZ#28 | 1570 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#52 | 1840 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#44 | 475 | | ug/kg | 133 | -- | 100 |
| Cl4-BZ#66 | 432 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#101 | 329 | | ug/kg | 133 | -- | 100 |
| Cl5-BZ#118 | 230 | | ug/kg | 133 | -- | 100 |
| Cl6-BZ#153 | 306 | | ug/kg | 133 | -- | 100 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | **0** | Q | 30-150 |
| BZ 198 | **0** | Q | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/21/11 18:18
Analyst: AW

Extraction Method: EPA 3510C
Extraction Date: 04/21/11 15:25
Cleanup Method1: - - - -
Cleanup Date1:
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 11 Batch: WG464083-1 | | | | | |
| 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 | 93 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/21/11 18:18
Analyst: AW

Extraction Method: EPA 3510C
Extraction Date: 04/21/11 15:25
Cleanup Method1: - - - -
Cleanup Date1:
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 11 Batch: WG464083-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/l | 0.00100 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 93 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/22/11 16:57
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 04/21/11 15:52
Cleanup Method1: EPA 3630
Cleanup Date1: 04/22/11
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-10 Batch: WG464091-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/22/11 16:57
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 04/21/11 15:52
Cleanup Method1: EPA 3630
Cleanup Date1: 04/22/11
Cleanup Method2: - - - -
Cleanup Date2:

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-10 Batch: WG464091-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 88 | | 30-150 |
| BZ 198 | 81 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/25/11 12:38
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 04/22/11 14:29
Cleanup Method1: EPA 3630
Cleanup Date1: 04/24/11

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 12-23 Batch: WG464267-1 | | | | | |
| Cl2-BZ#8 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#18 | ND | | ug/kg | 1.33 | -- |
| Cl3-BZ#28 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#52 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#44 | ND | | ug/kg | 1.33 | -- |
| Cl4-BZ#66 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#101 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#118 | ND | | ug/kg | 1.33 | -- |
| Cl5-BZ#105 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#138 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#187 | ND | | ug/kg | 1.33 | -- |
| Cl6-BZ#128 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#180 | ND | | ug/kg | 1.33 | -- |
| Cl7-BZ#170 | ND | | ug/kg | 1.33 | -- |
| Cl8-BZ#195 | ND | | ug/kg | 1.33 | -- |
| Cl9-BZ#206 | ND | | ug/kg | 1.33 | -- |
| Cl10-BZ#209 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 04/25/11 12:38
Analyst: AW

Extraction Method: EPA 3540C
Extraction Date: 04/22/11 14:29
Cleanup Method1: EPA 3630
Cleanup Date1: 04/24/11

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 12-23 Batch: WG464267-1 | | | | | |
| Cl6-BZ#153 | ND | | ug/kg | 1.33 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| DBOB | 97 | | 30-150 |
| BZ 198 | 80 | | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03
**Lab Number:** L1105174
**Report Date:** 04/28/11

PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG464091-4 WG464091-5 QC Sample: L1105174-10 Client ID: S-11A-C010-0-0.5

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cl2-BZ#8 | ND | 1680 | 1080 | 64 | | 1030 | 61 | | 40-140 | 5 | | 30 |
| Cl3-BZ#18 | ND | 1680 | 1060 | 63 | | 1050 | 63 | | 40-140 | 1 | | 30 |
| Cl4-BZ#44 | ND | 1680 | 1120 | 67 | | 1060 | 63 | | 40-140 | 6 | | 30 |
| Cl4-BZ#66 | 2.58 | 1680 | 1140 | 68 | | 1060 | 63 | | 40-140 | 7 | | 30 |
| Cl7-BZ#187 | ND | 1680 | 1030 | 61 | | 983 | 59 | | 40-140 | 5 | | 30 |
| Cl6-BZ#128 | ND | 1680 | 1100 | 66 | | 1020 | 61 | | 40-140 | 8 | | 30 |
| Cl7-BZ#180 | ND | 1680 | 1210 | 72 | | 1110 | 66 | | 40-140 | 9 | | 30 |
| Cl7-BZ#170 | ND | 1680 | 1090 | 65 | | 1010 | 60 | | 40-140 | 8 | | 30 |
| Cl8-BZ#195 | ND | 1680 | 1080 | 64 | | 1000 | 60 | | 40-140 | 8 | | 30 |
| Cl9-BZ#206 | ND | 1680 | 1230 | 73 | | 1160 | 69 | | 40-140 | 6 | | 30 |
| Cl10-BZ#209 | ND | 1680 | 1090 | 65 | | 1020 | 61 | | 40-140 | 7 | | 30 |
| Cl3-BZ#28 | 2.88 | 1680 | 1190 | 71 | | 1110 | 66 | | 40-140 | 7 | | 30 |
| Cl4-BZ#52 | 3.28 | 1680 | 1150 | 68 | | 1100 | 65 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 2.73 | 1680 | 1110 | 66 | | 1040 | 62 | | 40-140 | 7 | | 30 |
| Cl5-BZ#118 | 2.10 | 1680 | 1180 | 70 | | 1090 | 65 | | 40-140 | 8 | | 30 |
| Cl6-BZ#153 | 1.43 | 1680 | 1070 | 64 | | 996 | 59 | | 40-140 | 7 | | 30 |
| Cl5-BZ#105 | ND | 1680 | 1170 | 70 | | 1060 | 63 | | 40-140 | 10 | | 30 |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | **0** | Q | **0** | Q | 30-150 |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03
**Lab Number:** L1105174
**Report Date:** 04/28/11

| 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): 01-10 QC Batch ID: WG464091-4 WG464091-5 QC Sample: L1105174-10 Client ID: S-11A-C010-0-0.5 | | | | | | | | | | | | |

| Surrogate | MS % Recovery | MS Qualifier | MSD % Recovery | MSD Qualifier | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | **0** | Q | **0** | Q | 30-150 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03
**Lab Number:** L1105174
**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 11 Batch: WG464083-2 WG464083-3 | | | | | | | | |
| Cl2-BZ#8 | 74 | | 75 | | 40-140 | 1 | | 30 |
| Cl3-BZ#18 | 74 | | 76 | | 40-140 | 3 | | 30 |
| Cl3-BZ#28 | 83 | | 84 | | 40-140 | 2 | | 30 |
| Cl4-BZ#52 | 77 | | 78 | | 40-140 | 1 | | 30 |
| Cl4-BZ#44 | 78 | | 78 | | 40-140 | 1 | | 30 |
| Cl4-BZ#66 | 79 | | 79 | | 40-140 | 0 | | 30 |
| Cl5-BZ#101 | 76 | | 75 | | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 82 | | 81 | | 40-140 | 0 | | 30 |
| Cl5-BZ#105 | 84 | | 82 | | 40-140 | 2 | | 30 |
| Cl6-BZ#138 | 81 | | 81 | | 40-140 | 0 | | 30 |
| Cl7-BZ#187 | 76 | | 77 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 80 | | 80 | | 40-140 | 1 | | 30 |
| Cl7-BZ#180 | 81 | | 80 | | 40-140 | 1 | | 30 |
| Cl7-BZ#170 | 78 | | 79 | | 40-140 | 1 | | 30 |
| Cl8-BZ#195 | 78 | | 78 | | 40-140 | 0 | | 30 |
| Cl9-BZ#206 | 87 | | 88 | | 40-140 | 0 | | 30 |
| Cl10-BZ#209 | 77 | | 77 | | 40-140 | 1 | | 30 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET

**Project Number:** TO-0010-03

**Lab Number:** L1105174

**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 11 Batch: WG464083-2 WG464083-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 78 | | 80 | | 30-150 |
| DBOB | 94 | | 97 | | 30-150 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 11 Batch: WG464083-2 WG464083-3 | | | | | | | | |
| Cl6-BZ#153 | 78 | | 78 | | 40-140 | 1 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 78 | | 80 | | 30-150 |
| DBOB | 94 | | 97 | | 30-150 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET

**Project Number:** TO-0010-03

**Lab Number:** L1105174

**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-10 Batch: WG464091-2 WG464091-3 | | | | | | | | |
| Cl2-BZ#8 | 71 | | 69 | | 40-140 | 3 | | 30 |
| Cl3-BZ#18 | 72 | | 73 | | 40-140 | 1 | | 30 |
| Cl3-BZ#28 | 79 | | 79 | | 40-140 | 0 | | 30 |
| Cl4-BZ#52 | 76 | | 80 | | 40-140 | 5 | | 30 |
| Cl4-BZ#44 | 79 | | 73 | | 40-140 | 8 | | 30 |
| Cl4-BZ#66 | 77 | | 74 | | 40-140 | 4 | | 30 |
| Cl5-BZ#101 | 77 | | 74 | | 40-140 | 4 | | 30 |
| Cl5-BZ#118 | 80 | | 77 | | 40-140 | 4 | | 30 |
| Cl5-BZ#105 | 77 | | 71 | | 40-140 | 8 | | 30 |
| Cl6-BZ#138 | 80 | | 76 | | 40-140 | 5 | | 30 |
| Cl7-BZ#187 | 76 | | 75 | | 40-140 | 1 | | 30 |
| Cl6-BZ#128 | 78 | | 74 | | 40-140 | 5 | | 30 |
| Cl7-BZ#180 | 78 | | 74 | | 40-140 | 5 | | 30 |
| Cl7-BZ#170 | 79 | | 74 | | 40-140 | 7 | | 30 |
| Cl8-BZ#195 | 77 | | 74 | | 40-140 | 4 | | 30 |
| Cl9-BZ#206 | 87 | | 84 | | 40-140 | 4 | | 30 |
| Cl10-BZ#209 | 77 | | 74 | | 40-140 | 4 | | 30 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET

**Project Number:** TO-0010-03

**Lab Number:** L1105174

**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-10 Batch: WG464091-2 WG464091-3 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| DBOB | 84 | | 78 | | 30-150 |
| BZ 198 | 78 | | 76 | | 30-150 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 12-23 Batch: WG464267-2 WG464267-3 | | | | | | | | |
| Cl2-BZ#8 | 74 | | 75 | | 40-140 | 1 | | 30 |
| Cl3-BZ#18 | 80 | | 77 | | 40-140 | 4 | | 30 |
| Cl3-BZ#28 | 85 | | 83 | | 40-140 | 2 | | 30 |
| Cl4-BZ#52 | 81 | | 81 | | 40-140 | 0 | | 30 |
| Cl4-BZ#44 | 85 | | 81 | | 40-140 | 5 | | 30 |
| Cl4-BZ#66 | 83 | | 82 | | 40-140 | 1 | | 30 |
| Cl5-BZ#101 | 81 | | 80 | | 40-140 | 1 | | 30 |
| Cl5-BZ#118 | 86 | | 86 | | 40-140 | 0 | | 30 |
| Cl5-BZ#105 | 83 | | 81 | | 40-140 | 2 | | 30 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET

**Project Number:** TO-0010-03

**Lab Number:** L1105174

**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 12-23 Batch: WG464267-2 WG464267-3 | | | | | | | | |
| Cl6-BZ#138 | 83 | | 82 | | 40-140 | 1 | | 30 |
| Cl7-BZ#187 | 81 | | 81 | | 40-140 | 0 | | 30 |
| Cl6-BZ#128 | 82 | | 82 | | 40-140 | 0 | | 30 |
| Cl7-BZ#180 | 86 | | 84 | | 40-140 | 2 | | 30 |
| Cl7-BZ#170 | 77 | | 77 | | 40-140 | 0 | | 30 |
| Cl8-BZ#195 | 79 | | 80 | | 40-140 | 1 | | 30 |
| Cl9-BZ#206 | 91 | | 90 | | 40-140 | 1 | | 30 |
| Cl10-BZ#209 | 82 | | 81 | | 40-140 | 1 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 79 | | 77 | | 30-150 |
| DBOB | 91 | | 85 | | 30-150 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET

**Project Number:** TO-0010-03

**Lab Number:** L1105174

**Report Date:** 04/28/11

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 12-23 Batch: WG464267-2 WG464267-3 | | | | | | | | |
| Cl6-BZ#153 | 79 | | 78 | | 40-140 | 1 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| BZ 198 | 79 | | 77 | | 30-150 |
| DBOB | 91 | | 85 | | 30-150 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-01
Client ID: S-11A-C001-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 10:10
Date Received: 04/15/11
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 | 99.3 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 78.4 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-02
Client ID: S-11A-C002-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 10:22
Date Received: 04/15/11
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 | 99.4 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 69.4 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-03
Client ID: S-11A-C003-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 09:59
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 83.0 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-04
Client ID: S-11A-C004-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 10:37
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 82.5 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-05
Client ID: S-11A-C005-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 11:13
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 82.3 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-06
Client ID: S-11A-C006-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 11:28
Date Received: 04/15/11
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 | 99.2 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 64.7 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-07
Client ID: S-11A-C007-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 11:56
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 73.2 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-08
Client ID: S-11A-C008-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 12:23
Date Received: 04/15/11
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 | 99.4 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 81.9 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-09
Client ID: S-11A-C009-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 12:09
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 84.1 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-10
Client ID: S-11A-C010-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/14/11 11:44
Date Received: 04/15/11
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 | 99.3 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 82.7 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-12
Client ID: S-11A-C011-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 10:50
Date Received: 04/15/11
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 | 99.1 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 29.9 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-13
Client ID: S-11A-C012-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 10:04
Date Received: 04/15/11
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 | 98.6 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 53.6 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-14
Client ID: S-11A-C013-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 09:20
Date Received: 04/15/11
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 | 44.8 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 76.2 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-15
Client ID: S-11A-C014-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 09:46
Date Received: 04/15/11
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 | 99.5 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 79.6 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-16
Client ID: S-11A-C015-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 10:19
Date Received: 04/15/11
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 | 99.0 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 44.8 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-17
Client ID: S-11A-C015-0-0.5 REP
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 10:31
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 31.7 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-18
Client ID: S-11A-C016-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 11:01
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 27.2 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-19
Client ID: S-11A-C017-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 11:16
Date Received: 04/15/11
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 | 98.7 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 70.3 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-20
Client ID: S-11A-C018-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 11:46
Date Received: 04/15/11
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 | 97.9 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 44.9 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-21
Client ID: S-11A-C019-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 12:00
Date Received: 04/15/11
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 | 99.1 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 55.8 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-22
Client ID: S-11A-C020-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 12:16
Date Received: 04/15/11
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 | 98.1 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 36.2 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## SAMPLE RESULTS

Lab ID: L1105174-23
Client ID: S-11A-C021-0-0.5
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 04/15/11 12:40
Date Received: 04/15/11
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 | 100 | | % | 0.100 | -- | 1 | - | 04/21/11 18:00 | 30,2540G | SP |
| Solids, Total (Pre-Dried) | 63.6 | | % | 0.100 | NA | 1 | - | 04/19/11 09:20 | 30,2540G | KB |

# Lab Duplicate Analysis
## Batch Quality Control

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Mansfield Lab Associated sample(s): 01-10,12-20 QC Batch ID: WG464098-1 QC Sample: L1105174-01 Client ID: S-11A-C001-0-0.5 | | | | | | |
| Solids, Total | 99.3 | 100 | % | 1 | | 20 |
| General Chemistry - Mansfield Lab Associated sample(s): 21-23 QC Batch ID: WG464184-1 QC Sample: L1105174-23 Client ID: S-11A-C021-0-0.5 | | | | | | |
| Solids, Total | 100 | 99.3 | % | 1 | | 20 |

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

## 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 |
| B | Absent |

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1105174-01A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-02A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-03A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-04A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-05A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-06A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-07A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-08A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-09A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-10A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD(),A2-TS-PREDRIED(7) |
| L1105174-10B | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-MS/MSD(),A2-TS-PREDRIED(7) |
| L1105174-11A | Amber 1000ml unpreserved | A | 7 | 3 | Y | Absent | A2-PCBCONG-8082-NOAA(7) |
| L1105174-12A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-13A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-14A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-15A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-16A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |

*Values in parentheses indicate holding time in days

**Project Name:** NORTH OF WOOD STREET **Lab Number:** L1105174

**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## Container Information

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|
| L1105174-17A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-18A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-19A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-20A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-21A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-22A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-23A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-TS(7),A2-PCBCONG-8082-NOAA(14),A2-TS-PREDRIED(7) |
| L1105174-24A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-25A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-26A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-27A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-28A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-29A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-30A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-31A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-32A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-33A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-34A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-35A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-36A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-37A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-38A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-39A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-40A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-41A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |
| L1105174-42A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-43A | Glass 250ml unpreserved | B | N/A | 3.2 | Y | Absent | A2-STORAGE() |
| L1105174-44A | Glass 250ml unpreserved | A | N/A | 3 | Y | Absent | A2-STORAGE() |

## Container Comments

| | |
|---|---|
| L1105174-24A | samples originally frozen upon receipt 4/15/11 |
| L1105174-25A | samples originally frozen upon receipt 4/15/11 |

*Values in parentheses indicate holding time in days

**Project Name:** NORTH OF WOOD STREET
**Project Number:** TO-0010-03

**Lab Number:** L1105174
**Report Date:** 04/28/11

**Container Information**

| Container ID | Container Type | Cooler | pH | Temp deg C | Pres | Seal | Analysis(*) |
|---|---|---|---|---|---|---|---|

**Container Comments**

| | |
|---|---|
| L1105174-26A | samples originally frozen upon receipt 4/15/11 |
| L1105174-27A | samples originally frozen upon receipt 4/15/11 |
| L1105174-29A | samples originally frozen upon receipt 4/15/11 |
| L1105174-30A | samples originally frozen upon receipt 4/15/11 |
| L1105174-31A | samples originally frozen upon receipt 4/15/11 |
| L1105174-32A | samples originally frozen upon receipt 4/15/11 |
| L1105174-33A | samples originally frozen upon receipt 4/15/11 |
| L1105174-35A | samples originally frozen upon receipt 4/15/11 |
| L1105174-36A | samples originally frozen upon receipt 4/15/11 |
| L1105174-37A | samples originally frozen upon receipt 4/15/11 |
| L1105174-38A | samples originally frozen upon receipt 4/15/11 |
| L1105174-39A | samples originally frozen upon receipt 4/15/11 |
| L1105174-40A | samples originally frozen upon receipt 4/15/11 |
| L1105174-41A | samples originally frozen upon receipt 4/15/11 |
| L1105174-42A | samples originally frozen upon receipt 4/15/11 |
| L1105174-43A | samples originally frozen upon receipt 4/15/11 |
| L1105174-44A | samples originally frozen upon receipt 4/15/11 |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | NORTH OF WOOD STREET | **Lab Number:** | L1105174 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 04/28/11 |

## 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. |
| 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. |

***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. |
| **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. |
| **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 |

*Report Format:* Data Usability Report

| | | | |
|---|---|---|---|
| **Project Name:** | NORTH OF WOOD STREET | **Lab Number:** | L1105174 |
| **Project Number:** | TO-0010-03 | **Report Date:** | 04/28/11 |

***Data Qualifiers***

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:** NORTH OF WOOD STREET **Lab Number:** L1105174
**Project Number:** TO-0010-03 **Report Date:** 04/28/11

## REFERENCES


1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.


## 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 5

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1105174

## Client Information

Client: WOODS HOLE GROUP
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

## Project Information

Project Name: NORTH END WOODS ~~AIRPORT TOWER MONITORING~~ ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: TU-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

## 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 Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: PCB Cong (NWA18) | ANALYSIS: ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| 1 | S-11A-C001-0-0.5 | 4/14/11 | 10:10 | SED | DRW | X | | NWS-35 | 1 |
| -24 | S-11A-C001-0.5-1.0 | | 10:10 | | | | X | NWS-35 | 1 |
| 2 | S-11A-C002-0-0.5 | | 10:22 | | | X | | NWS-39 | 1 |
| -25 | S-11A-C002-0.5-1.0 | | 10:22 | | | | X | NWS-39 | 1 |
| 3 | S-11A-C003-0-0.5 | | 09:59 | | | X | | NWS-37 | 1 |
| -26 | S-11A-C003-0.5-1.0 | | 09:59 | | | | X | NWS-37 | 1 |
| 4 | S-11A-C004-0-0.5 | | 10:37 | | | X | | NWS-43 | 1 |
| -27 | S-11A-C004-0.5-1.0 | | 10:37 | | | | X | NWS-43 | 1 |
| 5 | S-11A-C005-0-0.5 | | 11:13 | | | X | | NWS-33 | 1 |
| -28 | S-11A-C005-0.5-1.0 | | 11:13 | | | | X | NWS-33 | 1 |
| | | | | | Container Type | G | G | | |
| | | | | | Preservative | A | A | | |

**SAMPLE HANDLING**
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do
(Please specify below)

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh 4/15/11 | 1824 | [illegible] 4-15-11 | 4-15-11 1824 |

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



ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1105174

**Client Information**

Client: WOODS HOLE GROUP
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

**Project Information**

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

**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: ☐

ANALYSIS: PCB Conq (NEMA 18) ARCHIVE

SAMPLE HANDLING
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Conq (NEMA 18) | ARCHIVE | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|
| -6 | S-11A-C006-0-0.5 | 4/14/11 | 11:28 | SED | DRW | X | | NWS-34 | 1 |
| -29 | S-11A-C006-0.5-0.8 | | 11:28 | | | | X | NWS-34 | 1 |
| 7 | S-11A-C007-0-0.5 | | 11:56 | | | X | | OBOW | 1 |
| -30 | S-11A-C007-0.5-1.0 | | 11:56 | | | | X | OBOW | 1 |
| 8 | S-11A-C008-0-0.5 | | 12:23 | | | X | | NWS-40 | 1 |
| -31 | S-11A-C008-0.5-0.9 | | 12:23 | | | | X | NWS-40 | 1 |
| 9 | S-11A-C009-0-0.5 | | 12:09 | | | X | | NWS-41 | 1 |
| -32 | S-11A-C009-0.5-1.0 | | 12:09 | | | | X | NWS-41 | 1 |
| 10 | S-11A-C010-0-0.5 | | 11:44 | | | X | | NWS-42 | 1 |
| -33 | S-11A-C010-0.5-1.0 | | 11:44 | | | | X | NWS-42 | 1 |
| | Container Type | | | | | G | G | | |
| | Preservative | | | | | A | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11 1824 | [signature] | 4-15-11 1824 |

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 5

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1105174

## Client Information

Client: WOODS HOLE GROUP

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

## Project Information

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING

Project Location: NEW BEDFORD, MA

Project #: TO-0010-03

Project Manager: DAVID WALSH

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

## 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: ☐

ANALYSIS: RCB Comp (NOAA 16) ARCHIVE

SAMPLE HANDLING

Filtration ☐ Done ☐ Not needed ☐ Lab to do

Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | RCB Comp (NOAA 16) | ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -10 | S-11A-C010-0-0.5 MS MSD | 4/14/11 | 11:44 | SED | DRW | X | | NWS-42 MS MSD | 1 |
| | ~~EB-041411~~ | | | | | | | | |
| -11 | EB-041411-01 | 4/14/11 | 14:06 | WATER | DRW | X | | AUGER EQUIPMENT BLANK | 1 |
| -12 | S-11A-C011-0-0.5 | 4/15/11 | 10:50 | SED | DRW | X | | Ø33 | 1 |
| -34 | S-11A-C011-0.5-1.0 | | 10:50 | | | | X | Ø33 | 1 |
| -13 | S-11A-C012-0-0.5 | | 10:04 | | | X | | Ø23 | 1 |
| -35 | S-11A-C012-0.5-0.9 | | 10:04 | | | | X | Ø23 | 1 |
| -14 | S-11A-C013-0-0.5 | | 09:20 | | | X | | Ø1Ø | 1 |
| 36 | S-11A-C013-0.5-0.9 | | 09:20 | | | | X | Ø1Ø | 1 |
| -15 | S-11A-C014-0-0.5 | | 09:46 | | | X | | Ø16 | 1 |
| | | | | | Container Type | G | G | | |
| | | | | | Preservative | A | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh | 4/15/11 1824 | Ron Bigg | 4-15-11 1824 |

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 4 OF 5

Date Rec'd in Lab:

ALPHA Job #: L1105174

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 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

**Project Information**

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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: ☐

ANALYSIS: PCB Cong (NOMAB), ARCHIVE

SAMPLE HANDLING
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do (Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Cong (NOMAB) | ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -37 | S-11A-C014-0.5-1.0 | 4/15/11 | 09:46 | SED | DRW | | X | Ø16 | 1 |
| -16 | S-11A-C015-0-0.5 | 4/15/11 | 10:19 | SED | DRW | X | | Ø28 | 1 |
| -17 | S-11A-C015-0-0.5REP | | 10:31 | | | X | | Ø28 REPLICATE | 1 |
| -38 | S-11A-C015-0.5-1.0 | | 10:19 | | | | X | Ø28 | 1 |
| -18 | S-11A-C016-0-0.5 | | 11:01 | | | X | | Ø39 | 1 |
| -39 | S-11A-C016-0.5-1.0 | | 11:01 | | | | X | Ø39 | 1 |
| -19 | S-11A-CØ17-0-0.5 | | 11:16 | | | X | | Ø40 | 1 |
| -40 | S-11A-CØ17-0.5-0.9 | | 11:16 | | | | X | Ø40 | 1 |
| -20 | S-11A-CØ18-0-0.5 | | 11:46 | | | X | | Ø48 | 1 |
| -41 | S-11A-CØ18-0.5-1.0 | | 11:46 | | | | X | Ø48 | 1 |
| | | | | | Container Type | G | G | | |
| | | | | | Preservative | A | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11 1824 | [signature] | 4-15-11 1824 |

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.

# CHAIN OF CUSTODY

PAGE 5 OF 5

Date Rec'd in Lab:

ALPHA Job #: L1105174

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 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

## Project Information

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: T8-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

## 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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All ***CAM*** methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS: PCB CONG. (NOAA-16) ARCHIVE

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB CONG. (NOAA-16) | ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -21 | S-11A-C019-0-0.5 | 4/15/11 | 12:00 | SED | DRW | X | | Ø49 | 1 |
| -42 | S-11A-C019-0.5-1.0 | ↓ | 12:00 | ↓ | ↓ | | X | Ø49 | 1 |
| -22 | S-11A-C020-0-0.5 | ↓ | 12:16 | ↓ | ↓ | X | | Ø55 | 1 |
| -43 | S-11A-C020-0.5-1.0 | ↓ | 12:16 | ↓ | ↓ | | X | Ø55 | 1 |
| -23 | S-11A-C021-0-0.5 | ↓ | 12:40 | ↓ | ↓ | X | | Ø62 | 1 |
| -44 | S-11A-C021-0.5-1.0 | ↓ | 12:40 | ↓ | ↓ | | X | Ø62 | 1 |

| | | |
|---|---|---|
| Container Type | G | G |
| Preservative | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11, 1824 | [signature] | 4-15-11 1824 |

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.

FORM NO: 01-01 (rev. 18-Jan-2010)

# MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 5

Date Rec'd in Lab:

ALPHA Job #: L1105174


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 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

## Project Information

Project Name: NORTH END WOODS ~~AIRPORT TOWER MONITORING~~ ANNUAL MONITORING

Project Location: NEW BEDFORD, MA

Project #: TO-0010-03

Project Manager: DAVID WALSH

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

## 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 Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: PCB Cong (NWA 18) | ANALYSIS: ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| 1 | S-11A-C001-0-0.5 | 4/14/11 | 10:10 | SED | DRW | X | | NWS-35 | 1 |
| -24 | S-11A-C001-0.5-1.0 | | 10:10 | | | | X | NWS-35 | 1 |
| 2 | S-11A-C002-0-0.5 | | 10:22 | | | X | | NWS-39 | 1 |
| -25 | S-11A-C002-0.5-1.0 | | 10:22 | | | | X | NWS-39 | 1 |
| 3 | S-11A-C003-0-0.5 | | 09:59 | | | X | | NWS-37 | 1 |
| -26 | S-11A-C003-0.5-1.0 | | 09:59 | | | | X | NWS-37 | 1 |
| 4 | S-11A-C004-0-0.5 | | 10:37 | | | X | | NWS-43 | 1 |
| -27 | S-11A-C004-0.5-1.0 | | 10:37 | | | | X | NWS-43 | 1 |
| 5 | S-11A-C005-0-0.5 | | 11:13 | | | X | | NWS-33 | 1 |
| -28 | S-11A-C005-0.5-1.0 | | 11:13 | | | | X | NWS-33 | 1 |
| | | | | | Container Type | G | G | | |
| | | | | | Preservative | A | A | | |

**SAMPLE HANDLING**

Filtration
☐ Done
☐ Not needed
☐ Lab to do

Preservation
☐ Lab to do
(Please specify below)

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh 4/15/11 | 1824 | [illegible] 4-15-11 | 4-15-11 1824 |

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 5

Date Rec'd in Lab:

ALPHA Job #: L1105174

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 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

**Project Information**

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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: ☐

ANALYSIS: PCB Cong (NEMA 18) ARCHIVE

SAMPLE HANDLING
Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB Cong (NEMA 18) | ARCHIVE | Sample Specific Comments | Total # Bottles |
|---|---|---|---|---|---|---|---|---|---|
| -6 | S-11A-C006-0-0.5 | 4/14/11 | 11:28 | SED | DRW | X | | NWS-34 | 1 |
| -29 | S-11A-C006-0.5-0.8 | | 11:28 | | | | X | NWS-34 | 1 |
| 7 | S-11A-C007-0-0.5 | | 11:56 | | | X | | OBOW | 1 |
| -30 | S-11A-C007-0.5-1.0 | | 11:56 | | | | X | OBOW | 1 |
| 8 | S-11A-C008-0-0.5 | | 12:23 | | | X | | NWS-40 | 1 |
| -31 | S-11A-C008-0.5-0.9 | | 12:23 | | | | X | NWS-40 | 1 |
| 9 | S-11A-C009-0-0.5 | | 12:09 | | | X | | NWS-41 | 1 |
| -32 | S-11A-C009-0.5-1.0 | | 12:09 | | | | X | NWS-41 | 1 |
| 10 | S-11A-C010-0-0.5 | | 11:44 | | | X | | NWS-42 | 1 |
| -33 | S-11A-C010-0.5-1.0 | | 11:44 | | | | X | NWS-42 | 1 |
| | Container Type | | | | | G | G | | |
| | Preservative | | | | | A | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11 1824 | [signature] | 4-15-11 1824 |

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 5

Date Rec'd in Lab:

ALPHA Job #: L1105174

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 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

**Project Information**

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING

Project Location: NEW BEDFORD, MA

Project #: TO-0010-03

Project Manager: DAVID WALSH

ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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 Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: RCB Comp (NOAA 16) | ANALYSIS: ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -10 | S-11A-C010-0-0.5 MS MSD | | 4/14/11 11:44 | SED | DRW | X | | NWS-42 MS MSD | 1 |
| | ~~EB-041411~~ | | | | | | | | |
| -11 | EB-041411-01 | 4/14/11 | 14:06 | WATER | DRW | X | | AUGER EQUIPMENT BLANK | 1 |
| -12 | S-11A-C011-0-0.5 | 4/15/11 | 10:50 | SED | DRW | X | | Ø33 | 1 |
| -34 | S-11A-C011-0.5-1.0 | | 10:50 | | | | X | Ø33 | 1 |
| -13 | S-11A-C012-0-0.5 | | 10:04 | | | X | | Ø23 | 1 |
| -35 | S-11A-C012-0.5-0.9 | | 10:04 | | | | X | Ø23 | 1 |
| -14 | S-11A-C013-0-0.5 | | 09:20 | | | X | | Ø1Ø | 1 |
| 36 | S-11A-C013-0.5-0.9 | | 09:20 | | | | X | Ø1Ø | 1 |
| -15 | S-11A-C014-0-0.5 | | 09:46 | | | X | | Ø16 | 1 |

SAMPLE HANDLING

Filtration ☐ Done ☐ Not needed ☐ Lab to do

Preservation ☐ Lab to do (Please specify below)

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | G | G | | | | | | | | | | | | | | | |
| Preservative | A | A | | | | | | | | | | | | | | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| DWalsh | 4/15/11 1624 | Ron Bigg | 4-15-11 1824 |

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 4 OF 5

Date Rec'd in Lab:

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## Client Information

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E. FALMOUTH, MA 02536
Phone: 508-540-8080
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Email: DWALSH@WHGRP.COM

☐ These samples have been previously analyzed by Alpha

## Project Information

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: TO-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

## 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: ☐

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS: PCB Cong (NOAA8) | ANALYSIS: ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -37 | S-11A-C014-0.5-1.0 | 4/15/11 | 09:46 | SED | DRW | | X | Ø16 | 1 |
| -16 | S-11A-C015-0-0.5 | 4/15/11 | 10:19 | SED | DRW | X | | Ø28 | 1 |
| -17 | S-11A-C015-0-0.5REP | | 10:31 | | | X | | Ø28 REPLICATE | 1 |
| -38 | S-11A-C015-0.5-1.0 | | 10:19 | | | | X | Ø28 | 1 |
| -18 | S-11A-C016-0-0.5 | | 11:01 | | | X | | Ø39 | 1 |
| -39 | S-11A-C016-0.5-1.0 | | 11:01 | | | | X | Ø39 | 1 |
| -19 | S-11A-CØ17-0-0.5 | | 11:16 | | | X | | Ø40 | 1 |
| -40 | S-11A-CØ17-0.5-0.9 | | 11:16 | | | | X | Ø40 | 1 |
| -20 | S-11A-CØ18-0-0.5 | | 11:46 | | | X | | Ø48 | 1 |
| -41 | S-11A-CØ18-0.5-1.0 | | 11:46 | | | | X | Ø48 | 1 |
| | | | | | Container Type | G | G | | |
| | | | | | Preservative | A | A | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11 1824 | [signature] | 4-15-11 1824 |

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.

# CHAIN OF CUSTODY

PAGE 5 OF 5

Date Rec'd in Lab:

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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 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

**Project Information**

Project Name: NORTH OF WOOD ST. ANNUAL MONITORING
Project Location: NEW BEDFORD, MA
Project #: T8-0010-03
Project Manager: DAVID WALSH
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

**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

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All ***CAM*** methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS: PCB CONG. (NOAA-16) ARCHIVE

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | PCB CONG. (NOAA-16) | ARCHIVE | Sample Specific Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|
| -21 | S-11A-C019-0-0.5 | 4/15/11 | 12:00 | SED | DRW | X | | Ø49 | 1 |
| -42 | S-11A-C019-0.5-1.0 | ↓ | 12:00 | ↓ | ↓ | | X | Ø49 | 1 |
| -22 | S-11A-C020-0-0.5 | ↓ | 12:16 | ↓ | ↓ | X | | Ø55 | 1 |
| -43 | S-11A-C020-0.5-1.0 | ↓ | 12:16 | ↓ | ↓ | | X | Ø55 | 1 |
| -23 | S-11A-C021-0-0.5 | ↓ | 12:40 | ↓ | ↓ | X | | Ø62 | 1 |
| -44 | S-11A-C021-0.5-1.0 | ↓ | 12:40 | ↓ | ↓ | | X | Ø62 | 1 |

| | PCB CONG. (NOAA-16) | ARCHIVE |
|---|---|---|
| Container Type | G | G |
| Preservative | A | A |

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT MA MCP or CT RCP?

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/15/11, 1824 | [signature] | 4-15-11 1824 |

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.

# APPENDIX C. NEW ENVIRONMENTAL HORIZONS, INC. DATA EVALUATION REPORTS

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# Data Validation Report
## EPA Region I Tier I+
## NOAA Congeners by 8082

| | |
|---|---|
| **Client/Company:** | Woods Hole Group, Inc. (WHG) |
| **Site/Project Name:** | North of Wood Street Process Cores, New Bedford Harbor, MA |
| **Laboratory:** | Alpha Analytical – Mansfield, MA |
| **Lab Project Number(s):** | L1105174 |
| **Date(s) of Collection:** | April 14, 2011 and April 15, 2011 |
| **Number / Type Samples & Analyses** | 22 sediment core samples plus 1 equipment blank for 18 NOAA Congeners by EPA SW-846 Method 8082 |
| **Senior Data Reviewers:** | Nancy C. Rothman, PhD, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc. |
| **Date Completed:** | May 24, 2010 |

This EPA Region I Tier I+ validation for PCB Congeners and 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. 3.0, prepared by Woods Hole Group, Inc., August 2010 (NBH OU1 QAPP Addendum 2010); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *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 comments 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 | Sample Type |
|---|---|---|---|---|---|
| S-11A-C001-0-0.5 | L1105174-01 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C002-0-0.5 | L1105174-02 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C003-0-0.5 | L1105174-03 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C004-0-0.5 | L1105174-04 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C005-0-0.5 | L1105174-05 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C006-0-0.5 | L1105174-06 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C007-0-0.5 | L1105174-07 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C008-0-0.5 | L1105174-08 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C009-0-0.5 | L1105174-09 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C010-0-0.5 | L1105174-10 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample [used for MS/MSD] |
| EB-041411-01 | L1105174-11 | 4/14/11 | Air-dried Sediment | 18 NOAA Congeners | Equipment Blank |

Table 1. Sample Descriptions and Analytical Parameters Validated

| Sample ID | Lab Sample ID | Collection Date | Matrix | Analytical Parameters | Sample Type |
|---|---|---|---|---|---|
| S-11A-C011-0-0.5 | L1105174-12 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C012-0-0.5 | L1105174-13 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C013-0-0.5 | L1105174-14 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C014-0-0.5 | L1105174-15 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C015-0-0.5 | L1105174-16 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C015-0-0.5 REP | L1105174-17 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | FD of S-11A-C015-0-0.5 |
| S-11A-C016-0-0.5 | L1105174-18 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C017-0-0.5 | L1105174-19 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C018-0-0.5 | L1105174-20 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C019-0-0.5 | L1105174-21 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C020-0-0.5 | L1105174-22 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |
| S-11A-C021-0-0.5 | L1105174-23 | 4/15/11 | Air-dried Sediment | 18 NOAA Congeners | Field Sample |

Analytical method references:

18 NOAA Congeners: *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.

## II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of 18 NOAA PCB Congener sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH OU1 QAPP Addendum 2009 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 2010 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 2010 criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Review Checklist.

**Sample Receipt and Holding Time**

The North of Wood Street process sediment cores were collected on April 14, 2011 and April 15, 2011 and separate aliquots of the cores were generated by WHG, for PCB Congener analysis. The sediment core samples were received at the laboratory intact at 3.0°C and 3.2°C on the day of sample aliquoting, April 15, 2011. Aliquots of the "as received" samples were analyzed for percent solids. All samples

had percent solids content of 27-84%. All of these sediment core samples were air-dried, as required by the QAPP, prior to Congener analysis, even though some samples had percent solids content above 50%. The laboratory maintained the same Lab Sample ID for both the "as received" and "air-dried" sediment aliquots.

After air-drying, the percent solids content for all samples was greater than 97%. These air-dried samples were frozen after receipt and prior to air-drying, to arrest the holding time for sample extraction. As a consequence of the freezing, these samples were considered to have been extracted and analyzed within holding time.

**Accuracy**

The Method Blanks (3) and the Equipment Blank were non-detect for all 18 NOAA. Therefore, blank action to negate sample data was not required.

One LCS/LCSD did not report results for the Congener 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153). Since all other Congeners in this LCS/LCSD were recovered within criteria and since BZ#153 was recovered within criteria in another LCS/LCSD extracted on the same day, a decision was to accept the LCS/LCSD results without requesting re-issue of the data package. LCS/LCSD recoveries were acceptable for all NOAA Congeners in all three LCS/LCSD pairs indicating acceptable accuracy in the laboratory analysis.

MS/MSD analyses were performed on sample S-11A-C010-0-0.5. The QAPP required frequency of MS/MSD analysis was 5% (1 MS/MSD per 20 field samples). This QAPP QC frequency was not met for these sediment core samples as 21 field samples (plus 1 FD) were included in this SDG. No action was taken other than to note this deviation. MS/MSD recoveries were acceptable for all NOAA Congeners indicating acceptable accuracy in the laboratory analysis of the site matrix.

**Precision**

LCS/LCSD precision, for all three sets of QC samples, was acceptable for all NOAA Congeners reported indicating acceptable precision in the laboratory analysis.

Precision was acceptable for all 18 NOAA Congeners in the MS/MSD analysis of S-11A-C010-0-0.5 indicating acceptable precision in the laboratory analysis of these samples.

The FD pair was S-11A-C015-0-0.5 & S-11A-C015-0-0.5 REP. Precision was acceptable for the eight non-detected NOAA Congeners in this FD pair but unacceptable for the ten detected Congeners including 2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, and 2,2',4,4',5,5'-Hexachlorobiphenyl. The results for these ten Congeners were estimated (J) in the field duplicate samples, as shown in Table 2, with indeterminate bias. These results are an indication of variable precision and representativeness of these sediment core samples and evidence of heterogeneity in the site matrix for PCB Congener analysis.

**Sensitivity & Reporting**

Nine samples (eight sediment cores + equipment blank) were analyzed without dilution (i.e., dilution factor (DF) = 1) and all non-detects in these samples were reported with reporting limits (RLs) below the Project Quantitation Limits (PQLs) given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010. The other fourteen samples were analyzed with various dilutions to report all Congeners within the instrument calibration range. For these samples, all RLs were increased as a consequence of the dilutions made (RLs achieved were 2 to 270 times higher than the 5 µg/Kg PQL given in QAPP Worksheet #15 of the NHB OU1 QAPP Addendum 2010). However, Total PCBs (as the sum of all detected Congener results) for these fourteen samples were detected at a level above the Project Action Limit (PAL) for Total PCBs given in Worksheet #15; therefore, sensitivity was considered acceptable.

The laboratory reported all results for samples analyzed at a dilution with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

| Field Sample ID | Analyte | Qualifier | Bias | Validation Comments |
|---|---|---|---|---|
| S-11A-C015-0-0.5 & S-11A-C015-0-0.5 REP | 2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 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:*
*FD = Field Duplicate*