

ABSTRACT

This study examined, among other parameters, the levels and distribution of twenty-five metals in sediment samples taken from the Hellshire Coastline. The analytical technique used for trace metal analysis was Neutron Activation Analysis. To establish the limitations of the data, experiments were done to determine the reliability of the sample collection, processing methods and the analytical technique used. A preliminary sampling programme yielded trace and major metal data for whole sediment samples taken at various points along the coastline. Samples from a subsequent sampling programme, a routine sampling programme, were wet sieved yielding two size fractions. The fine and coarse fraction from this study were analysed for metal ions, carbonate and mineralogical content.

From this study it was found that the coastline is largely composed of coarse carbonate sediments. Accumulation of metals in the fine fraction of sediment samples was attributed to the high organic content and the presence of clay minerals in this fraction. Decreasing metal levels from the mouth of Kingston Harbour along the coast suggests that Kingston Harbour is a source of metals to the coastline. The presence of fines along the Harbour mouth, Palisadoes spit and at the mouth of the Great Salt Pond may suggest that these areas may be sediment sources to the coast.