EXECUTIVE SUMMARY

A monitoring survey was conducted at the Massachusetts Bay Disposal Site (MBDS) from March 30 to April 4, 1992 as part of the Disposal Area Monitoring System (DAMOS). The previous bathymetric/REMOTS® monitoring surveys at MBDS occurred in August 1990. Since that time, MBDS has been subject to two major storms, Hurricane Bob and the Halloween Storm. In addition, initiation of a major construction project in the Boston area, the Central Artery/Third Harbor Tunnel (CA/THT) project, resulted in increased disposal activity at the site. Of the 289,588 m^3 of dredged sediments MBDS received since the August 1990 surveys, 81% of the total volume originated from the CA/THT project. Dredged material from this project consisted of Boston Blue Clay, very distinct in its greenish-gray color and homogeneous, fine-grained appearance. The objectives of the 1992 field work were to map the distribution and thickness of dredged materials that MBDS received following the 1990 survey, and to assess the status of the benthic communities around the reference areas.

Surveying and monitoring were conducted with precision bathymetry and REMOTS® sediment-profile photography. It was predicted that

1) the dredged materials disposed since 1990 would have increased the size of the mound detected by bathymetry in 1990;
2) the benthic communities at the reference areas would be similar to those found in the 1990 survey; and that
3) benthic infauna (Stage III taxa) would be absent around the disposal buoy due to the presence of fresh Boston Blue Clay.

The precision bathymetric survey detected the maximum thickness of the disposal mound approximately 100 m west of the buoy. Depth difference isopachs for 1990-1992 indicated a maximum change in depth of 2 m. The acoustically detected mound was elliptical in shape with an average diameter of 400 m. A comparison made of the depth matrices from 1988 to 1992 showed similar results with an average mound diameter of 500-700 m. Dredged material detected by the 1992 REMOTS® survey extended 600 m east, 400 m south, 800 m west, and 400 m north of the buoy location. These results indicate no substantial resuspension or transport of dredged material occurred as a result of Hurricane Bob and the Halloween Storm.

The benthic communities at the reference areas and at stations away from the center of the disposal mound contained Stage III taxa, indicative of a well-colonized, healthy benthic community. Stations located near the center of the disposal mound and on the Boston Blue Clay were characterized by Stage I pioneering polychaetes. Evidence of benthic recolonization at the mound and the abundance of Stage III infauna at the disposal site and reference area stations indicate no severe disturbance from disposal activities or from the two storms in 1991.

Results of the 1992 bathymetric/REMOTS® monitoring surveys at MBDS were as predicted. Dredged material released at MBDS since 1990 did increase the size of the disposal mound. The Stage III benthic communities at the reference areas were unchanged since 1990; no benthic infauna (Stage III organisms) were found in the Boston Blue Clay at the center of the mound.