

EXECUTIVE SUMMARY

A monitoring survey was conducted at the Seawolf disposal mound in the summer of 2006 to fulfill the Year 10 requirement of the monitoring plan, prepared as part of the permit issued for dredging operations at the Groton Submarine Base and in the Thames River channel in Connecticut on behalf of the U.S. Navy. The Seawolf mound is a capped disposal mound at the New London Disposal Site (NLDS) in Long Island Sound formed in 1995-1996 by the initial placement of over 300,000 m³ of dredged sediment contaminated with metals and PAHs, followed by the placement of over 550,000 m³ of dredged capping sediment suitable for unconfined open water disposal.

The Year 10 survey included multi-beam bathymetry, sediment-profile imaging, benthic biological sampling, and sediment coring. The objectives of the surveys were to: 1) document the continued recovery of the surface sediments over the Seawolf mound by assessing benthic conditions and infaunal successional status in comparison to the conditions detected at three DAMOS reference areas surrounding NLDS, 2) assess the integrity of the cap material by analyzing short and long cores for a suite of physical and chemical parameters, and 3) assess the long term stability of the Seawolf mound by evaluating changes in bathymetry.

The results of the 2006 Seawolf mound survey confirmed the biological recovery and stability identified during previous surveys. The multi-beam bathymetry identified no significant changes in the footprint of the mound on the bottom or its depth below the sea surface from the previous survey in 2003. The physical and chemical profiles in the sediment cores collected over the mound indicated a consistent cap sequestering the underlying contaminated horizons, as well as underlying ambient sediments and relic dredged material. The mature benthic community identified on the Seawolf mound in 2006 showed a complete recovery since initial mound formation, supporting a community with high densities of Stage 3 fauna no different than that found at the NLDS reference areas. The less frequent observation of mussels in the 2006 sediment profile imaging was attributed to the random placement of the SPI camera or a reflection of the natural progression of the community.

Collectively, the different monitoring elements of the 2006 survey revealed a fully recovered benthic system that did not appear to be subjected to physical disturbance indicative of large scale sediment movement or chemical disturbance detrimental to the benthic ecosystem. A review of the full series of monitoring events since formation of the Seawolf mound indicates that the top few centimeters of sediment is apparently subject to periods of transport and deposition within Long Island Sound, resulting in varying amount of shell lag and extent of armoring. However, these transport and deposition processes appear to only affect the uppermost sediment layer, given the long-term stability of the Seawolf mound, even following the passage of a significant coastal storm in 2002.

EXECUTIVE SUMMARY (continued)

The objectives of the Year 10 monitoring program were fully met. However, given the long-term interest in capping as a management tool for contaminated sediment and the opportunity to build on this long term dataset, performance of periodic multi-beam bathymetric surveying is proposed. Also, repeating portions of the 2006 coring effort during a future survey is recommended to better understand the PAH concentrations observed in the 2006 survey and the potential effect of different analyses and preparation methods between the 2006 and earlier 1998-2001 surveys.