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19 April 2012

Clerk to the Panel on Development
Legislative Council Complex
1 Legislative Council Road,
Central, Hong Kong
(Attn: Ms Connie SZETO)

Dear Ms SZETO,

Panel on Development

Follow-up to Meeting on 29 March 2011

**5737CL – Dredging, management and capping of contaminated
sediment disposal facility to the south of The Brothers**

In considering the paper CB(1)1668/10-11(06) on “5737CL – Dredging, management and capping of contaminated sediment disposal facility to the south of The Brothers” at the meeting of the Panel on Development held on 29 March 2011, Members requested the Administration to:

- (a) consider consulting interested parties in the fisheries industry and District Councils concerned (including Tsuen Wan District Council (TWDC) and Tuen Mun District Council (TMDC)) on the proposed contaminated sediment disposal facility to the south of The Brothers (the proposed disposal facility), and
- (b) provide further information about the environmental and ecological impacts of the construction and operation of the proposed disposal facility, including the impact on water quality in terms of dissolved

oxygen, etc.

2. The requested information is provided in the ensuing paragraphs.

Consultation with interested parties in the fisheries industry

3. The Civil Engineering and Development Department (CEDD) met with representatives of fishermen groups including mariculturists of Ma Wan Fish Culture Zone (FCZ) and representatives from Ma Wan Fisheries Rights Association Limited, Hong Kong Liner and Gillnetting Fisherman Association, Tai O Fishermen (Coastal Fishery) Association, Hong Kong Fishermen's Mutual-Aid Association (Tai O) on 9 and 12 March 2012. During the meeting, the fishermen groups were informed of the Administration's progress of reviewing the Ex-gratia Allowances (EGA) package for fishermen and mariculturists, and briefed them on the proposed disposal facility. CEDD received no adverse comments on the proposed disposal facility project.

4. In regard to fishermen groups' previous request for the Administration to review the current EGA package to address the economic loss of affected fishermen and mariculturists, the Administration has recently completed a review of the current EGA mechanism and proposed changes to the mechanism. The Legislative Council Panel on Food Safety and Environmental Hygiene discussed the proposed changes at its meeting on 13 March 2012.

Consultation with Tuen Mun District Council and Tsuen Wan District Council

5. CEDD consulted the Environment, Hygiene and District Development Committee (EHDDC) of the Tuen Mun District Council (TMDC) at its meeting held on 23 March 2012. The EHDDC of TMDC expressed no objection to the proposed disposal facility project.

6. CEDD consulted the Tsuen Wan District Council (TWDC) at its meeting held on 27 March 2012. The TWDC expressed no objection to the proposed disposal facility project.

Further information on Environmental and Ecological Impacts

7. CEDD completed an Environmental Impact Assessment (EIA) for the proposed disposal facility pursuant to the standards and requirements under the Environmental Impact Assessment Ordinance (EIAO) (Chapter 499). The EIA report, which was approved by the Director of Environmental Protection in 2005, concluded that the construction and operation of the proposed disposal facility would not have unacceptable impact on the environment. The EIA has covered different environmental aspects including water quality, fisheries and marine ecology. Results of the respective assessments are summarised below.

Water Quality Impact

8. Computer modeling has been used to assess the potential water quality impact on the identified sensitive receivers including bathing beaches along Tuen Mun coastal area, marine water near Tung Chung Wan, Ma Wan Fish Culture Zone, corals and seawater intakes at the nearby water. The assessment has duly taken into account the effects of navigation route, seasonal change of tidal effects and cumulative effect of other concurrent projects nearby. The results indicated that with the implementation of appropriate mitigation measures, the potential impact on the water quality by the proposed disposal facility would only confine to the water near the facility. In particular, the suspended solid concentration, dissolved oxygen, heavy metal and nutrient contents concentration would not exceed the relevant environmental standards and legal requirements.

Fisheries Impact

9. The potential impacts on fisheries resources and fishing operations have been assessed. The results indicated that the transient impact of the proposed disposal facility on fisheries activities would not be unacceptable as the site location of the disposal facility was not an important fishing ground with relatively less fishing operation and fish production. Furthermore, there would not be unacceptable indirect impact on fisheries resources near the proposed disposal facility.

Marine Ecological Impact

10. The potential impact of the proposed disposal facility on marine ecology has been assessed. The results concluded that the impact on the benthic communities within the proposed site would be transitional and acceptable as they were of relatively low ecological value and there were similar living environment nearby. The benthic communities were expected to recolonise at the affected living environment after completion of the reinstatement works. Furthermore, there would not be unacceptable indirect impact induced by the proposed disposal facility on the nearby marine ecology including the marine mammals, marine park, mangroves, intertidal mudflat and living ground of the horseshoe crab, and the seagrass area.

11. In 2009, CEDD reviewed the approved EIA results in the light of available updated information. The review concluded that the findings, assessments and recommendations of the approved EIA report were still valid. CEDD submitted the review results to the Advisory Council on the Environment (ACE) in August 2010 and received no further comments from ACE.

12. In response to concerns received from the public in the previous consultations, CEDD has further engaged three renowned academics from local universities with profound knowledge and research experience in the relevant areas to conduct an independent examination of the approved EIA report in respect of water quality and marine ecological impacts to verify the assumptions, assessments and findings of the report. The independent examination has confirmed that the water quality impact assessment and the marine ecological impact were conducted in accordance with the requirements of the EIAO and general internationally accepted standards. The academics also confirmed that the EIA findings were precise and accurate.

13. The actual environmental impacts during the construction and operation of the proposed disposal facility will be monitored through a fit-for-purpose Environmental Monitoring and Audit (EM&A) programme. The EM&A programme comprises a series of field sampling and laboratory testing activities to monitor the water quality, sediment quality and marine biota to assess the environmental performance of the proposed disposal facility such that:

- (a) the construction and operation of the facility will not result in any exceedance of the water quality objectives;
- (b) the operation of the facility will not increase sediment contaminant concentrations and sediment toxicity over time;
- (c) the operation of the facility will not affect the abundance of the fisheries resources and will not increase the tissue or whole body contaminant concentration over time in selected target species; and
- (d) recolonisation of benthic communities will be occurring after reinstatement of the mud pits.

14. CEDD has also reviewed the EM&A data of a nearby contaminated mud disposal facility at East Sha Chau (the ESC facility), which is very similar to the proposed disposal facility in terms of site location, design and mode of operations. The EM&A data of the ESC facility could provide a good indication on the potential impacts likely to be induced by the proposed disposal facility and effectiveness of the environmental mitigation measures. In this regard, CEDD has reviewed the key EM&A results including suspended solids, dissolved oxygen and fisheries trawling analysis for the period between late 2006 and early 2010. A summary of the review result is at **Enclosure 1**. From the review result, it can be observed that:

- (a) the disposal activities at the ESC facility had not resulted in elevations of suspended solids levels beyond the EIA predicted values;
- (b) the recorded dissolved oxygen levels had not exceeded the water quality objectives as predicted in the EIA study; and,
- (c) there had been no recorded adverse impact on fisheries resources as predicted in the EIA study.

15. The above observations on the EM&A data for the ESC facility have provided additional assurance that the proposed disposal facility could be operating in an environmentally acceptable manner within the predictions of the approved EIA.

Submission for Funding Approval

16. In the light of the latest results of the consultation with fishermen groups and the Tuen Mun District Council and Tsuen Wan District Council, the Administration plans to seek the support of the Public Works Subcommittee in May 2012 for the proposed upgrading of 5737CL to Category A with a view to seeking funding approval from the Finance Committee in June 2012.

Yours sincerely,



(Jimmy PM CHAN)
for Secretary for Development

Encl.

c.c. DCED (Attn: Mr IP Kwai-hang), w/e

**5737CL – Dredging, management and capping of
contaminated sediment disposal facility to the south of The Brothers**

**Review of long term monitoring data of EM&A programme
of the contaminated sediment disposal facility at East of Sha Chau**

According to the Environmental Monitoring and Audit (EM&A) programme for the disposal facility at East of Sha Chau (the ESC facility), monitoring data are collected on a regular basis at the following two types of stations:

- (a) Impact stations are set up in areas that have the potential to be affected by the operation of the ESC facility; and
- (b) Reference stations are set up in areas that are remote from the influence of the operation of the disposal facility.

2. Monitoring results of key EM&A data including suspended solids levels, dissolved oxygen levels and fisheries trawling analysis for the period between late 2006 and early 2010 are described in the ensuing paragraphs.

Suspended Solids¹

3. If there is any impact due to the operation of the ESC facility, higher suspended solids (SS) levels should be recorded at the Impact stations than at the Reference stations. **Chart 1** shows the recorded SS levels at the Impact and Reference stations between November 2006 and February 2010. It can be seen that the SS levels at the Impact stations vary with time following similar pattern as the data collected at the Reference stations. Furthermore, SS levels at the Impact stations are generally lower than that at the Reference stations except for the period between June 2008 and August 2009. During this period, the SS levels were very close to each other with the SS levels of Impact stations higher than the Reference stations by a maximum of 1.5 milligram/Litre (mg/L) as recorded at the Impact stations in August 2008. As this recorded value was only half of the

¹ Suspended solids (SS) refer to small solid particles which remain in suspension in water as colloid or due to the motion of the water. It is an indicator of water quality and is determined as the weight of the residue after removing the liquid portion of a litre of the water sample.

predicted value of about 3mg/L at similar distance from the ESC facility as presented in the EIA, it indicates that the actual impact of the ESC facility on SS levels is lower than the EIA prediction.

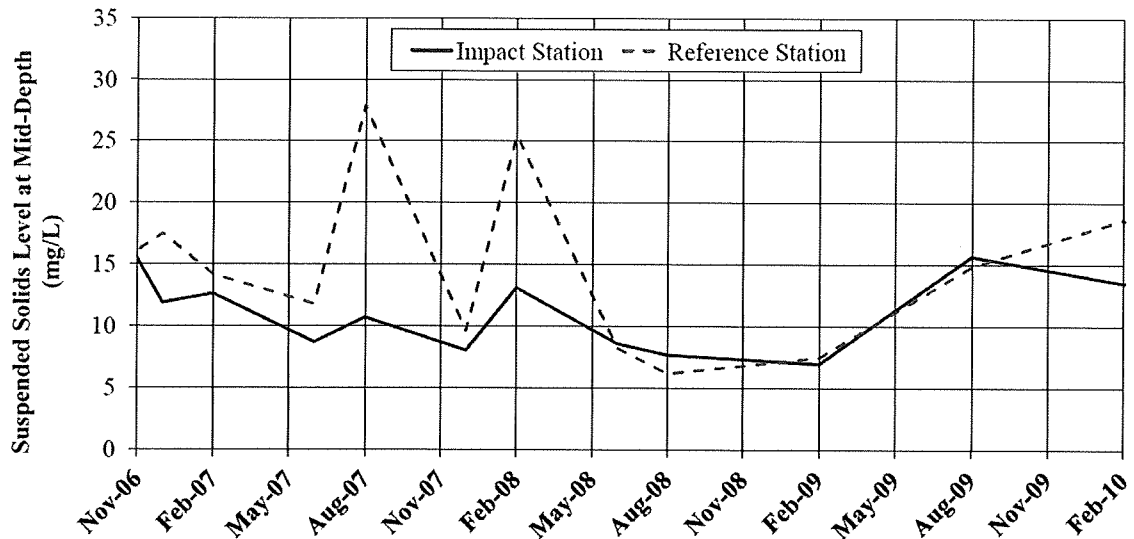


Chart 1 – Suspended solids level measured at Impact and Reference stations

(Observations - The recorded SS levels at the Impact station are generally lower than and follow similar trend of the Reference station.)

Dissolved Oxygen

4. If there is any impact due to the operation of the ESC facility, lower dissolved oxygen (DO) levels should be recorded at the Impact stations than at the Reference stations. **Chart 2** below shows the recorded DO levels at the Impact stations between November 2006 and February 2010. The DO levels at the Impact stations follow generally the trend of the Reference stations and are of similar values. There was no evidence of any trend of decrease in DO levels due to operation of the ESC facility. Although the DO level at Impact stations dropped instantaneously in mid 2008 when comparing to that at Reference stations, the DO level was still at about 40% above the requirement of Water Quality Objectives (WQO) of 4mg/L as predicted in the EIA study.

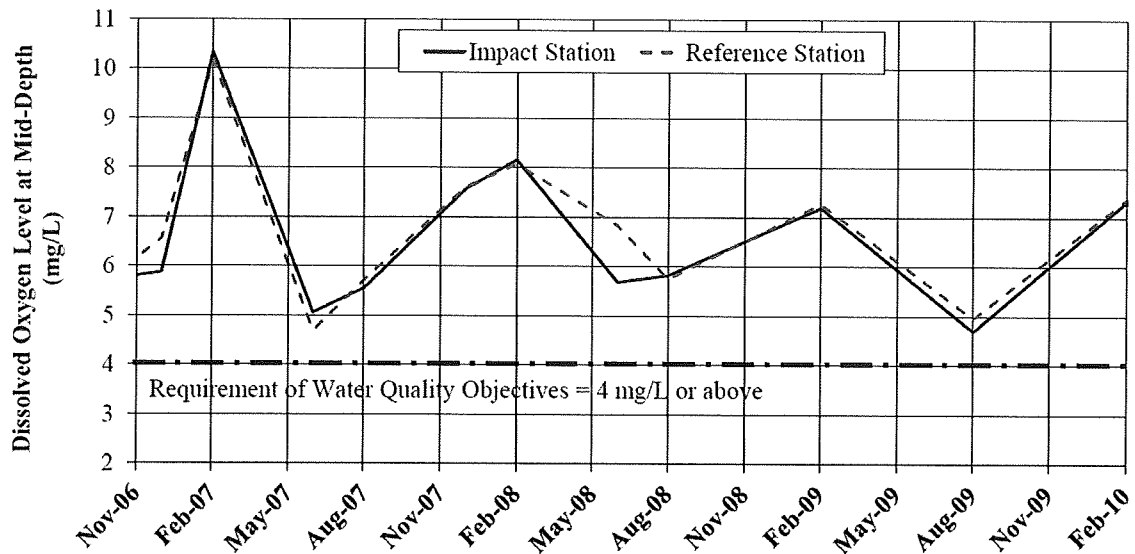


Chart 2 – Dissolved Oxygen level measured at Impact and Reference stations

(Remarks – The recorded DO levels at the Impact station generally follow similar trend of the Reference station and they are all above the WQO requirement.)

Fisheries Trawling Analysis

5. If there is any impact on fisheries resources due to the operation of the ESC facility, lower fish catch and number of fish species should be recorded at the Impact stations than at the Reference stations in the trawling surveys under the EM&A programme. **Chart 3** to **Chart 5** below show the respective fish catch (number and mass) and number of fish species collected at the Impact and Reference stations between November 2006 and February 2010. Except for some local variances, the recorded fisheries resources at both stations are comparable and generally follow similar trends. The results does not suggest any trend of adverse impact on fisheries resources due to operation of the ESC facility.

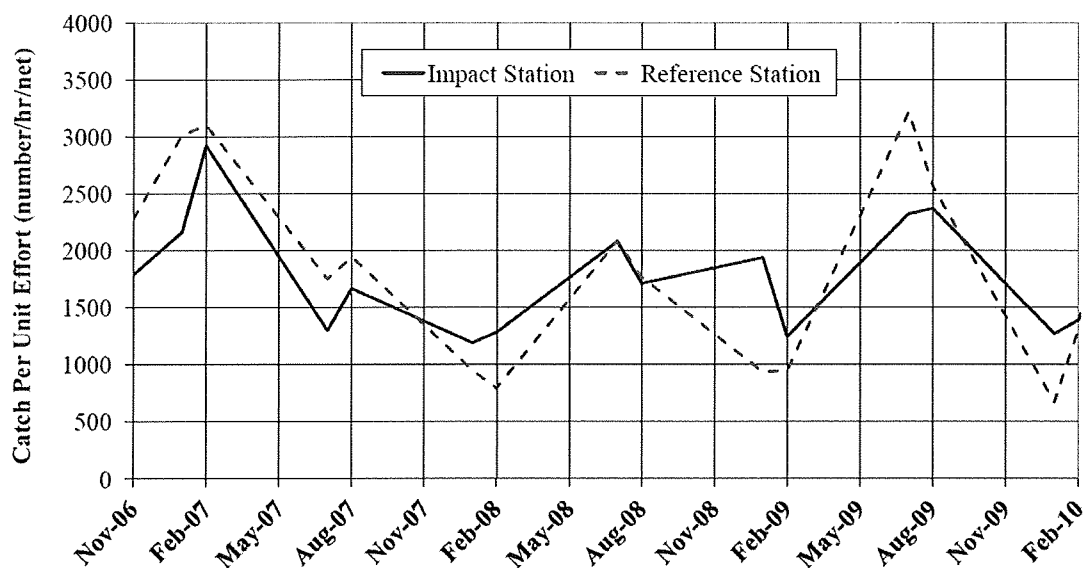


Chart 3 – Number of fish catch measured at Impact and Reference stations

(Remarks - The recorded number of fish catch at the Impact station generally follow similar trend of the Reference station, though with local variations.)

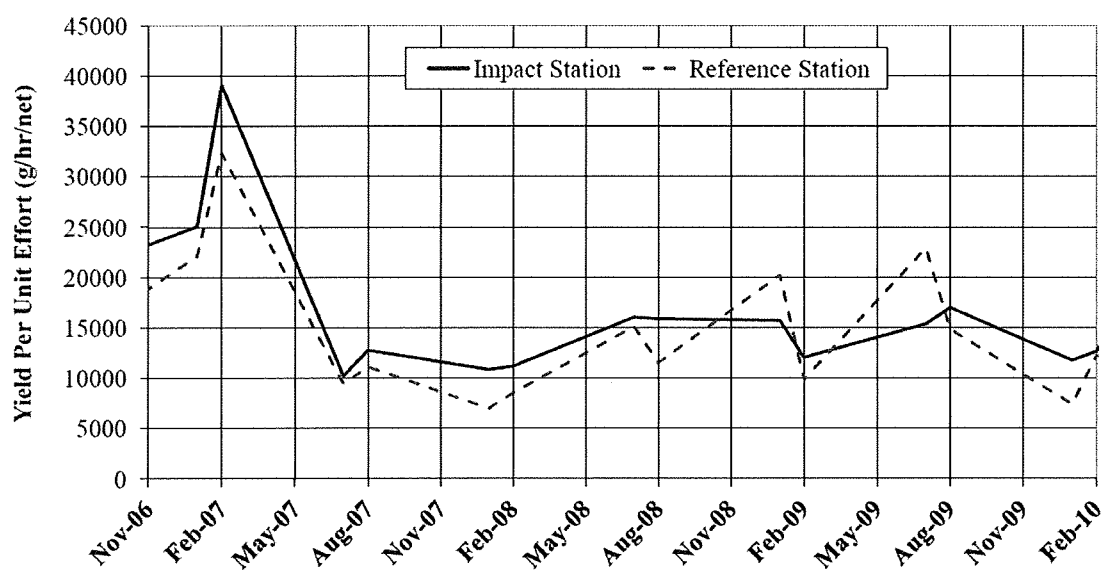


Chart 4 – Mass of fish catch measured at Impact and Reference stations

(Remarks - The recorded mass of fish catch at the Impact station generally follow similar trend of the Reference station, though with local variations.)

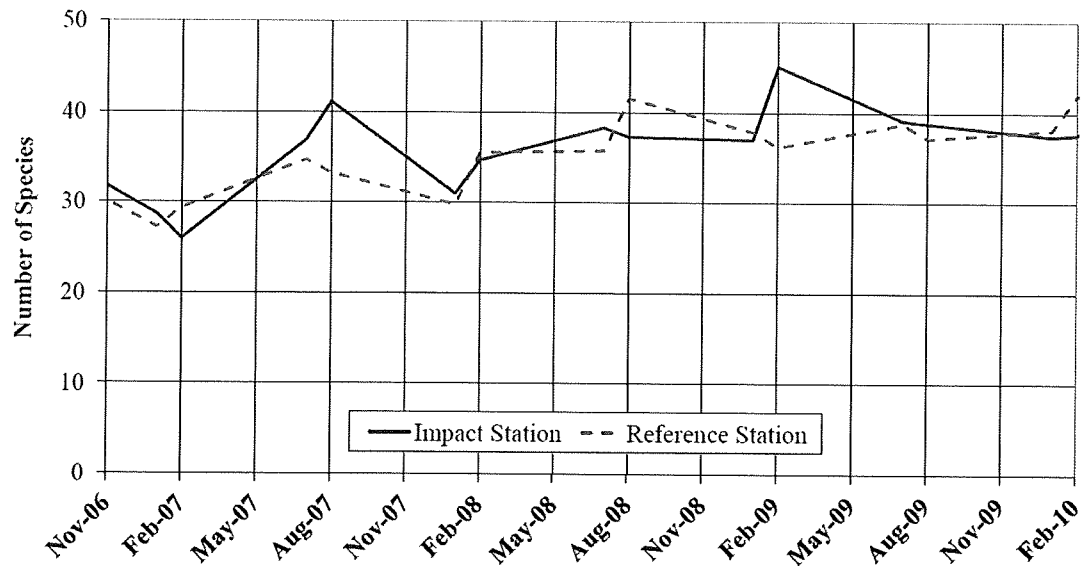


Chart 5 – Number of fish species measured at Impact and Reference stations

(Remarks - The recorded number of fish species at the Impact station generally follow similar trend of the Reference station, though with local variations.)

6. According to the EM&A data collected between November 2006 and February 2010, it is observed that disposal activities of the ESC facility have not resulted in unacceptable impacts on SS levels, DO levels and fisheries resources. The measurements indicated that impacts due to the ESC facility have been controlled within the requirements of relevant standards and requirements as predicted in the EIA.

- End -