

## 8 Conclusions and Recommendations

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### 8.1 Water Quality

- 8.1.1 The potential water quality impacts of this project during the relocation are mainly associated with the minor dredging work for the possible removal of anchor blocks at the existing site and minor dredging and backfilling work for the installation of anchor blocks at the proposed site. There is an on-going discussion between the Marine Department and Yiu Lian on if the anchor blocks should be removed from the existing site. Leaving the anchor blocks in place is preferred as it will avoid the disturbance to the seabed and therefore minimise any potential environmental impact of the decommissioning work. The potential impacts on the SRs have been quantitatively assessed assuming the need of the dredging activities and were found to be negligible. However, silt curtains should be provided at the existing site to further minimise the potential water quality impact during the potential dredging works.
- 8.1.2 The seabed at the existing site is contaminated and some of the sediments belong to Category H, as defined in ETWB TC (W) No. 34/2002. However, the contaminant levels of the marine sediment are generally comparable to those in the coastal area of the North Western WCZ. The bioaccumulation potential of the marine sediments has been found low. Therefore, it was concluded that leaving the sediment in place is the best option and is recommended for the existing site.
- 8.1.3 The potential water quality impact due to the effluent discharge from the Dock operations at Tsing Yi was assessed. It was found that the water quality impact would be limited to the immediate vicinity of the discharge point and negligible at the adjacent SRs. However, it is recommended that the industrial wastewater should go through an additional settling treatment system before discharge.
- 8.1.4 The domestic effluent generated from the Dock operations at Tsing Yi could meet the standards for effluent discharged into the marine waters of the Western Buffer WCZ. For some parameters such as pH, DO, *E coli*, it could even meet the WQOs for this WCZ. Water quality assessment was undertaken with an assumption of the maximum staff number of 110 on board. The results indicated that the potential impacts to the adjacent SRs would be negligible.
- 8.1.5 In order to ensure the compliance with the water quality criteria recommended, a Water Quality Monitoring and Audit Programme has been developed for the relocation.

### 8.2 Waste Management

- 8.2.1 The potential environmental impacts associated with the waste generated during the relocation have been assessed and it was concluded that there will be no adverse impact.
- 8.2.2 The existing waste management procedures for the operation of the Dock have been reviewed and are considered appropriate and adequate. Good site practice has been recommended for further improvement.

## 8.3 Air Quality

- 8.3.1 There will be no adverse air quality impact during the relocation. The potential air quality impacts from the diesel generators used on the Dock at Tsing Yi have been assessed. The resulting air quality level has been found to comply with the AQOs. However, routine maintenance of the generators is recommended to avoid any environmental nuisance.

## 8.4 Hazard Assessment for the Dock at Tsing Yi

- 8.4.1 The existing CT and the EMWT at the west of Tsing Yi pose a potential risk to the future Dock operations at Tsing Yi. The potential risk incidents associated with the oil terminals have been assessed. An evacuation plan has been developed for the Dock at Tsing Yi. Mitigation measures, including an effective communication channel between Yiu Lian and oil terminals, periodic review of the evacuation plan and the performance of drills, are recommended. Provided that these mitigation measures are implemented properly, the risk to workers/personnel working at the Dock could be controlled to an acceptable level.

## 8.5 Oil Spillage during the Dock Operation at Tsing Yi

- 8.5.1 Accidental oil spillage from the vessels at the Dock has the potential to cause water pollution at the nearby WSRs. However, all WSRs are separated from the Dock by the fast flowing channels. It is unlikely for any oil spills from the Dock to cross the channels and to affect the WSRs within 6 hours from the incident. Preventive measures and an Oil Pollution Contingency Procedure to deal with any potential oil spillage incidents have been developed. With the full implantation of the Oil Pollution Contingency Procedure and the preventive measures, the risks of the potential water pollution resulting from any oil spillage incidents can be limited to an acceptable level. The Dock relocation will lead to a reduction in the pollution risk level at Ma Wan Fish Culture Zone as the Tsing Yi site is further away than the existing site from the fish culture zone.

## 8.6 Environmental Outcome

### Environmental Friendly Construction Method

- 8.6.1 The proposed construction method will not involve any disposal of marine sediment. All the marine sediment will be used on site. In addition, this EIA recommends to keep in place the contaminated sediment at the existing site. A frame type silt curtain will be deployed for the possible dredging works at the existing site if the removal of the anchor blocks from the existing site is required. Therefore, the potential environmental impacts due to the handling, transport and disposal of the marine sediment will be minimised.

### Coherent Land Use and Protect the Environmentally Sensitive Area

- 8.6.2 The Dock is currently located at Yam O Wan, the northwest coast of Lantau Island. The majority of the land in the vicinity of this area is zoned as Green Belt. The decommissioning of the Dock will improve the overall environment and in particular the visual environment of this area. It is also in line with the overall planning context for tourism and recreation theme for this area. In addition, it will provide benefit to the inshore fisheries and marine ecology in this coastal region area as the vessel disturbance due to the Dock operations will disappear.
- 8.6.3 The unsightly visual impact of the existing dock imposed on the passengers and drivers of North Lantau Express Way, MTR Tung Chung Line, Airport Express Way and the ferries passing through the waters between Urmston Road and Ma Wan Channel, will disappear after the dock relocation.
- 8.6.4 The proposed new site is at the southwest coast of Tsing Yi Island. The land use along this coastal area is industrial. The relocation of the Dock to this area is compatible with surrounding land use.

### Elimination of Key Environmental Problem in Future Operation

- 8.6.5 TBT paint was developed for use as an antifouling paint on ships. It is highly toxic and causes adverse environmental impacts to marine organisms. The industrial wastewater generated from the hull washing activities will contain TBT. However, due to the enforcement of International Convention on Control of Harmful Anti-fouling Systems on Ships, which requires the cessation of the use of TBT by 2008, most of the ships have already stopped using TBT-containing paint. After relocation, the Dock will no longer receive any ships with TBT-containing paint for maintenance, ahead of the schedule imposed by the International Convention. Therefore, the most critical environmental problem associated with the Dock operations will no longer exist, leading to an improvement in the environment.

### Environmental Benefit of Environmental Protection Measures

- 8.6.6 In order to improve the environmental performance of the Dock operations, a settling treatment system will be added on the relocated Dock for further

treating the industrial wastewater before discharge. With the implementation of this measure, the suspended solids in the wastewater and any contamination they may carry will be effectively removed, leading to an improvement in the marine environment.

#### **Development of an Evacuation Plan**

- 8.6.7 As the proposed site is located within the consultation zone of two oil terminals, an emergency evacuation plan for the staff of the Dock has been developed. This Plan details the emergency organisation, the communication channels, emergency contact list, pre-arrangement, evacuation arrangement and required training which is essential for the protection of life.

### **Reduction of Oil Pollution Risk to Ma Wan Fish Culture Zone**

- 8.6.8 The Dock relocation will lead to a reduction in the pollution risk level at Ma Wan Fish Culture Zone as the Tsing Yi site is further away than the existing site from the fish culture zone.

## **8.7 Overall Conclusions**

It is concluded that the proposed relocation of the Dock would not cause any unacceptable environmental impacts during the relocation and subsequent operation, provided that the mitigation measures and good site practice recommended in this EIA are fully implemented.