

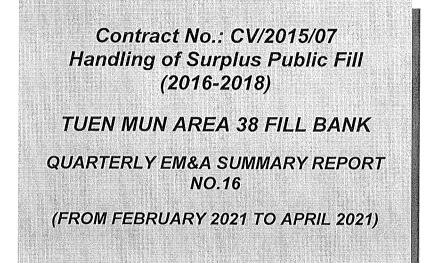
# 東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

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# China Harbour – Zhen Hua Joint Venture



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Environmental Team Leader

## Issue Date: 27 May 2021

Report No.: ENA12033

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Our Ref: PL-202106032



16 June 2021 By Email

ETS-Testconsult Limited 8/F, Block B, Veristrong Industrial Centre 34-36 Au Pui Wan Street Fo Tan, Hong Kong

Attention: Mr. C L Lau

Dear Mr. Lau,

## RE: Contract No. CV/015/07 Handling of Surplus Public Fill Quarterly EM&A Report (No. 16) for February to April 2021 for Tuen Mun Area 38 Fill Bank

Reference is made to your submission of the Quarterly EM&A Report for February 2021 to April 2021 for Tuen Mun Area 38 Fill Bank received. We are pleased to inform you that we have no adverse comment on the captioned report.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours faithfully,

Toang Jankbearg

F. C. Tsang Independent Environmental Checker

cc. CEDD – Mr. T M YEUNG ET Leader – Mr. C L LAU



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Contract No. CV/2015/07 Handling of Surplus Public Fill (2016-2018) Tuen Mun Area 38 Fill Bank

Report No. ENA12033 Quarterly EM&A Summary Report No.16

## EXECUTIVE SUMMARY

This is Quarterly Environmental Monitoring and Audit (EM&A) Summary Report No.16 prepared by ETS-Testconsult Ltd (ET) for the "Contract No. CV/2015/07 Handling of Surplus Public Fill (2016-2018) – Tuen Mun (TM) Area 38 Fill Bank" (The Project).

This report documents the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 from 01 February 2021 to 30 April 2021.

## Site Activities

As informed by the Contractor, the site activities in this reporting quarter were as below:

February 2021	<ol> <li>Operation of the TM38 Fill Bank;</li> <li>Operation of crushing plant at TMFB;</li> <li>Carrying out preliminary sorting of Public Fill for 3RS project at TMFB;</li> <li>Construction and Operation of Fixed Rigid Platform;</li> <li>Personnel Position Tracking and Proximity Detection System of Moving Plant;</li> <li>Setting up a Digital Works Supervision System (DWSS)</li> </ol>
March 2021	<ol> <li>Operation of the TM38 Fill Bank;</li> <li>Operation of crushing plant at TMFB;</li> <li>Carrying out preliminary sorting of Public Fill for 3RS project at TMFB;</li> <li>Operation of Fixed Rigid Platform;</li> <li>Setting up a Digital Works Supervision System (DWSS)</li> </ol>
April 2021	<ol> <li>Operation of the TM38 Fill Bank;</li> <li>Operation of crushing plant at TMFB;</li> <li>Carrying out preliminary sorting of Public Fill for 3RS project at TMFB;</li> <li>Operation of Fixed Rigid Platform;</li> <li>Setting up a Digital Works Supervision System (DWSS)</li> <li>Personnel Position Tracking and Proximity Detection System of Moving Plant at TMFB</li> </ol>

## Environmental Monitoring Works

Air Monitoring

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in this quarter.

### Marine Water Quality Monitoring

According to the summary of marine water monitoring results, no exceedance of Action and Limit levels was recorded in this quarter.

### Noise Monitoring

No exceedance of Action and Limit levels for noise monitoring was recorded in this quarter.

### Environmental Complaints, Notification of summons and successful prosecutions

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.



## 1.0 INTRODUCTION

China Harbour – Zhen Hua Joint Venture (CHZH-JV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the "Contract No: CV/2015/07 –Handling of Surplus Public Fill (2016-2018) – Tuen Mun (TM) Area 38 Fill Bank" (The Project).

In accordance with the Condition 4 of Part C of Environmental Permit (No.: EP-210/2005/D) (the EP), an EM&A programme as set out in the Project Profile should be implemented. The EM&A programme requires environmental monitoring for air quality, water quality and environmental site inspections for air quality, noise quality, water quality, landscape and visual, and waste management.

Baseline monitoring was completed in May 2003 by Stanger Asia Ltd. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

This quarterly report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 from February 2021 to April 2021.

## 2.0 **PROJECT INFORMATION**

#### 2.1 Work Programme in this Reporting Quarter

Details of work programme are shown in Appendix G.

### 2.2 Project Organization and Management Structure

The project organization chart is shown in Appendix A.

#### 2.3 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Organization Name of Key Staff Project Role Tel. No. Fax No. Leo Lam, T M Yeung, May Engineer's CEDD 2762 5555 2714 0113 Representative Lau IEC (Acuity) Mr. F C Tsang IEC 2698 9097 2333 1316 Senior Project Contractor (CHZH-JV)) 96266299 22474108 Zhou Chang Ying Manager ET (ETL) C. L. Lau ET Leader 2946 7791 2695 3944

Table 2.1 Contact Details of Key Personnel

### 3.0 SUMMARY OF EM&A REQUIREMENTS

## 3.1 EM&A Programme

The EM&A programme required environmental monitoring for air, marine water and environmental site inspections for air, marine water, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event/Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

The advice on implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of the Report.



## 3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. The description and detailed locations of monitoring stations for air quality, noise and marine water quality are shown in Figures 1, 2 and 3 and relevant sections of this Report.

### 3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in according with the EM&A Manual.

#### 3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix E. The event action plan is given in Appendix F.

#### 3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix H.

#### 4.0 MONITORING RESULTS

#### 4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring are to be conducted three times and one time per six days correspondingly. In the reporting quarter, no exceedances of Action and Limit levels were recorded for 1-hr and 24-hr TSP monitoring. The monitoring trend of air quality during the reporting quarter are given in Appendix B.

Major dust sources in the Fill Bank were dump truck traffic and hauling activities.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring event included regular monitoring events and additional ones.

Monitoring	Level of Exceedance	February 2021	March 2021	April 2021
Parameter				
24-hr TSP	No of monitoring events	5	5	6
	Action Level	0	0	0
	Limit Level	0	0	0
1-hr TSP	No of monitoring events	13	15	18
	Action Level	0	0	0
	Limit Level	0	0	0

 Table 4.1
 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

#### 4.2 Noise

Since Lands Dept did not approve to carry out noise monitoring at their own area where the noise monitoring stations TM-N1 and TM-N2 located due to the security, noise monitoring carried out at two noise monitoring stations TM-RN1 and TM-RN2 (refer to the figure attached) from 18 December 2007.

No exceedance was recorded in this reporting quarter.



## 4.3 Marine Water Quality

In accordance with the Project Profile, impact marine water quality monitoring was conducted at two control monitoring stations (TM-FC1 and TM-FC2) and two impact monitoring stations (TM-FM1and TM-FM2) in this quarter.

Impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-ebb and mid-flood tides at three depths (i.e. 1m below surface, mid depth and 1m above seabed). The AL Levels are included in Appendix E.

According to the summary of marine water monitoring results, no exceedance of action and limit level was recorded in this quarter. Table 4.2 presents the total number of marine water quality exceedances in the reporting quarter. The trend of marine water quality in the past three months is depicted in Appendix D.

Parameter	Exceedance Level	February 2021	March 2021	April 2021
Number of monitoring da		11	13	12
Dissolved Oxygen, DO	Action	0	0	0
(S&M)	Limit	0	0	0
Dissolved Oxygen, DO	Action	0	0	0
(B)	Limit	0	0	0
Turbidity	Action	0	0	0
	Limit	0	0	0
Suspended Solids, SS	Action	0	0	0
	Limit	0	0	0

Table 4.2 Total Number of Marine Water Quality Exceedances in this quarter

A comparison between the quarterly mean/median of SS and the 1.3 times of the baseline mean was made for each tide at each station. The statistical analysis results are given in Appendix I. Monitoring stations with significant difference (p<0.05) is summarized in Table 4.3.

Table 4.3Summary of Statistically Significant Results of SS

Monitoring Station	a Station Significant difference		Monitoring Station		
Monitoring Station		Mid-flood	Mid-ebb		
Designated Central Station	FC1	X	Х		
Designated Control Station	FC2	Х	Х		
Designated Monitoring Station	FM1 X X				
	FM2	X	X		

### 5.0 INSPECTION RESULTS

### 5.1 Implementation Status of Environmental Mitigation Measures

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. In this reporting period, thirteen weekly site inspections were conducted.

Air quality was the major environmental issue in the reporting quarter. The Contractor generally implemented most of the environmental mitigation measures in the reporting quarter. Dump truck traffic was the major dust source in the Fill Bank. Generally, the Contractor implemented adequate dust mitigation measures in the reporting quarter including dampening of haul roads, water spraying on the truckloads, during loading and unloading of material and for crushing plant, operation of automatic wheel washing facilities, dampening of fill material prior to handling or stockpiling, etc.

The major noise source was dump truck traffic in the Fill Bank. All site equipment and machinery were well maintained and no noise nuisance was observed during operating.

Drainage channels and wastewater treatment facilities were found maintained in good condition for merit function. The Contractor arranged site workers to clean up the silt and mud regularly.



Although there were a few observations regarding accumulation of mud and silt inside the drainage channel and stagnant water, the Contractor rectified most of these problems. Besides, the Contractor was reminded to clear the accumulated mud and silt to avoid any blockage and clean the stagnant water properly.

Overall site area was found tidy and clean. The Contractor was reminded to collect and dispose of the general refuse and other C&D waste in a timely manner.

## 5.2 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.1.

Description	Permit No.	Valid	Period	Section
		From	То	
Environmental	EP-	25/05/20		Issued
Permit	210/2005/D			
Chemical Waste	5296-421-	20/04/17		Spent battery containing heavy metals
Producer	C4184-01			and spent lubricating oil
Effluent Discharge License	WT0002870 1-2017	25/09/17	30/09/22	Effluent arising from vehicle washing and dust suppression activities and contaminated surface runoff treated by screening facilities and sedimentation tanks (sedimentation and chemical precipitation).
Marine Dumping Permit	EP/MD/21- 114	16/04/21	30/06/21	Approval for dumping 499,999 tons (approximately equal to 277,777 cu.m. bulked quantity) of Public Fill (Reclamation Materials) from Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank to designated dumping area at Guanghaiwan of Taishan
Billing Account for Waste Disposal	7027643	22/05/17		
Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust)	415661	12/04/17		

 Table 5.1
 Summary of environmental licensing and permit status

## 5.3 Advice on Solids and Liquid Waste Management Status

Table 5.2 summarizes data on offsite waste disposal in the quarter.

Table 5.2 Estimated Offsite Waste Disposal in the Reporting Quarter

Waste Type	February 2021	March 2021	April 2021
Public Fill ('000m³)	0	0	0
C&D Waste (general refuse) ('000kg)	16.41	55.55	87.89
Chemical Waste e.g. Waste oil (L) / Chemical Waste (kg)	0(L)	0(L)	0(L)

## 6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

## 6.1 Summary of Non-compliance



According to the monitoring results, no action and limit level exceedance was recorded in this quarter.

## 6.2 Review of the Reasons for and the Implications of Non-compliance

Since no non-compliance was recorded in this quarter, no review was required.

## 6.3 Summary of Actions Taken

Since no exceedance was recorded in this quarter, no further action was required.

# 6.4 Summary of Environmental Complaint, Notification of Summon and Successful Prosecution Handling

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.

A summary of environmental complaints and prosecutions was given in Table 6.1.

	ninental complaints and r	TOSECULIONS	
Period	Complaints	Summon	Successful
r enou	logged	served	Prosecution
February 2021	0	0	0
March 2021	0	0	0
April 2021	0	0	0
Cumulative	3	0	0

## Table 6.1 Summary of Environmental Complaints and Prosecutions

## 7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

Major activity in the Fill Bank was the import and dumping of fill materials in this quarter. Air quality was the major environmental issue in the Fill Bank. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

No exceedance of action and limit levels was recorded for 1-hr and 24-hr TSP monitoring in the reporting quarter.

According to the marine water monitoring results in this quarter, no exceedance of action and limit level was recorded.

The noise level measured at the monitoring station complied with the Limit Level of 65dB(A). No complaint was received regarding noise issue in this reporting quarter.

In this quarter, no complaint was received. Besides, no notification of summon and prosecution with respect to environmental issue was received in this quarter.

According to the ET weekly site inspection and IEC site audits carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard.

According to the environmental site inspections performed in the reporting quarter, the following recommendations were provided:

### Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on all paved haul roads and public roads especially outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowser;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;



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- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the construction activities;
- Designate proper haul roads to ensure effective water spraying; and
- Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

#### Noise

Conduct noisy activities at a farther location from the NSRs.

#### Water Quality

- Maintain the drainage system, including the trapezoidal channels and permanent desilting chambers regularly; and
- Remove the stagnant water or provide approved pesticides for the stagnant water in the permanent desilting chambers, if any.

#### Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

#### Landscape and Visual

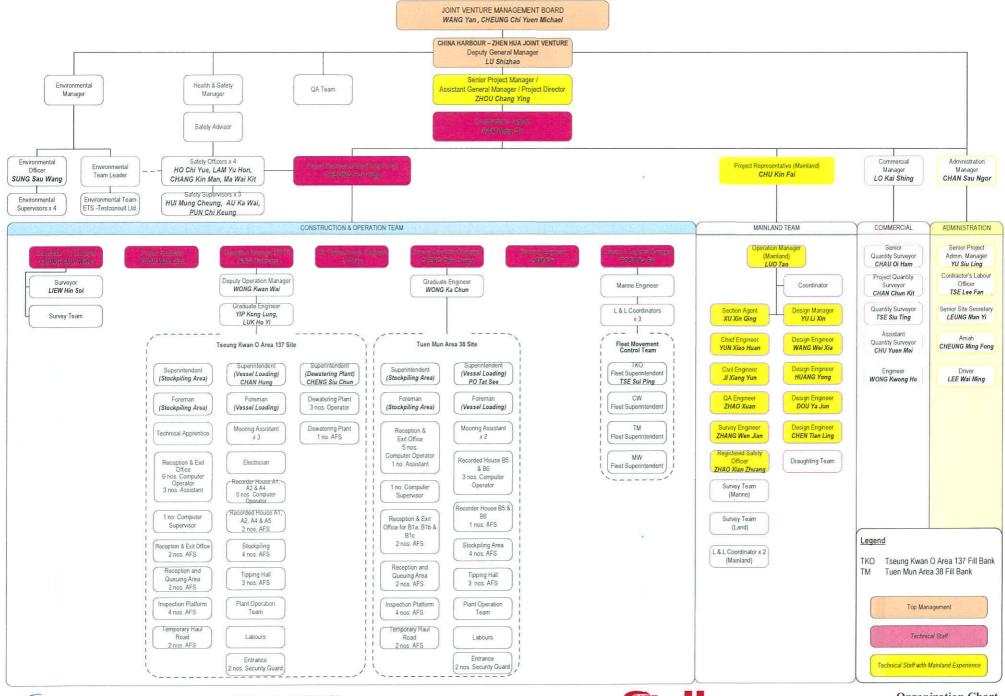
- Provide hydroseeding on the exposed slopes, on which the final profile has been formed;
- Erect all the site hoarding/chaining fences in accordance with agreed design at proper location; and
- Maintain the hydroseeding slopes in accordance with the Landscape Plan.

- END OF REPORT -



Appendix A

**Organization Chart** 



Civil Engineering and Development Department Contract No. CV/2015/07 Handling of Surplus Public Fill (2016-2018)



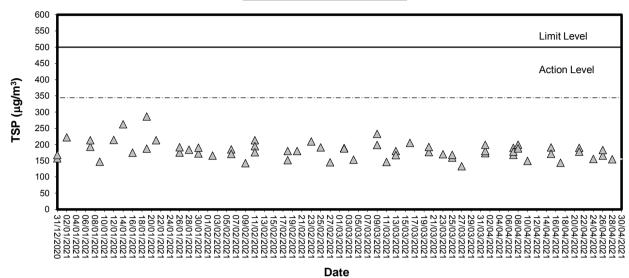
Organization Chart Rev.20



Appendix B

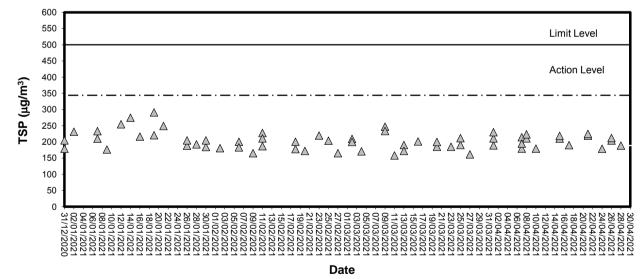
**Graphical Plots of Air Quality Monitoring Data** 



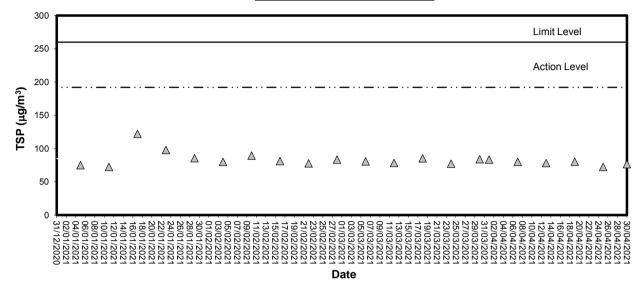


1-hour TSP level at TM-A1



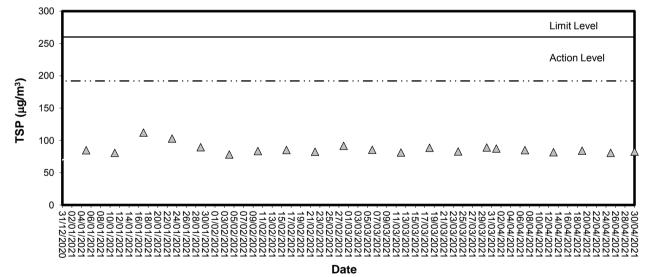






24-hour TSP level at TM-A1





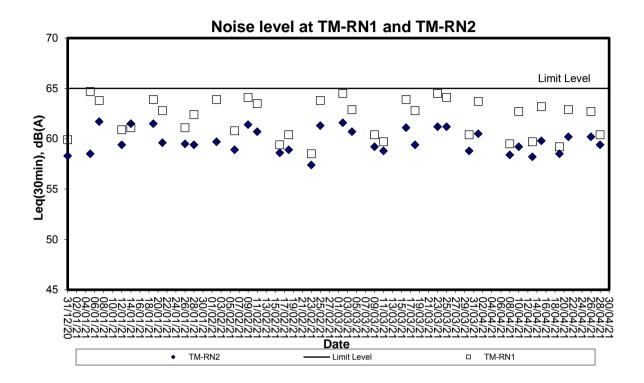


Appendix C

**Graphical Plots of Impact Noise Monitoring Data** 



## Noise Monitoring (Day-time)

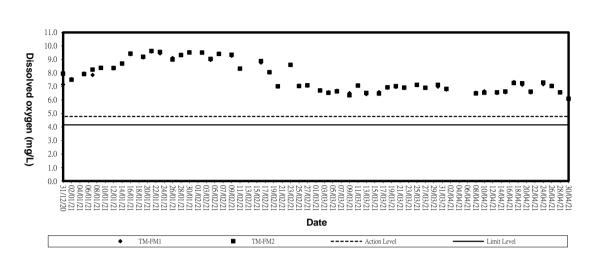




Appendix D

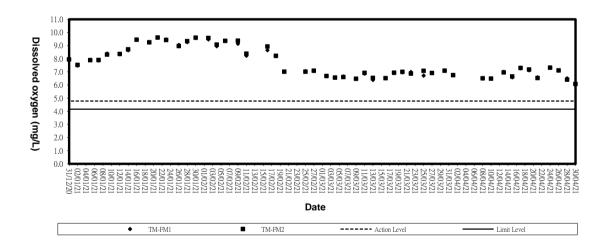
**Graphical Plots of Impact Marine Water Quality Monitoring Data** 



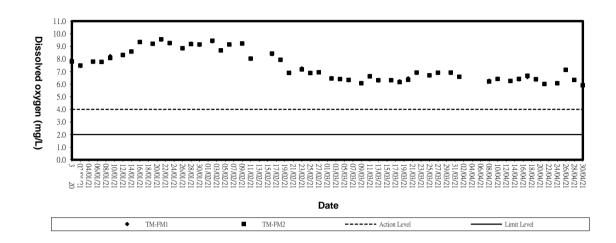


Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

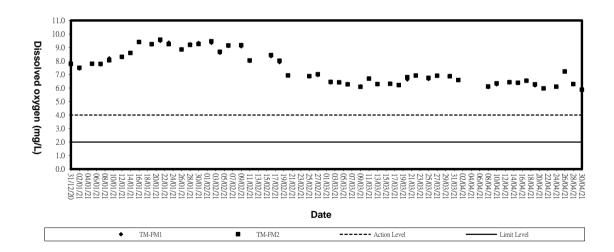






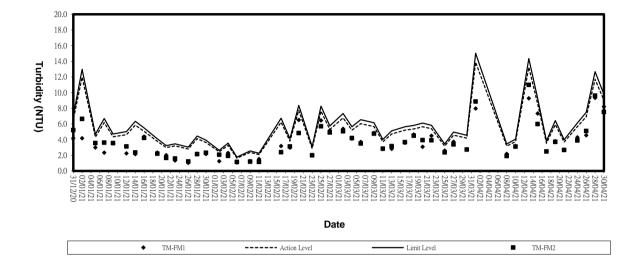
### Dissolved Oxygen (Bottom) at Mid-Flood Tide

#### Dissolved Oxygen (Bottom) at Mid-Ebb Tide

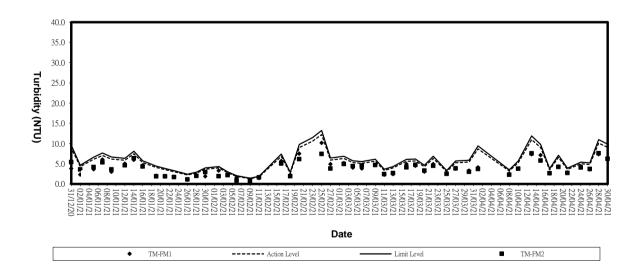




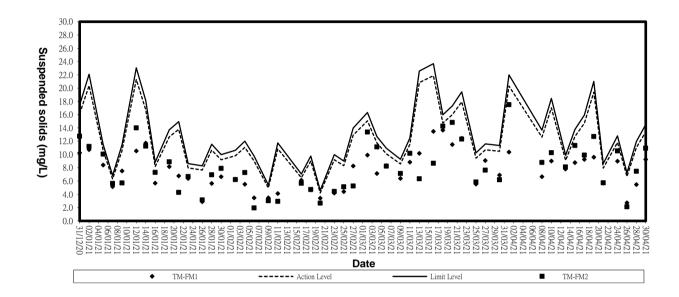
## Turbidity (Depth-average) at Mid-Flood Tide



## Turbidity (Depth-average) at Mid-Ebb Tide

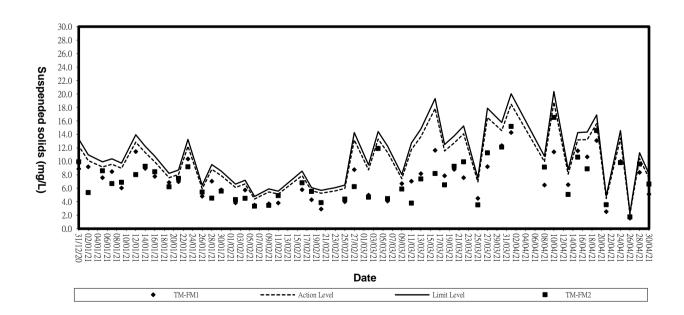






## Suspended solids (Depth-average) at Mid-Flood Tide

Suspended Solids (Depth-average) at Mid-Ebb Tide





Appendix E

**Environmental Quality Performance (Action / Limit Levels)** 



## Action and Limit Levels for 1-hour TSP and 24-hour TSP Monitoring

Monitoring Location	24-hr TS	Ρ (μg/m³)	1-hr TSF	Ρ (μg/m³)
	Action Level	Limit Level	Action Level	Limit Level
TM-A1	192	260	344	500
TM-A2	192	260	344	500

## Action and Limit Levels for Marine Water Quality Monitoring

Parameter	Action Level	Limit Level
DO (mg/L)	<u>Surface &amp; Middle</u> <4.78 mg/L (5%-ile of baseline data) <u>Bottom</u>	<u>Surface &amp; Middle</u> <4.00 mg/L (1%-ile of baseline data) <u>Bottom</u>
	<4.16 mg/L (5%-ile of baseline data)	<2.00 mg/L
SS (mg/L) (Depth-averaged)	>120% of the upstream control station's SS at the same tide on the same day	>130% of the upstream control station's SS at the same tide on the same day
Turbidity (NTU) (Depth-averaged)	>120% of the upstream control station's turbidity at the same tide on the same day	>130% of the upstream control station's turbidity at the same tide on the same day

## Action and Limit Levels for Noise Monitoring

Time Period	Action *	Limit *
0700-1900 hrs on normal weekdays	When one documented complaint is received	65 dB(A)



Appendix F

**Event-Action Plans** 

	Contractor		<ol> <li>Recity any unacceptatue practise appropriate appropriate</li> </ol>	<ol> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ol>		<ol> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification proposals</li> <li>Amend proposal if appropriate.</li> </ol>
TY EXCEEDANCE	ER		. Notify Contractor	<ol> <li>Confirm receipt of notification of failure in writing</li> <li>Notify the Contractor</li> <li>Ensure remedial measures propenty implemented</li> </ol>		<ol> <li>Confirm receipt of notification of failure in writing</li> <li>Notify the Contractor</li> <li>Ensure remedial measures properly implemented</li> </ol>
EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE ACTION	IC(E)	ACTION LEVEL	<ol> <li>Check monitoring data submitted by the ET</li> <li>Check contractor's working method</li> </ol>	<ol> <li>Check monitoring data submitted by the ET Leader</li> <li>Check the Contractor's working method</li> <li>Check the Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advice the ER on the effectiveness of the proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ol>		<ol> <li>Check monitoring data submitted by the ET Leader</li> <li>Check Contractor's working method</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise the ER on the effectiveness of the proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ol>
Ш	FT Leader		<ol> <li>Identify source, investigate the causes         <ol> <li>of exceedance and propose remedial             measures             Inform ER, IC(E) and Contractor             Transcrease             Information         </li> </ol> </li> <li>Repeat measurement to confirm         <ol> <li>finding</li> <li>Increase monitoring frequency to daily</li> </ol> </li> </ol>	<ol> <li>Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>Inform IC(E) and Contractor</li> <li>Repeat measurements to confirm finding</li> <li>Income to confirm</li> <li>Repeat measurements to confirm</li> <li>Repeat measurements to confirm</li> <li>Repeat measurements to confirm</li> <li>Repeat measurements to confirm</li> <li>Repeat measurements</li> <li>Inform</li> <li>Inform</li> <li>Inform</li> <li>Inform</li> <li>Inform</li> <li>Inform</li> <li>Inform</li> <li>Repeat measurements</li> <li>Inform</li> <li>Inform<td>monitoring</td><td><ol> <li>Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>Inform ER, Contractor and EPD</li> <li>Repeat measurement to confirm finding</li> <li>Increase monitoring frequency to daily</li> <li>Assess the effectiveness of Contractor's remedial actions and keep (CIC). EPD and ER informed of the results</li> </ol></td></li></ol>	monitoring	<ol> <li>Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>Inform ER, Contractor and EPD</li> <li>Repeat measurement to confirm finding</li> <li>Increase monitoring frequency to daily</li> <li>Assess the effectiveness of Contractor's remedial actions and keep (CIC). EPD and ER informed of the results</li> </ol>
EVENT			1. Exceedance for one sample	2. Exceedance for two or more consecutive samples		1. Exceedance for one sample



	Contractor	<ol> <li>Take Immediate action to avoid furthe exceedances</li> <li>Submit proposals for remedial actions to IC(E) within 3</li> <li>working days of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant activity of works as determined by the ER until the exceedance is abated</li> </ol>
TY EXCEEDANCE	В	<ul> <li>Confirm receipt of notification of failure in writing</li> <li>Notify Contractor</li> <li>In consultation with the LC(E), are eventation with the LC(E), the remedial measures to be implemented</li> <li>Ensure remedial measures</li> <li>Ensure remedial measures</li> <li>Ensure remedial measures</li> <li>Consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li> </ul>
ALL		- v.v. 4 v.
EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE ACTION	IC(E)	<ol> <li>Discuss amongst ER, ET and Contractor on the potential remedial actions</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>Supervise the implementation of remedial measures</li> </ol>
	ET Leader	<ol> <li>Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>Notify IC(E), ER, EPD and Contractor</li> <li>Repeat measurement to confirm finding</li> <li>Increase monitoring frequency to daily</li> <li>Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented discuss the remedial actions to be taken</li> <li>Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> <li>If a finding</li> </ol>
	<u> </u>	
EVENT		2. Exceedance for two or more consecutive samples

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EVENT									
				ACTION	N	•			
I		ET Leader		IC(E)		ER		Contractor	-
Level 1 Level 2 3 5	- Ci Ci - 4 - 10	Notify the IC(E) and the Contractor. Carry out investigation. Report the results of investigation to the IC(E) and the Contractor. Discuss with the Contractor and formulate remedial measures. Increase monitoring frequency to check mitigation effectiveness		Review the analysed results submitted by the ET. Review the proposed remedial measures by the Contractor and advise the ER accordingly. Supervise the implementation of remedial measures.	- 0 m +	Confirm receipt of notification of failure in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed moise problem. Ensure remedial measures are properly implemented.		Submit noise mitigation proposals to IC(E), Implement noise mitigation proposals.	united and the second
Limit		Notify the IC(E), the ER, the EPD	÷	Discuss amongst the ER, the ET	÷	Confirm receipt of notification of	÷	Take immediate action to avoid	
		and the Contractor.		Leader and the Contractor on the		talture in whang.		numer exceedance	
	N	Identify source.		potential remedial actions.	N	Notify the Contractor.	N	Submit proposals for remedial	-
	e,	Repeat measurement to confirm	2	Review the Contractor's remedial		Require the Contractor to propose		actions to IC(E) within 3 working days of notification.	للماليدين
	•	lindings.		dutulis with affaction and		construction included on the second provided of the second provided	~	Imnlement the arread	ian Ch
	4 ' u	Increase monitoring irequency. Carry out analysis of Contractor's		assure there inconvertess and advise the FR accordingly.	4	Ensure remedial measures are	5	proposals.	octanet
	;	working procedures to determine	<i>ы</i>	Supervise the implementation of		properly implemented.	4.	Resubmit proposals if problem	a kiter an
		possible mitigation to be		remedial measures.	ທີ	If exceedances continue, consider		still not under control.	-
		implemented.				what activity of the work is		Stop the relevant activity of	
	ő.	Inform the IC(E), the ER and the				responsible and instruct the		works as determined by the EK	
****		EPD the causes & actions taken for	e room			Contractor to stop that activity of		until the exceedances is	
		the exceedances.				Mork unui me exceedances is		anaren	
	7.					abated.			
1221010									-
								•	
-	c	ER informed of the results							
_	ó	Il exceedance que lo ale							
		additional monitoring							



		ting submitted by ET 2. Confirm ET assessment if	c		e measures 4. Review contractor's			he accordingly	5. Supervise the immementation of mitigation	· sance				
EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE ACTION		<ol> <li>Notify EPD and other relevant governmental agencies in writing writing 24 hours of the</li> </ol>	identification of the exceedance 2. Discuss with IEC, ET and	Contractor on the proposed mitigation measures;	3. Require contractor to propose	analysed problem if related to the	<ol> <li>Construction works</li> <li>Ensure remedial measures are</li> </ol>	properly implemented						
OR WA		riting tion of	ice; ient;	to IEC	in ofe	Đ	ue to	ER and	is due	within 4 ion of		igation de time		
AND ACTION PLAN F	Contractor	Notify the ER and IEC in writing within 24 hours of identification of			the identification of an		method if exceedance is due to the construction works	. –	propose mingauon measures un IEC and ER if exceedance is due	to the construction works within 4 working days of identification of	an exceedance	<ol> <li>Implement the agreed mitigation measures within reasonable time</li> </ol>	scale	
NT A	-		2.0				<b>C</b> (	ی۔ ص	2		5		ay	
EVE	ET   oader	Identify sources Repeat in-site	confirm finding Notify Contract	exceedance	<ul> <li>Check monitoring data, all plant, equipment and Contractor's</li> </ul>			to the Contractor within 3 working days of identification of	exceedance and advise contractor if exceedance is due to		Contractor if exceedance is due	to the construction works within 4	8. Repeat measurement on next day	
		+ ~			4	ц 							~~~~	) 
Event		Action level heind exceeded	by one sampling day								ال المشاهدين	دممرور	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

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ш	IEC	<ol> <li>Check monitoring data submitted by ET submitted by ET</li> <li>Confirm ET assessment if exceedance is due / not due to the works</li> <li>Discuss with ET, ER and contractor on the mitigation measures.</li> <li>Review proposals on mitigation measures on and advise the ER accordingly.</li> <li>Assess the effectiveness of the implemented mitigation measures</li> </ol>	
EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE ACTION	ER	<ol> <li>Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance</li> <li>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>Request Contractor to critically review the working methods;</li> <li>Ensure remedial measures are properly implemented fare implemented mitigation measures.</li> </ol>	
r and action plan for wa	Contractor	in writing; he practice; of working of the c and ER c and ER ation and ER ays of the eed es within cate	
EVENI	and to and an	<ol> <li>Leader</li> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Carry out investigation</li> <li>Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works</li> <li>Discuss mitigation measures within 4 working of identification of an exceedance</li> <li>Besure mitigation measures are implemented;</li> <li>Increase the monitoring frequency to daily until no</li> </ol>	exceedance of Limit Level.
Event		Limit level being exceeded by day day	

東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

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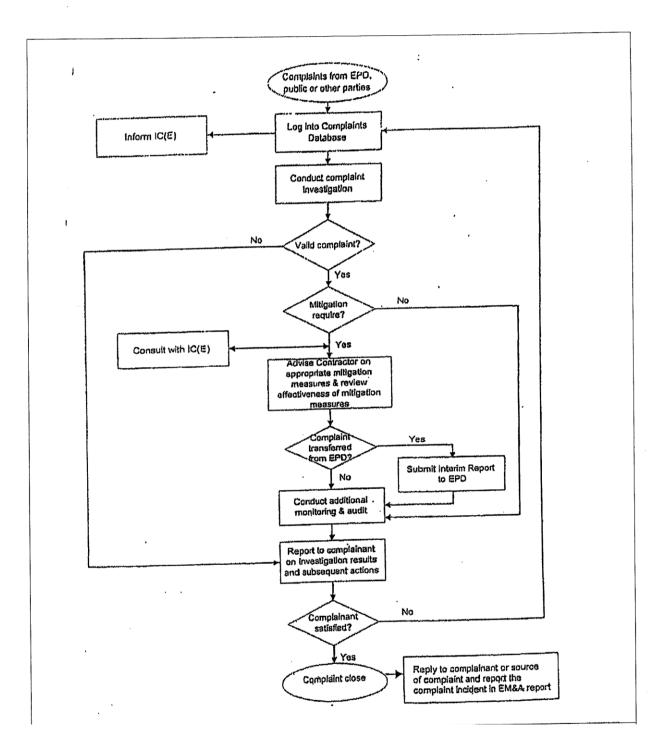
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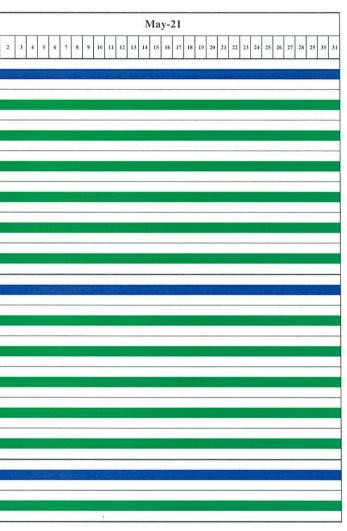
Appendix G

Work Programme

## China Harbour - Zhen Hua Joint Venture Contract No. CV/2015/07 Handling of Surplus Public Fill (2016 -2018)

## Three Months Rolling Programme for the Period from 1-March-2021 to 31-May-2021 (Supplementary Agreement No.4)

				Mar-21	Apr-21	
Item	em Description		То	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2
1	Section 1C	1-Mar-21	31-May-21			
1.1	Operation of Fill Bank, surveillance system, tipping halls and recorder houses	1-Mar-21	31-May-21			
1.2	Operation of crushing plants	1-Mar-21	31-May-21			
1.3	Operation of the existing and expanded dewatering plants	1-Mar-21	31-May-21			
1.4	Collection and delivery of Public Fill from CWPFBP and MWPFRF to TKOFB	1-Mar-21	31-May-21			
1.5	Breaking up the incoming precast concrete units	1-Mar-21	31-May-21			
1.6	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Mar-21	31-May-21			
2	Section 2C	1-Mar-21	31-May-21			<u>85%</u>
2.1	Operation of Fill Bank, surveillance system, tipping halls and recorder houses	1-Mar-21	31-May-21			
2.2	Breaking up the incoming precast concrete units	1-Mar-21	31-May-21			
2.3	Operation of crushing plants	1-Mar-21	31-May-21			t-cart
2.4	Operation of glass cullet storage compartment at Portion B7	1-Mar-21	31-May-21			
2.5	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Mar-21	31-May-21			
3	Section 4B	1-Mar-21	31-May-21			
3.1	Collection and delivery of Public Fill to the Designated Reclamation Sites in the Mainland	1-Mar-21	31-May-21			



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## Appendix H

Implementation Schedule of Environmental Mitigation Measures (EMIS)



# Environmental Mitigation Implementation Schedule

	Location		Implementa	tion Status	
Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas		$\checkmark$		
Water sprays shall be provided and used to dampen materials.	All areas				
All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	All areas				
<ul> <li>Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.</li> </ul>	All areas	V			
<ul> <li>Unpaved areas should be watered regularly to avoid dust generation.</li> </ul>	Site Egress				
The designated site main haul road shall be paved or regular watering.	All haul roads	$\checkmark$			
The public road around the site entrance should be kept clean and free from dust.	All areas				
<ul> <li>Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site and and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.</li> </ul>	Site Egress	$\checkmark$			
Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	Site Egress				
The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	All areas				
Vehicle and equipment should be switched off while not in use.	All areas				
All plant and equipment should be well maintained e.g. without black smoke emission.	All areas				
Open burning should be prohibited.	All areas				
<ul> <li>Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).</li> </ul>	All areas	V			
Noise Impact					
The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	$\checkmark$			
Only well maintained plant should be operated on-site and plant should be serviced regularly during the site works.	All areas	$\checkmark$			
Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas				
Air compressors and hand held breakers should have noise labels.	All areas				
<ul> <li>Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> </ul>	All areas				
Noisy equipment and mobile plant shall always be site away from NSRs.	All areas				



	Location	Implementati	on Status		
Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality					
<ul> <li>The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.</li> </ul>	All areas	$\checkmark$			
<ul> <li>Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels.</li> <li>Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.</li> </ul>	All areas	$\checkmark$			
<ul> <li>The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.</li> </ul>	All areas	$\checkmark$			
<ul> <li>The material shall be properly covered to prevent washed away especially before rainstorm.</li> </ul>	All areas	$\checkmark$			
<ul> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> </ul>	All areas	$\checkmark$			
<ul> <li>The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.</li> </ul>	Temporary Slopes	$\checkmark$			
<ul> <li>Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.</li> </ul>	All areas	$\checkmark$			
<ul> <li>A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.</li> </ul>	Wheel Washing facility	$\checkmark$			
<ul> <li>The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.</li> </ul>	Site Egress	$\checkmark$			
<ul> <li>Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.</li> </ul>	Site Office	$\checkmark$			
<ul> <li>The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.</li> </ul>	All areas	$\checkmark$			
<ul> <li>Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.</li> </ul>	All areas	$\checkmark$			
<ul> <li>Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.</li> </ul>	Along the seafront	$\checkmark$			
<ul> <li>A waste collection vessel shall be deployed to remove floating debris.</li> </ul>	Along the seafront	$\checkmark$			
Landscape and Visual					
The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.	All areas	$\checkmark$			
Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.	Completed slopes	$\checkmark$			
Stockpile of public fill shall be removed in a sequence to allow the outer hydrseeded to be removed later than other portions as far as practicable.	Completed slopes	$\checkmark$			
• Casuarina equisetifolia were planted as buffer tree along the northern perimeter of the Site. The height of Casuarina equisetifolia was maintained at least 3m above soil level.	Site boundary	$\checkmark$			
Lighting shall be set to minimise night-time glare.	All areas				
Waste Management					
Construction Waste Management					
Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	All areas	$\checkmark$			



		Implementati	Implementation Status				
Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable		
Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site dis	posal. All areas	$\checkmark$	•				
Mud and debris should be removed from waterworks access roads and associated drainage systems.	All areas	$\checkmark$					
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycl materials and their proper disposal.	ing of All areas	$\checkmark$					
• Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	waste All areas	$\checkmark$					
<ul> <li>In order to monitor the disposal of C&amp;D material and solid wastes at public filling areas and landfills, and to control fly-tipp trip-ticket system should be included as one of the contractual requirements.</li> </ul>	All aleas	$\checkmark$					
Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable material	als. All areas	$\checkmark$					
Chemical Waste Management							
It is required to register as a chemical waste producer if chemical wastes would be produced from the site activities. The bisposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (Ge Regulation should be observed and complied with for control of chemical wastes.	Waste Storage neral) Area	$\checkmark$					
After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Correctice on the Packaging, Labelling and Storage of Chemical Wastes.	ode of Waste Storage Area	$\checkmark$					
<ul> <li>Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment F or other licensed facility in accordance with the Chemical Waste (General) Regulation.</li> </ul>	acility Waste Storage Area	$\checkmark$					
Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Fac	ility. Waste Storage Area	$\checkmark$					
• Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	Waste Storage Area	$\checkmark$					
The designated chemical waste storage area should only be used for storing chemical wastes.	Waste Storage Area	$\checkmark$					
The set-up of chemical waste storage area should							
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition.	Waste Storage Area	$\checkmark$					
Be enclosed on at least 3 sides and securely closed.	Waste Storage Area	$\checkmark$					
<ul> <li>Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20 volume of the chemical waste stored in that area, whichever is the greatest.</li> </ul>	0% by Waste Storage Area	$\checkmark$					
Have adequate ventilation.	Waste Storage Area						
Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical was necessary).	aste if Waste Storage Area	$\checkmark$					
Be arranged so that incompatible materials are adequately separated.	Waste Storage Area	$\checkmark$					
Warning panels should be displayed at the waste storage area.	Waste Storage Area						



		Implementation	on Status		
Environmental Protection Measures		Implemented	Partially implemented	Not implemented	Not Applicable
Waste storage area should be cleaned and maintained regularly.	Waste Storage Area	$\checkmark$			
Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	All areas	$\checkmark$			
All generators, fuel and oil storage should be within bundle areas.	All areas	$\checkmark$			
Oil leakage from machinery, vehicle and plant should be prevented.	All areas				
In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	All areas	$\checkmark$			
The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	All areas	$\checkmark$			
Good Site Practices					
Nomination of approved personnel, such as site manager, to be responsible for good site practices, arrangements for collection     and effective disposal to an appropriate facility, of all wastes generated at the site.	All areas	$\checkmark$			
Training of site personnel in proper waste management and chemical handling procedures should be provided.	All areas	$\checkmark$			
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	$\checkmark$			
Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas	$\checkmark$			
The Environmental Permit should be displaced conspicuously on site.	Site Entrance	$\checkmark$			
Construction noise permits should be posted at site entrance or available for site inspection.	Site Entrance				$\checkmark$
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	All areas	$\checkmark$			
Chemical storage area provided with lock and located on sealed areas.	Chemical Storage Area	$\checkmark$			
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	Chemical Storage Area	$\checkmark$			
Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	$\checkmark$			
• Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	All areas				
• To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	All areas	$\checkmark$			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	All areas	$\checkmark$			
<ul> <li>A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.</li> </ul>	All areas	V			
Remove wastes in a timely manner.	All areas	$\checkmark$			



# Appendix I

# Statistical Analysis of the Trend of Suspended Solids in the Quarter



## Statistical Analysis of the Trend of Suspended Solids

## For Mid-Flood Tide

### Station: TM-FM1

### <u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline	12	0	5.9733	1.3518	0.3902
Mean Quarterly Mean	36	0	7.5306	2.8805	0.4801

### Result:

Probability that two variances are equal (f-test) = 0.0003

Difference between means = -1.5573 (95% Cl : -2.8078 < Diff < -0.3068)

t-value of difference = -2.5171 (40 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**

There is no statistically significant difference between the groups.

### Station: TM-FM2

### <u>t-test</u>

Group Name	Ν	Missing	Mean	Std Dev	SE
130%	12	0	6.0267	1.1748	0.3391
Baseline					
Mean					
Quarterly	36	0	8.0866	3.8221	0.6370
Mean			0.0000	3.0221	0.0370

### Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means = 0.7217 (95% CI : -3.5126 < Diff < -0.6072)

t-value of difference = -1.8266 (46 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**



## Statistical Analysis of the Trend of Suspended Solids

### For Mid-Flood Tide

### Station: TM-FC1

### <u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	6.6942	1.8839	0.5438
Quarterly Mean	36	0	7.6093	3.7828	0.6305

### Result:

Probability that two variances are equal (f-test) = 0.0008

Difference between means = 0.8326 (95% Cl : -2.6006 < Diff < 0.7704)

t-value of difference = -1.0991 (38 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**

There is no statistically significant difference between the groups.

### Station: TM-FC2

### <u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	6.3067	1.8674	0.5391
Quarterly Mean	36	0	9.9954	3.6435	0.6073

### Result:

Probability that two variances are equal (f-test) = 0.0012

Difference between means = 0.8120 (95% CI : -5.3232 < Diff < -2.0542)

t-value of difference = 3.3067 (46 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**



# Statistical Analysis of the Trend of Suspended Solids For Mid-Ebb Tide

### Station: TM-FM1

<u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.0008	1.6394	0.4733
Quarterly Mean	36	0	6.9949	3.6182	0.6030

### Result:

Probability that two variances are equal (f-test) = 0.0002

Difference between means = 0.7666 (95% CI : -1.5372 < Diff < 1.5490)

t-value of difference = 0.0054 (46 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**

There is no statistically significant difference between the groups.

### Station: TM-FM2

### <u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.2758	1.5293	0.4415
Quarterly Mean	36	0	7.1255	3.9245	0.6541

### Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means =0.1503 (95% Cl : -1.4381 < Diff < 1.7387)

t-value of difference = 0.1287 (46 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**



# Statistical Analysis of the Trend of Suspended Solids

## For Mid-Ebb Tide

### Station: TM-FC1

### <u>t-test</u>

Group Name	Ν	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.0008	1.6394	0.4733
Quarterly Mean	36	0	8.3398	4.0142	0.6690

### Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means = 0.8195 (95% Cl : -2.9886 < Diff < 0.3106)

t-value of difference = -1.1183 (46 degrees of freedom)

Calculated t-value < Critical t-value

### **Conclusion:**

There is no statistically significant difference between the groups.

### Station: TM-FC2

### <u>t-test</u>

Group Name	N	Missing	Mean	Std Dev	SE
130% Baseline Mean	12	0	7.2758	1.5293	0.4415
Quarterly Mean	36	0	8.5333	4.5725	0.7621

### Result:

Probability that two variances are equal (f-test) = 0.0001

Difference between means = 0.8807 (95% Cl : -3.0303 < Diff < 0.5153)

t-value of difference = -0.9296 (46 degrees of freedom)

Calculated t-value < Critical t-value

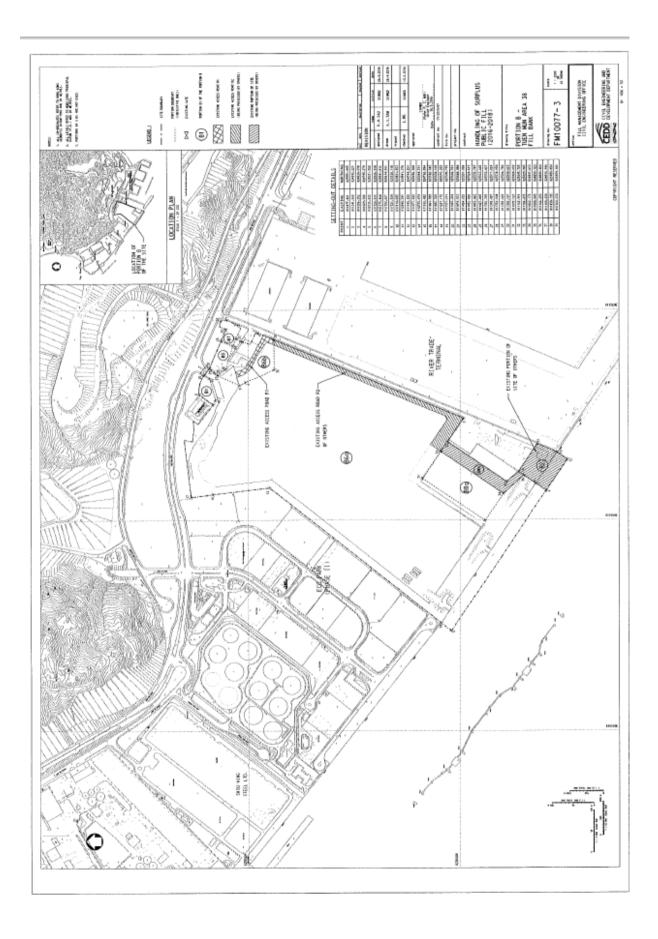
### **Conclusion:**



Appendix J

Site General Layout plan







Appendix K

Weather Condition

	Mean		01 1010000	l'ological o	Mean	Mean	Total	Prevailing	Mean
	Pressure Air Temperature			Dew	Relative	Rainfall	Wind	Wind	
		AIF	Temperat	ure					
Dorr	(hPa)				Point	Humidity	(mm)	Direction	Speed
Day		Absolute	Mean	Absolute	(deg. C)	(%)		(degrees)	(km/h)
		Daily	(deg. C)	Daily					
		Max		Min					
		(deg. C)		(deg. C)					
1	***	25.7#	19.4	15.2#	14.4	74	0	350	5.8
2	***	25.9	20	15.9	14.5	72	0	160	10.3
3	***	21.4#	18	15.9#	10.1	61	0	160	11.3
4	***	23.8#	18.7	14.0#	10.5	60	0	160	6.8
5	***	23.3	19	15.3	12.4	66	0	160	6.9
6	***	26	19.6	14.5	11.9	63	0	20	4.3
7	***	24.5	19.5	15.2	12.1	63	0	160	5.5
8	***	23.3	19.7	16.3	13.6	68	0	150	7.3
9	***	19.8	18.7	17.6	12.4	67	0	20	5.6
10	***	17.8	15.4	14.2	13.8	91	36.5	10	8.4
11	***	18	15.9	14.3	12.5	80	0	20	6.1
12	***	21.7	17	12.9	10.9	68	0	360	5.7
13	***	22.5	17.8	13.9	13.1	75	0	150	4.6
14	***	23.2	18.5	14.3	13	72	0	20	5
15	***	25.9	19.6	14.9	13	68	0	150	8.2
16	***	23.6	19.4	16.9	13.6	70	0	150	7.1
17	***	23.4	19	16.6	12.3	66	0	20	7.9
18	***	21.8	17.5	15	7.4	53	0	20	9.8
19	***	21.7	17.3	13.3	9.6	62	0	170	7.4
20	***	23.3	18.1	13.6	11.6	67	0	160	7.3
21	***	24.1	18.8	14.4	12.8	70	0	160	7.2
22	***	25.1	20.2	15.9	14.9	73	0	160	5.5
23	***	25.6#	20.7	16.8#	14.8	71	0	150	7.9
24	***	22.8	19.8	18	14.8	73	0	150	12.2
25	***	22.8#	19.8	17.8#	16.5	81	1	160	6.5
26	***	25.2#	21.3	18.6#	18.6	85	13.5	20	4.7
27	***	19	16.6	15.6	14.7	89	6	20	9.1
28	***	21.8	19.1	16	15.4	80	0	160	6.3

Daily Extract of Meteorological Observations, February 2021 - Tuen Mun

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

5	Mean Pressure (hPa)	Air Temperature			Mean Dew Point	Mean Relative Humidity	Total Rainfall (mm)	Prevailing Wind Direction	Mean Wind Speed
Day		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)	(deg. C)	(%)		(degrees)	(km/h)
1	***	24.2#	21.2	18.4#	18.1	83	0	10	4.2
2	***	23.8	20.2	18	14.1	70	0	350	8.7
3	***	19.7	18.2	17	13.5	74	0	150	8.2
4	***	18.6#	18	17.2#	16.5	91	3	160	5.5
5	***	21.5	19.9	18.6	18.5	91	0	150	6.3
6	***	22.4	20.6	19.7	19.4	93	2.5	230	5.8
7	***	20	19.3	18.8	17.8	91	0	20	4.1
8	***	21.3	19	17.8	15.5	80	0	150	9.1
9	***	21.8	19	16.8	15.1	79	0	160	7.1
10	***	22.8	19.7	17.5	14.9	74	0	150	8.2
11	***	24	20.5	18.5	16.4	77	0	160	9.3
12	***	27.1	22	18	17.6	77	0	150	5.4
13	***	23.4	21.1	19.6	16.3	74	0	150	10.7
14	***	23.6	20.8	19.4	16.4	76	0	150	10.5
15	***	25.3	21.6	18.6	16.7	74	0	150	8.9
16	***	27.1	22.7	19.1	18.2	77	0	160	6.1
17	***	27.8	23.4	19.8	19.6	80	0	160	7.1
18	***	24.8	22.9	21.8	20.1	84	0	160	8.6
19	***	27.5	23.4	21.4	19.8	81	0	160	8.8
20	***	28.3	23.7	20.3	19.7	79	0	160	6.1
21	***	22.6	19.6	16.1	14.4	72	0	20	10.2
22	***	19	16.6	14.7	7.7	56	0	20	11.8
23	***	20.2#	18.1	16.3#	8.7	54	0	20	5.1
24	***	24.1	20.6	17.5	13.5	64	0	20	6.2
25	***	24.2	21.8	20.3	15.6	68	0	150	11.2
26	***	24.7	21.6	19.3	16.1	71	0	150	11.1
27	***	27.4	23.7	21.5	19.8	80	0	10	6.4
28	***	28.8	24.8	21.9	21.1	81	0	160	5.8
29	***	29.3	25.6	22.8	22.1	82	0	160	8.4
30	***	29.4	26.3	24	22.7	81	0	150	12.2
31	***	29.9	26.2	24.6	22.7	82	0	150	14.5

Daily Extract of Meteorological Observations, March 2021 - Tuen Mun

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

5	Mean Pressure (hPa)	Air Temperature			Mean Dew Point	Mean Relative Humidity	Total Rainfall (mm)	Prevailing Wind Direction	Mean Wind Speed
Day		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)	(deg. C)	(%)		(degrees)	(km/h)
1	***	30.2	26.4	24.5	22.9	82	0	150	12.4
2	***	30.2	26.5	24.1	23	82	0	160	7.5
3	***	30.8	26.6	22.9	21.6	75	0	150	4.3
4	***	27.3	24.9	23.3	21.9	83	0	20	4.8
5	***	23.9	22.4	21.4	19.8	86	3	20	5.4
6	***	26.9	23.6	21	19.5	79	0	160	8.9
7	***	25.8	23.1	22	18.2	74	0	150	11.1
8	***	25.2	23.1	20.8	18.2	74	0	150	7.5
9	***	20.8	19.5	18.3	17.8	90	19.5	20	7
10	***	25.4	22	19.5	15	66	0	160	10.3
11	***	27.4	23.3	20.3	17.2	69	0	160	8.9
12	***	28.6	24.3	20.9	20.1	78	0	160	8.8
13	***	30.1	25.6	22.2	21.2	78	0	200	6.7
14	***	29.1	24.9	22.5	21.5	82	0	150	10.5
15	***	24	22.8	21.9	20.4	87	4.5	150	11.3
16	***	25.5	23.6	22.5	20.7	84	0	160	9.3
17	***	23.4	22.5	21.7	21.4	94	4	160	3.5
18	***	27.6	23.6	21.8	15	60	0	150	12.7
19	***	25.5	22.9	21.5	14.7	60	0	150	11
20	***	25.6	23.2	21.5	17.1	69	0	150	10.4
21	***	28.1	24.3	21.6	18.3	70	0	160	11.3
22	***	30.6	25.5	21.1	19.1	69	0	150	7.8
23	***	32.6	27.1	22.7	22.2	76	0	150	7.8
24	***	28.3	25.7	23.9	21.8	80	0	150	12.7
25	***	27.6	25.3	23.8	21.9	82	0	140	10.7
26	***	25.1	23.6	21.7	19	76	0	150	8.9
27	***	24.8	23.6	22.5	21.7	89	11	140	8
28	***	27.1	24.4	22.2	21.9	86	1	160	8.5
29	***	28.8	24.1	21.2	19.2	76	0.5	20	7.3
30	***	30.2	25.1	20.8	20.4	77	0	150	6

Daily Extract of Meteorological Observations, April 2021 - Tuen Mun

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected



Appendix L

**Complaint Log** 



# Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Lung Mun Road near Tuen Mun Area 38 Fill Bank	24 May 2017	One complaint received on 24 May 2017, which was forwarded to ET on 03 June 2017, from public against the rocks and debris deposited on the road surface along Lung Mun Road near Tuen Mun Area 38 Fill Bank. The complainant complained that waste generated caused an environmental nuisance.	<ul> <li>Refer to the ET site investigation on 06 June 2017, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory.</li> <li>Details of Action(s) Taken by the Contactor: <ol> <li>Regular water spraying by water lorries is provided for road cleaning at Lung Mun Road;</li> <li>Regular cleaning on Lung Mun Road and the access road at the site exit by road sweeper to remove mud and gravel is arranged four times on each working day;</li> <li>Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving;</li> <li>Site vehicle for transporting materials are covered properly by using clean tarpaulin sheets;</li> <li>Regular cleaning at the site haul road is provided to minimize the fugitive dust emission.</li> </ol> </li> </ul>	Closed



002	Lung Mun Road near Tuen Mun Area 38 Fill Bank	16 April 2018	One complaint received on 16 April 2018 from public and forwarded to ET by email at 10:51 on 25 May 2018. The complaint detail was"來往屯門第 38 區填料庫的龍門路沿 路有很多泥頭車出入,泥頭會從車上掉至路面上,要求部 門跟進及回覆。"	<ul> <li>Refer to the ET site investigation on 26 May 2018, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory.</li> <li>Details of Action(s) Taken by the Contactor: <ol> <li>Regular cleaning on Lung Mun Road and the access road at the site exit by road sweeper to remove mud and gravel is arranged four times on each working day;</li> <li>Regular water spraying by water lorries is provided for road cleaning at Lung Mun Road;</li> <li>Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving;</li> </ol> </li> <li>Site vehicles for transporting materials are covered properly by using clean tarpaulin sheets;</li> <li>Regular cleaning at the site haul road is provided.</li> </ul>	Closed
003	Lung Mun Road near Tuen Mun Area 38 Fill Bank	26 June 2018	One complaint received on 26 June 2018 from public and forwarded to ET by email at 13:58 on 03 July 2018. The complaint detail was" 當天水車於 6 時出動洗街,導致交通 阻塞."	<ul> <li>Refer to the ET site investigation on 07 July 2018, the condition of Lung Mun Road near Tuen Mun Area 38 Fill Bank was found satisfactory.</li> <li>Details of Action(s) Taken by the Contactor: <ol> <li>Improve the road washing plan to avoid washing in traffic peak peroid</li> <li>Revised the road washing schedule as soon as possible once there is traffic jam</li> </ol> </li> </ul>	Closed



Figures



