New Bedford Harbor Superfund Site

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June 20, 2012
New Bedford Harbor
Site Overview

- 1,000 Acres Tidal Estuary and shoreline and 17,000 Acres in Buzzards Bay
- Pre-remedial PCB levels ranged up to 200,000 ppm.
- Other contaminates include Heavy Metals: Lead, Cadmium, Cadmium, and Lead up to 5,000 ppm.
- Three Operable Units
  - 1. Estuary/ Harbor/ Bay
  - 2. Hot Spot (sediments > 4,000 ppm PCB) completed in 1999
  - 3. Buzzards Bay- being assessed.
Estuary/Harbor/Bay OU

- PCB Cleanup Levels
  - North part of Estuary – 10 ppm
  - Harbor – 50 ppm
  - Shoreline Visitor – 25 ppm
  - Shoreline Residential – 1 ppm
  - Wetlands – 50 ppm
- 270 Acres need Remediation
- 900,000 Cubic Yards total
- OU #1 remediation started 2003
- 250,000 Cubic Yards removed to date
Remedial Technologies

- Hydraulic Dredging with De-sanding, Dewatering, and Off-Site Disposal at TSCA Landfill – Current Remediation
- Excavation of Shoreline/Wetland Areas
- Mechanical Dredging with In-Water Disposal (Confined Aquatic Disposal)
- Dredging with Shoreline Disposal (3 Confined Disposal Facilities)
- Capped – Buzzards Bay Area
Areas dredged to date shown in yellow
Hydraulic Dredging

Full scale dredging started 9/04

Aerovox

10/06/2004
Hydraulic Dredge Type

Horizontal Auger Dredge
Sediment Dewatering
Excavation

North of Wood Street cleanup – 2002/03
Stream Bank Restoration

The restored river and streambanks
State Enhanced Remedy

MassDEP requested that EPA include Navigational Dredging into the Record of Decision.

This request was made under the Enhancement of Remedy provision of the NCP 40 CFR 3000.515 (f).

This requires the Navigational Dredging to follow the Superfund Process.

MassDEP is the lead agency for the Navigational Dredging.
What is a confined aquatic disposal cell?

For illustrative purposes only – NOT TO SCALE
CAD Design Considerations

- Contaminated Top Removal
  Contaminated Material
  - Need Place to Dispose or Store
  - Thickness of Top may determine CAD Location
- Disposal/Re-use of Suitable (“Clean”) Marine Materials
  - Need to Test for Contamination and Physical Properties
  - Permitted Location Off-Site
  - Reuse for Beach Nourishment
  - Capping Material
- Depth to Bedrock
- Cap Thickness and Type of Material(s)
Mechanical Dredging
Sediment Removal Considerations

- Hydraulic
  - Type
  - Needs Water
  - Limits to Depth of Dredging
  - Extensive Water Treatment Required
  - Pipe lines may be required
  - Location Controls needed
  - H2S Building Issues

- Mechanical
  - Use of Environmental Bucket may be limited to certain types of sediments
  - Use of Silt Curtains

- Excavation
  - Limited to Shoreline/Upland Locations

- Removal of Debris
Monitoring

- Water Quality – Turbidity
- Air – EPA
- Post Dredge Sediment

- Seafood Monitoring Annual since 2002
- Long-term Biological Monitoring

Additional information can be found at http://www.epa.gov/nbh/
“What did the sea say to the land? Thanks for the sediment.”

Certain Slides provided by of U.S. EPA and Apex Company
Questions ?