EXECUTIVE SUMMARY

A monitoring survey was conducted in July 2005 at the Rhode Island Sound Disposal Site (RISDS) as part of the Disposal Area Monitoring System (DAMOS) program. The 2005 field effort consisted of sediment-profile and plan view imaging and the collection of benthic sediment grabs. The objective of the 2005 RISDS survey was to assess the benthic recolonization status within RISDS following placement of sediment from the Providence River and Harbor Maintenance Dredging Project (PRHMDP). The PRHMDP and related projects disposed dredged material at RISDS every month from April 2003 to January 2005.

Based on observed patterns of physical, chemical, and biological responses of seafloor environments to dredged material disposal activity it was expected that the benthic community within RISDS would be in an intermediate phase of recolonization (Phase II). Specifically, the community was expected to consist of small, tubicolous polychaetes and Ampeliscid amphipods or equivalent fauna.

Since the beginning of disposal in April 2003, approximately four million m^3 of dredged material was placed at RISDS with no interruption in disposal activity. Benthic conditions across RISDS indicated that the biological community was recovering relatively rapidly and the initial predictions of the benthic community being in at least a Stage II recolonization phase were not only met but exceeded. The SPI and plan view images showed evidence of Stage III infauna present both at the reference and the disposal site, although, as anticipated, their densities were much lower at the disposal site.

The presence of dense populations of filter-feeding invertebrates in the grab samples collected at RISDS suggested that Stage II organisms dominated the surficial sediments. At the reference stations sampled in Rhode Island Sound, an even greater diversity of filter feeding organisms were present, including dense populations of amphipods, bivalves, and polychaetes. There was no evidence of head-down deposit-feeding Stage III organisms at the disposal site; however, larger surface-deposit feeding polychaetes were present.

Results of the 2005 RISDS survey indicated that in the six months since disposal activities at RISDS had concluded, the biological community at RISDS was recovering relatively rapidly and Stage II and III infauna were present throughout the region. Recovery is expected to continue until the benthic community within RISDS begins to resemble that found in the surrounding ambient sediments.