

## EXECUTIVE SUMMARY

---

Between October 1991 and June 1992, a capping project was conducted at the Portland Disposal Site (PDS) as part of the Disposal Area Monitoring System (DAMOS) Program. Fine-grained dredged material from the US Coast Guard project in South Portland (13,270 m<sup>3</sup>) was capped with cleaner fine-grained sediment from the same project (19,451 m<sup>3</sup>), as well as with sandy material from the Northeast Petroleum project (18,310 m<sup>3</sup>).

Science Applications International Corporation (SAIC) conducted a monitoring cruise at PDS in July 1992. The survey was designed to map the areal extent of dredged material at the site, to determine the effectiveness of the capping operation, and to obtain sediment chemistry data on the cap and at the reference areas. The field work included a REMOTS® sediment-profile survey, a bathymetric survey, an acoustic sediment density study, and sediment sampling for chemistry and grain size.

Based on the REMOTS® survey, the areal extent of dredged material at PDS ranged from 200 m west of the disposal buoy to 700 m southwest of the buoy location. The bathymetric survey, when compared to the previous bathymetric survey in January 1989, showed accumulations up to 0.75 m thick within 200 m of the buoy. The comparison of the 1989 and 1992 bathymetric surveys also indicated an area of accumulation 500 m south of the buoy. This corresponded to the southernmost detection of dredged material from the REMOTS® survey in an area that received dredged material after 1989.

The acoustic sediment density survey showed that, in general, the coarser grained sediment was concentrated in water depths shallower than 54 m, and the finer grained sediment was concentrated in the deeper areas. The acoustic data were patchy and, after smoothing, precluded identification of the project cap material. The patchiness was attributed to both the heterogeneity of dredged material and the rapidly changing slopes in the survey area.

Sediment chemistry data from the surface of the cap showed that contaminant concentrations were within the ranges measured at PDS reference areas, indicating that the cap was effectively isolating contaminants. Two stations, F7 and H5, showed elevated levels of several metals, although metal levels were overall within the range measured in samples collected in the cap material prior to dredging. A comparison of the metal and polycyclic aromatic hydrocarbon (PAH) baseline chemistry data from PDS reference areas and data collected by the National Oceanographic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) Program for the Gulf of Maine showed that the PDS reference areas were well within the ambient values for metals and PAHs in the area (NOAA 1991).