EXECUTIVE SUMMARY

The Seawolf Mound is a capped dredged material disposal mound developed in the northwestern quadrant of New London Disposal Site (NLDS) in 1995-96 as the product of a large improvement dredging project in the Thames River, as well as several smaller maintenance dredging projects in adjacent harbors. The disposal and capping of material generated from improvement dredging associated with homeporting the *Seawolf* class submarines in Groton, CT, as well as smaller maintenance dredging projects, resulted in a total estimated volume of 877,500 m^3 of sediment deposited at the Seawolf Mound. Comprehensive monitoring of the Seawolf Mound was conducted in September 1997, July 1998, August 2000, and June 2001. This report presents the findings of the most recent monitoring survey conducted in October 2002 following the passage of a significant storm event in the eastern Long Island Sound region.

In accordance with the comprehensive environmental monitoring plan established for the Seawolf Mound prior to initiation of the dredging projects, the post-storm monitoring survey was conducted to assess the stability of the capped mound and determine the potential for widespread erosion of the sediment deposit due to wave-induced sediment transport. The monitoring survey was performed following passage of a storm that met specified wind speed, direction, and duration criteria, which occurred on 16 October 2002. The survey was designed to detect any large-scale changes in the morphology of the mound, as well as any small-scale evidence of surface erosion or winnowing that may have occurred due to wave energy during the storm.

Bathymetric, side-scan sonar, and REMOTS® sediment profile imaging surveys were conducted to characterize post-storm conditions on the mound. Findings indicated no appreciable changes in large-scale mound morphology following the October 2002 storm event. The most prominent depth-difference occurred at the mound apex, indicating a decrease in mound height on the order of 0.25 – 0.5 m. However, sediment profile images from the mound apex region did not show any evidence of recent disturbance or scour of such magnitude, and in fact showed biogenic surface features indicative of stable physical conditions. Similarly, sediment profile images did not display any smaller-scale evidence for storm-related erosion at other areas of the mound. Findings indicated a mound surface consisting of clay cap material, with some areas showing evidence of armoring by shell fragments, sand and pebbles. These results were consistent with previous surveys of the Seawolf Mound. The presence of numerous biogenic surface features, including polychaete and amphipod tubes, fecal deposits, hydroids, burrow openings, and organic detritus, provide further evidence for a lack of storm-related disturbance at the surface across the mound.

Biological conditions on the Seawolf Mound showed a continuance of advanced successional stages and stable benthic habitat conditions, consistent with findings from the 2000 and 2001 surveys. Also consistent with previous surveys, conditions over the surface of the mound were slightly improved with respect to the nearby reference areas, indicating that the surficial sediments continue to provide suitable substrate for a stable, advanced benthic community.