

# New Bedford Harbor Superfund Site Environmental Monitoring, Sampling, and Analysis

## Project Characteristics:

- *PCB Contamination*
- *Remediation Monitoring*
- *Remedial Investigation and Feasibility Study*
- *Long-term Monitoring (LTM) Program*

New Bedford, MA has been the most active area of work for Woods Hole Group to date on the USACE Contract. The USACE and US EPA have extensive operations in New Bedford related to the characterization and remediation of contaminated sediments in New Bedford Harbor.

EPA is taking action to clean-up New Bedford Harbor, and has enlisted help from USACE New England District and Woods Hole Group. In Upper New Bedford Harbor, PCB-contaminated sediments are being actively remediated. Sediments are dredged from the harbor, treated, and disposed offsite. To date, approximately 340,000 cubic yards of contaminated sediment have been removed from New Bedford Harbor. Along with American Redevelopment and Recover Act funds (economic stimulus package), the remediation process has been expedited in 2009. During the remediation process, Woods Hole Group is monitoring water quality to help ensure side effects of the remediation process are minimized.

This monitoring includes deployment of field crews to measure the concentration of sediments in the water column as well as dissolved oxygen levels during the dredging operation. Woods Hole Group also is collecting and testing sediments before, during, and after the dredging operation to monitor changes and document clean-up levels. To date, the Woods Hole Group monitoring crews have worked cooperatively with EPA and USACE staff, as well as the dredging crews, to achieve safe and efficient remediation efforts. Woods Hole Group will have a crew onsite for more than 60 days from June through November 2009.



In addition to monitoring the environment before, during, and after the remediation efforts in the Harbor, EPA also has been proactive about monitoring long-term trends of environmental conditions throughout the New Bedford Superfund Site. Termed, the Long-Term Monitoring (LTM) Program, EPA designed a scientifically rigorous sampling program to gauge the response of the system to the PCB clean up within New Bedford Harbor. LTM began in 1993, and includes some 78 stations distributed throughout New Bedford Harbor and surrounding areas of Buzzards Bay. The sampling regime was designed to be probabilistic, unbiased, and repeatable. Previous sampling events were completed in 1993 (baseline), 1995 (after PCB hotspot remediation), 1999, and 2004.



# New Bedford Harbor Superfund Site Environmental Monitoring, Sampling, and Analysis (continued)

Woods Hole Group just completed the most recent LTM sampling in September, 2009. Two crews of three people on vessels, supported by land-based personnel, collected sediment samples for grain size analysis and analytical chemistry from the 78 sites. The sampling teams also collected and sorted three benthic invertebrate samples for laboratory enumerations and identification at each site. Oceanographic parameters (e.g., conductivity, temperature, and depth) were measured as well. Faced with challenging wind and rain conditions, the crews completed the mission in consecutive long days, on-schedule. High quality samples were collected, while the team had some fun and built camaraderie along the way.



In the ensuing weeks and months, Woods Hole Group will be working with its team members to analyze and report the data to USACE and EPA. With this long-term dataset, EPA can evaluate the response of New Bedford Harbor and surrounding regions to the ongoing remediation efforts. In addition to the remediation and long-term monitoring, the Woods Hole Group team is maintaining and updating the New Bedford database, and also developing a Remedial Investigation/Feasibility Study (RI/FS) for portions of the Superfund Site. This collective work will support the ongoing remediation efforts, and help plan and monitor future efforts with the goal of restoring the ecological value of the region for years and generations to come.



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