

**MONITORING REPORT No. 10
DREDGING AND RECLAMATION PROGRAMME IN
KINGSTON HARBOUR**

June 14, 2002

**Prepared for:
The Port Authority of Jamaica**

Prepared by:

1.0 BACKGROUND

Dredging at Rackham Cay began late evening of Saturday, 8th June, after repairs to the main spoil transport pipe. Dredging continued in Kingston Harbour at the H1-H4 sectors of the main ship channel.

Water quality sampling fieldwork was carried out on June 10th and dives were carried out at Rackhams Cay on June 11th and June 14th. A monitoring flight was made on June 15th.

2.0 DIVES

There seems to be little impact on the coral restoration area to date but coral on the eastern (windward) side of Rackham Cay, north of the restoration area has been impacted. The area to the west where the seagrass has been replanted shows considerable sedimentation and needs to be protected by screens. These are important nursery areas.

3.0 AERIAL MONITORING

Aerial photographs taken on June 13th show the ineffectiveness of the silt screen as the present location appears to be too far north and too narrow in terms of depth. Photo attached shows the extent of the plume generated by dredging.

Additional screens have to be deployed to protect the resources at Rackham Cay Lines on photograph (rpt#10-1) show the suggested configuration of screens. The screen east of Rackham also should be extended in depth.

Additional photographs taken on June 15th will be sent as an addendum to this report

4.0 WATER QUALITY MONITORING

This report is based primarily on fieldwork carried out on June 10, 2002.

The objective was provide background measurement of TSS (total suspended solids)/turbidity in the vicinity of Rackham's Cay dredging operations.

METHODOLOGY

Field Work

Four sites were identified for the monitoring exercise as follows:

- KTP 1 - Dredge Site 1 (north side of dredging operation just outside pipe)
- KTP 2 - Dredge Site 2 (between dredge and Rackham's Cay)
- KTP 3 - Screen at eastern end of Rackham's Cay
- KTP 4 - Screen near West Middle Shoal

All sites were assigned a GPS location (Table 1)

Table 1
Dredging And Reclamation In Kingston Harbour
Water Quality Monitoring Sites June 10, 2002

STATION NO	DESCRIPTION	N COORD.	W COORD.
KTP 1	Dredge Site 1	17° 55.698	76° 50.457
KTP 2	Dredge Site 2	17° 35.599	76° 50.443
KTP 3	Screen at eastern end of Rackham's Cay	17° 55.533	75° 50.168
KTP 4	Screen at West Middle Shoal	17° 55.343	76° 51.017

Sub-surface samples were collected using a Van Dorn type sampler. Samples were designated T (surface), M (middle depth) and B (bottom depth). Sampling was carried out between 1113 and 1244 hours.

Sample Analysis

Samples from were analysed by the Geological Survey Division laboratory in accordance with Standard Methods for the Analysis of Water and Waste Water to determine TSS and turbidity.

TSS was determined by filtration of a known sample volume through a dried, pre weighed filter. After filtration, the filter was dried and re-weighed. TSS in mg/l is obtained through a determination of the weight difference of the filter before and after filtration.

Turbidity was performed using the colorimetric method and reported in FAU (formazin attenuated units). FAU incorporates a correction for colour and thus gives a more realistic determination of turbidity.

OBSERVATION AND RESULTS

Laboratory results are pending.

Sampling was carried out during rough seas accompanied by heavy rains and lightning. The large swells prevented the collection of the usual complement of samples.

During this sampling exercise the Leonardo Da Vinci was engaged in dredging. The dredge pipe formed a semi-enclosed area with the northern end of Rackham's Cay. There was a noticeable plume in the vicinity of the vessel, particularly in the semi-enclosed area. Water outside the semi-enclosure towards the Port Royal coastline was visibly less turbid.

Screens were in place at the north-eastern tip of Rackham's Cay, and to the east of the dump site at West Middle Shoal.

CONCLUSION/ENVIRONMENTAL IMPACT

- Turbidity associated with dredging at Rackham's Cay appeared visibly to be confined to the dredge site.
- The silt screens appear to be withstanding the rough seas
- Material being deposited at West Middle shoal appeared to be confined to the dump site
- Work is to be carried out with a smaller craft to enable sampling nearer to the Rackham's Cay restoration site