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for information

Contaminated Mud Disposal at East Sha Chau Interim Report VII

Purpose

To provide Members with a regular update on general activities at East Sha Chau. The previous report to the Council was Interim Report VI which was circulated to Members for the meeting on 21 April 1997.

Update on General Activities at East Sha Chau

2. The last purpose-dredged seabed pit, CMP III d ceased receiving mud on 1 December 1997 when the first subpit of the empty marine sand borrow pit (CMP IV a) commenced operation. The attached drawing no. FMC/377K-1 shows the locations of mud pits at the East Sha Chau facility.
3. Two separate studies were undertaken before deciding to use CMP IV:
 - (i) Review of contaminated mud disposal strategy and status report on contaminated mud disposal facility at East Sha Chau - This study, completed by EVS Environment Consultants of Canada in May 1996 and presented to Members on 27 May 1997, reaffirmed that East Sha Chau is a suitable area and the one which is preferred for contained disposal of contaminated mud in Hong Kong.
 - (ii) Environmental impact assessment study for disposal of contaminated mud in the East Sha Chau marine borrow pit - This focused study, completed by ERM-Hong Kong in January 1997 and endorsed by Members on 24 March 1997, confirmed the suitability of the empty sand borrow pit for contaminated mud disposal.

Environmental Monitoring and Audit Programme for CMP IV

4. Environmental monitoring of sediment, water and biota in and around the disposal facility, undertaken since October 1992, has continued, and no adverse trends have been identified. A new consultancy agreement has been awarded to ERM-Hong Kong to continue the monitoring at East Sha Chau starting in late November 1997, about a week before CMP IV became operational on 1 December 1997.
5. The environmental monitoring and audit programme is designed to test the following impact hypothesis:

*Impacts associated with disposal of contaminated mud in CMP IV are not expected to result in exceedances of water quality objectives at sensitive receivers nor cause exceedances of applicable water quality standards. The operational design has been specified such that disposal of sediments shall not cause a detectable deterioration in sediment quality outside CMP IV. Physical impacts to fisheries and marine ecological sensitive receivers (e.g., *Sousa chinensis*) are not expected and no change in contaminant levels in marine organism tissue are predicted to arise from this project. Air and noise impacts are expected to be undetectable. [Environmental impact assessment study for disposal of contaminated mud in the East Sha Chau marine borrow pit, ERM-Hong Kong, January 1997]*

6. In accordance with this hypothesis, the specific objectives for the environmental monitoring and audit programme are as follows:

- (i) to assess changes and trends in environmental parameters, including water quality, sediment chemistry, sediment toxicity, marine organism tissue chemistry (muscle and whole body), and human health and ecological risks;
- (ii) to assess impacts and determine if effects are acceptable;
- (iii) to evaluate benthic recolonisation of capped mud pits;
- (iv) to determine the impacts of major storms on partially capped and uncapped pits; and
- (v) to review and revise the monitoring programme and disposal operations as necessary.

Independent Review

7. At the Public Works Sub-committee meeting held on 23 April 1997 to discuss the use of CMP IV, LegCo Members expressed concern about the estimated cost of \$118.7M (December 1996 price level) for the environmental monitoring and audit work over the course of operating the mud pit, particularly noting that the facility has been in operation since late 1992 and has proven successful with no adverse environmental impacts.

8. Upon LegCo Members' request, the Administration undertook to re-examine the programme. This review, to be undertaken by EVS Environment Consultants of Canada after sufficient data are collected from the new programme, is intended to identify areas where a refocus of monitoring effort would provide opportunities for cost savings without reducing the effectiveness of the monitoring.

Site Management

9. The 24-hour on-site East Sha Chau management team administered by the Civil Engineering Department since July 1993 continues to provide close control of the disposal operations.

10. The site management procedures for controlling the disposal location have gradually refined over the last few years. The initial deployment was a floating silt curtain attached to two marker pontoons. This set up was replaced by a single marker pontoon in mid-1996 when the monitoring consultants concluded that the silt curtain was not actually providing any benefit most of the time and might even have an adverse effect at times when the curtain was repositioned and when the disposal tugs/barges were reversed out of the enclosure. Since July 1997, a mobile guide boat has been used to position barges for disposal, which takes account of the water current speed and direction at the time of mud disposal.

Next Report to ACE

11. The next regular report to ACE, Interim Report VIII, will be in May 1998.

Attachment

Drawing no. FMC/377K-1 "East Sha Chau Contaminated Mud Disposal Area".

Fill Management Committee Secretariat
Geotechnical Engineering Office
Civil Engineering Department
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East Sha Chau Contaminated Mud Disposal Area

