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**TEST REPORT**

**CHINA HARBOUR ENGINEERING CO. LIMITED**

**DELIVERY OF RECLAMATION MATERIAL TO  
MAINLAND—**

**ENVIRONMENTAL MONITORING AND ADUIT  
(CONTRACT NO.: CV/2005/01)**

**TUEN MUN AREA 38 FILL BANK**


**MONTHLY EM&A REPORT**

**(AUGUST 2008)**

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Subject Agreement No. CE 9/2005 (EP)  
Tuen Mun Area 38 Fill Bank -  
Monthly Environmental Monitoring & Audit Report for August 2008

We refer to the revised 21<sup>st</sup> Monthly EM&A Report for August 2008 that we received through email on 11 September 2008 and are pleased to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,



Joseph Poon  
Independent Environmental Checker

JP/by

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## **EXECUTIVE SUMMARY**

This monthly Environmental Monitoring and Audit (EM&A) report No.21 was prepared by Environmental Team (ET) of ETS-Testconsult Ltd (ETL) for the "Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland – Tuen Mun Area 38 Fill Bank" (The Project).

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 in August 2008.

### **Construction Progress**

As informed by the Contractor, the construction activities in this reporting month were as below:

- Removal & delivery of public fill stockpiled material to Mainland
- Operation of the road water lorries and the road sweeper
- Maintenance of haul road within fill bank area
- Operation of the Tipping Halls (B1, B2 & B3)
- Operation at the queuing area for public truck lorries

### **Environmental Monitoring Progress**

The summary of the monitoring activities in this monitoring month is listed below:

- 24-hour TSP Monitoring: 5 Occasions at 2 designated locations
- 1-hour TSP Monitoring: 16 Occasions at 2 designated locations
- Noise, Daytime: 8 Occasions at 2 designated locations
- Marine Water Quality Monitoring: 13 Occasions at 4 designated locations
- Weekly-site inspection: 4 Occasions

### **Air Monitoring**

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the reporting month.

### **Noise Monitoring**

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) temporarily from 18 December 2007 and before Lands Department's approval.

No exceedances of Action and Limit levels for noise monitoring were recorded in the reporting month.

### **Marine Water Quality Monitoring**

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded.

### **Site Inspection**

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET Weekly site inspection	05, 12, 19 and 26
IEC site inspection	12, 26

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the Section 7.0.



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

No notification of summons and prosecutions with respect to environmental issues were received in this monitoring month.

A complaint was received on 02 September 2008 through email forwarded by the EPD from a citizen against dust emission at the exit of Tuen Mun Area 38 Fill Bank which caused by the dropping of small size of stones / rocks from dump truck leaving the public dump site on 26 August 2008. The small sizes of stones were then crushed into dust by the movement of vehicles, hereby generating fugitive dust. The complainant complained that the dust generated caused an environmental nuisance.

The complaint was reported to be happened in the evening time on 26 August 2008. After discussing with the Contractor, they reported that the site was closed at around 19:00 on 26 August 2008. Since no other observer was reported in the complaint, it is difficult to proof whether the contractor dump truck or other private dump truck was leaving the site especially after 19:00.

Refer to the ET weekly site inspection on 26 August 2008, dust depression measures such as regular public road cleaning and wheel washing facilities at the site entrance were provided by the Contractor and which were also operated properly during our routine weekly site inspections. Besides, dump trucks with open load carrying area used for moving materials which has the potential to create dust were properly fitting side and tail boards and were covered by tarpaulin sheets to prevent dropping when leaving the site.

As a result, we concluded that the complaint is an occasional case and no evidence to proof the complaint is project related. However, the Contractor arranged to take more effort on the maintenance of the public road, such as checking the exist more frequently, increase the frequency of road watering and cleaning the haul road / public road as soon as possible when leaving of stones/rocks were found. In addition, hoarding related notices in the site area was advised to remind the public to avoid dropping of any stones/rocks on the road when leaving the public dump site.

### **Future Key Issues**

Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Dust generation from activities on site, such as vehicular movements along unpaved area and rock crushing activities;*
- *Noise impact from operating equipment and machinery on site;*
- *Wastewater and surface runoff from the site discharged into nearby water body; and*
- *Storage and usage of chemicals / fuel and chemical waste / waste oil.*

## 1.0 INTRODUCTION

China Harbour Engineering Company Limited appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the “Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland – Tuen Mun Area 38 Fill Bank” (The Project).

In accordance with the Condition 5 of Part C of Environmental Permit (No.: EP-210/2005) (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, water quality, 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 Profile; and
- Environmental requirements in contract documents.

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 report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tuen Mun Area 38 in August 2008.

## 2.0 PROJECT INFORMATION

### 2.1 Construction Programme

Details of construction programme are shown in Appendix G.

### 2.2 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are 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.

Table 2.1 Contact Details of Key Personnel

Organization	Name of Key Staff	Project Role	Tel. No.	Fax No.
CEDD	Mr. W T CHAU Mr. H C TANG Mr. P Y LU	Engineer's Representative	2760 5835	2714 0113
IEC (Materialab)	Mr Joseph Poon	IEC	2450 8238	2450 6138
Contractor (CHEC)	Mr. William CHAN	Contractor's Agent	9772 7055	2243 4089
ET (ETL)	Mr C. L. Lau	ET Leader	2946 7791	2695 3944



### 3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- Removal & delivery of public fill stockpiled material to Mainland
- Operation of the road water lorries and the road sweeper
- Maintenance of haul road within fill bank area
- Operation of the Tipping Halls (B1, B2 & B3)
- Operation at the queuing area for public truck lorries

### 4.0 AIR QUALITY MONITORING

#### 4.1 Monitoring Requirement

1-hr and 24-hr TSP levels were monitored in the reporting month. Table 4.4 shows the Action and Limit Levels for the environmental monitoring works.

#### 4.2 Monitoring Equipment

Both 1-hour and 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

<i>Equipment</i>	<i>Model and Make</i>
<i>HVS</i>	<i>Greasby GMWS2310</i>
<i>Calibrator</i>	<i>Tisch TE-5025A</i>

#### 4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequency of air quality monitoring

<i>Parameter</i>	<i>Duration</i>	<i>Frequency</i>
<i>24-hr TSP</i>	<i>24 hr</i>	<i>One per six days</i>
<i>1-hr TSP</i>	<i>1 hr</i>	<i>Three times per six days</i>

#### 4.4 Monitoring Locations and Schedule

In accordance with the Project Profile, two air-quality monitoring stations, namely TM-A1 and TM-A2, were selected for the 1-hr TSP and 24-hr TSP sampling. The locations of monitoring stations are shown in Figure 2.

During the reporting month, 1-hr and 24-hr TSP monitoring were carried out as the schedule. The details for 24-hr and 1-hr TSP monitoring carried out in this reporting month are summarized in Appendix B2.

#### 4.5 Monitoring Methodology

##### ***Both 1-hr and 24-hr air quality monitoring (High Volume Sampler)***

##### Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets were employed for both 1-hour and 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).





Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m<sup>3</sup>/min and 1.7m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate is indicated on the flow rate chart.
- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 1 hour / 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.

Maintenance & Calibration

- The HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

**Wind Data Monitoring**

Wind data included wind speed and wind direction were directly extracted from Tuen Mun Station of Hong Kong Observatory during this reporting month. The wind data are presented in Appendix E.

**4.6 Action and Limit Levels**

Table 4.3 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.3 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP (µg/m <sup>3</sup> )		1-hr TSP (µg/m <sup>3</sup> )	
	Action Level	Limit Level	Action Level	Limit Level
TM-A1	192	260	344	500
TM-A2	192	260	344	500

**4.7 Event-Action Plans**

Please refer to Appendix F for details.



#### 4.8 Results and Observations

Totally 5 occasions of 24-hr TSP monitoring and 16 occasions of 1-hr TSP monitoring were carried out in this reporting period. All monitoring data of both 1-hr and 24-hr TSP monitoring is provided in Appendix B2. Graphical presentation of 1-hr and 24-hr TSP monitoring results for the reporting month is shown in Appendix B3. Wind data, including wind speed and wind direction, are annexed in Appendix E.

No exceedances of Action and Limit Level of both 1-hour and 24-hour TSP monitoring results were recorded during the reporting month.

Generally, the Contractor implemented sufficient dust mitigation measures, including operation of wheel washing facilities and road dampening by water bowsers on the main haul roads and unpaved areas.

#### 5.0 MARINE WATER QUALITY MONITORING

##### 5.1 Monitoring Requirements

In accordance with the Project Profile, impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-flood and mid-ebb tides at three depths (i.e. 1m below surface, mid depth and 1m from seabed) at two control monitoring stations (TM-FC1 and TM-FC2) and two impact monitoring stations (TM-FM1 and TM-FM2).

##### 5.2 Monitoring Locations

As stipulated in the EM&A requirement, there were four monitoring stations undertaken during the impact monitoring. Figure 3 shows the locations of the marine water quality monitoring stations.

##### 5.3 Monitoring Parameters and Frequency

Monitoring of the marine water quality parameters and frequency are listed in Table 5.1.

Table 5.1 Monitoring Parameters and Frequency of the marine water

Monitoring Station	Parameter	Frequency	No. of Depths
Control Stations: TM-FC1 and TM-FC2	Depth (m)	3 days/week, 2 tides/day	3 (Surface, mid-depth & bottom)
	Temperature (°C)		
Impact Stations: TM-FM1 and TM-FM2	Dissolved Oxygen (mg/L and % saturation)		
	Turbidity (NTU)		
	Salinity (ppt)		
	Suspended solids (mg/L)		

##### 5.4 Monitoring Methodology and Equipment Used

###### For Location of the monitoring stations

###### Global Positioning System (GPS)

A hand-held digital GPS was used to identify the designated monitoring stations prior to water sampling.

###### For Water Depth measurement

###### Echo Sounder

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.



**For In-situ Water Quality Measurement**

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring.

**Dissolved Oxygen (DO) and temperature measuring equipment**

A portable, weatherproof DO-measuring meter with built-in salinity compensation (YSI model 95) was used in the impact monitoring. It can be capable for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation; and
- a temperature of 0-45 degree Celsius

This type of DO-measuring meter has a membrane electrode with automatic temperature compensation complete with a 50-foot cable. Wet bulb calibration for a DO meter was carried out before the start of measurement.

**Turbidity Measurement Instrument**

A portable and weatherproof turbidity meter (HACH model 2100P) was used during impact monitoring. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU. Response of the sensor was checked with certified standard Turbidity solutions before the start of measurement.

**Salinity Meter**

A portable salinity meter capable of measuring salinity in the range 0-40 ppt (YSI Model 30M) was provided for measuring salinity of the water at each monitoring location. It was checked with standard 30 ppt Salinity solutions before the start of measurement.

**For Water Sampling and Sample Analysis**

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. At each sampling depth, duplicate readings of dissolved oxygen content and turbidity were taken. The probes were retrieved out of the water after first measurement and then redeployed for the second measurement. The difference between the two readings of each set was more than 25% of the value of the first reading while a third measurement would be conducted to ensure data precision.

**Water Sampler**

A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 liters, was lowered into the water body at the predetermined depth. The both opening ends of the sampler were then closed accordingly by dead weight and water samples were collected.

**Water Container**

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to a local HOKLAS-accredited laboratory (Environmental Laboratory, ETS-Testconsult Ltd, HOKLAS Registration No. 022) on the same day for analysis.

The summary of testing method of testing parameter as recommended by EIA or required by EPD, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 5.2. For the QA/QC procedures, one QC sample, one duplicate sample and one sample spike of every batch of 20 samples were analysis. The QA/QC results are summarized in Appendix L.

Table 5.2 Summary of testing procedures

Laboratory Analysis	Testing Procedure	Detection Limit
Total suspended solids	In house method based on APHA 19 <sup>th</sup> ed 2540D	1.0 mg/L

### In-situ measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before the start of measurement.

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. For turbidity measurement, the sample was collected by using sampler and then transferred to the cell. The reading of turbidity of the sample was directly recorded from the Turbidimeter (HACH 2100P) after inserting the cell to the Turbidimeter. For DO, DOS and Salinity, measurements were conducted three days per week at both mid-ebb and mid-flood tides at three depths (i.e. 1m below surface, mid depth and 1m from seabed). The duplicate measurements were averaged if the difference was not greater than 25%. If the difference is greater than 25%, repeat measurement will be required to be carried out.

Table 5.3 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix C1.

Table 5.3 Details of Marine Water Quality Monitoring Equipment (In-site measurement)

Parameter	Model	Date of Calibration	Due Date	Equipment No.
Coordinate of Monitoring stations	MLR GPS Navigator, SP24	----	----	ET/EW/005/01
Dissolved Oxygen (Saturation), Temperature, Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85	02/06/08	01/09/08	ET/EW/008/002 *
Turbidity	HACH Model 2100P Turbid Meter	28/07/08	27/10/08	ET/EW/006/001
Water Depth	EAGLE Strata 128 Sonar	----	----	EW/002/02

Remark: (\*) indicates the instrument should be calibrated on use.

### 5.5 Action and Limit Levels

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.

Table 5.4 Water Quality Action and Limit Levels

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> <4.16 mg/L (5%-ile of baseline data)	<u>Surface &amp; Middle</u> <4.00 mg/L (1%-ile of baseline data)  <u>Bottom</u> <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

### 5.6 Event and Action Plan

Please refer to the Appendix F for details.

### 5.7 Monitoring Duration and Period in this reporting month

Below is the time schedule for the water quality monitoring events that were conducted in this reporting month:

Table 5.5 Time Schedule of Marine Water Quality Monitoring

August 2008						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 / 31	25	26	27	28	29	30

Remark (▼) : Marine water quality monitoring carried out by ET

The duration of marine water quality monitoring is detailed in Appendix C2.

## 5.8 Marine Water Quality Monitoring Results

Totally 13 occasions (mid-flood and mid-ebb) of marine water quality monitoring were carried out in this reporting period. The impact water quality measurement results are detailed in Appendix C2. Appendix C3 presents the water quality monitoring data and graphical presentations of monitoring results respectively.

The summary of marine water quality exceedances is shown in Table 5.6.

Table 5.6 Summary of Marine Water Quality Exceedances in this reporting month

Tide	Station	Exceedance Level	DO		Turbidity	SS	Total
			Surface and Middle	Bottom			
Mid-Ebb	TM-FM1	Action	0	0	0	0	0
		Limit	0	0	0	0	0
	TM-FM2	Action	0	0	0	0	0
		Limit	0	0	0	0	0
Mid-Flood	TM-FM1	Action	0	0	0	0	0
		Limit	0	0	0	0	0
	TM-FM2	Action	0	0	0	0	0
		Limit	0	0	0	0	0
Total		Action	0	0	0	0	0
		Limit	0	0	0	0	0

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded for this reporting month.

## 6.0 Noise Monitoring

### 6.1 Monitoring Requirements

Noise monitoring was conducted at 2 designated monitoring stations as specified in the Sections 26.10 to 26.12 of the Particular Specification for good site practice.

The equipment, parameter, frequency, duration, methodology, calibration details, results and observations of the noise monitoring for the reporting month are presented in this section.

## 6.2 Monitoring Equipment

An Integrating Sound Level Meter was used for noise monitoring. It was a Type 1 sound level meter capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). It complies with International Electro Technical Commission Publications 651:1979 (Type1) and 804:1985 (Type1), and speed in m/s was used to monitor the wind speed.

Table 6.1 summarizes noise monitoring equipment model being used. A copy of the calibration certificate for noise meter and calibrator are attached in Appendix D1.

Table 6.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31 Sound Level Meter
Calibrator	Rion NC-73 Sound Level Calibrator
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter

## 6.3 Monitoring Parameters, Duration and Frequency

Duration, frequencies and parameters of noise measurement are presented in Table 6.2.

Table 6.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	Parameters	Frequency
Day-time: 0700-1900 hrs on normal weekday	30	$L_{eq}$ , $L_{10}$ , $L_{90}$	Twice per week

## 6.4 Monitoring Locations and Period

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) temporarily from 18 December 2007 and before Lands Department's approval.

The noise monitoring locations, TM-RN1 and TM-RN2 are shown in Figure 4.

The noise-monitoring period of monitoring stations is summarized in Appendix D2.

## 6.5 Monitoring Procedures and Calibration Details

### Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting: A
  - Time weighting : Fast
  - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Free Field correction to the measurements should be made. Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.



Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth in quarterly intervals.
- The meter is sent to the supplier or HOKLAS laboratory to check and calibrated in yearly intervals.

**6.6 Action and Limit Levels**

The Action and Limit levels for noise levels derived as illustrated in Table 6.3.

Table 6.3 Action and Limit Levels for noise monitoring

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

Remark (\*): The Action and Limit Levels refer to the Table 26.2 – Action and Limit Levels for Noise in the Particular Specification of Contract No.CV/2005/01.

**6.7 Event-Action Plans**

Please refer to the Appendix F for details.

**6.8 Results and Observation**

Totally 8 occasions of noise monitoring were carried out in this reporting month.

The detail of the noise monitoring is provided in Appendix D2. Graphical presentation of the monitoring result for the reporting month is shown in Appendix D3.

Since no documented complaints on noise issue were received in this reporting month, no Action Level exceedances were recorded. Besides, no exceedances in Limit Level were recorded according to the result from Day-time noise monitoring.

The major sources of noise pollution observed in this reporting month were noise from the traveling dump trucks and from the operation of site machines.

**7.0 ENVIRONMENTAL AUDIT**

**7.1 Weekly Site Inspection**

Weekly site inspections were carried out by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting month, four weekly site inspections were conducted on 05, 12, 19 and 26 August 2008. Summaries of weekly site inspection observations and recommendations in this reporting month are described as follows:

*Air Quality*

- The major dust sources were dump truck movement on the unpaved haul roads and loading & unloading activities on various working platforms in the Fill Bank. The Contractor deployed water bowsers to dampen the haul roads and the working platforms;
- Wheel washing facilities were found operating during weekly site inspections. However, the parts of water spraying system at wheel washing bay were found out of order during the weekly site inspection on 05 August 2008. The Contractor was reminded to repair the water spraying system promptly and ensure all drivers to use the wheel washing facilities to wash away any dusty materials before leaving the site by providing notice or manpower at site exit to inform the drivers. During the next weekly site inspection on 12 August 2008, the defect water spraying system was repaired and work properly;
- Water trucks served to dampen the haul roads and on the ramp to the stockpiling area;
- The dump trucks were operating below the speed limit in the Fill Bank. There were sufficient speed limit signs on site to advise the drivers;
- No fugitive dust was noted at unpaved areas and public roads in this reporting month. The Contractor was still reminded to improve the water spraying system to dampen unpaved areas and public roads;



- Follow up action to the outstanding observation in the previous month, the defect excavator at stockpile area was repaired and no black smoke was noted emitted from the excavator. However, the Contractor was still reminded to maintain the site vehicles and machines properly and avoid black smoke emission.
- The power of the engines of site equipment were off when not in use; and
- Water spraying system or other dust suppression facilities were noted at tipping halls during the weekly site inspections in the reporting month.

#### **Noise**

- The major noise source was dump truck traffic in the Fill Bank;
- Compressors and generators were operated with door closed; and
- All site equipment and machinery were well maintained and no noise nuisance was sensed during operating.

#### **Water Quality**

- Mud and silt were observed accumulated in the main drainage channel during the weekly site inspection on 12 August 2008. The Contractor was reminded to clean up the mud and silt to avoid any blockage. During the subsequent weekly site inspection on 19 August 2008, mud and silt accumulated in the main drainage channel were cleaned up;
- Stagnant water was noted at water truck filling station during the weekly site inspection on 19 August 2008. The Contractor was reminded to drain them or apply pesticide to avoid mosquito breeding. During the weekly site inspection on 26 August 2008, no stagnant water was still noted at water truck filling station;
- Mud and debris were observed accumulated in the manhole next to dump truck parking area during the weekly site inspection on 26 August 2008. The Contractor was reminded to clean up the mud and debris to avoid any blockage. Since the observation was noted at the last weekly site inspection, it will be verified in the coming month.

#### **Chemical and Waste Management**

- The chemical waste was stored in the Chemical Waste Storage Area (CWSA). The Contractor should dispose chemical wastes regularly to avoid over accumulation of chemical waste on site;
- Chemical containers accumulated at chemical waste storage area were collected by the licensed collector regularly;
- Oil leakage was noted from drip tray at chemical waste storage area during the weekly site inspection on 05 August 2008. The Contractor was reminded to repair the drip tray and clean up the oil stain immediately. During the weekly site inspection on 12 August 2008, the leak oil from the drip tray at chemical waste storage area was cleaned up and no oil leakage was noted from the drip tray after repaired.
- A chemical bucket was noted at full checking station without drip tray during the weekly site inspection on 12 August 2008. The Contractor was reminded to provide appropriate drip trays for all chemical or store them in an appropriated chemical storage area. During the next weekly site inspection on 19 August 2008, no chemicals were noted at full checking station without drip tray; and
- Oil stain was noted on the ground at full checking station during the weekly site inspection on 26 August 2008. The Contractor was reminded to clean up and treat the contaminated materials as chemical waste. Since the observation was noted at the last weekly site inspection, it will be verified in the coming month.

#### **Site Practices**

- Follow up action to the outstanding observation in the previous month, withered vegetation in the rubbish skip at full checking station was disposed during the weekly site inspection on 05 August 2008;
- Follow up action to the outstanding observation in the previous month, rubbish in the rubbish bin at workshop was collected during weekly site inspection on 12 August 2008;
- Some idle tires were found disposed at stockpile area during the weekly site inspection on 12 August 2008. The Contractor was reminded to collect the tires and dispose them properly. During the last weekly site inspection on 26 August 2008, the idle tires disposed at stockpile area were collected; and



- Rubbish was disposed on the ground next to the wheel washing bay during the weekly site inspection on 26 August 2008. The Contractor was reminded to collect the rubbish. Since the observation was noted at the last weekly site inspection, it will be verified in the coming month.

## 7.2 Review of Environmental Monitoring Procedures

The monitoring works conducted by the ET were inspected internally on a regular basis. The following observations have been recorded for the monitoring works:

### **Air Quality Monitoring**

- The monitoring team recorded the observations around the monitoring stations within and outside of the construction site.
- The monitoring team recorded the temperature, air pressure and general weather condition on the monitoring day.

### **Water Quality Monitoring**

- The monitoring team recorded the observations around the monitoring stations, which might affect the results; and
- Major water pollution sources were identified and recorded.

### **Noise Monitoring**

- The monitoring team recorded the observations around the monitoring station, which might affect the results.
- Major noise sources were identified and recorded.

## 7.3 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 7.1.

Table 7.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-210/2005	25/02/05	---	Issued
Chemical Waste Producer	5298-421-C1186-07	03/01/07	---	Spent lubricating oil, Petrol, Diesel, Battery and Surplus Paint
Effluent Discharge License	EP760/421/012141/I	19/04/07	30/04/12	Discharge of Industrial Trade Effluent arising from public fill reception facilities

## 7.4 Implementation Status

### 7.4.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix I. Most of the necessary mitigation measures were implemented properly.

### 7.4.2 Implementation Status of Event and Action Plan

There was no exceedance on air quality, noise and marine water monitoring parameters recorded in this monitoring month. Hence no further actions were required.

### 7.4.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No notifications of summons and successful prosecutions were received in this reporting month.



A complaint was received on 02 September 2008 through email forwarded by the EPD from a citizen against dust emission at the exit of Tuen Mun Area 38 Fill Bank which caused by the dropping of small size of stones / rocks from dump truck leaving the public dump site on 26 August 2008. The small sizes of stones were then crushed into dust by the movement of vehicles, hereby generating fugitive dust. The complainant complained that the dust generated caused an environmental nuisance.

The complaint was reported to be happened in the evening time on 26 August 2008. After discussing with the Contractor, they reported that the site was closed at around 19:00 on 26 August 2008. Since no other observer was reported in the complaint, it is difficult to proof whether the contractor dump truck or other private dump truck was leaving the site especially after 19:00.

Refer to the ET weekly site inspection on 26 August 2008, dust depression measures such as regular public road cleaning and wheel washing facilities at the site entrance were provided by the Contractor and which were also operated properly during our routine weekly site inspections. Besides, dump trucks with open load carrying area used for moving materials which has the potential to create dust were properly fitting side and tail boards and were covered by tarpaulin sheets to prevent dropping when leaving the site.

As a result, we concluded that the complaint is an occasional case and no evidence to proof the complaint is project related. However, the Contractor agreed to take more effort on the maintenance of the public road, such as checking the exist more frequently, increase the frequency of road watering and cleaning the haul road / public road as soon as possible when leaving of stones/rocks were found. In addition, hoarding related notices in the site area was advised to remind the public to avoid dropping of any stones/rocks on the road when leaving the public dump site.

A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 7.2.

Table 7.2 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful Prosecution	
August 2008	Cumulative	August 2008	Cumulative	August 2008	Cumulative
1	1	0	0	0	0

## 8.0 LANDSCAPE AND VISUAL

Landscape and visual site audit was carried out on a weekly basis to monitor environmental issues in order to ensure that all mitigation measures were implemented timely and properly. The findings in this reporting month were:

- The maximum stockpiling height at the Fill Bank was limited to a maximum of +40 mPD;
- The Contractor hydroseeded the outer slopes of the Fill Bank as far as practicable;
- The Contractor removed the stockpile of public fill in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable;
- *Casuarina equisetifolia* were planted as buffer tree along the northern perimeter of the site. The height of *Casuarina equisetifolia* was maintained at least 3000mm above soil level; and
- Lighting was set to minimize night-time glare.

## 9.0 WASTE MANAGEMENT

### 9.1 Summary of Waste generated in this month

The actual amounts of different types of waste generated by the activities of the Project in the month are shown in Table 9.1



Table 9.1 Actual amounts of Waste generated in this reporting month

Waste Type	Actual Amount	Disposal Locations
Public Fill	0 m <sup>3</sup>	---
C&D Waste (general refuse)	0 m <sup>3</sup>	---
Chemical Waste	245 kg	Collected by licensed waste collector

## 9.2 Advice on the Solid and Liquid Waste Management Status

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

The drain outlet of all the bunded areas should be plugged properly. Besides, pre-cast drip trays were provided for oil drums at several areas, such as workshop and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the concrete bunding and drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal should be properly kept in the site office.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including permanent desilting chambers, desilting facilities, oil interceptor bypass tank and all the trapezoidal channels. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

All the runoff from the parking area should be pumped to the desilting facilities and oil interceptors to remove suspended solids and oil & grease prior to discharge.

## 10.0 ENVIRONMENTAL NON-CONFORMANCE

### 10.1 Summary of air quality, noise and marine water quality

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month.

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded for this reporting month.

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 month.

### 10.2 Summary of Environmental Complaints

A complaint was received on 02 September 2008 through email forwarded by the EPD from a citizen against dust emission at the exit of Tuen Mun Area 38 Fill Bank which caused by the dropping of small size of stones / rocks from dump truck leaving the public dump site on 26 August 2008. The small sizes of stones were then crushed into dust by the movement of vehicles, hereby generating fugitive dust. The complainant complained that the dust generated caused an environmental nuisance.

The complaint was reported to be happened in the evening time on 26 August 2008. After discussing with the Contractor, they reported that the site was closed at around 19:00 on 26 August 2008. Since no other observer was reported in the complaint, it is difficult to proof whether the contractor dump truck or other private dump truck was leaving the site especially after 19:00.



Refer to the ET weekly site inspection on 26 August 2008, dust depression measures such as regular public road cleaning and wheel washing facilities at the site entrance were provided by the Contractor and which were also operated properly during our routine weekly site inspections. Besides, dump trucks with open load carrying area used for moving materials which has the potential to create dust were properly fitting side and tail boards and were covered by tarpaulin sheets to prevent dropping when leaving the site.

As a result, we concluded that the complaint is an occasional case and no evidence to prove the complaint is project related. However, the Contractor agreed to take more effort on the maintenance of the public road, such as checking the exist more frequently, increase the frequency of road watering and cleaning the haul road / public road as soon as possible when leaving of stones/rocks were found. In addition, hoarding related notices in the site area was advised to remind the public to avoid dropping of any stones/rocks on the road when leaving the public dump site.

### 10.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this reporting month.

## 11.0 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Impact monitoring of air quality, noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

Impact monitoring of air quality were carried out at designated locations in accordance with the Project Profile in this reporting month.

According to the summary of air monitoring results, no exceedances of Action and Limit Level of 1-hour and 24-hour TSP monitoring results were recorded during the reporting month.

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded in this reporting month.

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 month.

According to the weekly site inspections carried out in this reporting month, the Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems and automatic wheel washing facilities, dampening of haul roads and stockpiling areas.

No prosecutions or notifications of summons were received in this reporting month.

A complaint was received on 02 September 2008 through email forwarded by the EPD from a citizen against dust emission at the exit of Tuen Mun Area 38 Fill Bank which caused by the dropping of small size of stones / rocks from dump truck leaving the public dump site on 26 August 2008. Details of the complaint are present in clause 10.2.

### Recommendations

According to the environmental site inspections performed in the reporting month, 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 bowsers;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- 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 hydroseeded slopes properly.

## **12.0 FUTURE KEY ISSUES**

Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- Dust generation from activities on site, such as vehicular movements along unpaved area and rock crushing activities;
- Noise impact from operating equipment and machinery on site and
- Wastewater and surface runoff from the site discharged into nearby water body.



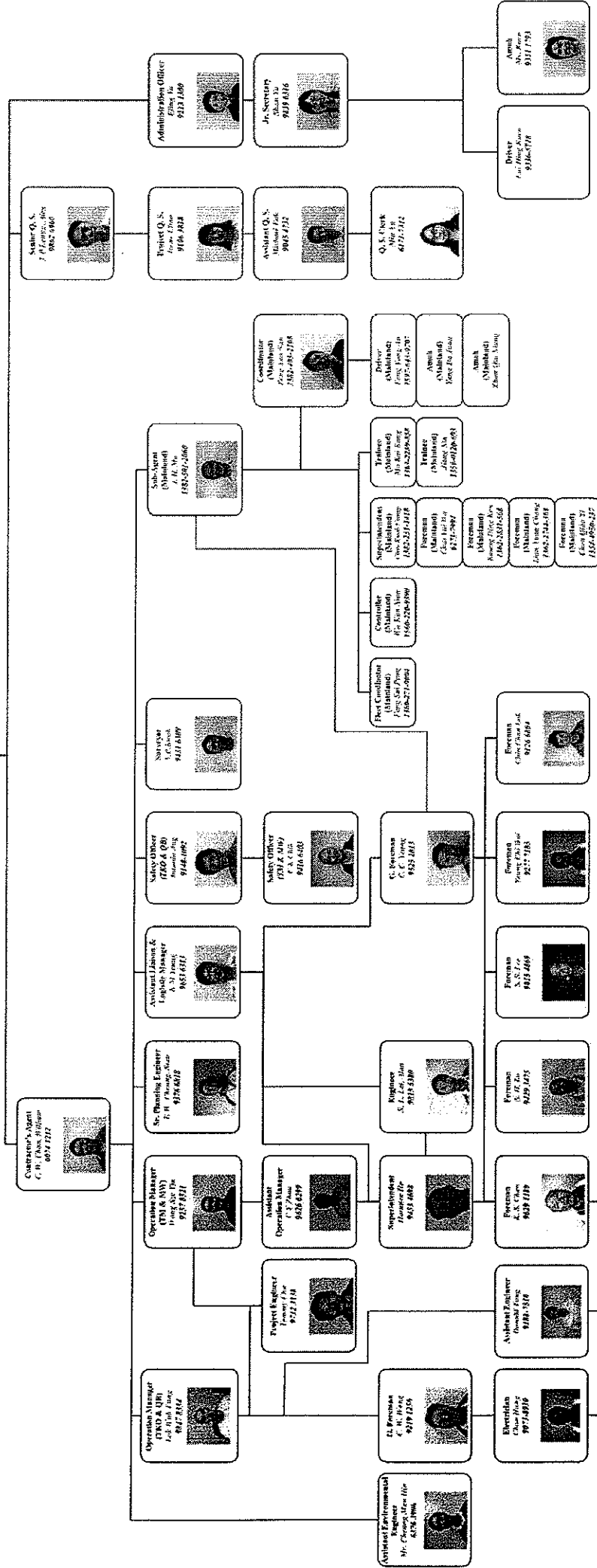
## **Appendix A**

### **Organization Chart and Lines of Communication**

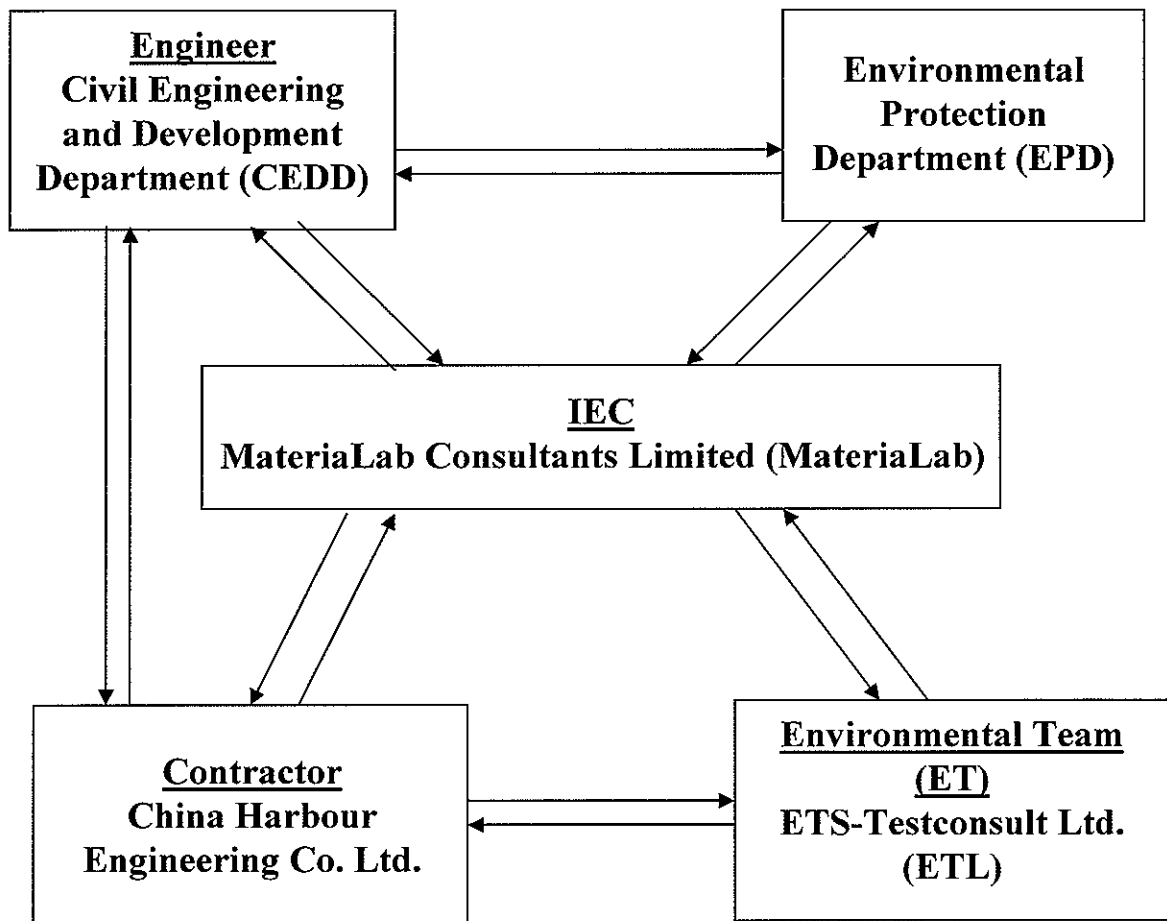
Contract No. CV/2005/01  
 Delivery of Reclamation Material to Mainland



Senior Project Manager  
 H.S. Wilson  
 9467 2175



# Lines of Communication







## **Appendix B1**

### **Calibration Certificates for Impact Air Quality Monitoring Equipments**



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etf@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

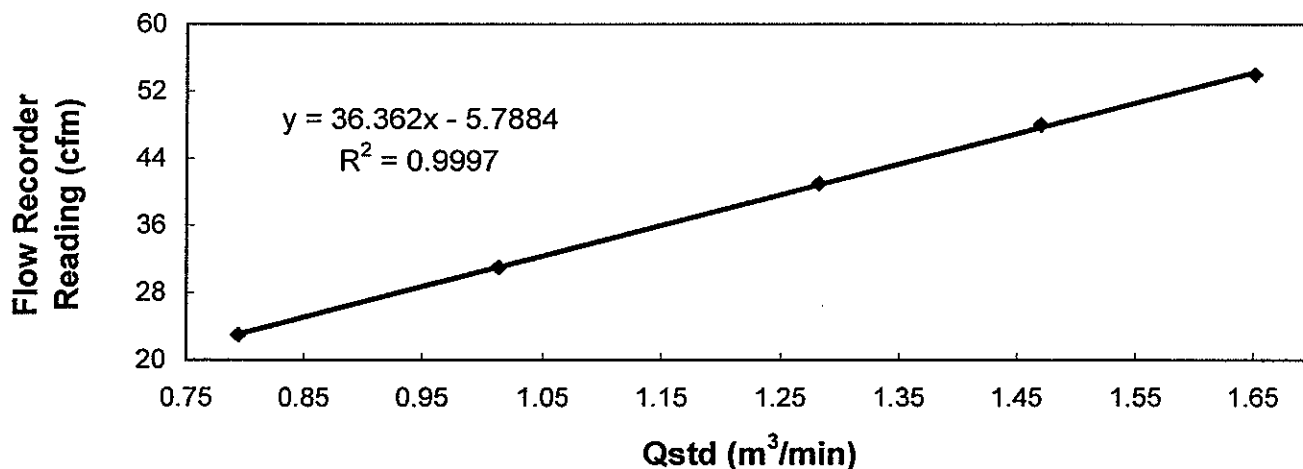
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 10 July 2008  
**Serial No.** : 9503 ( ET / EA / 003 / 03 ) Calibration Due Date : 09 September 2008  
**Method** : Based on Operations Manual for the 5-point calibration using standard calibration kit manufactured by Tisch TE-5025 A

**Results** :

Flow recorder reading (cfm)	54	48	41	31	23
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.65	1.47	1.28	1.01	0.79
Pressure :	761.31 mm Hg		Temp. :	302 K	

**Sampler 9503 Calibration Curve**  
**Site: Tuen Mun 38 (TM-A1)**  
**Date of Calibration: 10 July 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by : MAK Kei Wai  
MAK, Kei Wai  
(Senior Technician)

Approved by : CHOW, Hoi Tat  
CHOW, Hoi Tat  
(Asst. Environmental Officer)



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

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Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

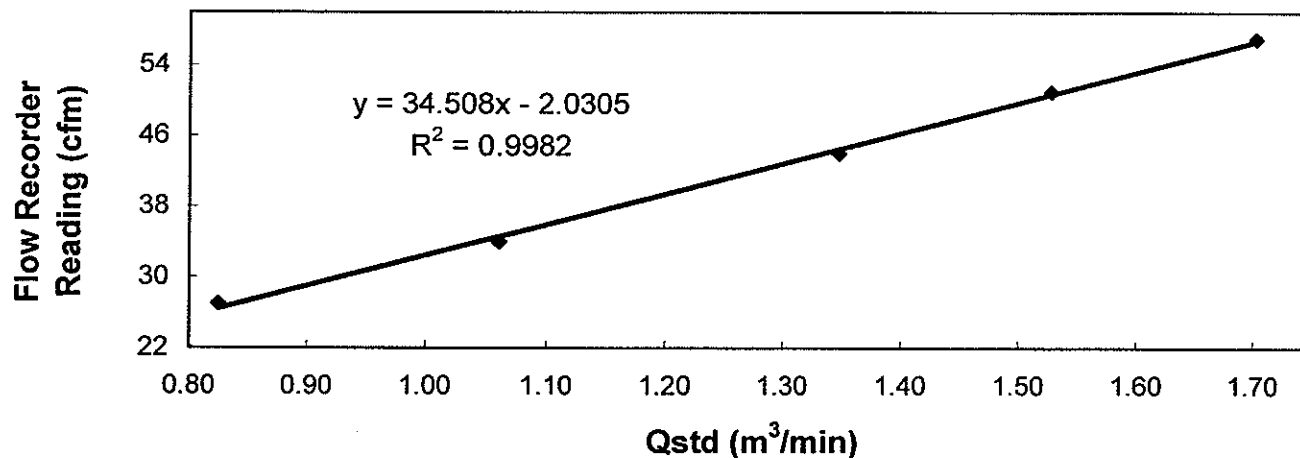
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW **Date of Calibration** : 10 July 2008  
**Serial No.** : 8115 ( ET / EA / 003 / 13 ) **Calibration Due Date** : 09 September 2008  
**Method** : Based on Operations Manual for the 5-point calibration using standard calibration kit manufactured by Tisch TE-5025 A

**Results** :

Flow recorder reading (cfm)	57	51	44	34	27
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.70	1.53	1.35	1.06	0.82
Pressure :	761.31 mm Hg			Temp. :	302 K

**Sampler 8115 Calibration Curve**  
**Site: Tuen Mun 38 (TM-A2)**  
**Date of Calibration: 10 July 2008**



**Acceptance Criteria** : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by : Mak Kei Wai  
Mak, Kei Wai  
(Senior Technician)

Approved by : [Signature]  
CHOW, Hoi Tat  
(Asst. Environmental Officer)



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 14, 2008 Roots-meter S/N 9833620 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 1172 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3800	3.1	2.00
2	NA	NA	1.00	0.9650	6.3	4.00
3	NA	NA	1.00	0.8630	7.9	5.00
4	NA	NA	1.00	0.8230	8.6	5.50
5	NA	NA	1.00	0.6770	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9935	0.7199	1.4125	0.9958	0.7216	0.8866
0.9893	1.0252	1.9976	0.9916	1.0276	1.2538
0.9870	1.1437	2.2334	0.9894	1.1464	1.4018
0.9862	1.1983	2.3424	0.9885	1.2011	1.4703
0.9807	1.4486	2.8251	0.9830	1.4521	1.7732
Qstd slope (m) =		1.94106	Qa slope (m) =		1.21546
intercept (b) =		0.01311	intercept (b) =		0.00823
coefficient (r) =		0.99996	coefficient (r) =		0.99996

y axis =  $\sqrt{H_2O(Pa/760)(298/Ta)}$

y axis =  $\sqrt{H_2O(Ta/Pa)}$

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$   
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$   
 $Q_a = V_a / \text{Time}$

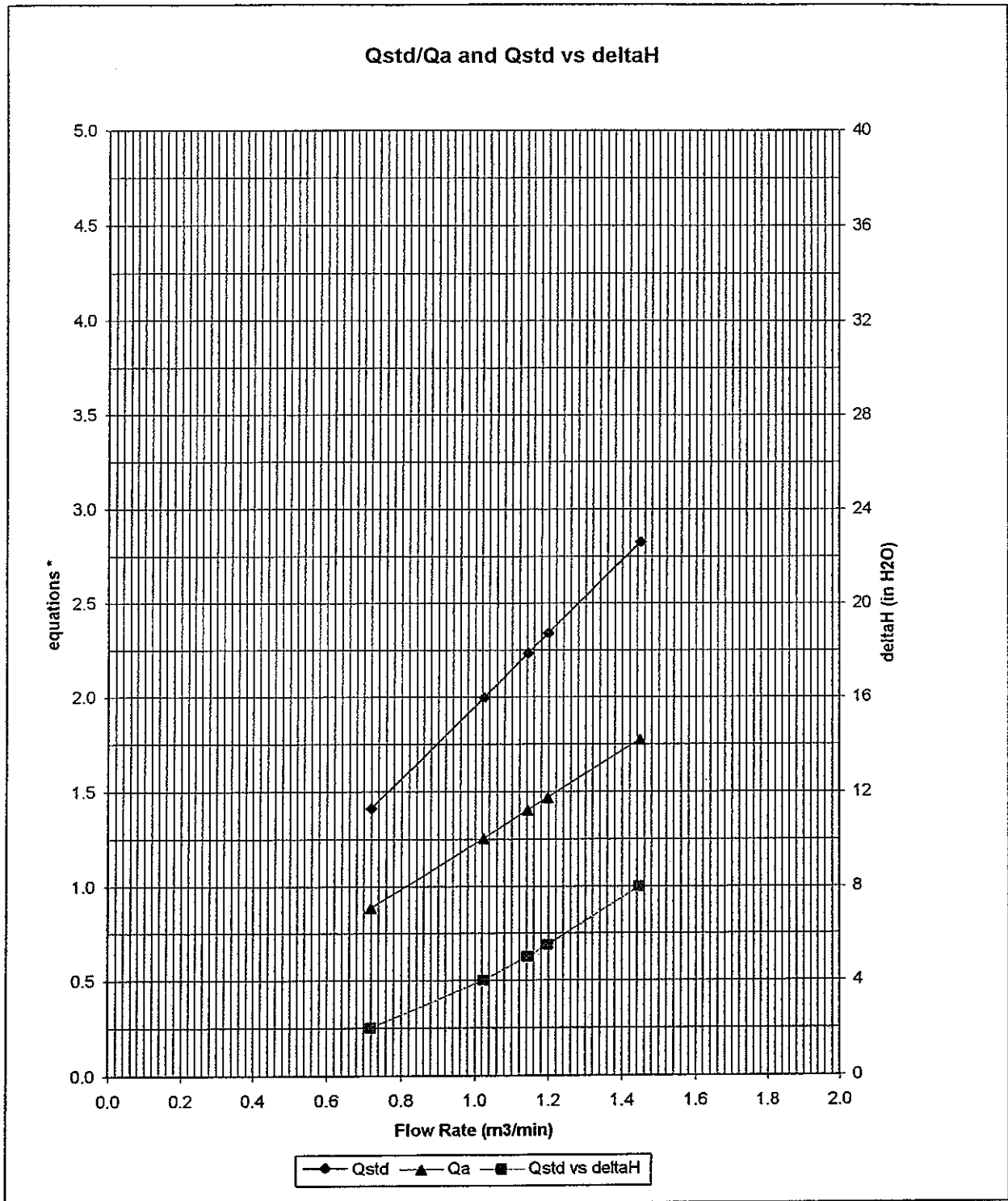
For subsequent flow rate calculations:

$Q_{std} = 1/m \{ [\sqrt{H_2O(Pa/760)(298/Ta)}] - b \}$   
 $Q_a = 1/m \{ [\sqrt{H_2O(Ta/Pa)}] - b \}$



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 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT



\* y-axis equations:

Qstd series: 
$$\sqrt{\Delta H \left( \frac{P_a}{P_{std}} \right) \left( \frac{T_{std}}{T_a} \right)}$$

Qa series: 
$$\sqrt{(\Delta H (T_a / P_a))}$$

# 1172



## **Appendix B2**

### **Impact Air Quality Monitoring Results**

## Summary of 24-hr TSP Monitoring Results

Monitoring Station : TM-A1

Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
04/08/08	10:10	05/08/08	10:10	12711.16	12735.16	24.00	1.0392	1.0392	1.0392	2.8363	3.0498	143
09/08/08	10:30	10/08/08	10:30	12738.16	12762.16	24.00	1.0392	1.0392	1.0392	2.8096	2.9975	126
15/08/08	10:15	16/08/08	10:15	12765.16	12789.16	24.00	0.9842	0.9842	0.9842	2.8316	3.0357	144
21/08/08	13:00	22/08/08	13:00	12792.16	12816.16	24.00	1.0117	1.0117	1.0117	2.8354	3.0386	139
27/08/08	10:30	28/08/08	10:30	12819.16	12843.16	24.00	1.0117	1.0117	1.0117	2.7867	2.9846	136

Monitoring Station : TM-A2

Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
04/08/08	10:15	05/08/08	10:15	2975.14	2999.14	24.00	0.9862	0.9862	0.9862	2.8268	3.0607	165
09/08/08	10:22	10/08/08	10:22	3002.14	3026.14	24.00	0.9862	0.9862	0.9862	2.8133	3.0244	149
15/08/08	10:02	16/08/08	10:02	3029.14	3053.14	24.00	1.0441	1.0441	1.0441	2.8405	3.0856	163
21/08/08	13:05	22/08/08	13:05	3056.14	3080.14	24.00	1.0151	1.0151	1.0151	2.8297	3.0695	164
27/08/08	10:38	28/08/08	10:38	3082.14	3106.14	24.00	1.0151	1.0151	1.0151	2.8101	3.0218	145

## Summary of 1-hr TSP Monitoring Results

Monitoring Station : TM-A1  
Location : Outside CEDD Site Office

Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
02/08/08	09:00	10:00	12709.16	12710.16	1.00	1.0392	1.0392	1.0392	2.8419	2.8613	311
04/08/08	09:00	10:00	12710.16	12711.16	1.00	1.0392	1.0392	1.0392	2.8567	2.8732	265
05/08/08	10:18	11:18	12735.16	12736.16	1.00	1.0667	1.0667	1.0667	2.8485	2.8629	225
07/08/08	09:00	10:00	12736.16	12737.16	1.00	1.0667	1.0667	1.0667	2.8637	2.8794	245
09/08/08	09:00	10:00	12737.16	12738.16	1.00	1.0667	1.0667	1.0667	2.8126	2.8294	263
12/08/08	09:00	10:00	12762.16	12763.16	1.00	1.0392	1.0392	1.0392	2.8297	2.8475	285
14/08/08	09:00	10:00	12763.16	12764.14	1.00	1.0392	1.0392	1.0392	2.8302	2.8471	271
15/08/08	09:00	10:00	12764.16	12765.16	1.00	1.0117	1.0117	1.0117	2.8329	2.8484	255
16/08/08	10:30	11:30	12789.16	12790.16	1.00	1.0117	1.0117	1.0117	2.8424	2.8556	217
19/08/08	09:00	10:00	12790.16	12791.16	1.00	1.0117	1.0117	1.0117	2.8225	2.8380	255
21/08/08	09:00	10:00	12791.16	12792.16	1.00	1.0117	1.0117	1.0117	2.8272	2.8447	288
23/08/08	09:00	10:00	12816.16	12817.16	1.00	1.0117	1.0117	1.0117	2.8449	2.8591	234
26/08/08	09:00	10:00	12817.16	12818.16	1.00	1.0117	1.0117	1.0117	2.8324	2.8473	245
27/08/08	09:00	10:00	12818.16	12819.16	1.00	1.0117	1.0117	1.0117	2.7911	2.8069	260
28/08/08	10:55	11:55	12843.16	12844.16	1.00	1.0392	1.0392	1.0392	2.8232	2.8403	274
30/08/08	09:00	10:00	12844.16	12845.16	1.00	1.0392	1.0392	1.0392	2.8041	2.8225	295

Monitoring Station : TM-A2  
Location : Site Egress

Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
02/08/08	09:05	10:05	2973.14	2974.14	1.00	0.9862	0.9862	0.9862	2.8368	2.8568	338
04/08/08	09:00	10:00	2974.14	2975.14	1.00	0.9862	0.9862	0.9862	2.8416	2.8600	311
05/08/08	10:27	11:27	2999.14	3000.14	1.00	1.0151	1.0151	1.0151	2.8415	2.8586	281
07/08/08	09:00	10:00	3000.14	3001.14	1.00	1.0151	1.0151	1.0151	2.8664	2.8846	299
09/08/08	09:00	10:00	3001.14	3002.14	1.00	1.0151	1.0151	1.0151	2.8155	2.8338	300
12/08/08	09:00	10:00	3026.14	3027.14	1.00	0.9862	0.9862	0.9862	2.8355	2.8544	319
14/08/08	09:00	10:00	3027.14	3028.14	1.00	0.9862	0.9862	0.9862	2.8371	2.8543	291
15/08/08	09:00	10:00	3028.14	3029.14	1.00	1.0151	1.0151	1.0151	2.8254	2.8442	309
16/08/08	10:20	11:20	3053.14	3054.14	1.00	1.0151	1.0151	1.0151	2.8383	2.8578	320
19/08/08	09:00	10:00	3054.14	3055.14	1.00	1.0151	1.0151	1.0151	2.8256	2.8444	309
21/08/08	09:00	10:00	3055.14	3056.14	1.00	1.0151	1.0151	1.0151	2.8403	2.8566	268
23/08/08	09:00	10:00	3080.14	3081.14	1.00	1.0151	1.0151	1.0151	2.8503	2.8634	215
26/08/08	09:00	10:00	3081.14	3082.14	1.00	1.0151	1.0151	1.0151	2.8226	2.8405	294
27/08/08	09:00	10:00	3082.14	3083.14	1.00	1.0151	1.0151	1.0151	2.8009	2.8176	274
28/08/08	10:45	11:45	3106.14	3107.14	1.00	0.9572	0.9572	0.9572	2.8305	2.8493	327
30/08/08	09:00	10:00	3107.14	3108.14	1.00	0.9572	0.9572	0.9572	2.7977	2.8172	340



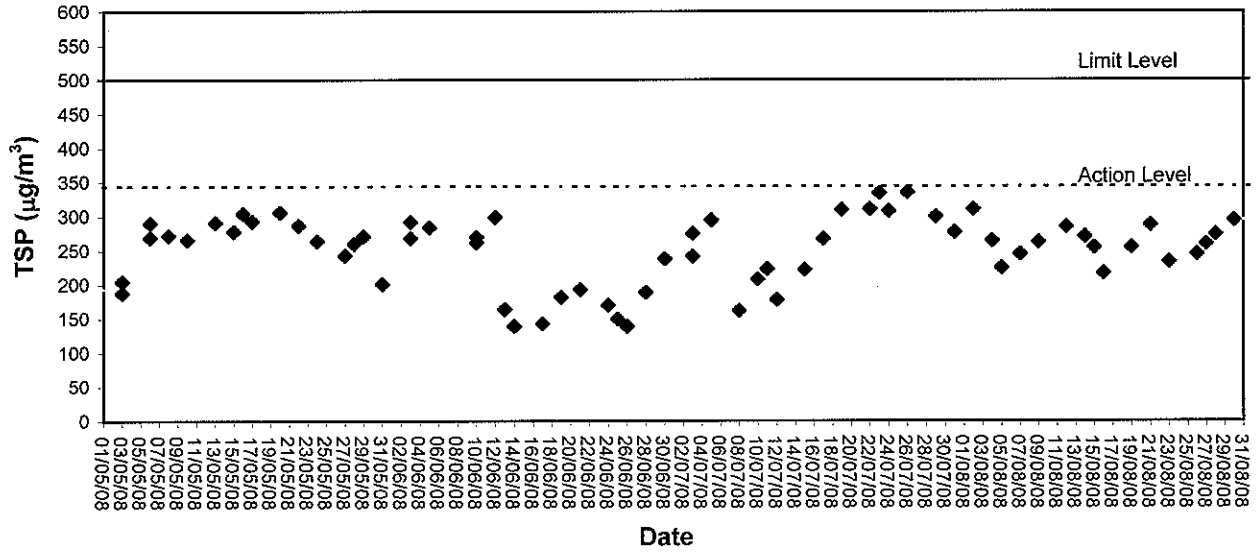


## **Appendix B3**

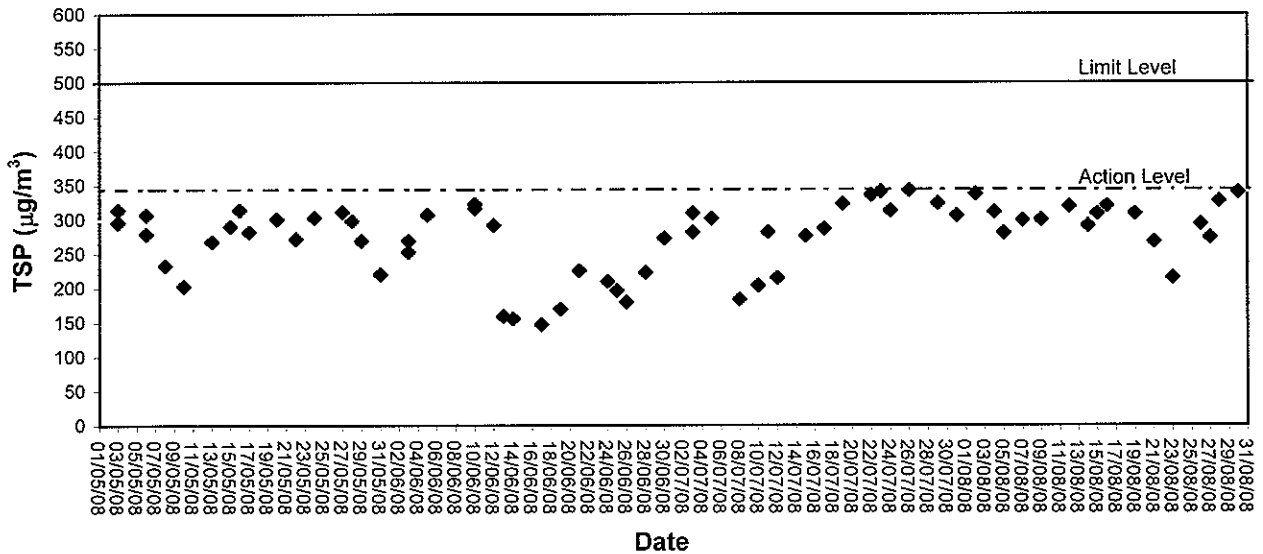
### **Graphical Plots of Impact Air Quality Monitoring Data**



### 1-hour TSP level at TM-A1

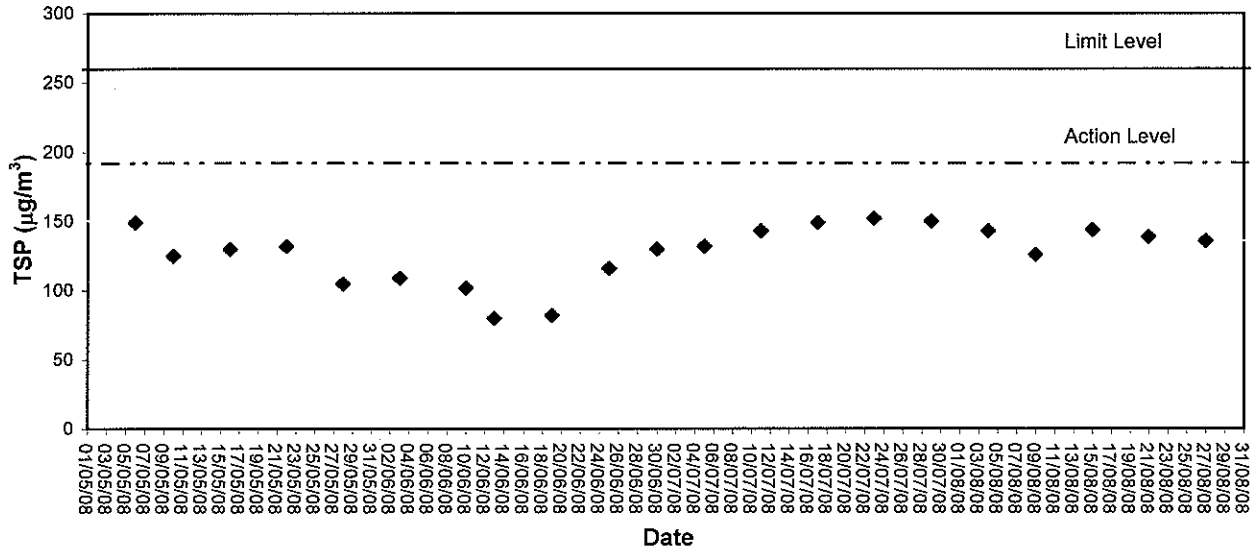


### 1-hour TSP level at TM-A2

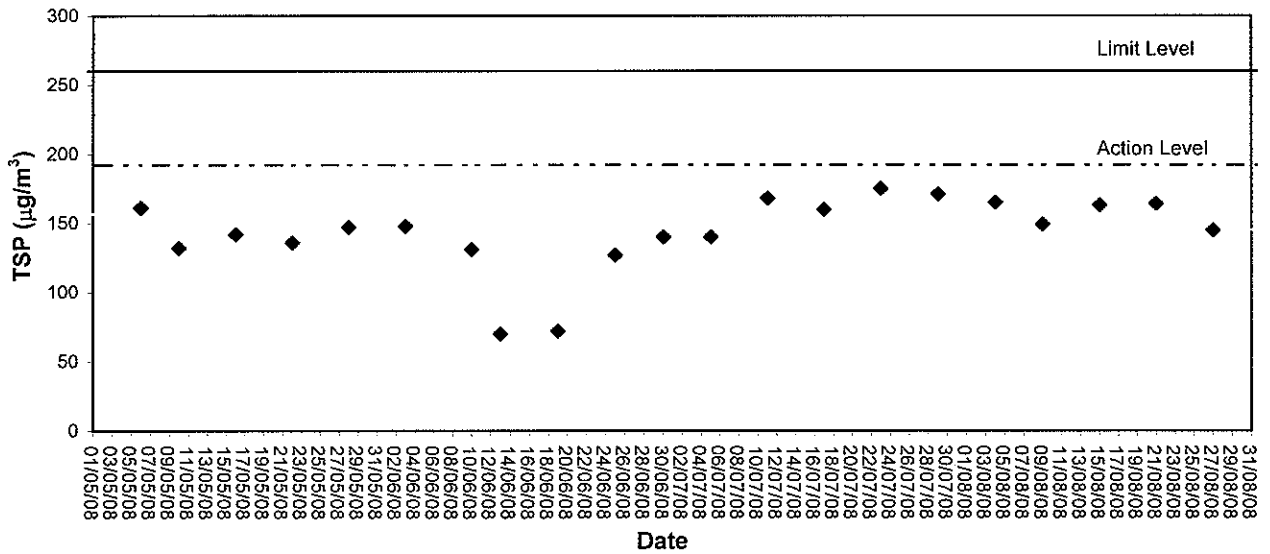




### 24-hour TSP level at TM-A1



### 24-hour TSP level at TM-A2





**Appendix C1**

**Calibration Certificates for  
Impact Marine Water Quality Monitoring Equipments**



### Internal Calibration Report of Turbidimeter

Equipment Ref. No. : ETIEN10061001 Manufacturer : HACH  
Model No. : HACH 2100P Serial No. : 040500035856  
Date of Calibration : 28/10/08 Calibration Due : 26/10/08  
27  
28/10/08

#### Data

5.60	53.0	540
0 - 10 NTU Gelex Vial	10 - 100 NTU Gelex Vial	100 - 1000 NTU Gelex Vial
5.63	53.5	546

The equipment complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

\* Delete as appropriate

Calibrated by : [Signature] Approved by : [Signature]



### Internal Calibration Report of Dissolved Oxygen Meter

ETTEL/008/002

Equipment Ref. No. :	<u>ETTEL/008/002</u>	216/08	Manufacturer :	<u>VSI</u>
Model No. :	<u>85</u>		Serial No. :	<u>060199870</u>
Date of Calibration :	<u>216/08</u>		Calibration Due Date :	<u>1/9/08</u>

Ref. No. of Reference Thermometer : ET/0521/003

Ref. No. of Potassium Dichromate : ET/022/003/02

**Temperature Verification**

	Temperature (°C)
Thermometer reading	<u>24.0</u>
Meter reading	<u>24.0</u>

**Linearity Checking**

Purging time, min	DO meter reading, mg/L			Winkler Titration result, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	<u>7.51</u>	<u>7.53</u>	<u>7.52</u>	<u>7.40</u>	<u>7.44</u>	<u>7.42</u>	<u>1.38</u>
5	<u>5.80</u>	<u>5.78</u>	<u>5.79</u>	<u>5.63</u>	<u>5.61</u>	<u>5.62</u>	<u>2.98</u>
10	<u>3.75</u>	<u>3.73</u>	<u>3.74</u>	<u>3.64</u>	<u>3.62</u>	<u>3.63</u>	<u>2.99</u>
Linear regression coefficient						<u>0.9996</u>	

**Zero Point Checking**

DO meter reading, mg/L	<u>0.00</u>
------------------------	-------------

**Salinity Checking**

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	<u>6.23</u>	<u>6.25</u>	<u>6.24</u>	<u>6.27</u>	<u>6.29</u>	<u>6.28</u>	<u>0.6%</u>
30	<u>6.30</u>	<u>6.32</u>	<u>6.31</u>	<u>6.22</u>	<u>6.20</u>	<u>6.21</u>	<u>1.60</u>

**Acceptance Criteria**

- (1) Difference between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : > 0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

\* Delete as appropriate

Calibrated by :  Approved by :



## Performance Check of Salinity Meter

Equipment Ref. No. : BTEW1008102      Manufacturer : YSI  
Model No. : YS185      Serial No. : 06C1998AD  
Date of Calibration : 216108      Due Date : 19108

Ref. No. of Salinity Standard used (30ppt)

J36.

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.7	1.00%

Acceptance Criteria

Difference : <10 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by :

Approved by :



## **Appendix C2**

### **Impact Marine Water Quality Monitoring Results**



# Mid-Flood Tide



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/08	0830-0845	32/Cloudy	Surface	28.5	27.1	27.1	6.81	6.79	6.60	98.0	97.7	8.02	8.04	8.5	8.4	8.6		
			Middle	27.1	29.2	29.2	6.40	6.42	6.60	97.4	92.3	8.05	8.50	8.2	8.5			
			Bottom	27.1	29.2	29.2	6.43	6.42	6.60	92.5	92.3	8.50	8.50	8.5	8.5			
05/08/08	0840-0854	29/Cloudy	Surface	29.7	20.6	20.6	5.98	5.96	5.96	86.1	81.8	9.14	7.41	7.5	7.4	7.9		
			Middle	29.4	21.8	21.8	5.94	5.79	5.90	85.5	78.7	9.12	7.82	7.2	7.9			
			Bottom	29.4	21.8	21.8	6.01	5.79	5.90	81.9	78.7	7.41	7.83	8.0	8.8			
07/08/08	1005-1018	28/Cloudy	Surface	28.7	22.3	22.3	5.54	5.54	5.54	73.7	73.7	7.71	7.70	8.3	8.4	8.3		
			Middle	28.0	17.3	17.3	6.38	6.34	6.11	73.7	89.0	7.69	8.70	8.5	7.9			
			Bottom	28.0	19.8	19.8	5.87	5.87	5.59	89.3	82.8	8.68	8.82	7.7	8.8			
09/08/08	1300-1313	31/Fine	Surface	29.7	22.8	22.8	5.78	6.18	6.07	82.8	85.4	8.84	7.96	7.5	7.5	8.5		
			Middle	27.3	23.1	23.1	6.30	5.95	6.07	82.8	82.6	8.71	8.07	8.5	8.5			
			Bottom	27.3	23.5	23.5	5.87	5.72	5.72	82.4	77.9	8.80	8.42	8.2	9.5			
12/08/08	1710-1724	30/Cloudy	Surface	27.2	27.5	27.5	5.58	6.50	6.09	78.1	89.8	8.41	8.98	8.0	8.0	9.1		
			Middle	28.1	28.2	28.2	5.60	5.68	6.09	77.7	78.5	8.43	7.72	8.0	9.3			
			Bottom	28.1	29.5	29.5	6.49	5.26	5.26	89.9	72.6	8.94	9.39	8.0	10.0			
14/08/08	1800-1815	31/Sunny	Surface	29.2	27.6	27.6	5.70	6.77	6.52	97.0	96.8	9.02	7.92	7.5	7.5	8.2		
			Middle	28.0	29.1	29.1	6.30	6.28	6.52	96.5	89.1	7.90	8.29	8.0	8.1			
			Bottom	28.0	29.6	29.6	6.25	5.93	5.93	89.4	84.2	8.30	8.77	8.2	9.0			
16/08/08	0740-0753	29/Sunny	Surface	29.2	21.9	21.9	5.95	6.15	6.10	84.4	87.7	8.77	9.38	7.8	7.9	8.4		
			Middle	29.1	21.5	21.5	6.14	6.06	6.10	87.6	87.7	9.35	9.06	8.0	8.5			
			Bottom	28.4	22.4	22.4	6.05	5.88	5.88	85.7	83.0	9.05	10.16	8.5	8.8			
					22.3	22.3	5.86	5.88	5.88	83.3	83.0	10.20	10.2	9.0	8.9			

# Mid-Flood Tide



東業 德 勤 測 試 顧 問 有 限 公 司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
19/08/08	0730-0741	29/Sunny	Surface	28.0	22.8	22.9	6.29	6.30	88.1	88.3	7.50	7.51	7.0	7.2	7.6			
			Middle	27.8	23.4	6.14	6.15	88.4	86.0	7.41	7.41	7.3	7.5					
			Bottom	27.9	23.5	6.15	6.10	86.0	85.4	7.40	7.11	7.5	8.0					
21/08/08	1000-1015	30/Cloudy	Surface	28.7	24.6	24.8	6.10	6.10	85.4	99.0	7.11	7.11	7.8	7.9	8.6			
			Middle	27.9	27.4	6.89	6.88	99.2	92.5	7.61	8.31	8.0	8.5					
			Bottom	27.5	29.1	6.86	6.43	92.8	86.6	7.64	8.58	8.5	9.3					
23/08/08	1200-1215	29/Rainy	Surface	27.8	29.5	29.6	6.06	6.04	87.2	86.9	8.59	8.58	9.3	9.3	8.6			
			Middle	27.3	24.8	24.8	6.69	6.68	95.3	95.5	7.12	7.14	7.5	7.4				
			Bottom	26.9	28.4	6.30	6.28	88.7	89.1	8.56	8.57	8.5	8.4					
26/08/08	1600-1615	32/Sunny	Surface	28.6	29.0	29.0	5.95	5.93	84.4	84.2	8.91	8.90	10.0	10.0	8.8			
			Middle	27.5	29.1	5.69	5.68	79.0	78.8	8.74	8.73	10.0	10.0					
			Bottom	27.4	30.2	5.45	5.43	75.2	74.9	9.39	9.38	10.0	10.0					
28/08/08	1700-1714	31/Sunny	Surface	31.5	22.7	22.9	6.17	6.18	88.4	88.5	8.14	8.15	7.5	7.5	9.0			
			Middle	30.6	23.5	5.79	5.81	82.8	83.0	9.22	9.22	9.5	9.5					
			Bottom	30.2	23.4	5.83	5.37	76.0	76.3	9.43	9.43	10.0	10.0					
30/08/08	0740-0755	29/Fine	Surface	29.8	22.9	22.8	6.06	6.04	84.8	84.5	10.70	10.7	8.8	8.9	10.2			
			Middle	29.5	23.3	5.37	5.39	75.7	75.9	12.90	13.0	9.0	12.0					
			Bottom	29.3	24.0	5.20	5.20	73.3	73.2	9.97	9.97	12.0	12.0					

# Mid-Flood Tide



東業德動測試顧問有限公司  
ETS-TESTCONSULT LIMITED

Monitoring Station : TM-FM1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/08	0750-0805	32/Cloudy	Surface	28.4	26.3	26.6	6.59	6.57	6.35	94.8	94.6	7.54	7.56	7.5	7.5	8.6		
			Middle	27.2	29.2	6.15	6.13	87.3	87.6	8.71	8.70	8.5	8.5					
			Bottom	26.9	29.5	5.94	5.92	84.9	84.6	10.10	10.2	9.5	9.7					
05/08/08	0917-0930	29/Cloudy	Surface	29.7	20.9	21.0	6.34	6.35	6.18	83.7	83.8	8.90	8.91	8.5	8.5	8.9		
			Middle	29.2	21.5	6.02	6.02	81.9	81.8	8.40	8.41	8.8	8.8					
			Bottom	28.2	21.8	5.63	5.65	74.3	74.5	8.21	8.21	9.3	9.3					
07/08/08	1046-1100	28/Cloudy	Surface	27.8	17.1	17.1	6.50	6.52	6.13	91.0	91.4	9.02	9.01	8.5	8.7	8.8		
			Middle	27.5	21.4	5.73	5.74	81.4	81.5	8.71	8.71	8.2	8.3					
			Bottom	27.0	21.5	5.61	5.61	79.1	78.9	8.60	8.64	9.5	9.5					
09/08/08	1340-1350	31/Fine	Surface	29.7	22.3	22.4	6.24	6.24	6.02	86.7	86.6	8.78	8.79	8.0	7.9	8.2		
			Middle	28.8	22.8	5.80	5.80	79.5	79.4	8.65	8.65	8.2	8.3					
			Bottom	27.9	23.2	5.31	5.32	73.3	73.4	9.00	8.98	8.5	8.5					
12/08/08	1630-1642	30/Cloudy	Surface	27.0	27.0	27.1	6.39	6.38	6.02	88.2	88.1	7.89	7.95	8.3	8.3	9.2		
			Middle	26.4	29.3	5.68	5.66	78.4	78.2	10.40	10.5	9.5	9.5					
			Bottom	25.8	29.9	5.04	5.03	69.6	69.5	9.82	9.79	10.0	9.9					
14/08/08	1720-1735	31/Sunny	Surface	29.4	27.4	27.4	6.62	6.60	6.37	94.6	94.3	8.07	8.06	7.7	7.8	8.2		
			Middle	27.9	28.9	6.12	6.15	88.2	87.9	8.90	8.91	8.2	8.2					
			Bottom	27.7	29.4	5.81	5.79	82.5	82.1	9.40	9.42	8.5	8.5					
16/08/08	0816-0830	29/Sunny	Surface	29.6	20.7	20.7	6.17	6.17	6.10	88.2	88.2	8.91	8.92	8.3	8.3	9.3		
			Middle	29.1	21.4	6.03	6.03	85.6	85.6	9.21	9.24	9.5	9.5					
			Bottom	28.3	22.2	5.68	5.66	80.7	80.6	9.51	9.52	10.0	10.0					

# Mid-Flood Tide

Monitoring Station : TM-FM1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
19/08/08	0805-0820	29/Sunny	Surface	28.2	24.2	24.2	6.40	6.41	6.30	89.3	89.5	8.02	8.02	8.5	8.5	8.5		
			Middle	28.1	25.4	25.3	6.42	6.19	6.30	89.7	86.7	8.01	8.08	8.5	8.5			
			Bottom	27.6	25.2	25.3	6.20	6.18	6.30	86.8	86.7	8.08	8.07	7.8	7.8		8.5	
21/08/08	0920-0935	30/Cloudy	Surface	28.7	26.4	26.3	6.00	6.00	6.00	84.1	84.1	9.04	9.05	9.3	9.3	9.1		
			Middle	27.7	26.2	26.2	6.00	6.00	6.00	84.1	84.1	9.06	9.06	9.3	9.3		9.1	
			Bottom	27.3	27.2	27.2	6.67	6.66	6.49	96.0	95.8	7.74	7.75	7.7	7.9		9.1	
23/08/08	1120-1135	29/Rainy	Surface	27.8	28.9	28.9	6.34	6.32	6.27	90.6	90.3	9.49	9.51	8.0	8.0	8.2		
			Middle	27.4	28.8	28.3	6.12	6.10	6.27	87.5	87.2	9.21	9.23	8.3	8.3		8.2	
			Bottom	27.0	28.3	28.3	6.08	6.08	6.27	86.9	87.2	9.24	9.23	8.3	8.3		8.2	
25/08/08	1520-1535	32/Sunny	Surface	28.4	28.9	28.9	5.62	5.61	5.61	79.8	79.6	9.67	9.68	8.8	8.8	8.4		
			Middle	27.7	25.6	25.6	5.59	5.61	5.61	79.3	79.6	9.69	9.68	8.8	8.8		8.4	
			Bottom	27.5	25.6	25.6	6.44	6.42	6.17	89.5	89.2	7.80	7.82	7.2	7.3		8.4	
28/08/08	1740-1754	31/Sunny	Surface	31.5	28.8	28.8	5.93	5.92	5.98	82.4	82.2	8.89	8.88	10.0	10.0	10.3		
			Middle	30.2	28.7	28.8	5.90	5.92	5.98	82.0	82.2	7.83	8.88	10.0	10.0		10.3	
			Bottom	29.5	30.2	30.2	5.62	5.60	5.60	78.1	77.8	9.67	9.68	9.5	9.5		10.3	
30/08/08	0824-0837	29/Fine	Surface	30.6	23.6	23.6	5.20	5.19	5.19	73.1	73.1	10.80	10.8	11.0	11.0	10.4		
			Middle	30.0	23.6	23.6	5.17	5.19	5.19	73.0	73.1	10.70	10.8	11.0	11.0		10.4	
			Bottom	29.5	22.6	22.8	6.37	6.38	5.93	91.1	91.3	10.10	10.3	9.7	9.9		10.4	
			Surface	29.5	22.9	22.9	6.39	6.38	5.93	91.4	91.3	10.40	10.3	11.0	11.0	11.0		
			Middle	30.0	22.5	22.5	5.47	5.48	5.93	77.7	77.8	10.90	11.0	10.2	10.4		11.0	
			Bottom	29.5	23.3	23.3	5.48	5.07	5.07	72.9	72.4	11.10	12.1	10.5	11.0		11.0	
					23.2	23.3	5.05	5.07	5.07	72.2	72.4	12.10	12.1	11.0	11.0			

# Mid-Flood Tide

## Monitoring Station : TM-FM2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Value	Average
02/08/08	0810-0825	32/Cloudy	Surface	28.4	27.0	27.0	6.70	6.72	6.70	96.4	96.7	7.39	7.41	7.7	7.9	8.5		
			Middle	27.2	29.2	6.39	6.38	92.0	91.8	8.96	8.95	8.0	8.4					
			Bottom	27.0	29.5	5.87	5.86	91.5	84.3	8.94	9.97	8.5	9.2					
05/08/08	0859-0913	29/Cloudy	Surface	29.5	21.3	21.3	6.20	6.19	82.7	82.6	7.54	7.57	7.5	7.5	8.0			
			Middle	29.1	21.5	5.89	5.87	78.9	78.6	7.25	7.28	8.5	8.5					
			Bottom	28.4	21.8	5.65	5.67	74.1	74.3	7.13	7.11	8.0	8.0					
07/08/08	1028-1041	28/Cloudy	Surface	28.1	17.4	17.3	6.85	6.83	95.9	95.7	8.40	8.38	8.5	8.5	8.7			
			Middle	27.6	20.3	5.94	5.94	83.8	83.8	8.50	8.52	8.2	8.4					
			Bottom	27.2	21.0	5.64	5.64	80.1	80.1	9.04	9.02	9.0	9.2					
09/08/08	1320-1334	31/Fine	Surface	29.7	22.7	22.6	6.18	6.18	85.9	85.9	9.11	9.12	9.0	9.1	9.2			
			Middle	29.0	23.1	5.86	5.87	80.3	80.5	9.00	9.01	9.5	9.5					
			Bottom	28.4	23.4	5.30	5.31	73.1	73.3	9.31	9.31	9.0	9.0					
12/08/08	1647-1700	30/Cloudy	Surface	26.9	27.1	27.1	6.65	6.63	91.8	91.6	8.63	8.67	10.0	10.0	9.2			
			Middle	26.2	29.0	5.92	5.91	81.7	81.6	9.44	9.51	8.5	8.5					
			Bottom	25.6	29.8	5.31	5.29	73.3	73.1	9.03	9.06	9.0	9.2					
14/08/08	1740-1755	31/Sunny	Surface	29.1	27.6	27.5	6.57	6.55	93.9	93.6	8.14	8.13	8.2	8.2	8.9			
			Middle	27.9	29.1	6.09	6.08	87.0	86.8	8.75	8.77	8.8	8.9					
			Bottom	27.7	29.5	5.65	5.63	80.5	80.1	9.29	9.28	9.5	9.5					
16/08/08	0759-0811	29/Sunny	Surface	29.4	21.3	21.3	6.21	6.21	89.1	89.2	9.11	9.11	8.5	8.5	8.8			
			Middle	29.2	21.5	6.08	6.08	86.4	86.4	9.17	9.17	8.3	8.4					
			Bottom	28.6	22.7	5.94	5.95	84.9	85.0	9.78	9.78	9.5	9.6					

# Mid-Flood Tide



東業德動測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FM2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value
19/08/08	0747-0800	29/Sunny	Surface	28.1	22.5	22.6	6.53	6.52	92.1	91.9	7.34	7.33	7.5	7.5	7.8		
					22.7		6.51		91.7		7.32		7.5				
					23.2	23.3	6.31	6.30	87.1	86.8	7.14	7.15	8.2	8.4			
21/08/08	0940-0955	30/Cloudy	Bottom	27.7	23.3	23.3	6.28	6.07	86.5	84.3	7.16	7.02	7.5	7.5	9.1		
					24.8	24.7	6.07	6.07	84.3	84.3	7.01	7.86	7.5	7.9			
					24.5	27.4	6.06	6.70	84.2	96.4	7.03	7.87	7.5	9.0			
23/08/08	1140-1155	29/Rainy	Surface	27.8	27.4	27.4	6.71	6.42	96.6	91.8	7.85	6.90	7.0	7.0	8.3		
					27.4	29.0	6.68	6.23	96.1	89.9	7.87	9.07	8.0	8.3			
					28.4	28.4	6.25	6.23	90.2	89.1	9.05	9.21	9.5	9.5			
26/08/08	1540-1555	32/Sunny	Bottom	27.0	29.0	29.0	5.97	5.82	85.3	82.5	9.78	9.84	10.0	10.0	9.0		
					29.6	29.6	5.94	5.82	84.9	82.5	9.79	9.84	10.0	10.0			
					24.8	25.8	6.40	6.52	91.5	90.5	6.89	7.71	7.0	7.5			
28/08/08	1722-1735	31/Sunny	Surface	28.6	24.8	25.8	6.44	6.26	92.0	89.8	6.90	10.0	9.5	9.5	10.3		
					25.7	21.4	6.50	6.26	90.7	89.7	7.69	10.0	7.5	9.5			
					29.0	22.4	5.87	5.76	81.5	82.4	9.02	10.6	9.3	10.4			
30/08/08	0804-0818	29/Fine	Bottom	30.0	29.1	29.1	5.82	5.09	80.8	72.3	9.05	10.8	10.2	10.6	10.7		
					30.4	21.8	5.57	5.09	76.8	72.3	9.80	10.8	10.5	10.6			
					30.4	21.7	5.54	5.00	76.4	71.0	9.83	12.3	10.0	12.0			
30/08/08	0804-0818	29/Fine	Surface	29.4	21.2	21.4	6.27	5.00	89.8	86.9	10.00	9.21	9.5	9.5	12.0		
					21.5	21.2	6.25	6.13	89.7	86.9	10.00	9.21	9.5	9.5			
					22.3	21.4	5.78	5.00	82.1	86.9	10.50	9.20	10.2	9.5			
30/08/08	0804-0818	29/Fine	Middle	30.0	22.4	22.4	5.74	5.00	82.7	72.3	10.60	10.8	10.5	10.6	10.7		
					22.8	21.8	5.21	5.00	74.1	72.3	11.40	10.8	11.0	10.6			
					22.9	21.7	5.20	5.00	73.7	71.0	11.40	12.3	11.0	12.0			
30/08/08	0804-0818	29/Fine	Bottom	29.4	22.3	22.4	5.00	5.00	71.0	71.0	12.30	12.3	12.0	12.0	12.0		
					22.3	22.4	5.00	5.00	71.0	71.0	12.30	12.3	12.0	12.0			
					22.3	22.4	5.00	5.00	71.0	71.0	12.30	12.3	12.0	12.0			

# Mid-Flood Tide



東榮 儀器 測試 顧問 有限公司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/08	0730-0745	32/Cloudy	Surface	28.3	26.7	26.7	6.67	6.65	6.43	96.0	95.7	8.21	8.23	8.5	8.4	9.3		
			Middle	27.1	29.0	29.0	6.23	6.22	6.43	89.7	89.5	8.24	9.63	9.5	9.4			
			Bottom	27.0	29.0	29.4	6.20	6.22	6.43	89.2	89.5	9.62	9.63	9.3	9.4			
05/08/08	0938-0952	29/Cloudy	Surface	29.4	29.4	29.4	5.82	5.84	5.84	83.8	84.1	10.20	10.2	10.0	10.0	9.2		
			Middle	28.5	20.6	20.3	5.86	6.27	6.11	84.3	83.4	10.10	8.69	8.5	8.4			
			Bottom	28.0	20.7	21.2	6.30	5.52	5.52	83.0	80.1	8.70	8.95	8.2	9.5			
07/08/08	1106-1120	28/Cloudy	Surface	28.0	16.8	16.7	5.51	6.47	6.07	73.3	73.5	9.53	8.87	8.0	8.1	8.7		
			Middle	27.2	20.9	21.0	5.53	5.67	6.07	73.6	77.1	9.56	8.95	8.2	8.5			
			Bottom	26.8	21.0	22.0	6.47	5.66	5.45	88.6	88.6	8.88	8.87	8.0	8.1			
09/08/08	1357-1408	31/Fine	Surface	29.6	22.1	22.2	6.14	6.14	5.89	83.5	83.4	8.24	8.22	8.5	8.4	8.5		
			Middle	28.2	22.5	22.6	6.13	5.64	5.89	83.2	77.8	8.20	8.26	8.2	8.5			
			Bottom	27.4	22.6	23.0	5.63	5.64	5.15	77.5	77.7	8.25	8.26	8.5	8.5			
12/08/08	1615-1622	30/Cloudy	Surface	27.1	27.4	27.4	5.14	5.15	5.15	70.9	71.1	8.35	8.38	8.5	8.5	9.3		
			Middle	26.7	28.7	28.7	5.16	5.40	5.81	71.3	74.6	8.41	9.34	10.0	10.0			
			Bottom	26.0	29.8	29.7	6.24	4.96	4.94	86.1	68.3	10.40	8.31	10.0	10.0			
14/08/08	1700-1715	31/Sunny	Surface	29.4	27.4	27.4	6.75	6.73	6.46	96.5	96.2	8.53	8.55	8.5	8.5	9.3		
			Middle	28.1	28.9	28.9	6.21	6.19	6.46	95.9	88.5	8.56	9.45	9.3	9.3			
			Bottom	27.6	29.4	29.4	6.17	5.88	5.88	88.2	84.0	9.46	9.45	9.3	9.3			
16/08/08	0838-0850	29/Sunny	Surface	29.6	21.7	21.9	5.90	6.07	5.98	84.3	84.9	10.10	8.83	10.0	10.0	8.5		
			Middle	28.6	22.5	22.7	6.06	5.90	5.98	83.6	83.7	8.84	9.13	8.0	8.2			
			Bottom	28.0	23.2	23.3	5.37	5.36	5.36	76.8	76.6	10.30	10.3	9.5	9.6			

# Mid-Flood Tide

## Monitoring Station : TM-FC1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
19/08/08	0826-0840	29/Sunny	Surface	28.5	23.8	23.9	6.45	6.44	90.3	90.2	7.80	7.79	7.5	7.5	7.8			
			Middle	28.0	25.1	6.10	6.09	85.4	85.2	7.64	7.62	7.2	7.3					
			Bottom	27.5	26.0	5.82	5.81	80.9	80.8	8.12	8.12	8.5	8.5					
21/08/08	0900-0915	30/Cloudy	Surface	28.8	27.3	27.3	6.52	6.54	93.8	94.1	8.21	8.23	8.0	8.1	9.0			
			Middle	27.6	28.8	6.55	6.19	94.3	89.1	8.24	9.75	9.5	9.5					
			Bottom	27.4	29.4	5.86	5.84	84.3	84.1	10.10	10.2	9.5	9.5					
23/08/08	1100-1115	29/Rainy	Surface	27.6	24.2	24.2	6.52	6.51	93.2	93.0	7.62	7.64	7.0	7.2	8.2			
			Middle	27.4	28.2	6.09	6.08	92.8	86.8	8.87	8.87	8.5	8.4					
			Bottom	26.9	28.8	5.78	5.76	82.6	82.3	9.92	9.91	9.0	9.0					
26/08/08	1500-1515	32/Sunny	Surface	28.4	25.7	25.7	6.53	6.52	90.7	90.5	8.58	8.58	8.5	8.7	9.4			
			Middle	27.7	28.9	5.72	5.70	79.5	79.2	9.72	9.74	9.5	9.5					
			Bottom	27.4	30.2	5.49	5.48	75.7	75.5	10.20	10.3	10.0	10.0					
28/08/08	1759-1812	31/Sunny	Surface	31.2	22.4	22.4	6.20	6.21	88.9	89.0	8.41	8.41	8.0	8.0	8.7			
			Middle	30.0	22.8	5.80	5.79	82.7	82.6	8.34	8.36	8.5	8.5					
			Bottom	29.6	23.6	5.25	5.27	74.9	75.1	9.09	9.12	9.5	9.6					
30/08/08	0847-0900	29/Fine	Surface	30.9	21.9	21.9	6.20	6.21	86.8	86.9	9.56	9.57	9.5	9.5	10.2			
			Middle	29.8	23.4	5.24	5.24	87.0	73.8	9.58	9.83	10.0	10.0					
			Bottom	29.1	24.4	5.11	5.13	72.6	72.9	10.90	11.0	11.0	11.0					



# Mid-Ebb Tide

## Monitoring Station : TM-FC1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Value	Average
02/09/08	1315-1330	32/Cloudy	Surface	28.8	26.8	26.8	6.52	6.50	93.8	93.5	9.12	9.14	8.5	8.7	9.3			
			Middle	27.6	29.1	29.1	6.10	6.08	87.8	87.5	9.98	9.97	8.8	9.5				
			Bottom	27.4	29.5	29.5	5.62	5.60	80.9	80.6	10.50	10.7	9.7	9.9				
05/09/08	1631-1645	30/Drizzle	Surface	29.7	20.0	20.0	6.24	6.24	82.8	82.8	8.41	8.41	8.2	8.3	8.7			
			Middle	28.3	21.0	21.0	5.90	5.90	79.2	79.1	8.40	8.50	8.5	8.5				
			Bottom	27.9	21.6	21.6	5.41	5.42	73.0	73.2	9.20	9.21	9.3	9.3				
07/09/08	1744-1757	28/Cloudy	Surface	27.8	18.7	18.8	6.21	6.22	83.8	83.9	8.74	8.72	8.5	8.5	8.8			
			Middle	27.2	21.4	21.5	5.64	5.62	76.4	76.2	8.64	8.62	8.5	8.7				
			Bottom	26.4	22.2	22.3	5.42	5.44	73.4	73.6	9.21	9.21	9.3	9.3				
09/09/08	0831-0843	27/Cloudy	Surface	27.9	21.5	21.6	6.24	6.26	87.4	87.7	8.40	8.41	7.5	7.5	8.4			
			Middle	27.3	22.3	22.4	5.68	5.69	77.8	77.9	8.71	8.71	8.5	8.5				
			Bottom	26.8	22.9	22.9	5.11	5.11	71.0	71.0	9.11	9.13	9.3	9.3				
12/09/08	0930-0943	29/Cloudy	Surface	26.8	26.8	26.8	6.56	6.55	90.3	90.2	9.99	9.98	10.0	10.0	10.2			
			Middle	26.2	29.6	29.5	5.73	5.71	88.0	88.0	10.20	10.2	9.5	9.5				
			Bottom	25.7	30.4	30.4	5.46	5.45	78.8	78.6	10.10	10.2	11.0	11.0				
14/09/08	1100-1115	31/Sunny	Surface	29.7	27.2	27.2	6.62	6.61	94.6	94.4	8.87	8.88	8.5	8.5	9.5			
			Middle	28.2	28.8	28.8	6.12	6.11	87.5	87.3	9.96	9.95	9.7	9.9				
			Bottom	27.6	29.4	29.4	5.64	5.62	80.6	80.3	10.50	10.7	10.0	10.0				
16/09/08	1329-1343	33/Sunny	Surface	32.1	22.8	22.9	6.00	5.99	83.5	83.4	9.24	9.23	8.8	8.9	9.5			
			Middle	30.6	23.5	23.7	5.52	5.52	78.4	78.3	9.51	9.52	9.5	9.5				
			Bottom	29.3	24.0	24.2	5.02	5.04	71.3	71.6	10.30	10.3	10.0	10.0				

# Mid-Ebb Tide



英業德動測試驗有限公司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
19/08/08	1431-1442	34/Sunny	Surface	32.0	25.4	25.3	6.27	6.26	89.0	88.9	7.24	7.22	7.5	7.7	8.0		
			Middle	30.7	26.4	6.03	6.04	88.7	85.8	7.20	7.06	7.8	8.3				
			Bottom	29.0	26.3	6.05	6.05	85.9	81.4	7.07	7.23	8.2	8.0				
21/08/08	1500-1515	30/Cloudy	Surface	29.2	27.3	27.4	5.73	6.51	81.2	93.7	7.22	9.05	9.5	9.5	9.6		
			Middle	27.8	28.9	6.07	6.05	94.0	87.0	9.06	9.49	9.3	9.3				
			Bottom	27.6	29.6	5.67	5.65	86.6	80.7	10.30	10.4	10.0	10.0				
23/08/08	1530-1545	29/Rainy	Surface	27.8	24.4	24.4	6.57	6.59	94.5	94.2	8.05	8.07	8.8	8.8	9.4		
			Middle	27.2	28.4	6.14	6.12	93.9	87.5	8.08	9.26	8.8	9.5				
			Bottom	26.9	28.3	6.10	5.93	87.2	84.2	9.25	10.2	9.5	10.0				
26/08/08	0830-0844	29/Sunny	Surface	27.6	25.2	25.2	5.95	6.39	84.4	89.3	10.10	10.4	10.0	10.0	9.2		
			Middle	25.9	29.6	5.73	5.72	83.9	79.9	10.20	8.18	9.5	8.3				
			Bottom	24.6	29.4	5.71	5.34	89.5	74.6	10.50	9.32	9.5	9.9				
28/08/08	1137-1149	32/Sunny	Surface	31.2	21.8	21.9	5.32	6.29	74.4	89.3	8.45	8.44	7.7	7.8	8.7		
			Middle	30.2	22.4	5.83	5.84	89.0	83.5	8.42	8.57	7.8	8.8				
			Bottom	29.5	22.5	5.84	5.19	83.4	73.6	8.54	9.43	8.8	9.5				
30/08/08	1315-1329	34/Sunny	Surface	32.1	23.0	23.0	5.17	5.97	73.4	82.9	9.41	9.38	9.5	9.6	10.2		
			Middle	31.3	23.2	5.30	5.29	82.7	75.6	10.10	10.1	9.7	10.0				
			Bottom	30.4	23.3	5.27	5.14	75.3	72.9	10.00	11.3	10.0	11.0				
					23.8	23.9	5.13	5.14	73.0	72.7	11.40	11.40	11.0	11.0			

# Mid-Ebb Tide



東業 繼 勤 測 試 顧 問 有 限 公 司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FM1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Value	Average
02/08/08	1335-1350	32/Cloudy	Surface	28.9	26.8	26.7	6.61	6.59	6.39	94.9	8.06	8.05	8.5	8.5	8.9			
			Middle	27.7	29.2	29.1	6.21	6.19	88.8	9.33	9.36	8.5	8.7					
			Bottom	27.3	29.5	29.5	5.74	5.72	82.6	9.90	9.93	9.5	9.5					
05/08/08	1610-1624	30/Drizzle	Surface	29.5	20.5	20.4	6.21	6.23	6.09	82.4	8.41	8.41	8.5	8.5	8.0			
			Middle	29.1	21.7	21.7	5.95	5.96	80.0	8.04	8.07	8.0	8.1					
			Bottom	28.1	22.1	22.0	5.41	5.44	73.2	8.14	8.14	7.5	7.5					
07/08/08	1735-1737	28/Cloudy	Surface	28.0	19.1	19.2	6.35	6.33	6.07	84.9	8.58	8.56	8.5	8.5	8.6			
			Middle	27.3	21.7	21.8	5.80	5.81	82.3	8.34	8.37	8.0	8.1					
			Bottom	26.8	22.3	22.2	5.63	5.63	80.0	8.71	8.72	9.2	9.3					
09/08/08	0812-0824	27/Cloudy	Surface	27.8	22.0	22.0	6.47	6.46	6.15	88.5	8.89	8.8	8.9	9.0				
			Middle	27.5	22.2	22.2	5.84	5.85	80.0	9.41	9.41	9.5	9.5					
			Bottom	26.9	22.5	22.5	5.25	5.26	71.9	8.42	8.39	8.5	8.5					
12/08/08	0952-1004	29/Cloudy	Surface	26.5	27.0	27.0	6.67	6.65	6.36	91.6	8.77	8.85	8.9	9.6				
			Middle	26.0	29.0	28.9	6.08	6.07	83.7	9.25	9.29	9.5	9.5					
			Bottom	25.5	30.2	30.2	5.79	5.77	79.7	10.90	11.10	10.3	10.3					
14/08/08	1120-1135	31/Sunny	Surface	29.8	27.5	27.4	6.43	6.41	6.21	91.6	7.86	7.7	7.9	9.0				
			Middle	28.1	28.9	28.9	6.03	6.01	86.2	9.03	9.02	9.5	9.5					
			Bottom	27.7	29.4	29.4	5.72	5.71	81.2	9.70	9.72	9.5	9.5					
16/08/08	1310-1322	33/Sunny	Surface	32.3	21.5	21.4	6.07	6.07	6.00	85.8	8.62	8.5	8.5	9.1				
			Middle	31.3	22.1	22.1	5.92	5.93	84.5	9.03	9.03	9.0	9.0					
			Bottom	29.7	22.9	22.8	5.50	5.49	78.6	9.62	9.61	9.8	9.9					

# Mid-Ebb Tide

## Monitoring Station : TM-FM1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
19/08/08	1415-1426	34/Sunny	Surface	31.8	26.1	26.2	6.15	6.15	6.10	86.0	86.0	8.10	8.09	7.8	7.7	8.1		
					26.2	27.1	6.14	6.06	86.0	83.8	8.07	7.87	7.5	8.5				
					27.2	28.0	6.05	6.06	83.7	83.8	7.85	7.86	8.5	8.5				
21/08/08	1520-1535	30/Cloudy	Bottom	29.4	28.0	28.1	5.94	5.93	5.93	83.1	83.1	7.65	7.65	8.2	8.3	9.2		
					28.1	27.4	5.92	6.62	95.0	95.3	8.14	8.16	8.0	8.0				
					27.3	29.0	6.64	6.17	95.6	88.1	8.17	9.35	8.0	9.5				
23/08/08	1550-1605	29/Rainy	Surface	27.9	29.0	29.0	6.15	6.17	6.39	88.1	88.1	9.36	9.35	9.5	9.5	8.5		
					29.0	28.3	6.18	6.28	88.3	89.7	9.34	8.95	10.0	8.5				
					29.6	28.4	5.95	5.80	85.0	82.3	9.79	9.88	10.0	9.5				
26/08/08	0852-0905	29/Sunny	Surface	27.7	29.6	29.6	5.91	5.93	5.93	84.8	84.8	9.76	9.78	10.0	10.0	8.6		
					29.6	29.0	5.78	5.80	84.5	87.4	9.76	7.65	7.5	7.5				
					24.8	29.0	6.73	6.26	96.2	87.4	7.18	7.65	7.5	7.5				
28/08/08	1117-1130	32/Sunny	Surface	31.4	25.8	25.8	6.27	6.26	5.96	87.5	87.4	7.61	7.65	7.3	7.4	10.8		
					25.8	29.0	6.25	5.66	84.2	79.1	7.69	8.51	7.5	9.0				
					22.6	29.4	6.19	5.41	84.5	75.6	8.48	9.39	10.0	9.0				
30/08/08	1255-1308	34/Sunny	Surface	32.4	30.0	30.0	5.42	5.41	5.41	88.2	88.4	9.43	9.93	10.0	10.0	10.2		
					30.0	23.8	5.32	5.94	76.2	84.2	11.80	9.93	10.0	10.5				
					24.3	24.1	5.11	5.36	75.9	76.0	10.40	9.77	10.5	10.5				
30/08/08	1255-1308	34/Sunny	Middle	31.9	23.5	23.5	5.29	5.31	5.31	84.2	84.4	10.50	10.5	10.5	10.5	11.0		
					23.4	24.0	5.35	5.36	75.6	75.9	11.50	11.7	12.0	12.0				
					24.5	24.3	5.11	5.11	72.7	72.7	10.10	10.2	11.00	11.00				

# Mid-Ebb Tide



東業 德 動 測 試 顧 問 有 限 公 司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FM2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/08	1355-1410	32/Cloudy	Surface	28.9	26.9	26.8	6.57	6.56	6.31	94.6	94.4	8.15	8.17	7.5	7.5	8.6		
			Middle	27.7	29.2	29.2	6.08	6.07	6.31	87.5	87.3	8.21	9.20	8.8	8.9			
			Bottom	27.4	29.4	29.4	5.63	5.61	5.61	80.4	80.7	9.79	9.80	9.5	9.5			
05/08/08	1550-1605	30/Drizzle	Surface	29.3	20.7	20.6	6.18	6.18	6.01	82.2	82.1	7.59	7.61	7.7	7.7	7.8		
			Middle	28.9	21.1	21.1	5.84	5.84	6.01	77.7	77.7	7.71	7.73	8.3	8.3			
			Bottom	28.5	21.3	21.2	5.60	5.61	5.61	73.3	73.4	7.64	7.62	7.5	7.5			
07/08/08	1717-1730	28/Cloudy	Surface	27.8	19.3	19.3	6.50	6.50	6.14	91.2	91.1	8.41	8.42	7.7	7.9	8.4		
			Middle	27.5	21.0	21.1	5.76	5.78	6.14	82.0	82.2	8.67	8.69	8.0	8.4			
			Bottom	26.7	21.5	21.5	5.57	5.57	5.57	77.7	77.6	9.21	9.21	9.0	9.0			
09/08/08	0756-0808	27/Cloudy	Surface	27.7	22.3	22.2	6.38	6.38	6.16	87.4	87.4	9.04	9.05	8.8	8.8	9.4		
			Middle	27.5	22.8	22.8	5.93	5.94	6.16	81.2	81.4	9.12	9.12	9.5	9.5			
			Bottom	27.1	22.7	22.7	5.95	5.94	6.16	81.5	81.4	9.12	9.12	9.5	9.5			
12/08/08	1010-1023	29/Cloudy	Surface	26.7	27.1	27.1	6.02	6.01	5.96	82.8	82.7	9.04	8.99	8.8	8.7	9.3		
			Middle	26.0	28.9	28.9	5.92	5.90	5.96	81.1	81.3	7.65	7.69	8.2	8.4			
			Bottom	25.6	30.5	30.5	5.53	5.52	5.52	76.1	76.0	12.30	12.2	11.0	11.0			
14/08/08	1140-1155	31/Sunny	Surface	29.7	27.4	27.4	6.39	6.37	6.16	91.3	91.1	8.23	8.25	8.5	8.4	9.1		
			Middle	27.9	29.0	29.0	5.97	5.95	6.16	85.3	85.0	8.89	8.90	9.3	9.3			
			Bottom	27.6	29.6	29.6	5.62	5.60	5.60	80.3	80.0	9.58	9.57	9.7	9.6			
16/08/08	1253-1305	33/Sunny	Surface	32.4	21.7	21.8	6.16	6.17	6.09	88.0	88.2	8.81	8.82	8.5	8.5	9.0		
			Middle	30.3	22.3	22.3	6.02	6.02	6.09	85.2	85.2	8.92	8.93	8.8	8.9			
			Bottom	29.2	23.4	23.5	5.80	5.78	5.78	81.8	81.6	9.41	9.42	9.5	9.5			

# Mid-Ebb Tide

## Monitoring Station : TM-FM2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
19/08/08	1401-1411	34/Sunny	Surface	32.2	26.3	26.3	6.20	6.20	6.16	86.5	86.5	7.27	7.27	7.5	7.5	7.7		
					26.2	26.2	6.20	6.20	86.4	86.4	7.26	7.26	7.5	7.5				
					26.7	26.8	6.12	6.13	85.7	85.8	7.17	7.17	7.5	7.5				
21/08/08	1540-1555	30/Cloudy	Bottom	29.7	27.2	27.2	5.87	5.88	5.88	83.4	83.6	7.03	7.04	8.0	8.0	8.5		
					27.1	27.1	5.89	5.88	83.7	83.7	7.04	7.04	8.0	8.0				
					27.5	27.5	6.53	6.51	94.0	93.7	8.09	8.11	7.5	7.5				
23/08/08	1610-1625	29/Rainy	Surface	27.9	29.1	29.1	6.09	6.08	6.29	87.6	87.4	9.21	9.22	8.5	8.5	9.9		
					29.1	29.1	6.06	6.08	87.2	87.2	9.23	9.22	8.5	8.5				
					29.8	29.8	5.87	5.86	84.5	84.3	9.94	9.96	9.5	9.4				
25/08/08	0910-0923	32/Sunny	Surface	27.7	29.7	29.7	5.84	5.86	5.86	95.6	95.3	7.53	7.55	10.0	10.0	11.0		
					25.5	25.5	6.55	6.57	91.6	91.8	8.97	9.01	10.0	10.0				
					28.9	29.0	5.95	5.94	83.1	83.0	9.69	9.71	9.5	9.6				
28/08/08	1059-1113	34/Sunny	Middle	26.1	29.1	29.1	5.93	5.68	6.05	82.9	80.4	11.70	11.10	12.0	12.0	9.7		
					30.1	30.1	5.70	5.68	73.0	72.8	11.70	11.70	11.5	11.4				
					20.8	20.9	6.41	6.43	91.0	91.4	10.40	10.4	9.5	9.5				
30/08/08	1236-1250	34/Sunny	Bottom	30.9	21.0	21.0	6.45	6.00	5.59	91.7	84.2	10.30	8.90	8.5	8.5	9.8		
					21.8	21.9	5.64	5.66	80.1	80.4	11.00	11.1	12.0	12.0				
					22.0	24.1	5.68	5.13	73.0	72.8	11.60	11.7	11.5	11.4				
30/08/08	1236-1250	34/Sunny	Surface	32.3	22.1	22.1	6.00	6.00	5.59	84.6	84.2	8.89	8.90	8.5	8.5	9.8		
					22.4	22.4	5.20	5.19	73.8	73.6	10.20	10.3	9.8	9.9				
					22.3	23.0	5.18	5.01	73.4	71.1	10.40	10.9	10.0	11.0				
30/08/08	1236-1250	34/Sunny	Middle	32.0	23.0	23.1	5.01	5.01	5.01	71.1	71.1	10.90	10.9	11.0	11.0	9.8		
					23.0	23.1	5.00	5.01	71.0	71.1	10.80	10.9	11.0	11.0				
					23.1	23.1	5.00	5.01	71.0	71.1	10.80	10.9	11.0	11.0				

# Mid-Ebb Tide



東業 模動測 試 顧問 有 限 公 司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/08	1415-1430	32/Cloudy	Surface	29.0	27.0	27.1	6.63	6.61	95.4	95.1	7.71	7.72	7.2	7.3	8.3			
			Middle	27.6	29.1	6.27	6.26	94.8	90.0	7.73	8.65	7.3	8.5					
			Bottom	27.4	29.7	6.24	5.77	89.8	82.4	8.66	9.67	8.5	9.0					
05/08/08	1530-1543	30/Drizzle	Surface	29.3	20.1	20.3	6.04	6.05	82.2	82.1	7.34	7.36	8.0	8.0	7.8			
			Middle	28.7	21.7	21.8	6.06	5.75	78.0	78.1	7.38	7.44	7.5	7.5				
			Bottom	28.3	22.1	22.1	5.50	5.51	5.71	5.73	7.62	7.63	8.0	8.0				
07/08/08	1700-1712	28/Cloudy	Surface	27.6	18.6	18.6	6.27	6.26	84.7	84.7	8.91	8.92	7.8	7.8	8.4			
			Middle	27.4	20.6	20.5	6.25	5.46	84.6	73.8	8.92	9.11	7.7	8.4				
			Bottom	26.9	21.5	21.5	5.45	5.54	73.6	77.5	9.11	8.99	8.2	9.0				
09/08/08	0735-0748	27/Cloudy	Surface	27.8	22.6	22.7	6.30	6.27	86.3	86.2	8.05	8.05	7.8	7.9	8.6			
			Middle	27.8	23.0	23.1	6.03	6.03	86.0	82.5	8.04	8.46	8.0	8.5				
			Bottom	27.3	23.2	23.3	6.02	5.84	82.3	80.7	8.41	9.13	8.5	9.4				
12/08/08	1032-1042	29/Cloudy	Surface	26.9	27.0	27.0	6.14	6.12	80.5	84.2	9.11	10.3	10.0	10.0	9.2			
			Middle	26.4	29.3	29.3	5.80	5.79	80.8	79.7	10.50	8.00	10.0	8.5				
			Bottom	25.9	30.2	30.2	5.78	5.22	79.6	71.9	7.96	8.29	8.8	9.0				
14/08/08	1200-1215	31/Sunny	Surface	29.7	27.5	27.5	6.47	6.45	92.5	92.2	7.60	7.62	7.8	7.9	8.6			
			Middle	27.9	29.1	29.1	6.42	6.13	91.8	87.0	7.64	8.81	8.0	9.0				
			Bottom	27.6	29.5	29.5	6.10	5.76	86.6	81.7	8.82	9.16	9.0	8.8				
16/08/08	1230-1245	33/Sunny	Surface	32.4	22.5	22.5	6.05	6.02	85.7	85.6	9.20	9.19	8.0	8.0	8.6			
			Middle	30.7	22.8	22.8	5.99	5.85	85.5	82.3	9.17	9.01	8.0	8.7				
			Bottom	29.8	23.4	23.4	5.86	5.73	82.0	81.3	9.01	9.58	8.8	9.0				

# Mid-Ebb Tide



東業德勘測試驗有限公司  
ETS-TESTCONSULT LIMITED

## Monitoring Station : TM-FC2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value
19/08/08	1345-1355	34/Sunny	Surface	32.1	24.2	24.4	6.07	6.06	85.0	84.8	7.50	7.49	7.3	7.3	8.1		
			Middle	31.6	25.2	25.2	6.02	6.02	84.1	84.1	7.17	7.13	7.3	7.3			
			Bottom	30.2	25.1	26.4	6.01	5.91	84.1	83.3	7.14	7.02	8.5	8.5			
21/08/08	1600-1615	30/Cloudy	Surface	29.0	27.6	27.6	5.91	6.70	83.3	96.4	7.03	7.99	8.0	8.1	8.7		
			Middle	27.9	29.2	29.2	6.68	6.25	96.1	89.9	7.99	9.05	8.2	8.5			
			Bottom	27.6	29.2	29.8	6.23	6.04	89.7	86.3	9.06	9.58	8.5	9.4			
23/08/08	1630-1645	29/Rainy	Surface	28.0	24.9	24.9	6.82	6.80	86.0	97.2	7.02	7.04	7.5	7.5	8.4		
			Middle	27.0	28.5	28.5	6.78	6.25	86.5	89.3	7.05	9.16	7.5	8.2			
			Bottom	26.9	29.1	29.2	6.23	5.83	90.1	83.3	9.14	9.55	8.3	9.5			
26/08/08	0929-0942	29/Sunny	Surface	27.7	26.3	26.2	5.81	6.62	83.0	92.5	9.53	7.56	7.7	7.9	8.6		
			Middle	26.3	29.2	29.3	5.81	5.80	83.6	81.1	7.53	8.67	7.5	8.5			
			Bottom	25.3	30.4	30.4	5.81	5.26	83.0	73.5	8.71	10.20	8.5	9.4			
28/08/08	1040-1054	32/Sunny	Surface	31.5	22.5	22.5	5.27	6.26	73.4	89.5	10.40	7.89	7.5	7.5	9.0		
			Middle	30.8	22.4	22.9	6.26	5.94	89.5	84.4	7.87	10.1	7.5	9.5			
			Bottom	30.5	24.1	24.2	5.93	5.33	84.2	75.7	7.90	11.9	9.5	10.0			
30/08/08	1215-1228	34/Sunny	Surface	32.1	23.0	23.1	5.31	5.96	75.4	83.9	11.80	9.24	9.5	9.5	10.5		
			Middle	31.6	23.2	23.5	5.94	5.42	75.9	77.0	12.00	9.39	9.5	9.8			
			Bottom	31.1	23.5	24.0	5.43	5.10	77.1	72.4	9.38	10.4	10.0	12.0			



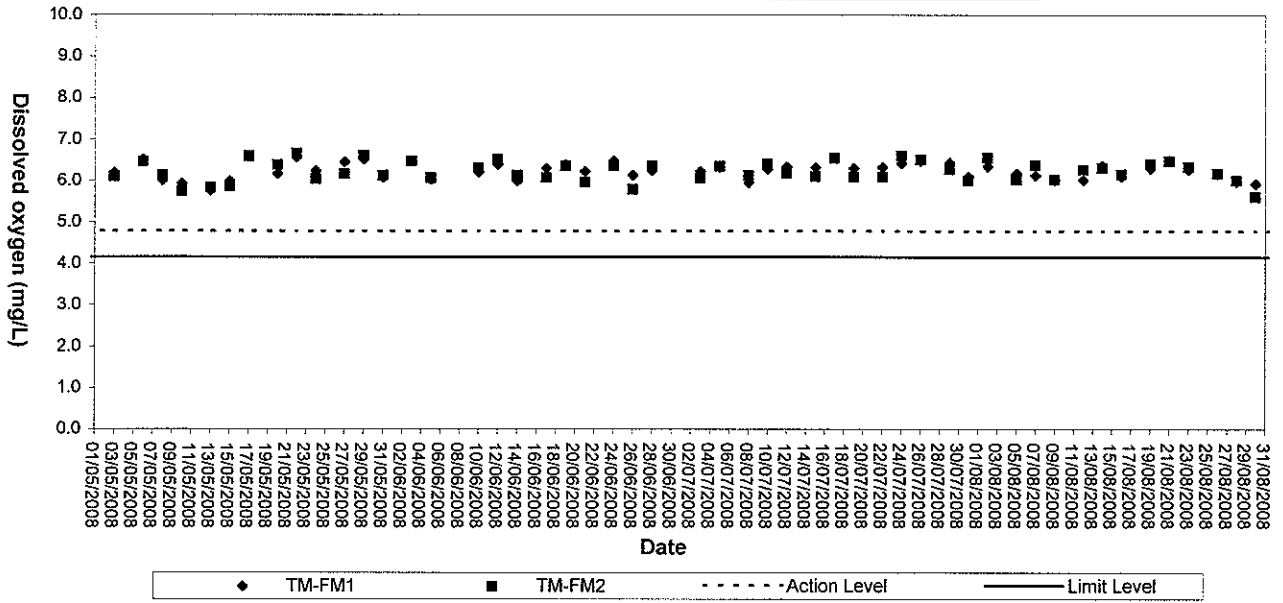


## **Appendix C3**

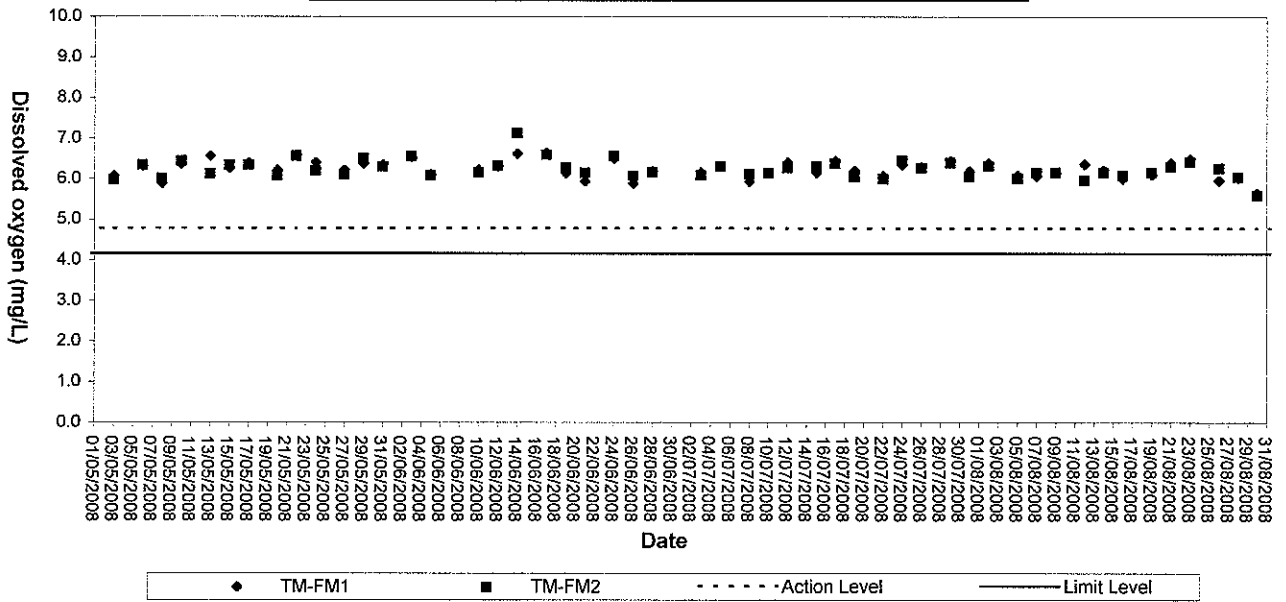
### **Graphical Plots of Impact Marine Water Quality Monitoring Data**



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

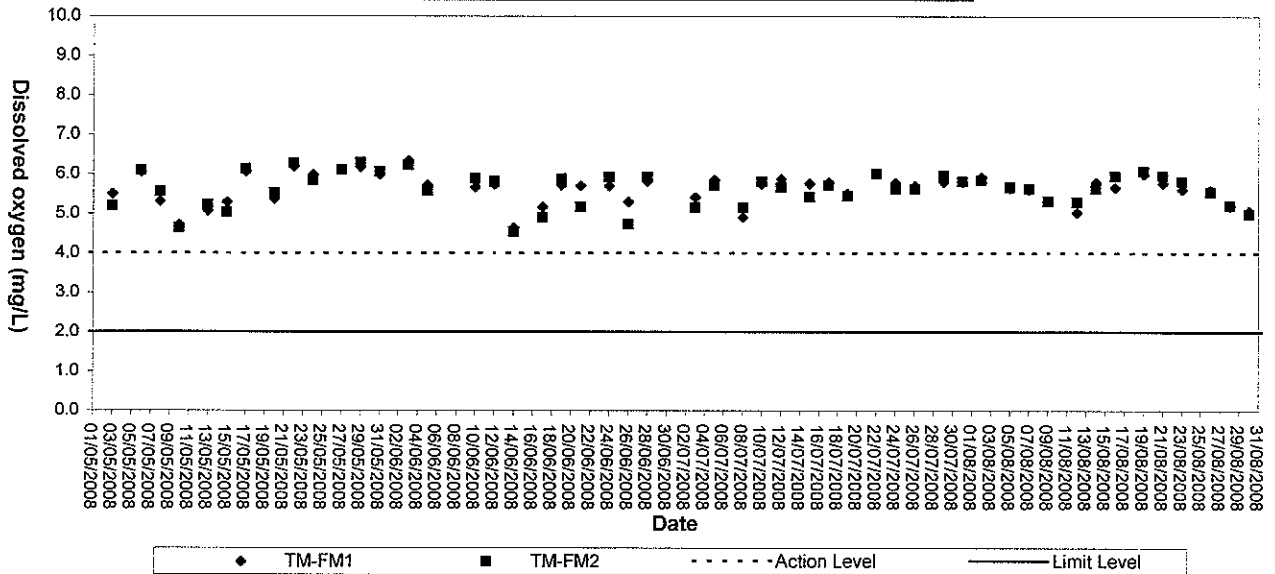


### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

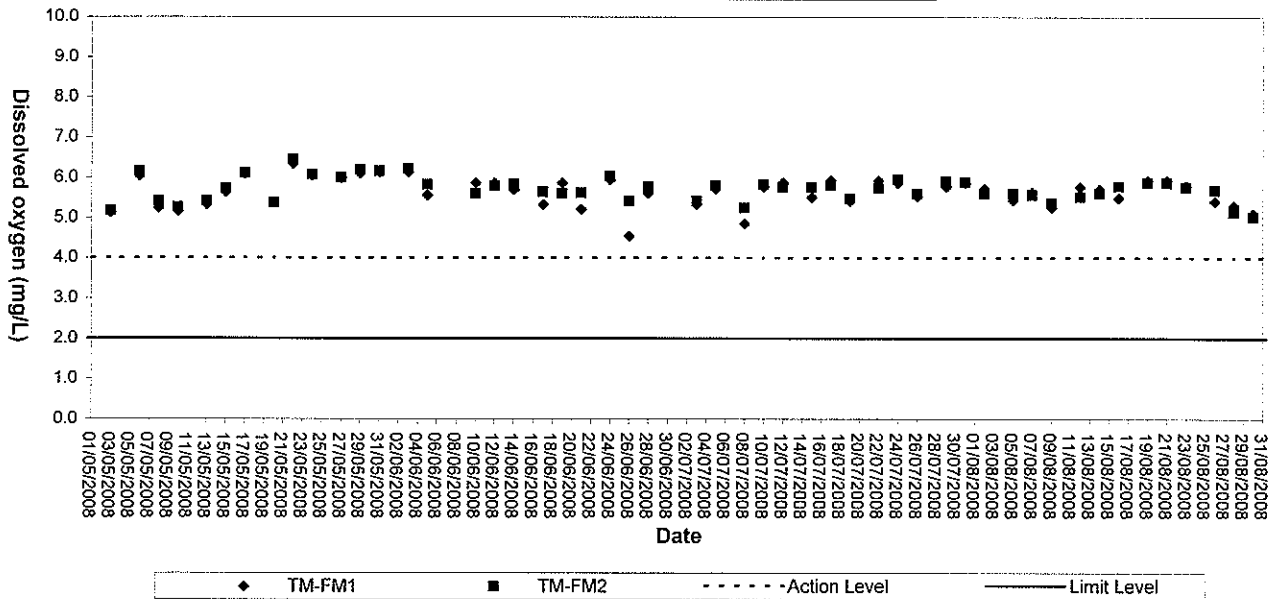




### Dissolved Oxygen (Bottom) at Mid-Flood Tide

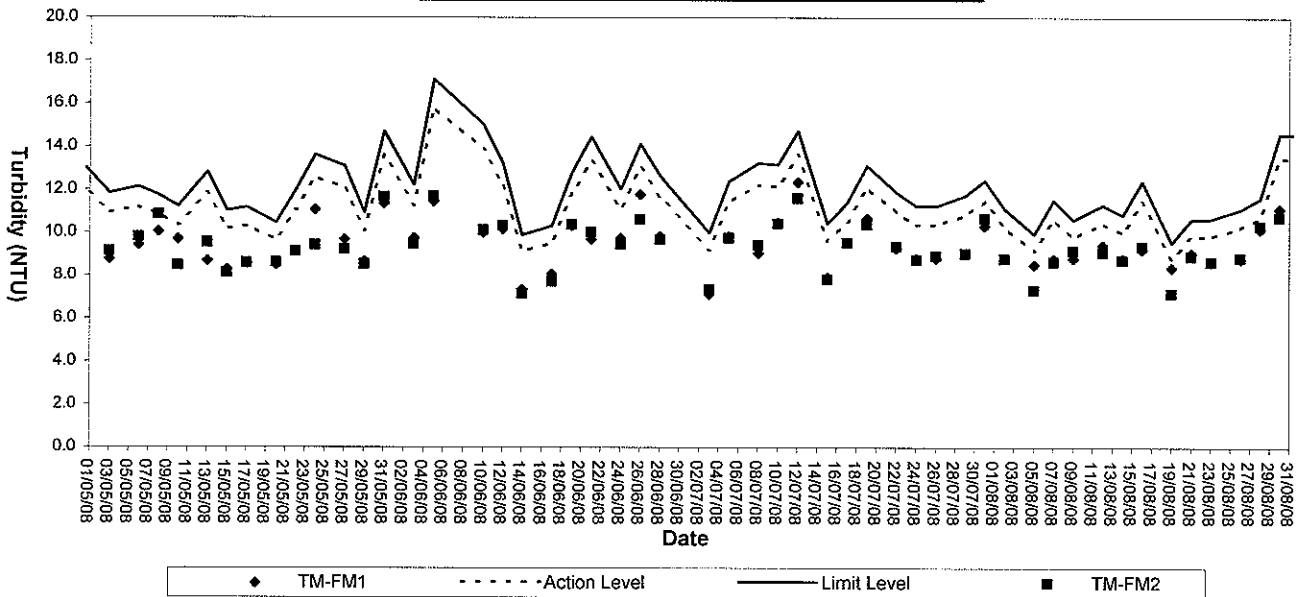


### Dissolved Oxygen (Bottom) at Mid-Ebb Tide

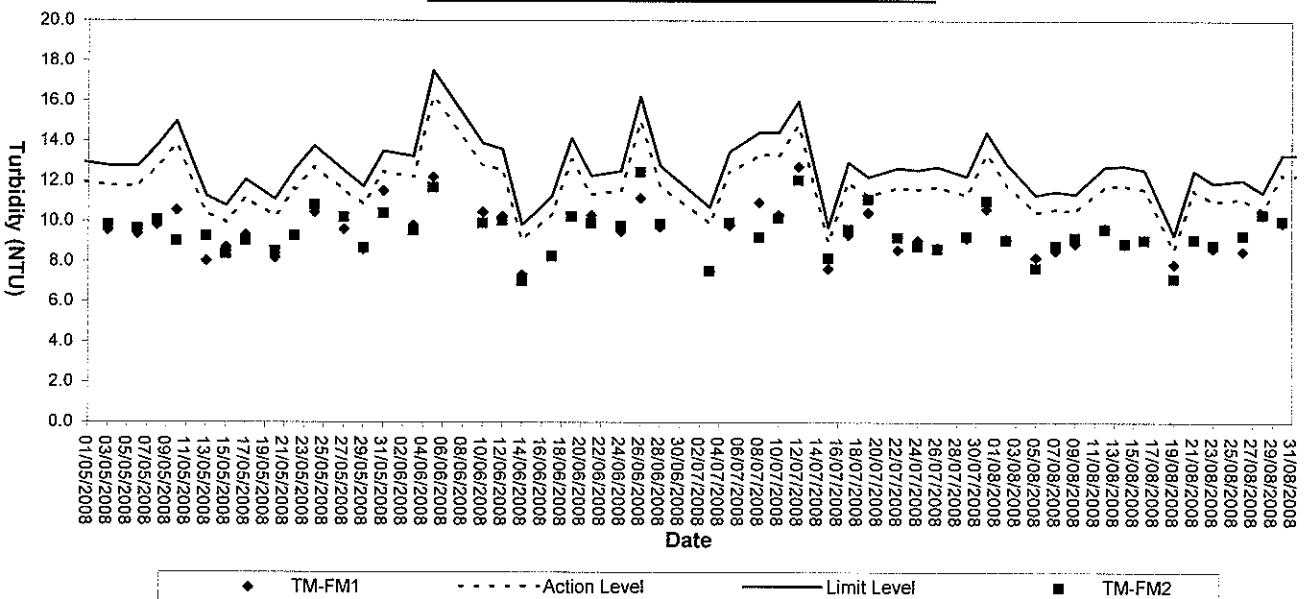




**Turbidity (Depth-average) at Mid-Flood Tide**

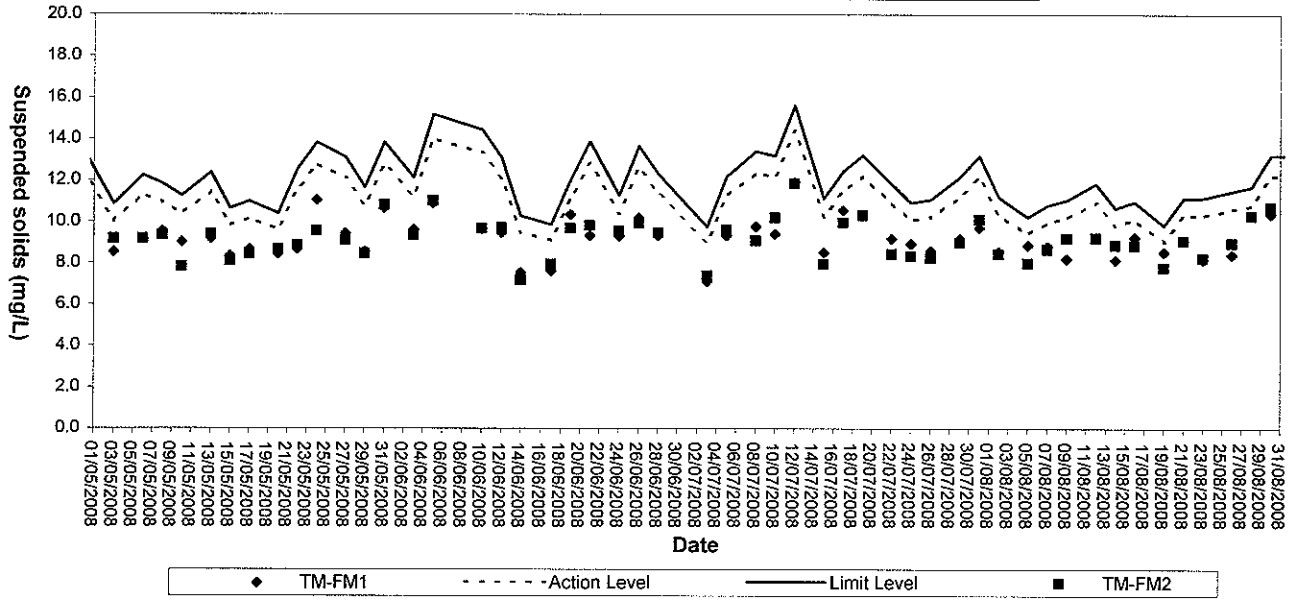


**Turbidity (Depth-average) at Mid-Ebb Tide**

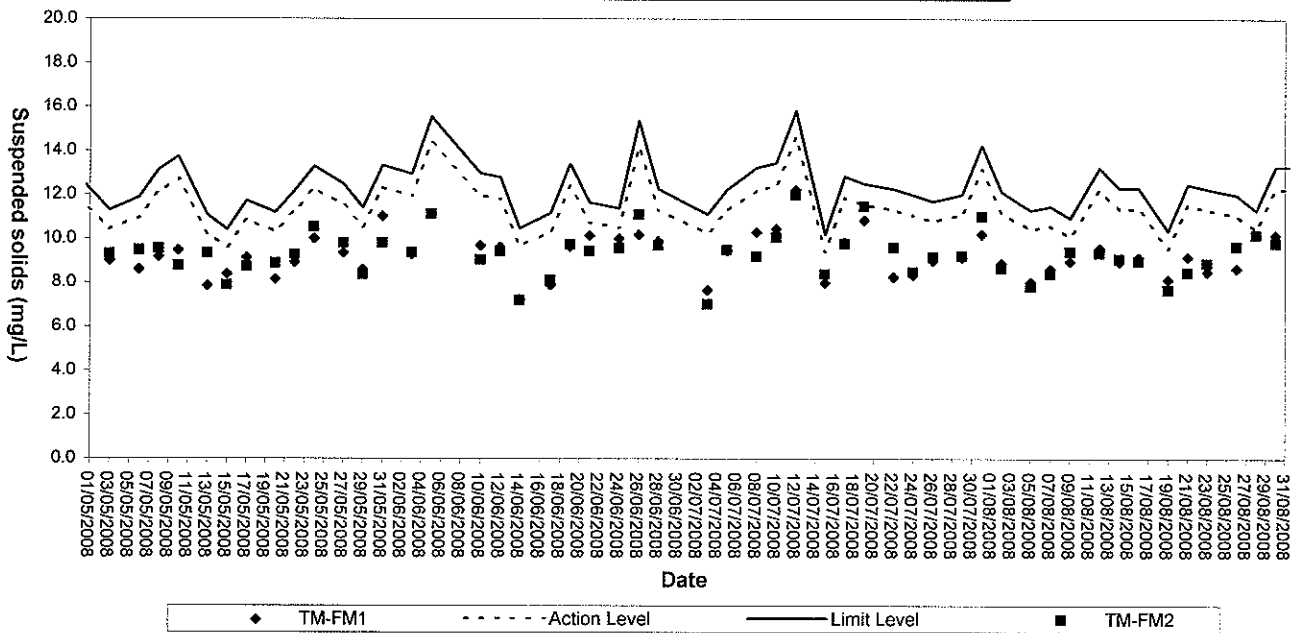




### Suspended solids (Depth-average) at Mid-Flood Tide



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





## **Appendix D1**

### **Calibration Certificates for Impact Noise Monitoring Equipments**



# Calibration Certificate

Certificate No. 81355

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q80566

**Date of receipt :** 1-Apr-08

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 3-Apr-08

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

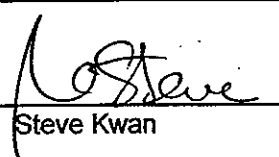
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	73602	7-Jul-08	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR
S041	Universal Counter	73453	22-Aug-08	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

**Calibrated by :**   
Dorothy Cheuk

**Approved by :**   
Steve Kwan

**Date:** 3-Apr-08



# Calibration Certificate

Certificate No. 81355

Page 2 of 2 Pages

Results :

## 1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.0 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.1$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.990 8 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.1$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values are the mean of 3 measurement.

4. Atmospheric Pressure : 1 005 hPa

----- END -----





# Calibration Certificate

Certificate No. **81354**

Page 1 of 4 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q80566

**Date of receipt :** 1-Apr-08

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00110024

## Test Conditions

**Date of Test :** 3-Apr-08

**Supply Voltage :** -

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : Z01.

## Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

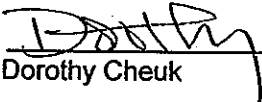
The results are shown in the attached page(s).


Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C081456	18-Mar-09	SCL-HKSAR
S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

Calibrated by :   
Dorothy Cheuk

Approved by :   
Steve Kwan

This Certificate is issued by:  
Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.  
Tel: 2425 8801 Fax: 2425 8646

Date: 3-Apr-08



# Calibration Certificate

Certificate No. 81354

Page 2 of 4 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.03	94.0
		Slow		94.0
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.1
30 - 120	L <sub>A</sub>	Fast	94.03	94.0
		Slow		93.9
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.0
30 - 120	L <sub>A</sub>	Fast	113.97	114.0
		Slow		113.9
	L <sub>C</sub>	Fast		113.9
	L <sub>p</sub>	Fast		113.9

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB  
Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB  
Uncertainty :  $\pm 0.01$  dB



# Calibration Certificate

Certificate No. 81354

Page 3 of 4 Pages

## 3. Linearity

### 3.1 Level Linearity

UUT Range	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.1	+0.1	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.1	+0.1	
100	74.0	74.0	0.0	
90	64.0	64.1	+0.1	
80	54.0	54.2	+0.2	

Uncertainty : ± 0.1 dB

### 3.2 Differential level linearity

UUT Range	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)	--	
	95.0	95.1	+0.1	± 0.2 dB
	104.0	104.0	0.0	± 0.3 dB
	105.0	105.0	0.0	± 1.0 dB

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

### A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.7	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.3	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.4	+ 1.2 dB, ± 1 dB
4 kHz	+ 1.2	+ 1.0 dB, ± 1 dB
8 kHz	- 1.0	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.6	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB



# Calibration Certificate

Certificate No. 81354

Page 4 of 4 Pages

## 4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 <sup>2</sup>	40.0	40.0	
1/10 <sup>3</sup>	40.0	40.0	± 1.0 dB
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 008 hPa.

----- END -----



## **Appendix D2**

### **Impact Noise Monitoring Results**



## Day-time Noise Monitoring

### Monitoring Location: TM-RN1 \*

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq</sub> (30min)	L <sub>10</sub>	L <sub>90</sub>		
05/08/08	13:05	57.2	59.8	56.1	0.9	Cloudy
09/08/08	09:00	55.6	58.2	53.4	0.7	Fine
12/08/08	10:45	56.4	58.2	52.7	0.9	Cloudy
14/08/08	15:30	54.2	57.0	51.3	1.2	Sunny
19/08/08	10:00	55.2	58.2	53.4	0.3	Sunny
21/08/08	10:45	53.2	55.7	48.6	1.5	Cloudy
26/08/08	13:40	51.1	53.4	48.5	1.2	Sunny
28/08/08	14:40	56.8	60.0	55.2	0.4	Sunny

Remark: Since Lands Dept did not allow us to enter their own area where the noise monitoring stations TM-N1 and TM-N2 located due to the security, two noise monitoring stations TM-RN1 and TM-RN2 (refer to the figure attached) are proposed by us to carried out noise monitoring temporarily in this reporting month.

### Monitoring Location: TM-RN2 \*

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq</sub> (30min)	L <sub>10</sub>	L <sub>90</sub>		
05/08/08	13:42	54.0	56.2	52.5	0.8	Cloudy
09/08/08	09:06	53.3	56.7	51.1	0.5	Fine
12/08/08	11:20	54.3	57.7	51.6	1.2	Cloudy
14/08/08	16:10	53.6	56.2	49.8	1.4	Sunny
19/08/08	10:38	52.1	55.4	48.7	0.2	Sunny
21/08/08	14:40	52.1	54.8	48.0	1.7	Cloudy
26/08/08	14:20	52.2	54.6	49.2	1.3	Sunny
28/08/08	15:17	52.4	56.1	49.3	0.5	Sunny

Remark: Since Lands Dept did not allow us to enter their own area where the noise monitoring stations TM-N1 and TM-N2 located due to the security, two noise monitoring stations TM-RN1 and TM-RN2 (refer to the figure attached) are proposed by us to carried out noise monitoring temporarily in this reporting month.

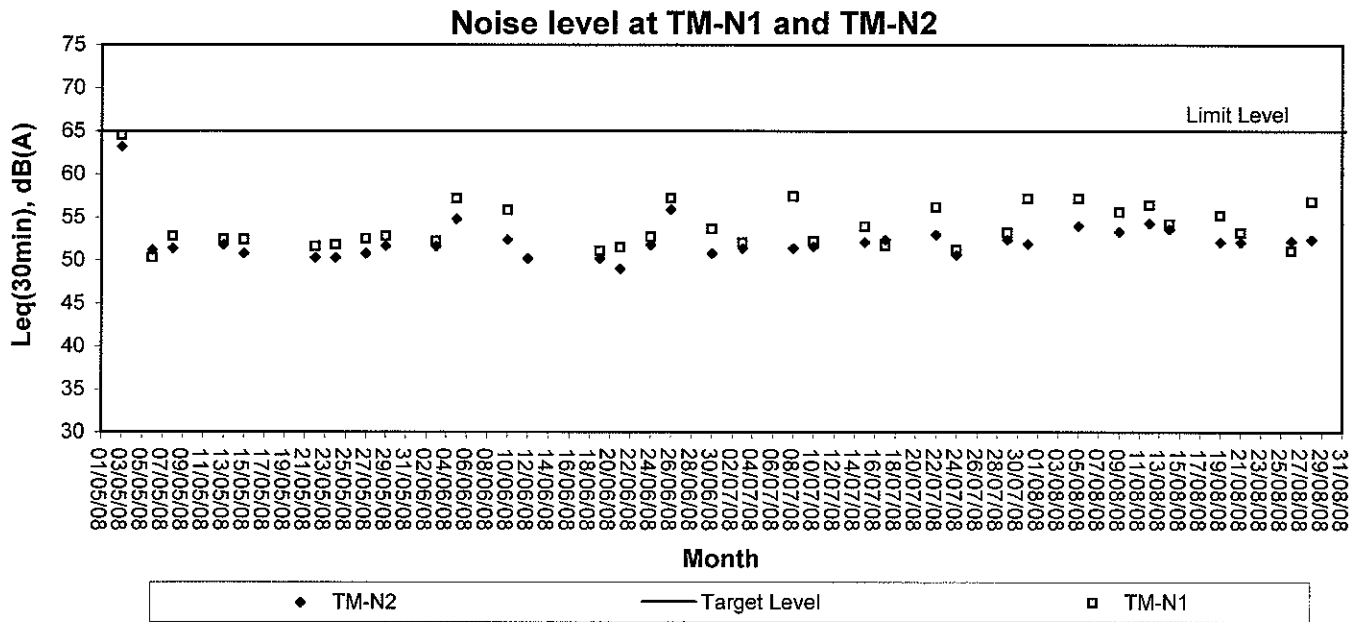


## **Appendix D3**

### **Graphical Plots of Impact Noise Monitoring Data**



## Noise Monitoring (Day-time)







## **Appendix E**

### **Weather Condition**

## Extract of Meteorological Observations for Tuen Mun Automatic Weather Station, August 2008

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Aug 1	*****	33.1	29.3	26.2	23.8	86	73	58
Aug 2	*****	34.4	29.7	27.2	23.6	84	71	52
Aug 3	*****	34.3	30.0	26.6	23.4	83	69	49
Aug 4	*****	35.4	30.4	26.4	24.0	85	69	49
Aug 5	*****	29.5	27.8	26.4	23.9	89	80	71
Aug 6	*****	27.7	26.3	25.0	24.0	93	87	78
Aug 7	*****	32.0	27.4	23.9	23.9	95	82	63
Aug 8	*****	29.0	26.8	25.4	24.5	93	87	79
Aug 9	*****	32.2	28.1	25.3	23.6	90	77	60
Aug 10	*****	31.9	28.2	25.4	23.6	89	77	53
Aug 11	*****	27.0	25.8	24.8	23.7	93	88	78
Aug 12	*****	32.3	28.3	25.3	24.8	90	82	66
Aug 13	*****	34.4	29.9	26.2	23.9	90	72	49
Aug 14	*****	32.6	29.7	27.3	24.2	85	73	58
Aug 15	*****	33.0	29.7	27.6	24.5	85	74	60
Aug 16	*****	32.7	29.7	27.4	24.4	84	74	58
Aug 17	*****	35.0	30.5	27.9	24.8	84	72	53
Aug 18	*****	34.1	30.3	28.0	24.3	84	71	56
Aug 19	*****	33.5	30.1	27.3	24.0	84	71	52
Aug 20	*****	35.1	30.9	26.7	24.3	86	69	43
Aug 21	*****	34.7	30.4	27.4	24.7	86	72	53
Aug 22	*****	30.2	27.3	24.3	22.7	94	77	58
Aug 23	*****	28.3	25.5	23.5	22.6	92	84	68
Aug 24	*****	31.8	28.2	25.1	23.9	90	78	59
Aug 25	*****	32.8	29.2	27.3	24.9	88	78	61
Aug 26	*****	33.8	29.4	26.2	24.3	90	75	56
Aug 27	*****	34.5	29.6	26.2	22.9	88	69	36
Aug 28	*****	34.7	29.7	26.6	24.0	86	72	49
Aug 29	*****	34.2	29.8	26.9	24.2	86	73	50
Aug 30	*****	34.2	30.3	27.2	24.6	87	73	53
Aug 31	*****	34.8	30.1	27.6	24.0	84	71	50
<b>Mean</b>	*****	32.7	29.0	26.3	24.0	88	75	57
<b>Maximum</b>	*****	35.4	30.9	28.0	24.9	95	88	79
<b>Minimum</b>	*****	27.0	25.5	23.5	22.6	83	69	36

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Aug 1	0.0	140	10.4
Aug 2	0.0	170	7.3
Aug 3	0.0	160	7.9
Aug 4	0.0	020	10.0
Aug 5	3.0	020	8.9
Aug 6	62.5	140	19.5
Aug 7	63.5	140	15.4
Aug 8	6.0	160	5.4
Aug 9	0.0	020	7.4
Aug 10	0.0	160	7.0
Aug 11	14.0	160	6.2
Aug 12	1.0	160	11.8
Aug 13	0.0	160	8.0
Aug 14	0.0	230	8.3
Aug 15	0.0	230	10.0
Aug 16	0.0	150	10.3
Aug 17	0.0	150	14.7
Aug 18	0.0	150	13.7
Aug 19	0.0	160	10.9
Aug 20	0.0	300	8.4
Aug 21	4.5	160	6.1
Aug 22	30.5	350	17.9
Aug 23	13.0	190	17.4
Aug 24	0.0	150	12.3
Aug 25	0.0	150	13.2
Aug 26	0.0	160	7.8
Aug 27	0.0	160	8.3
Aug 28	0.0	160	9.7
Aug 29	0.0	130	9.5
Aug 30	0.0	150	10.1
Aug 31	0.0	150	7.3
<b>Mean</b>	-----	160	10.3
<b>Total</b>	198.0	---	-----
<b>Maximum</b>	63.5	---	19.5
<b>Minimum</b>	0.0	---	5.4

\*\*\* unavailable

# missing (less than 24 hourly observations a day)

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



## **Appendix F**

### **Event-Action Plans**

# EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT		ACTION		Contractor
ET Leader		IC(E)	ER	
<b>ACTION LEVEL</b>				
<ol style="list-style-type: none"> <li>1. Exceedance for one sample</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, IC(E) and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check contractor's working method</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practise</li> <li>2. Amend working methods if appropriate</li> </ol>
<ol style="list-style-type: none"> <li>2. Exceedance for two or more consecutive samples</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform IC(E) and Contractor</li> <li>3. Repeat measurements to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with IC(E) and Contractor on remedial actions</li> <li>6. If exceedance continues, arrange meeting with IC(E) and ER.</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if appropriate</li> </ol>
<b>LIMIT LEVEL</b>				
<ol style="list-style-type: none"> <li>1. Exceedance for one sample</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, Contractor and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Amend proposal if appropriate.</li> </ol>

## EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

	ACTION			
EVENT	ET Leader	IC(E)	ER	Contractor
<p>2. Exceedance for two or more consecutive samples</p>	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Notify IC(E), ER, EPD and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. If exceedances continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedances</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Resubmit proposals if problem still not under control</li> <li>5. Stop the relevant activity of works as determined by the ER until the exceedance is abated</li> </ol>

## EVENT/ACTION PLAN FOR NOISE EXCEEDANCE

		ACTION			
		ET Leader	IC(E)	ER	Contractor
EVENT	Action Level	<ol style="list-style-type: none"> <li>1. Notify the IC(E) and the Contractor.</li> <li>2. Carry out investigation.</li> <li>3. Report the results of investigation to the IC(E) and the Contractor.</li> <li>4. Discuss with the Contractor and formulate remedial measures.</li> <li>5. Increase monitoring frequency to check mitigation effectiveness</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET.</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IC(E).</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level		<ol style="list-style-type: none"> <li>1. Notify the IC(E), the ER, the EPD and the Contractor.</li> <li>2. Identify source.</li> <li>3. Repeat measurement to confirm findings.</li> <li>4. Increase monitoring frequency.</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>6. Inform the IC(E), the ER and the EPD the causes &amp; actions taken for the exceedances.</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results</li> <li>8. If exceedance due to the construction works stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions.</li> <li>2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedances continue, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedances is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Resubmit proposals if problem still not under control.</li> <li>5. Stop the relevant activity of works as determined by the ER until the exceedances is abated.</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

### ACTION

Event	ET Leader	Contractor	ER	IEC
<p>Action level being exceeded by one sampling day</p>	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Repeat in-situ measurement to confirm findings;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. 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>7. Discuss mitigation measures with Contractor if exceedance is due to the construction works within 4 working days</li> <li>8. Repeat measurement on next day of exceedance if exceedance is due to the construction works</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify the ER and IEC in writing within 24 hours of identification of exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Submit investigation report to IEC and ER within 3 working days of the identification of an exceedance</li> <li>5. Consider changes of working method if exceedance is due to the construction works</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER if exceedance is due to the construction works within 4 working days of identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the identification of the exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Require contractor to propose remedial measures for the analysed problem if related to the construction works</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the mitigation measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures</li> <li>4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly</li> <li>5. Supervise the implementation of mitigation measures</li> </ol>



## EVENT AND ACTION PLAN FOR WATER QUALITY

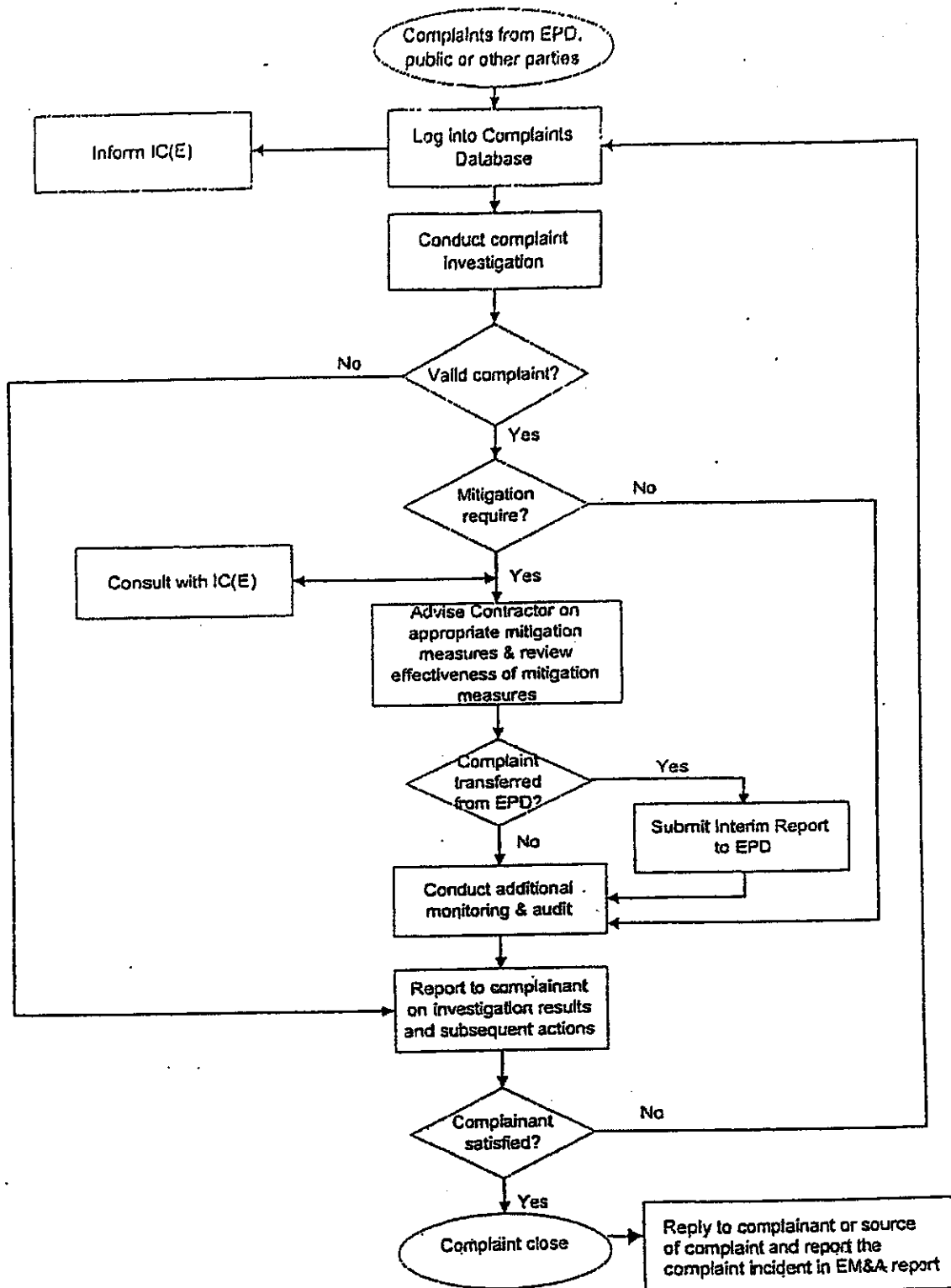
Event	ACTION			
	ET Leader	Contractor	ER	IEC
<p>Action level being exceeded by more than one consecutive sampling days</p>	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Repeat in-situ measurement to confirm findings</li> <li>3. Notify Contractor in writing within 24 hours of identification</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. 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>7. Discuss mitigation measures with IEC and Contractor within 4 working of identification of an exceedance</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Prepare to increase the monitoring frequency to daily;</li> <li>10. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify IEC and ER in writing within 24 hours of identification of exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the identification of the exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Require contractor to propose remedial measures for the analysed problem if related to the construction works</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the mitigation measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures.</li> <li>4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

Event	ACTION			IEC
	ET Leader	Contractor	ER	
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. 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>7. Discuss mitigation measures with IEC, ER and Contractor within 4 working of identification of an exceedance</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify IEC and ER in writing; within 24 hours of the identification of the exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of the identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures.</li> <li>4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly.</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

	ACTION		
Event	ET Leader	Contractor	ER
Limit Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. 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>7. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify ER and IEC in writing within 24 hours of the identification of the exceedance and</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>8. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days;</li> <li>6. Implement the agreed mitigation measures within reasonable time scale</li> <li>7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>6. Ensure remedial measures are properly implemented</li> <li>4. Assess the effectiveness of the implemented mitigation measures;</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.</li> </ol>
			<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ER, ET and Contractor on the mitigation measures.</li> <li>4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly.</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>



CEDD Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland

Figure 5 Environmental Complaint Handling Procedure - Tuen Mun Area 38 Fill Bank

Scale : --

Date issued :  
December 2006



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED



## **Appendix G**

### **Construction Programme**

Project Activities at TM38 (From June to September 2008)

Activity ID	Activity description	Original duration	Remaining duration	Percent complete	Early start	Early finish	Late start	Late finish	Total float
EOB1A200	B1a Servicing 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
EOB1A300	Measurement System O&M for B1a 104wks	728	97	87	01/12/06A	27/11/2008	01/12/06A	30/11/2008	3
EOB1B200	B1b Servicing 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
EOB1B300	Measurement System O&M for B1b 104wks	728	97	87	01/12/06A	27/11/2008	01/12/06A	30/11/2008	3
EOB1B400	Surveillance System O&M for B1b 104wks	728	97	87	01/12/06A	27/11/2008	01/12/06A	30/11/2008	3
EOB1C200	B1c Servicing 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
EOB1C300	Measurement System O&M for B1c 104wks	728	97	87	02/12/06A	27/11/2008	02/12/06A	30/11/2008	3
HK050200	Sorting of Stockpiled Public fill	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
HK050300	Removal of Stockpiled Public Fill (Contractor's)	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
HK050400	Removal of Stockpiled Public Fill (other)	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
HK050500	Disposal of unsuitable Material	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
HK050600	Compaction of Public Fill	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
HK100100	Catchpits TM Area 3mrs	30	30	0	02/10/08*	06/11/2008	27/10/2008	29/11/2008	20
HK100200	Drainage 300mm U-channels TM Area 1000m	50	50	0	02/10/08*	29/11/2008	02/10/2008	29/11/2008	0
HK110300	TM Tipping Halls Operation 308nr-wks	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
KD0C1000	Achievement of Stage C1 (555days) Contract	0	0	0		22/08/2008		02/07/2008	-51
RHB20200	Record House B2 Servicing 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/01/2009	61
SOB10200	RE Secondary Office Servicing (B6) 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0
TACB0200	Servicing 24mths	731	100	86	01/12/06A	30/11/2008	01/12/06A	30/11/2008	0



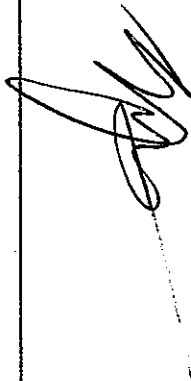


## **Appendix H**

### **Weekly ET's Site Inspection Record**



CEDD Contract No.: CV/2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

Inspection Date : 5 August 2008  
Time : 14:45  
Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
Wind : Calm / Light / Breeze / Strong  
Temperature : 30°C  
Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:		 ST WONG K.H.KLOB.	
Name:	YWNG	ST WONG K.H.KLOB.	W.L.LI
Title	(LOW/86CTM)	Operation Manager. FOREMAN	E.T.



Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Fugitive Dust Emission</b>				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			Item 2
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	√			
▪ 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.	√			
▪ Unpaved areas should be watered regularly to avoid dust generation.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ The haul road inside the site and public road around the site entrance should be kept clean and free from dust.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			Item 7
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	√			
▪ Vehicle and equipment should be switched off while not in use.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
<b>Noise Impact</b>				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ The constructions works should be scheduled to minimize noise nuisance.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Compressors and generators should operate with door closed.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist		Implementation Stages*		Remark
		Yes	No	
<b>Water Quality</b>				
Drainage system and the sand / silt removal facilities should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓			
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓			
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓			
The material shall be properly covered to prevent washed away especially before rainstorm.	✓			
The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	✓			
Final slope surfaces, especially those facing to the north of the site shall be treated by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
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.	✓			
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.	✓			
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓			
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.	✓			
The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓			
Tipping hails enclosed with top and 3-side to prevent spillage of material into marine water.	✓			
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓			
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓			
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓			
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓			
The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	✓			
A waste collection vessel shall be deployed to remove floating debris.	✓			
<b>Landscape and Visual</b>				
The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.	✓			
Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.	✓			
Stockpile of public fill shall be removed in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable.	✓			
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.	✓			
Lighting shall be set to minimise night-time glare.	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Waste Management</b>					
<b>Construction Waste Management</b>					
▪	Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	√			
▪	Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.	√			
▪	Mud and debris should be removed from waterworks access roads and associated drainage systems.	√			
▪	Provision of sufficient waste disposal points and regular collection for disposal. Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	√			
▪	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	√			
▪	Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	√			
▪	In order to monitor the disposal of C&D material and solid wastes at public filling areas and landfills, and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements.	√			
▪	Any soil contaminated with chemicals/soils shall be removed from site and the void created shall be filled with suitable materials.	√			
<b>Chemical Waste Management</b>					
▪	It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	√			
▪	After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	√			
▪	Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	√			
▪	Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	√			
▪	Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	√			
▪	The designated chemical waste storage area should only be used for storing chemical wastes.	√			
▪	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.	√			
▪	Be enclosed on at least 3 sides and securely closed.	√			
▪	Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	√			
▪	Have adequate ventilation.	√			
▪	Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).	√			
▪	Be arranged so that incompatible materials are adequately separated.	√			

CEDD Contract No.: CV/2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 3B Fill Bank


Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
Warning panels should be displayed at the waste storage area.	√		
Waste storage area should be cleaned and maintained regularly.	√		
Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	√		
All generators, fuel and oil storage should be within bundle areas.	√		
Oil leakage from machinery, vehicle and plant should be prevented.	√		Item 6
In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	√		
The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	√		
<b>Good Site Practices</b>			
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.	√		
Training of site personnel in proper waste management and chemical handling procedures should be provided.	√		
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.	√		
Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	√		
The Environmental Permit should be displaced conspicuously on site.	√		
Construction noise permits should be posted at site entrance or available for site inspection.	√	√	
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√		
Chemical storage area provided with lock and located on sealed areas.	√		
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√		
Any unused chemicals or those with remaining functional capacity should be recycled.	√		
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, surps and oil interceptors.	√		
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.	√		
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.	√		
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.	√	√	Item 5

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Photo Ref.	Further Action Required (Yes/No)
1	Follow up action to the previous site inspections item 7 on 03/07/08, item 5 on 08/07/08, item 9 on 15/07/08, item 7 on 22/07/08 and item 3 on 31/07/08, the defect excavator at stockpile area was repaired and no black smoke was noted emitted from the excavator	080805_001	No
2	Follow up action to the previous site inspections item 10 on 22/07/08 and item 5 on 31/07/08, tipping hall no.2 was still found damaged. The Contractor was reminded to repair the damaged part of tipping hall no.2 immediately.	080805_002	Yes
3	Follow up action to the previous site inspections item 12 on 22/07/08 and item 7 on 31/07/08, mud and silt observed accumulated in the u-channel near the CEDD site office were cleaned up.	080805_003	No
4	Follow up action to the previous site inspection item 8 on 31/07/08, withered vegetation in the rubbish skip at full checking station was disposed of.	080805_004	No
5	Follow up action to the previous site inspection item 9 on 31/07/08, the rubbish bin at workshop was still full. The Contractor was reminded to collect the rubbish regularly.	080805_005	Yes
6	Oil leakage was noted from a drip tray at chemical waste storage area. The Contractor was reminded to clean up the leaked oil and repair the drip tray immediately.	080805_006	Yes
7	Parts of water spraying system at wheel washing bay was found out of order. The Contractor was reminded to repair the water spraying system immediately.	080805_007	Yes

**Remark**

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	Name	Signature	Date
Checked by	Linda Law		05 August 2008
	Title		
	Senior Environmental Officer		

**Photos**

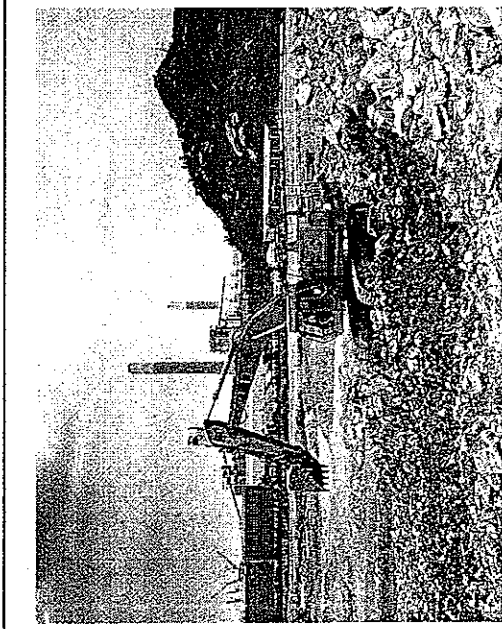


Photo 080805\_001

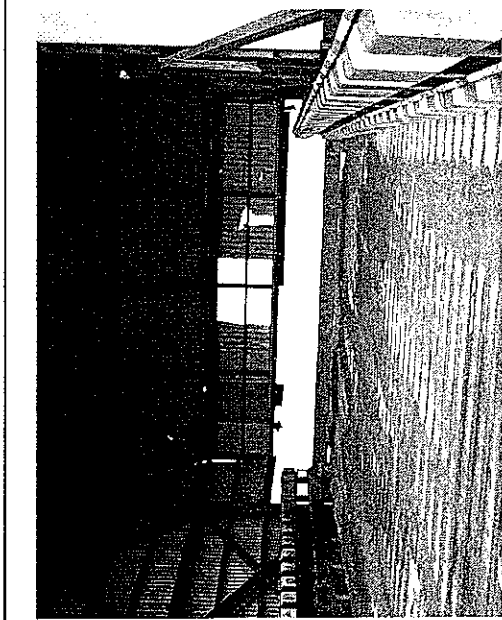


Photo 080805\_002

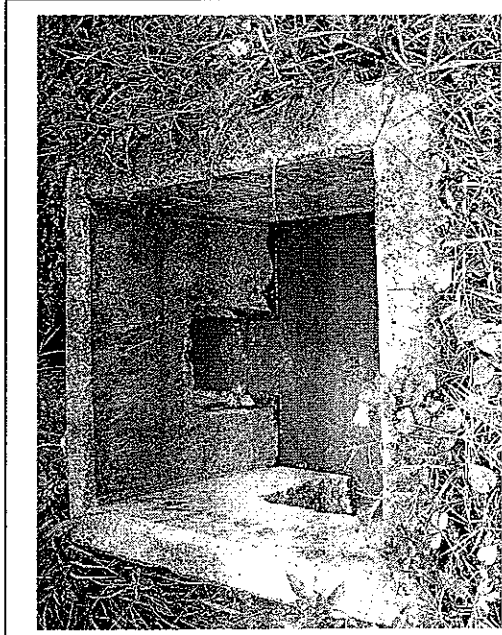


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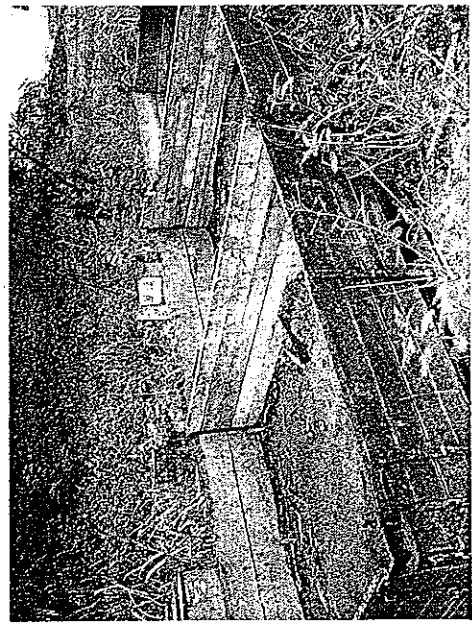


Photo 080805\_004

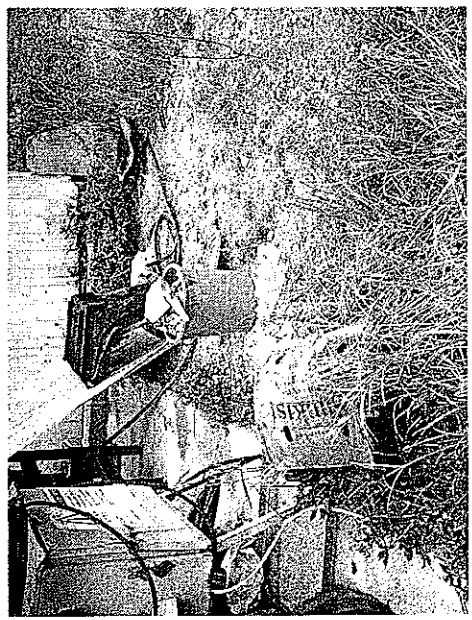


Photo 080805\_005

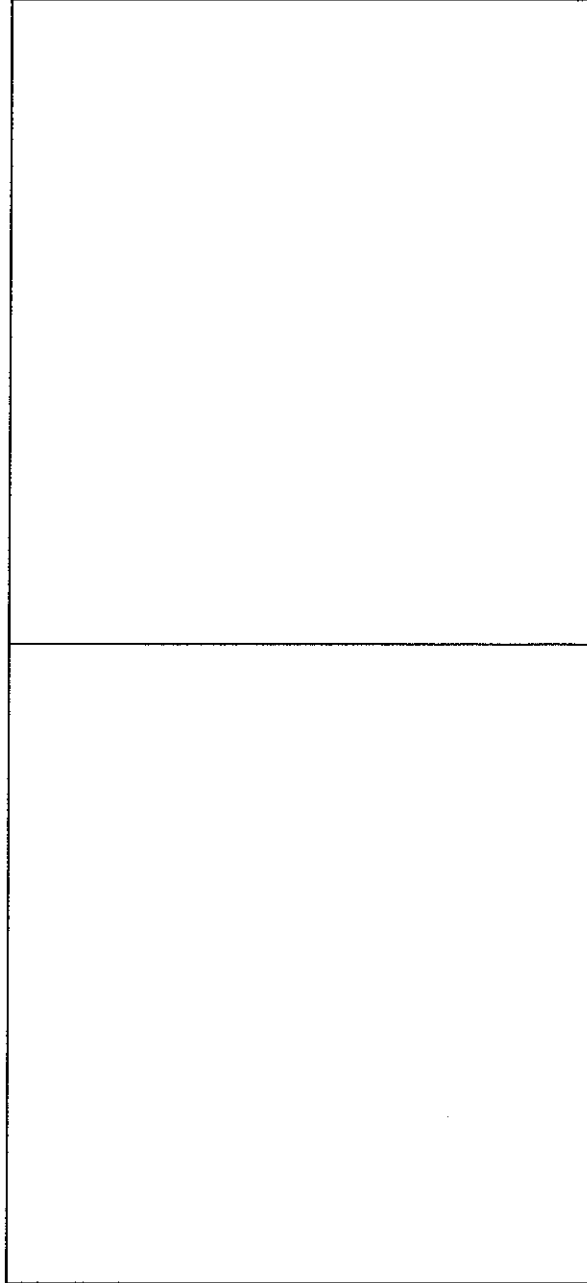


Photo 080805\_006

Photos



Photo 080805\_007





CEDD Contract No.: CV/2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

Inspection Date : 12 August 2008





Time : 14:00

Weather : ~~Sunny/Fine~~ / Cloudy / ~~Overcast/Drizzle~~ / Rain / Storm / Hazy

Wind : ~~Slight~~ / Light / ~~Breeze~~ / Strong

Temperature : 30°C

Humidity : High / ~~Moderate~~ / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:		Albert  	
Name:	YUNG SIM NG	Cheng Si Mun Hk L.H. Kudo. CMC CK	H.T. Chow
Title	COV/16 Area/16.1	Env Engineer Quality Manager. Foreman. Safety Officer	A.E.O.





		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Fugitive Dust Emission</b>					
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪	Water sprays shall be provided and used to dampen materials.	✓			
▪	All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓			
▪	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.	✓			
▪	Unpaved areas should be watered regularly to avoid dust generation.	✓			
▪	The designated site main haul road shall be paved or regular watering.	✓			
▪	The haul road inside the site and public road around the site entrance should be kept clean and free from dust.	✓			
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓			
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓			
▪	The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	✓			
▪	Vehicle and equipment should be switched off while not in use.	✓			
▪	All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪	Open burning should be prohibited.	✓			
<b>Noise Impact</b>					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪	The constructions works should be scheduled to minimize noise nuisance.	✓			
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪	Air compressors and hand held breakers should have noise labels.	✓			
▪	Compressors and generators should operate with door closed.	✓			
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Water Quality</b>					
Drainage system and the sand / silt removal facilities should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.		√			Item 7
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.		√			
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.		√			
The material shall be properly covered to prevent washed away especially before rainstorm.		√			
The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.		√			
Final slope surfaces, especially those facing to the north of the site shall be treated by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.		√			
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.		√			
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.		√			
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.		√			
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.		√			
The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.		√			
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.		√			
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.		√			
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.		√			
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.		√			
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.		√			
The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.		√			
A waste collection vessel shall be deployed to remove floating debris.		√			
<b>Landscape and Visual</b>					
The maximum stockpiling height at the fill bank shall be limited to a maximum of ~40mPD.		√			
Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.		√			
Stockpile of public fill shall be removed in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable.		√			
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.		√			
Lighting shall be set to minimise night-time glare.		√			

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Environmental Checklist</b>			
<b>Waste Management</b>			
<b>Construction Waste Management</b>			
▪ Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	√		
▪ Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.	√		
▪ Mud and debris should be removed from waterworks access roads and associated drainage systems.	√		Item 1 and 7
▪ Provision of sufficient waste disposal points and regular collection for disposal. Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	√		
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	√		
▪ Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	√		
▪ In order to monitor the disposal of C&D material and solid wastes at public filling areas and landfills, and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements.	√		
▪ Any soil contaminated with chemicals/foils shall be removed from site and the void created shall be filled with suitable materials.	√		
<b>Chemical Waste Management</b>			
▪ It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	√		
▪ After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	√		
▪ Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	√		
▪ Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	√		
▪ Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	√		
▪ The designated chemical waste storage area should only be used for storing chemical wastes.	√		
▪ 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.	√		
▪ Be enclosed on at least 3 sides and securely closed.	√		
▪ Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	√		
▪ Have adequate ventilation.	√		
▪ Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).	√		
▪ Be arranged so that incompatible materials are adequately separated.	√		

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<input checked="" type="checkbox"/>	Warning panels should be displayed at the waste storage area.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Waste storage area should be cleaned and maintained regularly.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	All generators, fuel and oil storage should be within bundle areas.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Oil leakage from machinery, vehicle and plant should be prevented.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	<input checked="" type="checkbox"/>			
<b>Good Site Practices</b>					
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Training of site personnel in proper waste management and chemical handling procedures should be provided.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Item 8
<input checked="" type="checkbox"/>	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	The Environmental Permit should be displayed conspicuously on site.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Construction noise permits should be posted at site entrance or available for site inspection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Chemical storage area provided with lock and located on sealed areas.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Item 3
<input checked="" type="checkbox"/>	Any unused chemicals or those with remaining functional capacity should be recycled.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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 banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	<input checked="" type="checkbox"/>			



**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Photo Ref.	Further Action Required (Yes/No)
1	Mud and debris were accumulated on the ground at dump truck's parking area. The Contractor was reminded to clean up the mud and debris and keep the site clean and tidy.	080812_001	Yes
2	Follow up action to the previous site inspection item 7 on 05/08/08, water spraying system at wheel washing bay was found repaired.	080812_002	No
3	A chemical bucket was noted at full checking station without drip tray. The Contractor was reminded to provide appropriate drip trays for all chemical or store them in chemical storage area.	080812_003	Yes
4	Follow up action to the previous site inspections item 9 on 31/07/08 and item 5 on 05/08/08, the rubbish bin at workshop was collected.	080812_004	No
5	Follow up action to the previous site inspection item 6 on 05/08/08, the damaged drip tray at chemical waste storage area was repaired and no oil leakage was noted.	080812_005	No
6	Follow up action to the previous site inspections item 10 on 22/07/08, item 5 on 31/07/08 and item 2 on 05/08/08, the damaged part of tipping hall no.2 was repaired.	080812_006	No
7	Mud and silt were noted accumulated in the main drainage channel. The Contractor was reminded to clean up the mud and silt in order to avoid blockage of drainage channel.	080812_007	Yes
8	Some idle tires were found disposed at stockpile area. The Contractor was reminded to collect the tires and dispose them properly.	080812_008	Yes

Remark

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	Name	Title	Signature	Date
Checked by	Linda Law	Senior Environmental Officer		12 August 2008

**Photos**

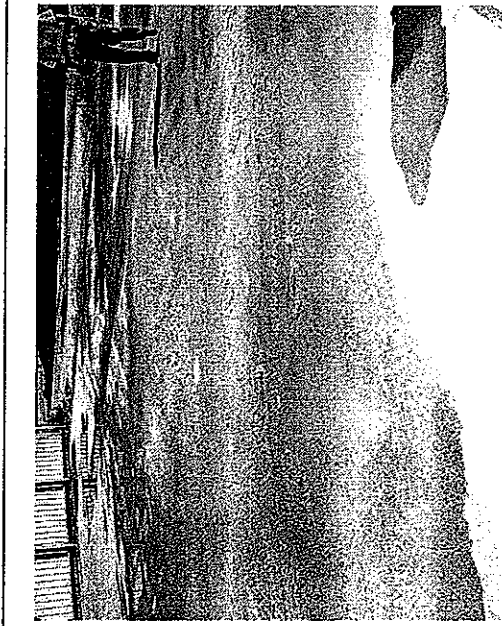


Photo 080812\_001



Photo 080812\_002

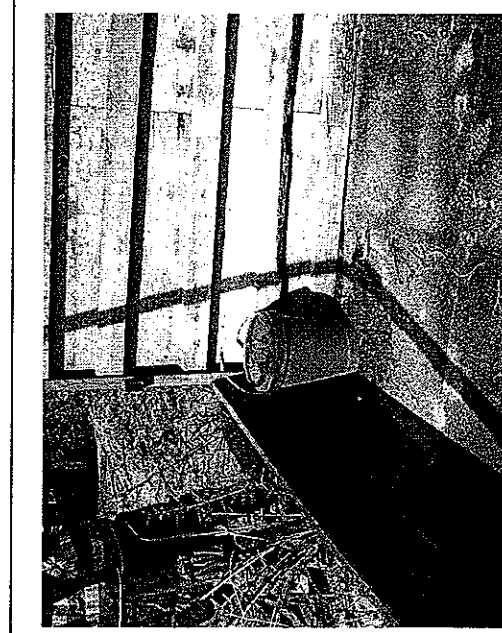


Photo 080812\_003

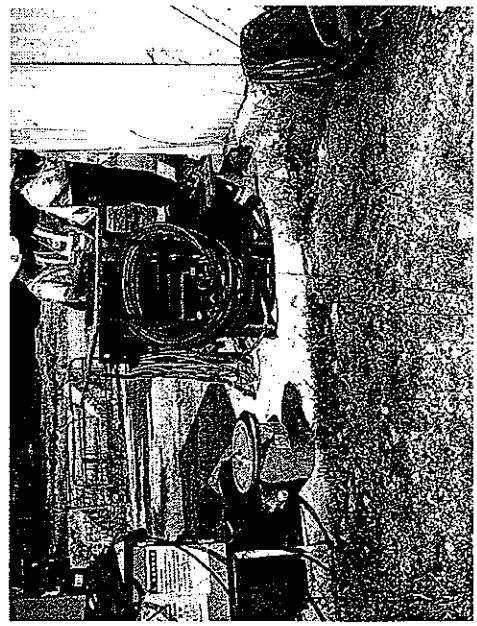


Photo 080812\_004



Photo 080812\_005

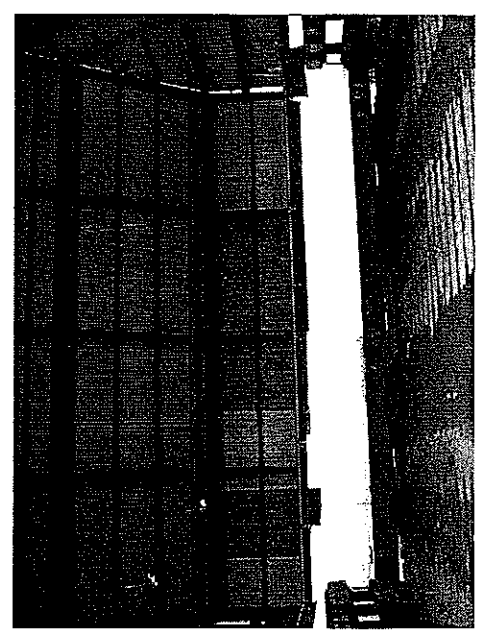


Photo 080812\_006

Photos

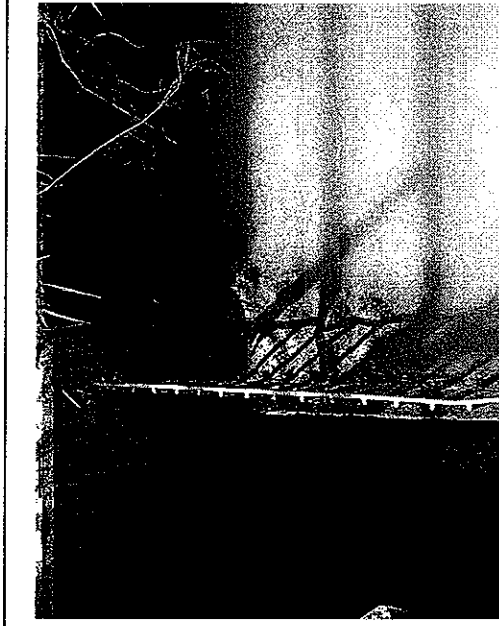


Photo 080812\_007

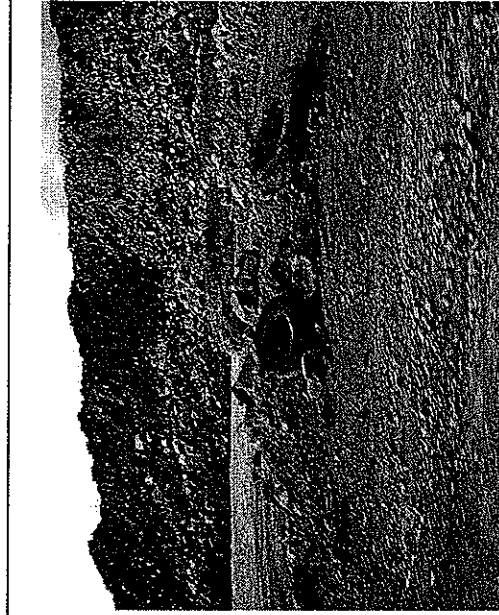
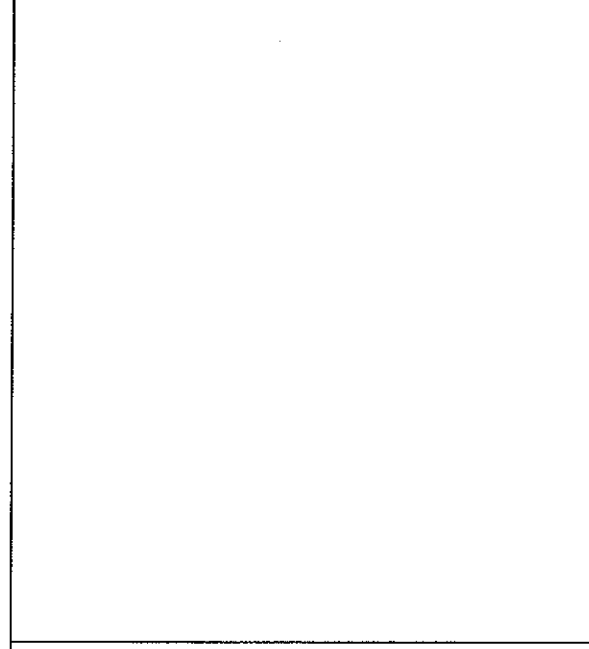


Photo 080812\_008



CEDD Contract No.: CV/2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

Inspection Date : 19 August 2008




Time : 16:00

Weather : Sunny Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 33°C

Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:		 Cheung Man Hin	
Name:	S M NGAN YUNG	Cheung TONG MING CHUN / W. Fook Man Hin	W-L-Li
Title	Area/9601 (OM/9601) (CN)	Env Engineer Assistant Engineer Operation Manager	E-T.





CEDD Contract No.: CV2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Fugitive Dust Emission</b>					
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪	Water sprays shall be provided and used to dampen materials.	√			
▪	All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	√			
▪	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.	√			
▪	Unpaved areas should be watered regularly to avoid dust generation.	√			
▪	The designated site main haul road shall be paved or regular watering.	√			
▪	The haul road inside the site and public road around the site entrance should be kept clean and free from dust.	√			
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪	The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	√			
▪	Vehicle and equipment should be switched off while not in use.	√			
▪	All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪	Open burning should be prohibited.	√			
<b>Noise Impact</b>					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪	The constructions works should be scheduled to minimize noise nuisance.	√			
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪	Air compressors and hand held breakers should have noise labels.	√			
▪	Compressors and generators should operate with door closed.	√			
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	√			



CEDD Contract No.: CV2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Water Quality</b>					
▪	Drainage system and the sand / silt removal facilities should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.		√		Item 5
▪	The material shall be properly covered to prevent washed away especially before rainstorm.	√			
▪	The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	√			
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪	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.	√			
▪	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.	√			
▪	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.	√			
▪	The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪	The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪	All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪	Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪	The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪	A waste collection vessel shall be deployed to remove floating debris.	√			
<b>Landscape and Visual</b>					
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.	√			
▪	Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.	√			
▪	Stockpile of public fill shall be removed in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable.	√			
▪	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.	√			
▪	Lighting shall be set to minimise night-time glare.	√			



Implementation Stages*		Remark
<b>Waste Management</b>		
<b>Construction Waste Management</b>		
Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	√	
Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.	√	
Mud and debris should be removed from waterworks access roads and associated drainage systems.	√	Item 1
Provision of sufficient waste disposal points and regular collection for disposal. Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	√	
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	√	
Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	√	
In order to monitor the disposal of C&D material and solid wastes at public filling areas and landfills, and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements.	√	
Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.	√	
<b>Chemical Waste Management</b>		
It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	√	
After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	√	
Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	√	
Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	√	
Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	√	
The designated chemical waste storage area should only be used for storing chemical wastes.	√	
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.	√	
Be enclosed on at least 3 sides and securely closed.	√	
Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	√	
Have adequate ventilation.	√	
Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).	√	
Be arranged so that incompatible materials are adequately separated.	√	



Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
▪	Warning panels should be displayed at the waste storage area.	√			
▪	Waste storage area should be cleaned and maintained regularly.	√			
▪	Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	√			
▪	All generators, fuel and oil storage should be within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant should be prevented.	√			
▪	In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	√			
▪	The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	√			
<b>Good Site Practices</b>					
▪	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.	√			
▪	Training of site personnel in proper waste management and chemical handling procedures should be provided.	√			
•	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.	√			Item 4
•	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	√			
•	The Environmental Permit should be displaced conspicuously on site.	√			
•	Construction noise permits should be posted at site entrance or available for site inspection.			√	
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Chemical storage area provided with lock and located on sealed areas.	√			
▪	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
▪	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
▪	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪	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.	√			
▪	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.	√			
▪	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.	√			



**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Photo Ref.	Further Action Required (Yes/No)
1	Follow up action to the previous site inspection item 1 on 12/08/08, mud and debris were still accumulated on the ground at dump truck's parking area. The Contractor was reminded to clean up the mud and debris and keep the site clean and tidy.	080819_001	Yes
2	Follow up action to the previous site inspection item 3 on 12/08/08, the chemical bucket was removed.	080819_002	No
3	Follow up action to the previous site inspection item 7 on 12/08/08, mud and silt accumulated in the main drainage channel were cleaned up.	080819_003	No
4	Follow up action to the previous site inspection item 8 on 12/08/08, idle tires were found still disposed at stockpile area. The Contractor was reminded to collect the tires and dispose them properly.	080819_004	Yes
5	Stagnant water was noted accumulated at water truck filling station. The Contractor was reminded to drain the stagnant water or apply pesticide to avoid mosquito breeding.	080819_005	Yes

Remark

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Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		19 August 2008

**Photos**

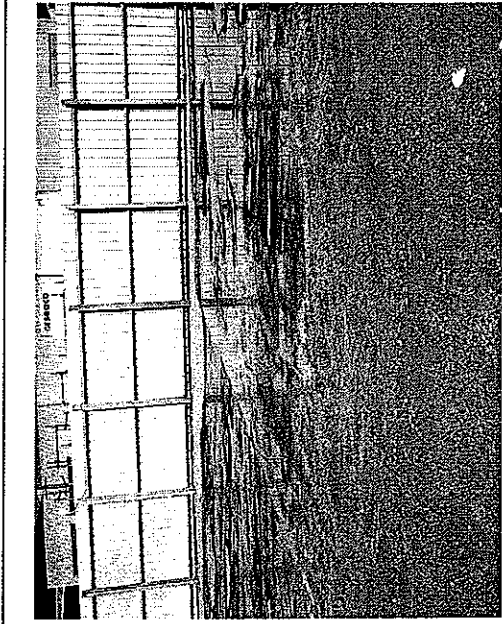


Photo 080819\_001



Photo 080819\_002



Photo 080819\_003

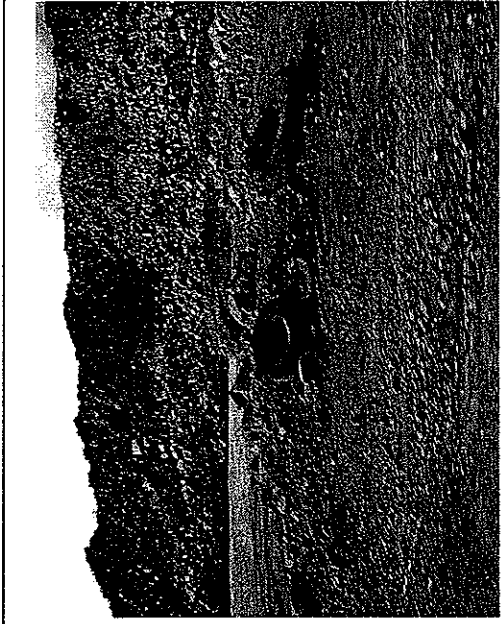


Photo 080819\_004



Photo 080819\_005



CEDD Contract No.: CV/2005/01  
Delivery of Reclamation material to Mainland - Tuen Mun Area 38 Fill Bank

Inspection Date : 26 August 2008  
 Time : 10200  
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : ~~Calm~~ / Light / Breeze / Strong

Temperature : 31°C  
 Humidity : ~~High~~ / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	S M Ngan / Tung	Chung S Yuen / K.H. Kwok	H.T. Chow
Title	Asst/Pls (Comp/CEM) Eng.	Oper. Mngwr. / FORSMAN	A.E.O.



Implementation Stages*		Remark
<b>Fugitive Dust Emission</b>		
<input checked="" type="checkbox"/>		Dust control / mitigation measures shall be provided to prevent dust nuisance.
<input checked="" type="checkbox"/>		Water sprays shall be provided and used to dampen materials.
<input checked="" type="checkbox"/>		All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.
<input checked="" type="checkbox"/>		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.
<input checked="" type="checkbox"/>		Unpaved areas should be watered regularly to avoid dust generation.
<input checked="" type="checkbox"/>		The designated site main haul road shall be paved or regular watering.
<input checked="" type="checkbox"/>		The haul road inside the site and public road around the site entrance should be kept clean and free from dust.
<input checked="" type="checkbox"/>		Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.
<input checked="" type="checkbox"/>		Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.
<input checked="" type="checkbox"/>		The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.
<input checked="" type="checkbox"/>		Vehicle and equipment should be switched off while not in use.
<input checked="" type="checkbox"/>		All plant and equipment should be well maintained e.g. without black smoke emission.
<input checked="" type="checkbox"/>		Open burning should be prohibited.
<b>Noise Impact</b>		
<input checked="" type="checkbox"/>		The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.
<input checked="" type="checkbox"/>		The constructions works should be scheduled to minimize noise nuisance.
<input checked="" type="checkbox"/>		Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.
<input checked="" type="checkbox"/>		Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.
<input checked="" type="checkbox"/>		Air compressors and hand held breakers should have noise labels.
<input checked="" type="checkbox"/>		Compressors and generators should operate with door closed.
<input checked="" type="checkbox"/>		Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.
<input checked="" type="checkbox"/>		Noisy equipment and mobile plant shall always be site away from NSRs.





CEDD Contract No.: CV/2005/01  
Delivery of Reclamation materials to Mainland - Tuen Mun Area 38 Fill Bank

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Water Quality</b>					
▪	Drainage system and the sand / silt removal facilities should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.		√		Item 3
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪	The material shall be properly covered to prevent washed away especially before rainstorm.	√			
▪	The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.	√			
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪	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.	√			
▪	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.	√			
▪	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.	√			
▪	The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪	The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪	All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪	Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪	The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪	A waste collection vessel shall be deployed to remove floating debris.	√			
<b>Landscape and Visual</b>					
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.	√			
▪	Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.	√			
▪	Stockpile of public fill shall be removed in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable.	√			
▪	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.	√			
▪	Lighting shall be set to minimise night-time glare.	√			



		Implementation Stages*			Remark
<b>Environmental Checklist</b>					
<b>Waste Management</b>					
<b>Construction Waste Management</b>					
▪	Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.	√			
▪	Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.	√			
▪	Mud and debris should be removed from waterworks access roads and associated drainage systems.		√		Item 3
▪	Provision of sufficient waste disposal points and regular collection for disposal. Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	√			
▪	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	√			
▪	Prior to disposal of C&D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.	√			
▪	In order to monitor the disposal of C&D material and solid wastes at public filling areas and landfills, and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements.	√			
▪	Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.	√			
<b>Chemical Waste Management</b>					
▪	It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	√			
▪	After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	√			
▪	Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	√			
▪	Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	√			
▪	Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.	√			
▪	The designated chemical waste storage area should only be used for storing chemical wastes.	√			
▪	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.	√			
▪	Be enclosed on at least 3 sides and securely closed.	√			
▪	Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	√			
▪	Have adequate ventilation.	√			
▪	Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).	√			
▪	Be arranged so that incompatible materials are adequately separated.	√			



Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
Warming panels should be displayed at the waste storage area.	✓		
Waste storage area should be cleaned and maintained regularly.	✓		
Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	✓		
All generators, fuel and oil storage should be within bundle areas.	✓		
Oil leakage from machinery, vehicle and plant should be prevented.			
In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.	✓	✓	Item 2
The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.	✓		
<b>Good Site Practices</b>			
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.	✓		
Training of site personnel in proper waste management and chemical handling procedures should be provided.	✓		
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.	✓		
Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓		
The Environmental Permit should be displayed conspicuously on site.	✓		
Construction noise permits should be posted at site entrance or available for site inspection.		✓	
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓		
Chemical storage area provided with lock and located on sealed areas.	✓		
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	✓		
Any unused chemicals or those with remaining functional capacity should be recycled.	✓		
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	✓		
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.	✓		
A recycling 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.	✓		
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 banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.		✓	Item 5



**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Photo Ref.	Further Action Required (Yes/No)
1	Follow up action to the previous site inspection item 1 on 12/08/08 and item 1 on 19/08/08, mud and debris noted on the ground at dump truck's parking area were cleaned up.	080826_001	No
2	Oil stains were observed on the ground at dump truck's parking area. The Contractor was reminded to clean up the oil stains immediately.	080826_002	Yes
3	Mud and debris were noted accumulated in the manhole next to dump truck's parking area. The Contractor was reminded to clean up the mud and debris.	080826_003	Yes
4	Follow up action to the previous site inspection item 5 on 19/08/08, no stagnant water was noted accumulated at water truck filling station.	080826_004	No
5	Rubbish was observed disposed on the ground near the wheel washing bay. The Contractor was reminded to collect and dispose the rubbish properly.	080826_005	Yes
6	Tipping hall no.1 was found damaged. The Contractor was reminded to repair the damaged part of the tipping hall no. 1 properly.	080826_006	Yes
7	Follow up action to the previous site inspection item 8 on 12/08/08 and item 4 on 19/08/08, idle tires disposed at stockpile area were collected.	080826_007	No

Remark

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Name	Title	Signature	Date
Linda Law	Senior Environmental Officer	<i>Linda Law</i>	26 August 2008

**Photos**

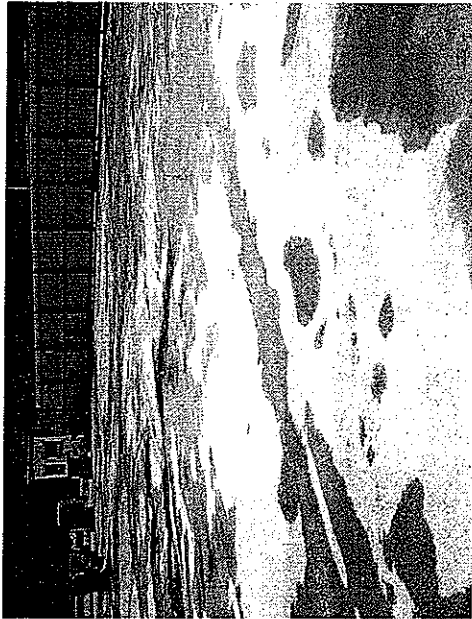


Photo 080826\_001



Photo 080826\_002

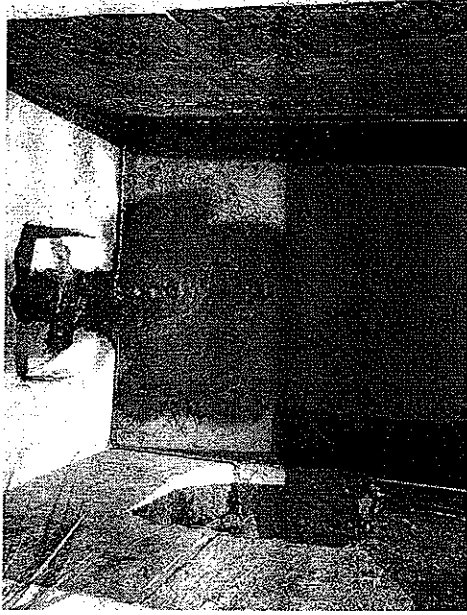


Photo 080826\_003



Photo 080826\_004



Photo 080826\_005

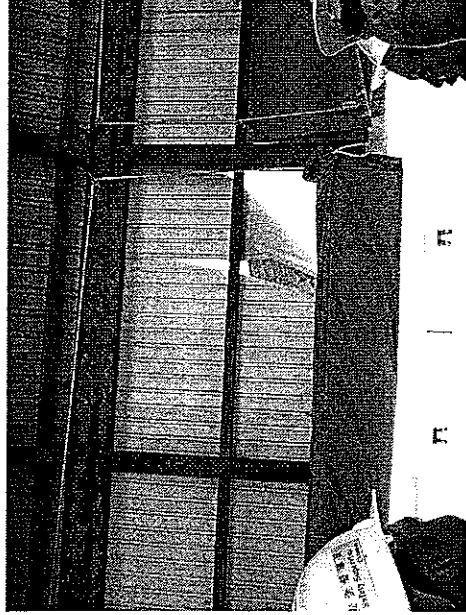


Photo 080826\_005



Photos

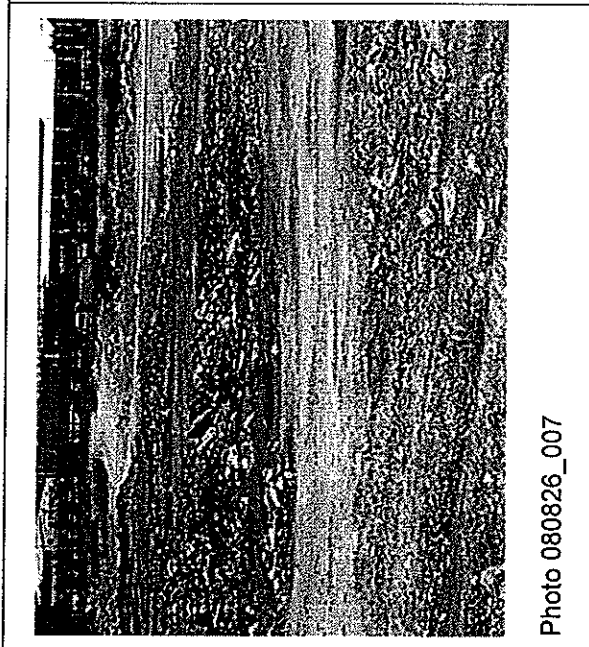


Photo 080826\_007



## **Appendix I**

### **Implementation Schedule of Mitigation Measures**



## Environmental Mitigation Implementation Schedule

	Location	Implementation Status		
		Implemented	Partially implemented	Not Implemented
<b>Air Quality</b>				
<ul style="list-style-type: none"> <li>▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.</li> <li>▪ Water sprays shall be provided and used to dampen materials.</li> <li>▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.</li> <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> <li>▪ Unpaved areas should be watered regularly to avoid dust generation.</li> <li>▪ The designated site main haul road shall be paved or regular watering.</li> <li>▪ The public road around the site entrance should be kept clean and free from dust.</li> <li>▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.</li> <li>▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.</li> <li>▪ The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.</li> <li>▪ Vehicle and equipment should be switched off while not in use.</li> <li>▪ All plant and equipment should be well maintained e.g. without black smoke emission.</li> <li>▪ Open burning should be prohibited.</li> </ul>			√	
<b>Noise Impact</b>				
<ul style="list-style-type: none"> <li>▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.</li> <li>▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.</li> <li>▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.</li> <li>▪ Air compressors and hand held breakers should have noise labels.</li> <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> <li>▪ Noisy equipment and mobile plant shall always be site away from NSRs.</li> </ul>			√	





Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
<b>Water Quality</b>						
<ul style="list-style-type: none"> <li>▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.</li> <li>▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.</li> <li>▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.</li> <li>▪ The material shall be properly covered to prevent washed away especially before rainstorm.</li> <li>▪ The temporary slope surfaces shall be covered with impermeable sheet or sprayed with water.</li> <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> <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> <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> <li>▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided.</li> <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> <li>▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.</li> <li>▪ A waste collection vessel shall be deployed to remove floating debris.</li> </ul>	All areas	√				
		All areas	√			
		All areas	√			
		All areas	√			
		Temporary Slopes	√			
		All areas	√			
		Wheel Washing facility	√			
		Site Egress	√			
		Site Office	√			
		All areas	√			
		Along the seafront	√			
		Along the seafront	√			
<b>Landscape and Visual</b>						
<ul style="list-style-type: none"> <li>• The maximum stockpiling height at the fill bank shall be limited to a maximum of +40mPD.</li> <li>• Surface of outer slopes of the Fill Bank shall preferably be hydroseeded.</li> <li>• Stockpile of public fill shall be removed in a sequence to allow the outer hydroseeded to be removed later than other portions as far as practicable.</li> <li>• 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.</li> <li>• Lighting shall be set to minimise night-time glare.</li> </ul>	All areas	√				
		Completed slopes	√			
		Completed slopes	√			
		Site boundary	√			
		All areas	√			
<b>Waste Management</b>						
<b>Construction Waste Management</b>						
<ul style="list-style-type: none"> <li>• Relevant licence / permits for disposal of construction waste or excavated materials available for inspection.</li> <li>• Excavated material to be generated from construction works to be re-used on-site as far as practicable to reduce off-site disposal.</li> <li>• Mud and debris should be removed from waterworks access roads and associated drainage systems.</li> </ul>	All areas	√				
		All areas	√			
		All areas	√			

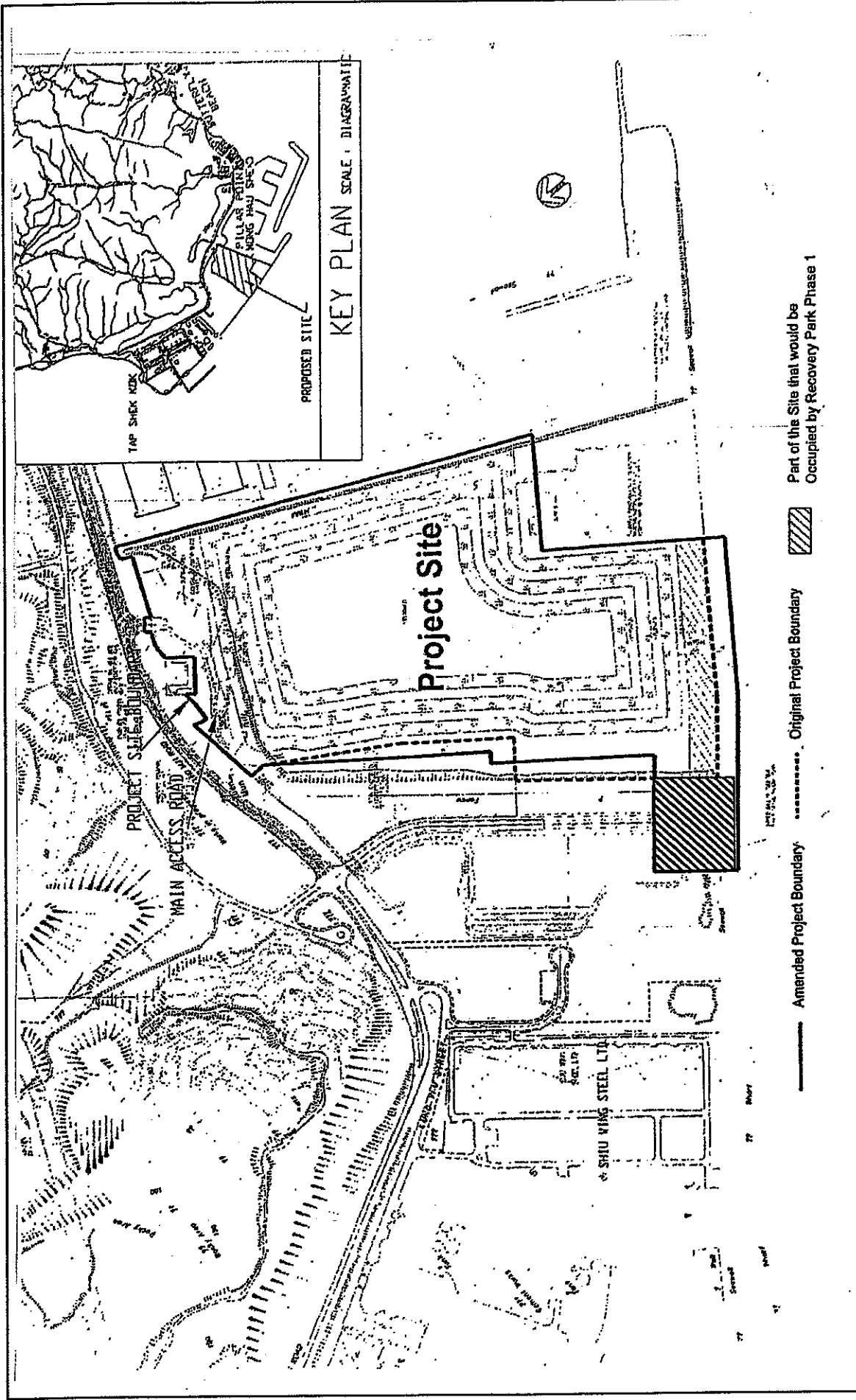


	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Environmental Protection Measures</b>					
<ul style="list-style-type: none"> <li>Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</li> <li>Prior to disposal of C&amp;D waste, recyclable materials should be salvaged for reuse (such as wood and metal) and inert waste utilised as public fill to minimise the quantity of waste to be disposed of to landfill.</li> <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-tipping, a trip-ticket system should be included as one of the contractual requirements.</li> <li>Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.</li> </ul>	All areas	✓			
<b>Chemical Waste Management</b>					
<ul style="list-style-type: none"> <li>It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</li> <li>After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Spent chemicals should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.</li> <li>Chemical wastes should be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facility.</li> <li>Chemical wastes including waste oil should be stored properly in designated areas, e.g. chemical waste storage area.</li> <li>The designated chemical waste storage area should only be used for storing chemical wastes.</li> </ul>	Waste Storage Area	✓			
<b>The set-up of chemical waste storage area should</b>					
<ul style="list-style-type: none"> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition.</li> <li>Be enclosed on at least 3 sides and securely closed.</li> <li>Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.</li> <li>Have adequate ventilation.</li> <li>Be covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary).</li> <li>Be arranged so that incompatible materials are adequately separated.</li> <li>Warning panels should be displayed at the waste storage area.</li> <li>Waste storage area should be cleaned and maintained regularly.</li> <li>Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste.</li> </ul>	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓	✓		
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	Waste Storage Area	✓			
	All areas	✓			

	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Environmental Protection Measures</b> <ul style="list-style-type: none"> <li>All generators, fuel and oil storage should be within bundle areas.</li> <li>Oil leakage from machinery, vehicle and plant should be prevented.</li> <li>In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed.</li> <li>The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place.</li> </ul>	All areas	√			
	All areas		√		
	All areas	√			
	All areas	√			
<b>Good Site Practices</b>					
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	√			
Training of site personnel in proper waste management and chemical handling procedures should be provided.	All areas	√			
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		√		
Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas	√			
The Environmental Permit should be displaced conspicuously on site.	Site Entrance	√			
Construction noise permits should be posted at site entrance or available for site inspection.	Site Entrance				√
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	All areas	√			
Chemical storage area provided with lock and located on sealed areas.	Chemical Storage Area	√			
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	Chemical Storage Area	√			
Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√			
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, surps 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		√		
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	√			
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.	All areas	√			
Remove wastes in a timely manner.	All areas		√		



**Appendix J**  
**Site General Layout plan**



CEDD Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland		Scale : ---	Date issued : December 2006
Figure 1 Site Layout Plan - Tuen Mun Area 38 Fill Bank		Part of the Site that would be Occupied by Recovery Park Phase 1	



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## **Appendix K**

### **QA/QC Results of Laboratory Analysis**

### QA/QC Results of Laboratory Analysis of Total Suspended Solids

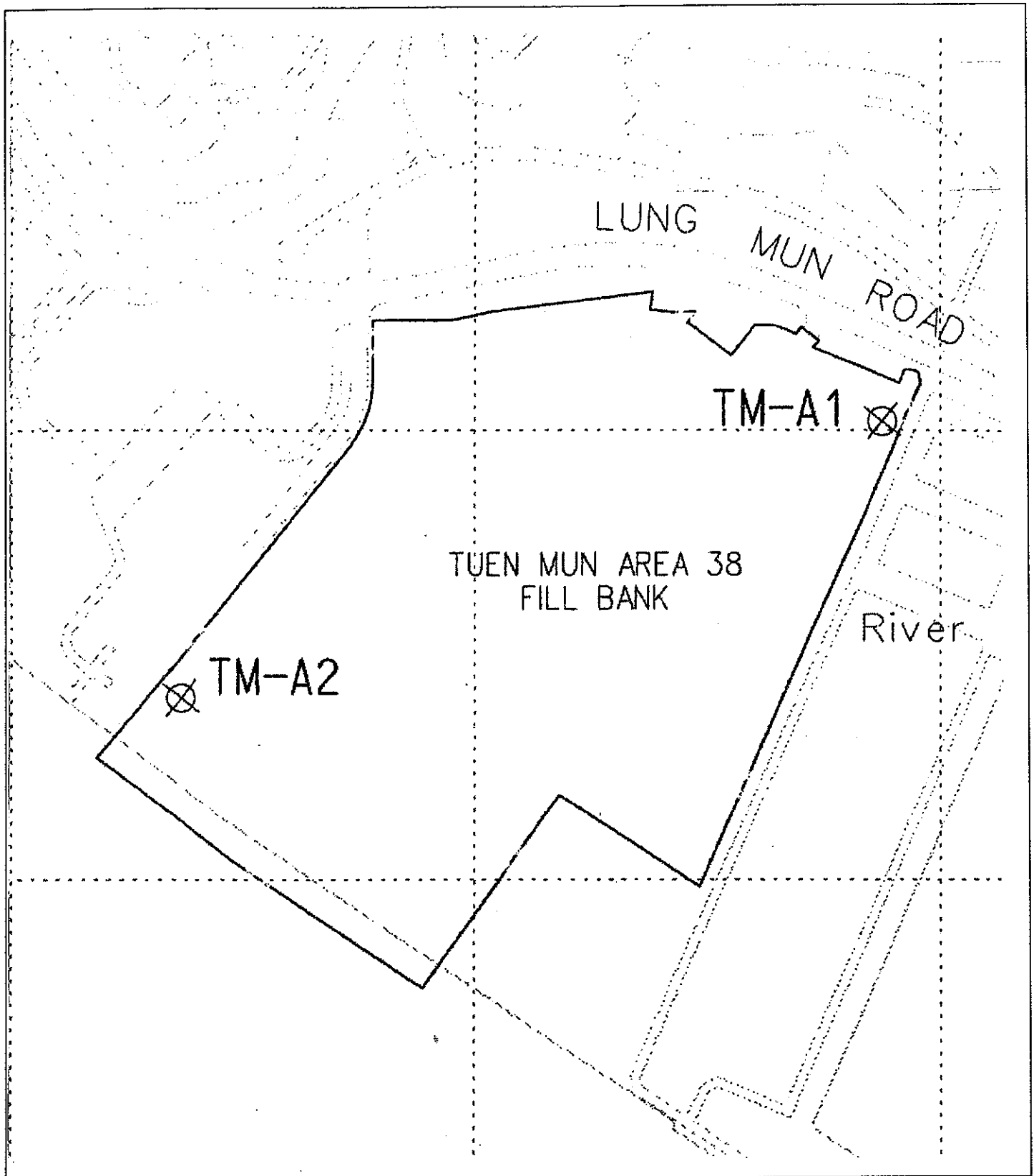
Sampling Date	QC Sample Analysis	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
02/08/08	98.5	FC1-S	0.0	FM2-M	95.6
	106.0	FM2-B	0.0	EM1-S	100.0
	107.8	EM1-M	0.0	EC2-B	100.0
05/08/08	92.9	FC1-S	0.0	FM2-M	105.8
	98.2	FM2-B	0.0	EM1-S	104.3
	100.6	EM1-M	0.0	EC2-B	106.1
07/08/08	103.9	FC1-S	0.0	FM2-M	96.8
	93.9	FM2-B	0.0	EM1-S	94.2
	104.5	EM1-M	0.0	EC2-B	103.0
09/08/08	93.7	FC1-S	0.0	FM2-M	94.2
	96.6	FM2-B	0.0	EC2-B	101.9
	98.4	EM1-M	0.0	EC2-B	94.8
12/08/08	103.2	FC1-S	0.0	FM2-M	96.8
	99.0	FM2-B	0.0	EM1-S	105.6
	103.2	EM1-M	0.0	EC2-B	107.4
14/08/08	99.0	FC1-S	0.0	FM2-M	93.7
	96.7	FM2-B	0.0	EM1-S	98.0
	103.2	EM1-M	0.0	EC2-B	92.3
16/08/08	103.4	FC1-S	0.0	FM2-M	89.3
	101.7	FM2-B	0.0	EM1-S	91.7
	96.0	EM1-M	0.0	EC2-B	105.9
19/08/08	93.6	FC1-S	0.0	FM2-M	100.0
	106.7	FM2-B	0.0	EM1-S	101.4
	97.5	EM1-M	0.0	EC2-B	95.5
21/08/08	101.9	FC1-S	0.0	FM2-M	100.0
	101.2	FM2-B	0.0	EM1-S	98.5
	102.2	EM1-M	0.0	EC2-B	94.8
23/08/08	95.4	FC1-S	0.0	FM2-M	101.8
	103.2	FM2-B	0.0	EM1-S	92.9
	99.6	EM1-M	0.0	EC2-B	107.5
26/08/08	98.9	FC1-S	0.0	FM2-M	89.8
	105.7	FM2-B	0.0	EM1-S	93.2
	107.9	EM1-M	0.0	EC2-B	96.7
28/08/08	100.0	FC1-S	0.0	FM2-M	93.1
	100.6	FM2-B	0.0	EM1-S	91.2
	106.1	EM1-M	0.0	EC2-B	90.5
30/08/08	98.8	FC1-S	0.0	FM2-M	107.4
	106.7	FM2-B	0.0	EM1-S	106.5
	97.7	EM1-M	0.0	EC2-B	100.0

Note: (\*) % Recovery of QC sample should be between 80% to 120%.  
 (#) % Error of Sample Duplicate should be between -10% to 10%.  
 (©) % Recovery of Sample Spike should be between 80% to 120%.



## Figures



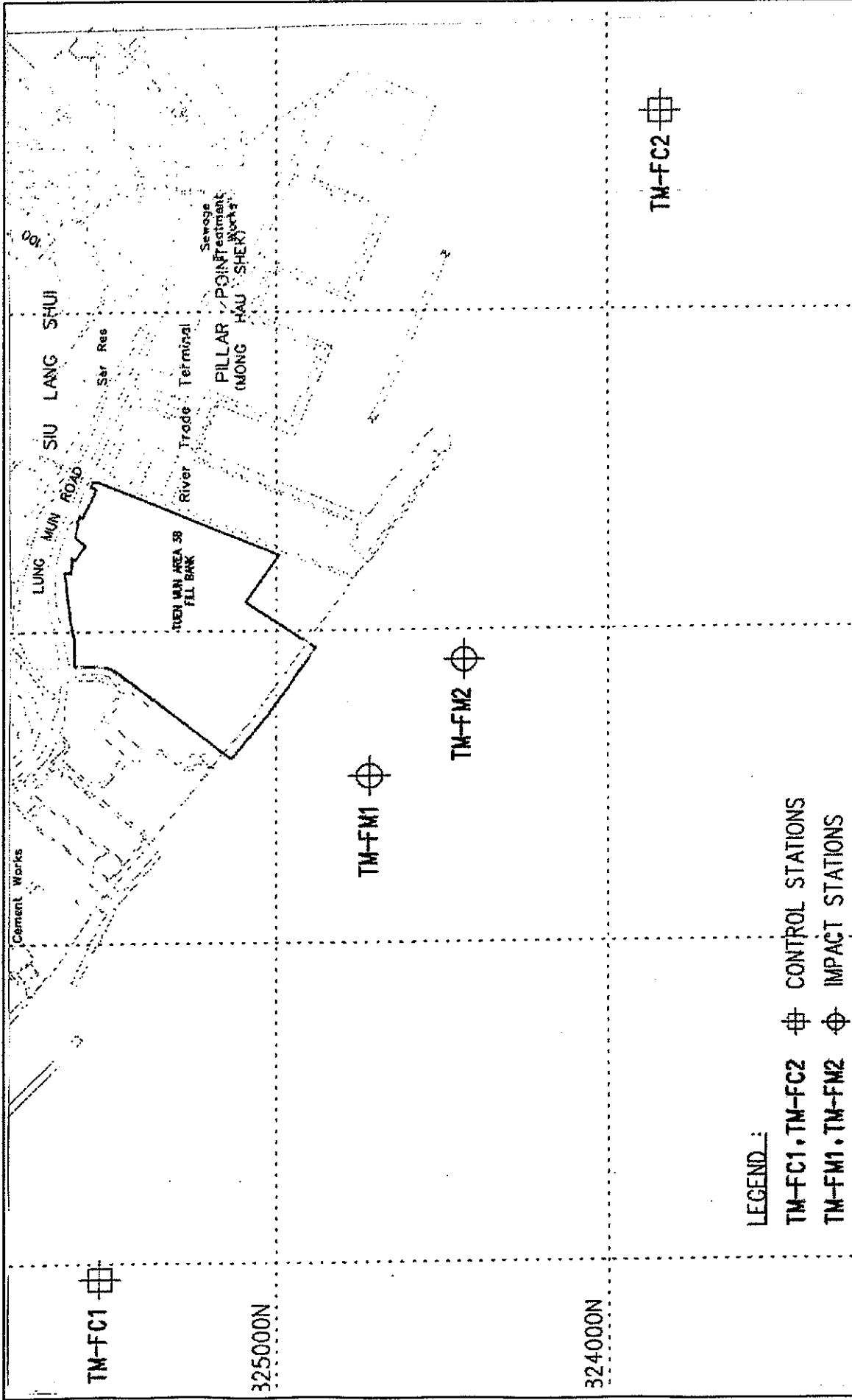


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Figure 2  
 Locations of Air Quality Monitoring Stations –  
 Tuen Mun Area 38 Fill Bank



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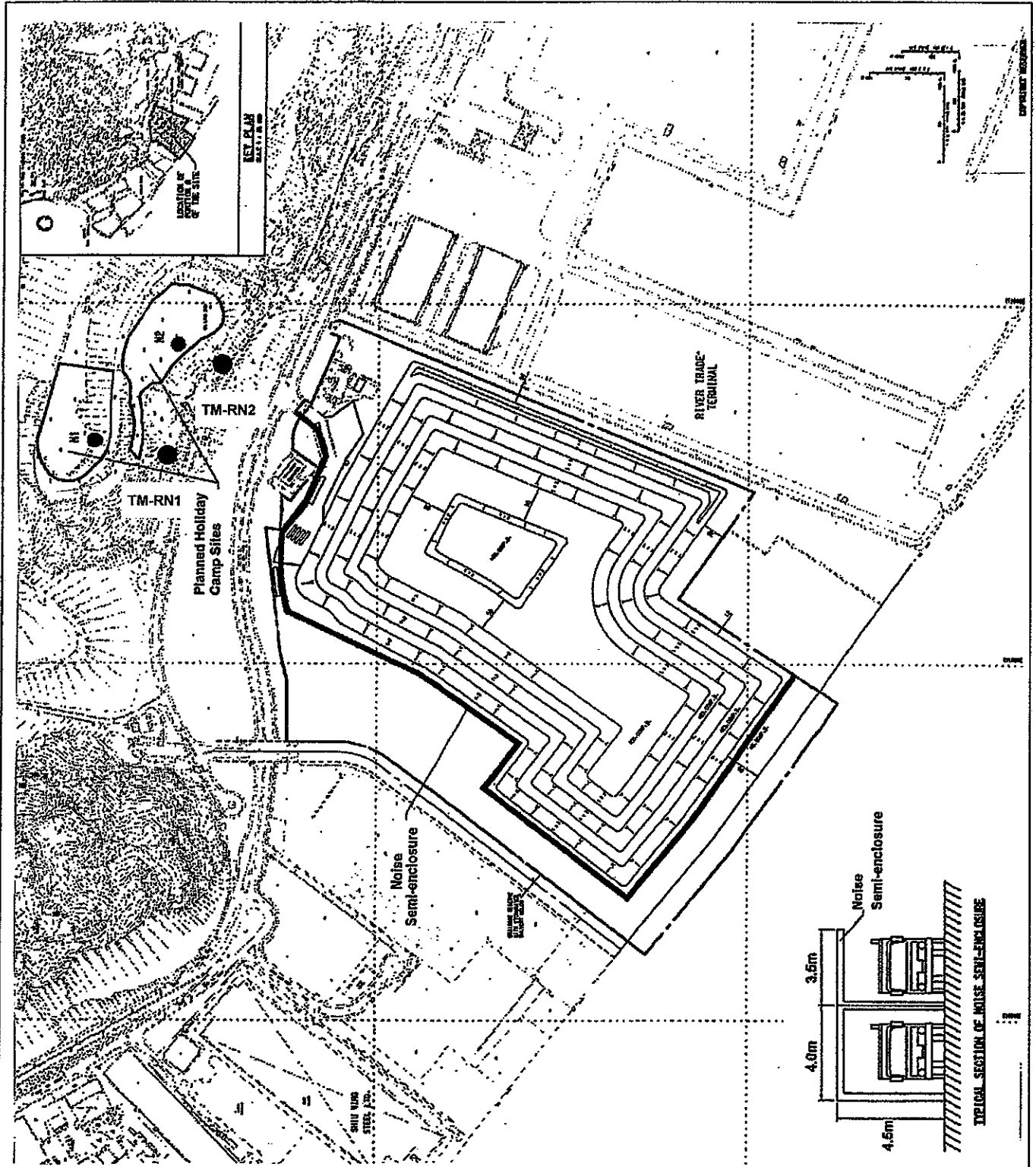
Scale : ---

Date issued :  
December 2006

Figure 3 Locations of Water Quality Monitoring Stations - Tuen Mun Area 38 Fill Bank



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Figure 4  
 Locations of Noise Quality Monitoring Stations –  
 Tuen Mun Area 38 Fill Bank



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