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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

(DECEMBER 2006)

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Report No.: ENA60917

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Subject

Agreement No. CE 9/2005 (EP)

Tuen Mun Area 38 Fill Bank -

Monthly Environmental Monitoring & Audit Report

We refer to the revised first monthly EM&A report that we received yesterday through email 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/ac

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EXECUTIVE SUMMARY

This is the first monthly Environmental Monitoring and Audit (EM&A) report prepared by ETS-Testconsult Ltd (ET) 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 December 2006.

Construction Progress

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

- Takeover and serving RE's Secondary Office, Reception, Record Houses and Exit Offices
- Erection and serving of Contractor's site office
- Public Filling Operation
- Setup of Crushing Plant

Environmental Monitoring Progress

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

- 24-hour TSP Monitoring: 6 Occasions at 2 designated locations
- 1-hour TSP Monitoring: 18 Occasions at 2 designated locations
- Marine Water Quality Monitoring: 12 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

According to the Section 26.11 of the Particular Specification of the Project, two noise monitoring stations, TM-N1 and TM-N2 (Planned Holiday Camp Sites) are proposed to be carried out for noise monitoring during impact phase. However, after the site investigation, Environmental Team (ET) found that the two monitoring locations are still wild and vacant in this moment. Since no noise sensitive receivers are noted at these two monitoring locations, the noise monitoring is suspended until the two locations were developed and occupied.

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	08, 14, 19, 30
IEC site inspection	08, 21

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 complaints, notification of summons and prosecutions with respect to environmental issues were received in this monitoring month.

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 Section 4 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 December 2006.

2.0 PROJECT INFORMATION

2.1 Construction Programme

Details of construction programme are shown in Appendix F.

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. WT 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	Assistant Project Manager	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:

- Takeover and serving RE's Secondary Office, Reception, Record Houses and Exit Offices
- Erection and serving of Contractor's site office
- Public Filling Operation
- Setup of Crushing Plant

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 1.

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 table 4.3.



Table 4.3 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	Monitoring Period											
	24-hr TSP				1-hr TSP							
	Start		Finish		Date	Start	Finish					
	Date	Time	Date	Time								
TM-A1	---				02/12/06	09:00	10:02					
						10:02	11:02					
						11:02	12:02					
					08/12/06	08:30	09:30					
						11:00	12:00					
						14:00	15:00					
					14/12/06	09:00	10:00					
						10:10	11:10					
					19/12/06	13:00	14:00					
						10:29	11:29					
						14:48	15:48					
					23/12/06	09:36	10:37					
						10:41	11:41					
					30/12/06	13:00	14:00					
						09:00	10:00					
						10:05	11:05					
					TM-A2	---				02/12/06	09:05	10:05
											10:07	11:07
11:09	12:09											
08/12/06	08:30	09:30										
	11:00	12:00										
	14:00	15:00										
14/12/06	09:00	09:59										
	10:46	11:45										
19/12/06	13:00	13:59										
	10:49	11:48										
	14:59	15:58										
23/12/06	09:50	09:49										
	10:53	11:52										
30/12/06	13:00	13:59										
	09:00	09:59										
	10:12	11:11										
TM-A1	02/12/06	13:00	03/12/06	13:00						---		
	08/12/06	15:30	09/12/06	15:29								
	14/12/06	14:30	15/12/06	14:30								
	19/12/06	16:00	20/12/06	16:00								
	23/12/06	14:30	24/12/06	14:30								
	30/12/06	14:30	31/12/06	14:30								
TM-A2	02/12/06	13:10	03/12/06	13:10	---							
	08/12/06	15:45	09/12/06	15:17								
	14/12/06 *	14:30	15/12/06	09:48								
	19/12/06	16:15	20/12/06	16:01								
	23/12/06	14:30	24/12/06	14:30								
	30/12/06	14:30	31/12/06	14:29								

*The TSP collection was interrupted due to shortage of power supply after 19 hours and 18 minutes operation at TM-A2 monitoring station.

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 0.6m³/min and 1.7m³/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 D.

4.6 Action and Limit Levels

Table 4.4 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.4 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP (µg/m ³)		1-hr TSP (µg/m ³)	
	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 E for details.



4.8 Results and Observations

Totally 6 occasions of 24-hr TSP monitoring and 18 occasions of 1-hr TSP monitoring were carried out in this reporting period. All monitoring data of both 1-hour and 24-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting month is shown in Appendix B3. Wind data, including wind speed and wind direction, are annexed in Appendix D.

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 bowzers 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 four monitoring stations, TM-FC1, TM-FM1, TM-FM2 and TM-FC2.

5.2 Monitoring Locations

As stipulated in the EM&A requirement, there were four monitoring stations undertaken during the impact monitoring. Figure 2 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-feet 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 K.



Table 5.2 Summary of testing procedures

Laboratory Analysis	Testing Procedure	Detection Limit
Total suspended solids	In house method based on APHA 19 th 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	----	----	EW/005/01*
Dissolved Oxygen (Saturation), Temperature	YSI Dissolved Oxygen Meter, YSI 95	20/11/2006	19/02/2007	EW/003/001*
Turbidity	HACH Model 2100P Turbid Meter	28/10/2006	28/01/2007	ET/0505/002
Salinity	YSI Model 30M	26/10/2006	26/01/2007	ET/0527/001
Water Depth	EAGLE Strata 128 Sonar	----	----	EW/002/02

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

5.5 Action and Limit Level

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 & 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 & 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 E 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 Water Quality Monitoring

December 2006						
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

According to the Section 26.11 of the Particular Specification of the Project, two noise monitoring stations, TM-N1 and TM-N2 (Planned Holiday Camp Sites) are proposed to be carried out for noise monitoring during impact phase. However, after the site investigation, Environmental Team (ET) found that the two monitoring locations are still wild and vacant in this moment. Since no noise sensitive receivers are noted at these two monitoring locations, the noise monitoring is suspended until the two locations are developed and occupied.

7.0 ENVIRONMENTAL AUDIT

7.1 Weekly Site Inspection

Weekly ET 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 (08, 14, 19, 30 December 2006). Summaries of the 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;
- Water trucks served to dampen the haul roads and on the ramp to the stockpiling area;
- Wheel washing facilities were found operating during weekly site inspections;
- No potential fugitive dust from vehicle movement was observed in this reporting month. The Contractor was still reminded to water the haul road more frequently during dry season;
- 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; and
- During weekly site inspection on 08 December 2006, black smoke emission was spotted from a bulldozer at TP2. The Contractor was still reminded to maintain all the Powered Mechanical Equipment (PME) regularly. The bulldozer was repaired and no black smoke was found emitted from it during the subsequent weekly site inspection (14 December 2006).

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 observed during operating.

Water Quality

- During weekly site inspections on 14 and 30 December 2006, muddy water was found to be continuously discharging into nearby seabody from drainage channel at TP-3. The Contractor should be reminded that muddy water should pass through proper sedimentation tank or treatment facilities before direct discharge. Besides, all drainage channels and wastewater treatment facilities have to be maintained in good condition for merit function. Since the finding was noted at the last weekly site inspection, it will be verified in the next month.

Chemical and Waste Management

- During weekly site inspection on 08 December 2006, no cover was provided for a waste collection point in front of fill checking station. The Contractor should cover collection point with suitable lit or tarpaulin sheets to avoid water trap and mosquito breeding. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. During the subsequent weekly site inspection on 14 December 2006, the waste in collection point had been removed; and



- During the weekly site inspection on 19 and 30 December 2006, the generator at temporary workshop was found without drip tray. The Contractor was reminded to provide drip tray for all generator. Since the finding was still observed during the last weekly site inspection, it will be verified in the next month

Site Practices

- The site area was found tidy and clean; and
- Sufficient rubbish skips had been provided at site by the Contractor.

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.

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
Effluent Discharge License	Application had been submitted to EPD			
Chemical Waste Producer	Application had been submitted to EPD			

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 H. 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 monitoring parameters recorded in this monitoring month. Hence no further actions were required.

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

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

No complaints, notifications of summons and successful prosecutions were received in this reporting month. 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	
December2006	Cumulative	December2006	Cumulative	December2006	Cumulative
0	0	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 December 2006 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 8.1 Actual amounts of Waste generated in December 2006

Waste Type	Actual Amount	Disposal Locations
Public Fill	0 m ³	---
C&D Waste	0 tonne	---
Chemical Waste	0 L	---

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 were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

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.

10.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

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 were carried out at designated locations in accordance with the Profile in this reporting month.

According to the summary of air monitoring results, 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 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 complaints, prosecutions or notifications of summons were received in this reporting month.

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

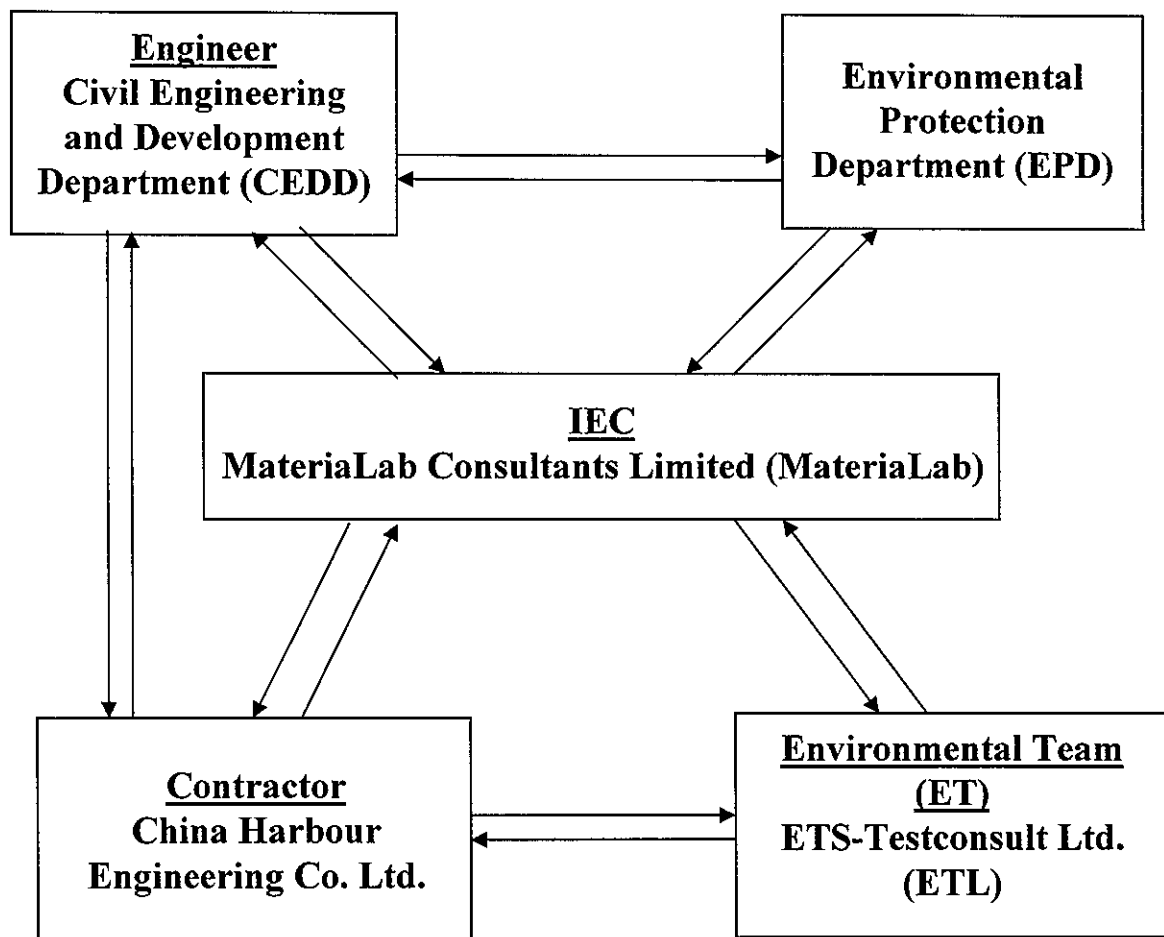
Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- 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

Lines of Communication





Appendix B1

Calibration Certificates for 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 : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

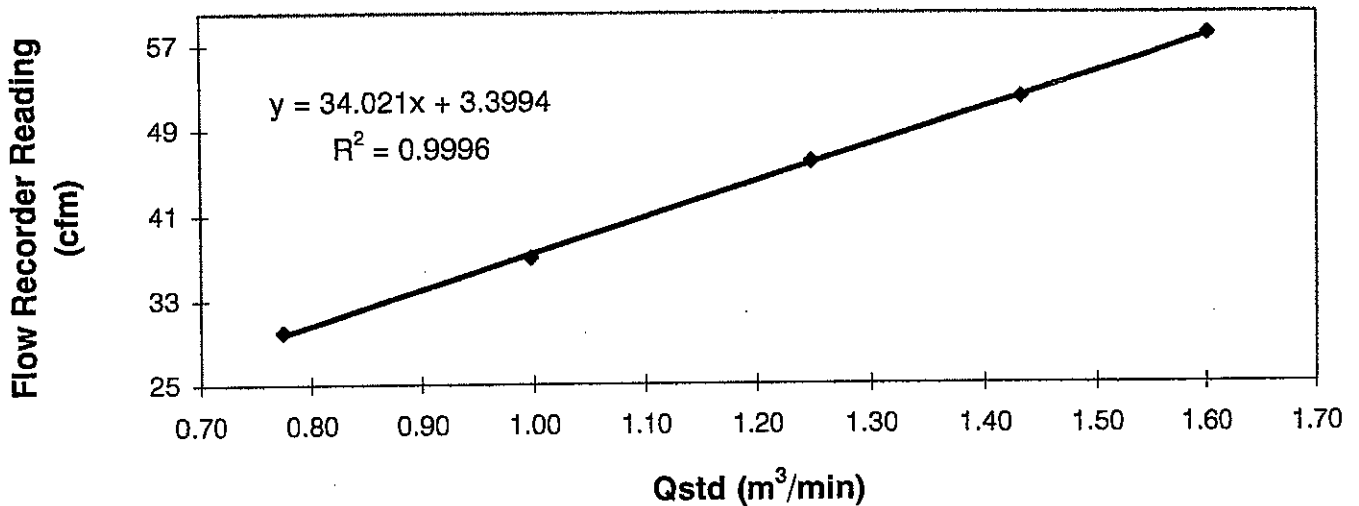
TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 06 September 2006
Serial No. : 9503 (ET / EA / 003 / 03) Calibration Due Date : 05 November 2006
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)	58	52	46	37	30
	Qstd (Actual flow rate, m ³ /min)	1.60	1.43	1.25	1.00	0.78
	Pressure : 758.31 mm Hg	Temp. : 303 K				

Sampler 9503 Calibration Curve
Site: Tuen Mun 38 (AM-1)
Date of Calibration: 06 September 2006



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 : H. T. Chow
H. T. Chow
(Asst. Environmental Officer)

Approved by : Linda Law
Linda Law
(Environmental Officer)



東業德勤測試顧問有限公司
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TEST REPORT

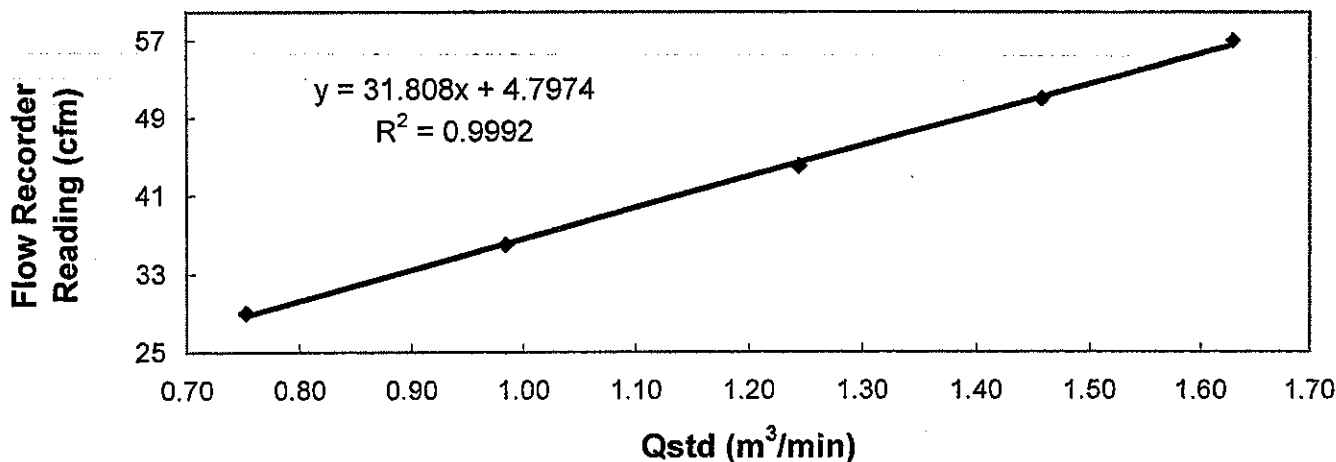
Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW **Date of Calibration** : 09 November 2006
Serial No. : 9503 (ET / EA / 003 / 03) **Calibration Due Date** : 08 January 2007
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	36	29
Qstd (Actual flow rate, m ³ /min)	1.63	1.46	1.24	0.98	0.75
Pressure :	756.81 mm Hg			Temp. :	295 K

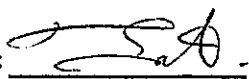
Sampler 9503 Calibration Curve
Site: Tuen Mun 38 (AM-1)
Date of Calibration: 09 November 2006



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 : 
Danny Wong
(Technician)

Approved by : 
H. T. Chow
(Asst. Environmental Officer)



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TEST REPORT

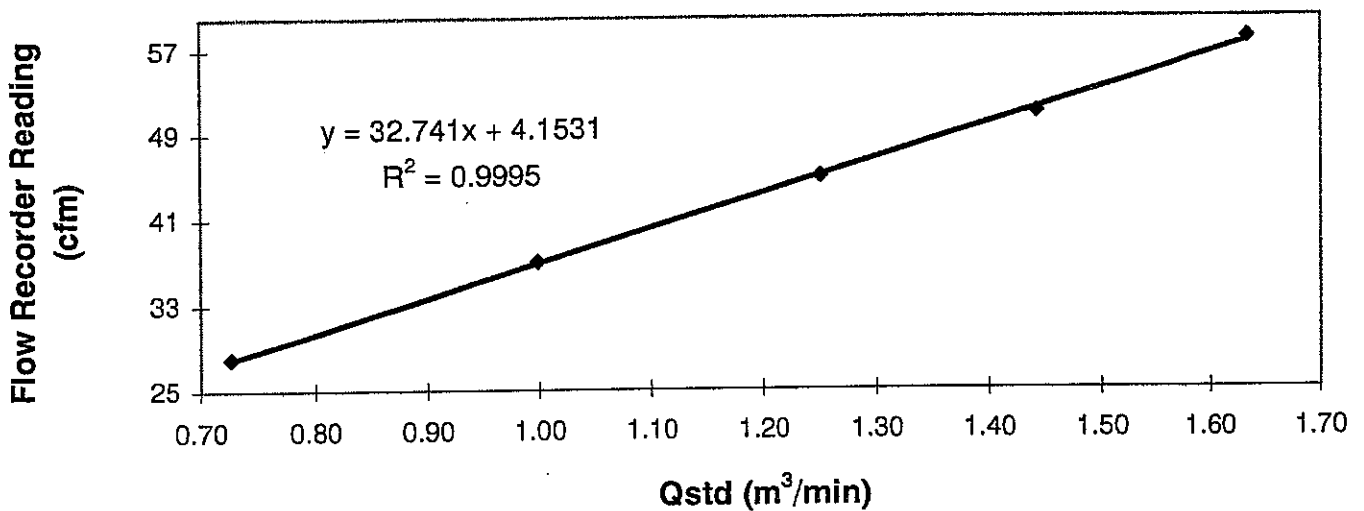
**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Graseby GMW **Date of Calibration** : 06 September 2006
Serial No. : 8115 (ET / EA / 003 / 13) **Calibration Due Date** : 05 November 2006
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)	58	51	45	37	28
Qstd (Actual flow rate, m ³ /min)	1.63	1.44	1.25	1.00	0.73
Pressure :	758.31 mm Hg		Temp. :	302 K	

**Sampler 8115 Calibration Curve
Site: Tuen Mun 38 (AM-2)
Date of Calibration: 06 September 2006**



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 :
H. T. Chow
(Asst. Environmental Officer)

Approved by :
Linda Law
(Environmental Officer)



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TEST REPORT

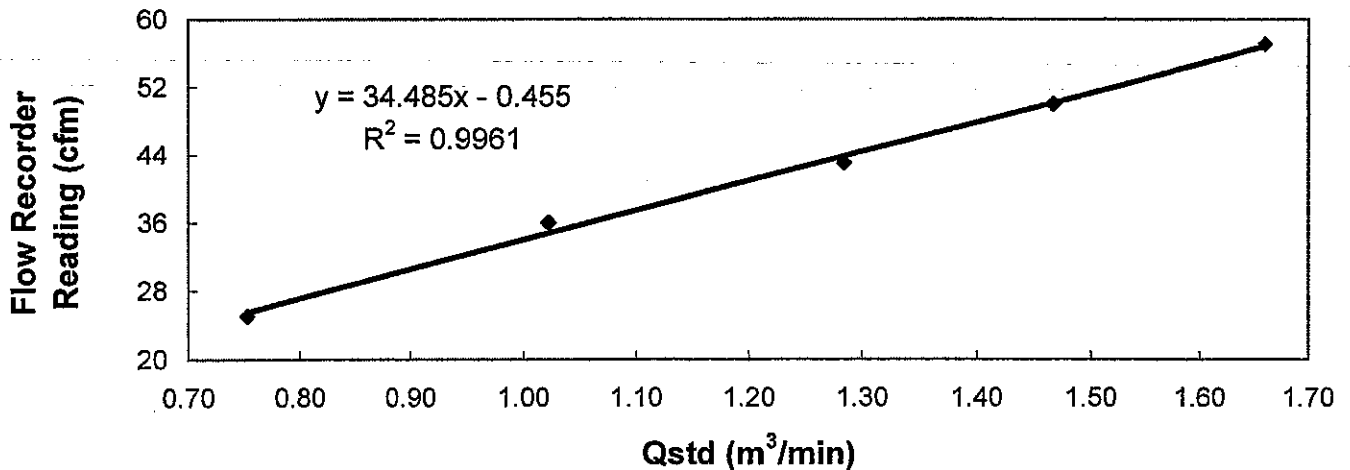
Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 09 November 2006
Serial No. : 8115 (ET / EA / 003 / 13) Calibration Due Date : 08 January 2007
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	50	43	36	25
Qstd (Actual flow rate, m ³ /min)	1.66	1.47	1.28	1.02	0.75
Pressure :	756.81 mm Hg		Temp. :	295 K	

Sampler 8115 Calibration Curve
Site: Tuen Mun 38 (AM-2)
Date of Calibration: 09 November 2006



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 : Danny Wong
Danny Wong
(Technician)

Approved by : H. T. Chow
H. T. Chow
(Asst. Environmental Officer)



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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jun 16, 2006 Roots-meter S/N 9833620 Ta (K) - 296
 Operator Tisch Orifice I.D. - 1061 Pa (mm) - 753.11

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	1.3950	3.1	2.00
2	NA	NA	1.00	0.9820	6.3	4.00
3	NA	NA	1.00	0.8770	7.8	5.00
4	NA	NA	1.00	0.8360	8.6	5.50
5	NA	NA	1.00	0.6910	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9935	0.7122	1.4125	0.9959	0.7139	0.8866
0.9893	1.0074	1.9976	0.9916	1.0098	1.2539
0.9872	1.1256	2.2334	0.9895	1.1283	1.4019
0.9862	1.1797	2.3424	0.9885	1.1825	1.4703
0.9809	1.4195	2.8251	0.9832	1.4229	1.7732
Qstd slope (m) = 1.99638			Qa slope (m) = 1.25010		
intercept (b) = -0.01172			intercept (b) = -0.00736		
coefficient (r) = 0.99998			coefficient (r) = 0.99998		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

$$Qstd = Vstd / \text{Time}$$

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

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

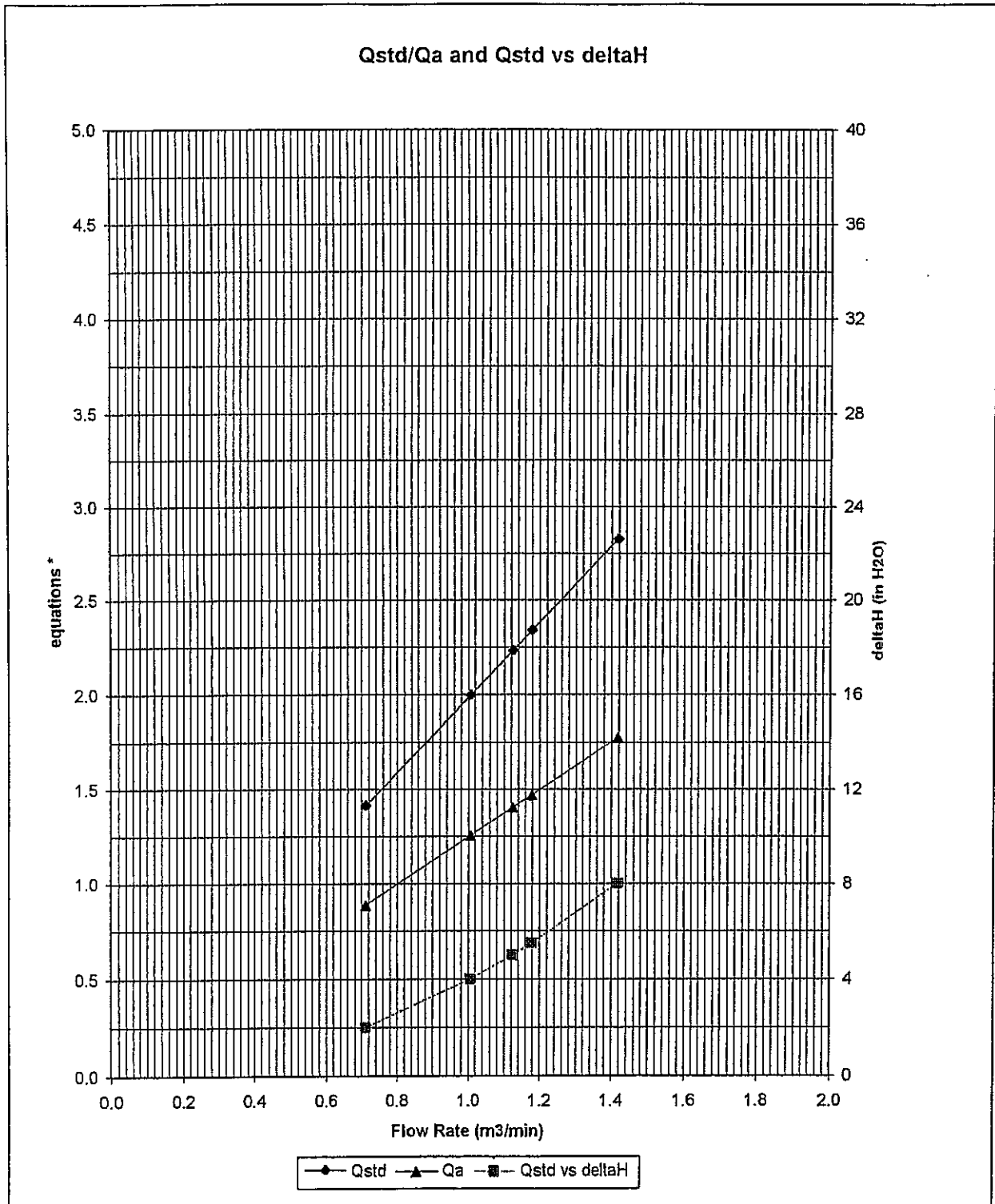
$$Qstd = 1/m \{ [\text{SQRT}(H2O(Pa/760) (298/Ta))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT} H2O(Ta/Pa)] - b \}$$



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

#1061



Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : TM-A1

Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
02/12/06	13:00	03/12/06	13:00	9829.06	9853.06	24.00	1.0124	1.0124	1.0124	2.8880	3.1137	155
08/12/06	15:30	09/12/06	15:29	9856.06	9880.04	23.98	0.9810	0.9810	0.9810	2.8874	3.1326	174
14/12/06	14:30	15/12/06	14:30	9883.03	9907.03	24.00	1.0438	1.0438	1.0438	2.8907	2.9845	62
19/12/06	16:00	20/12/06	16:00	9910.03	9934.03	24.00	1.0438	1.0438	1.0438	2.7977	3.0351	158
23/12/06	14:30	24/12/06	14:30	9937.04	9961.04	24.00	1.0753	1.0753	1.0753	2.7809	3.0455	171
30/12/06	14:30	31/12/06	14:30	9964.04	9988.04	24.00	1.0753	1.0753	1.0753	2.7672	2.9947	147

Monitoring Station : TM-A2

Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
02/12/06	13:10	03/12/06	13:10	098.62	112.62	24.00	0.9991	0.9991	0.9991	2.9245	3.1600	164
08/12/06	15:45	09/12/06	15:17	125.62	149.16	23.54	0.9411	0.9411	0.9411	2.9111	3.1517	181
14/12/06	14:30	15/12/06	09:48	152.10	171.40	19.30	0.9991	0.9991	0.9991	2.9052	3.0923	162
19/12/06	16:15	20/12/06	16:01	174.34	198.11	23.77	0.9411	0.9411	0.9411	2.7934	3.0328	178
23/12/06	14:30	24/12/06	14:30	201.05	225.06	23.98	0.9991	0.9991	0.9991	2.7610	3.0273	185
30/12/06	14:30	31/12/06	14:29	228.99	252.97	23.98	0.9991	0.9991	0.9991	2.7629	2.9613	138

Summary of 1-hr TSP Monitoring Results

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

Date	Time		Elapsed Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
02/12/06	09:00	10:00	9826.06	9827.06	1.00	1.0124	1.0124	1.0124	2.9316	2.9495	295
	10:02	11:02	9827.06	9828.06	1.00	1.0124	1.0124	1.0124	2.9068	2.9201	219
	11:02	12:02	9828.06	9829.06	1.00	1.0124	1.0124	1.0124	2.9217	2.9375	260
08/12/06	08:30	09:30	9853.06	9854.06	1.00	0.9810	0.9810	0.9810	2.8495	2.8618	209
	11:00	12:00	9854.06	9855.06	1.00	0.9810	0.9810	0.9810	2.8637	2.8855	309
	14:00	15:00	9855.06	9856.06	1.00	0.9810	0.9810	0.9810	2.8805	2.8967	275
14/12/06	09:00	10:00	9880.04	9881.04	1.00	0.9181	0.9181	0.9181	2.8812	2.8947	245
	10:10	11:10	9881.04	9882.04	1.00	0.9810	0.9810	0.9810	2.9105	2.9180	127
	13:00	14:00	9882.04	9883.04	1.00	0.9810	0.9810	0.9810	2.9105	2.9155	85
19/12/06	10:29	11:29	9907.03	9908.03	1.00	0.9810	0.9810	0.9810	2.8044	2.8174	221
	13:00	14:00	9908.03	9909.03	1.00	0.9810	0.9810	0.9810	2.8072	2.8204	224
	14:48	15:48	9909.03	9910.03	1.00	1.1731	1.1731	1.1731	2.8067	2.8210	203
23/12/06	09:36	10:37	9934.03	9935.03	1.00	1.0753	1.0753	1.0753	2.7849	2.7952	145
	10:41	11:41	9935.03	9936.03	1.00	1.1696	1.1696	1.1696	2.7967	2.8122	221
	13:00	14:00	9936.03	9937.03	1.00	1.1696	1.1696	1.1696	2.8032	2.8157	178
30/12/06	09:00	10:00	9961.04	9962.04	1.00	1.1382	1.1382	1.1382	2.7603	2.7727	182
	10:05	11:05	9962.04	9963.04	1.00	1.1696	1.1696	1.1696	2.7750	2.7901	215
	13:00	14:00	9963.04	9964.04	1.00	1.0438	1.0438	1.0438	2.7697	2.7854	251

Monitoring Station : TM-A2
Location : Site Egress

Date	Time		Elapsed Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
02/12/06	09:05	10:05	95.62	96.62	1.00	0.9991	0.9991	0.9991	2.9251	2.9431	300
	10:07	11:07	96.62	97.62	1.00	0.9991	0.9991	0.9991	2.9048	2.9223	292
	11:09	12:09	97.62	98.62	1.00	0.9991	0.9991	0.9991	2.9513	2.9322	282
08/12/06	08:30	09:30	122.62	123.62	1.00	0.9411	0.9411	0.9411	2.8794	2.8932	244
	11:00	12:00	123.62	124.62	1.00	0.9411	0.9411	0.9411	2.8663	2.8852	335
	14:00	15:00	124.62	125.62	1.00	0.9411	0.9411	0.9411	2.8900	2.9063	298
14/12/06	09:00	09:59	149.16	150.14	0.98	1.0571	1.0571	1.0571	2.9263	2.9409	235
	10:46	11:45	150.14	151.12	0.98	0.7091	0.7091	0.7091	2.9269	2.9316	113
	13:00	13:59	151.12	152.10	0.98	0.9991	0.9991	0.9991	2.9275	2.9316	70
19/12/06	10:49	11:48	171.40	172.38	0.98	0.9991	0.9991	0.9991	2.7967	2.8115	247
	13:00	13:59	172.38	173.36	0.98	1.0571	1.0571	1.0571	2.7993	2.8098	169
	14:59	15:58	173.36	174.34	0.98	0.9411	0.9411	0.9411	2.7982	2.8097	208
23/12/06	09:50	09:49	198.11	199.09	0.98	1.2311	1.2311	1.2311	2.7945	2.8045	138
	10:53	11:52	199.09	200.07	0.98	1.0571	1.0571	1.0571	2.8049	2.8182	214
	13:00	13:59	200.07	201.05	0.98	0.9701	0.9701	0.9701	2.7856	2.7922	116
30/12/06	09:00	09:59	225.06	226.04	0.98	0.9411	0.9411	0.9411	2.7704	2.7812	195
	10:12	11:11	226.04	227.02	0.98	0.9411	0.9411	0.9411	2.7774	2.7894	217
	13:00	13:58	227.02	228.99	0.97	1.0861	1.0861	1.0861	2.7646	2.7774	202

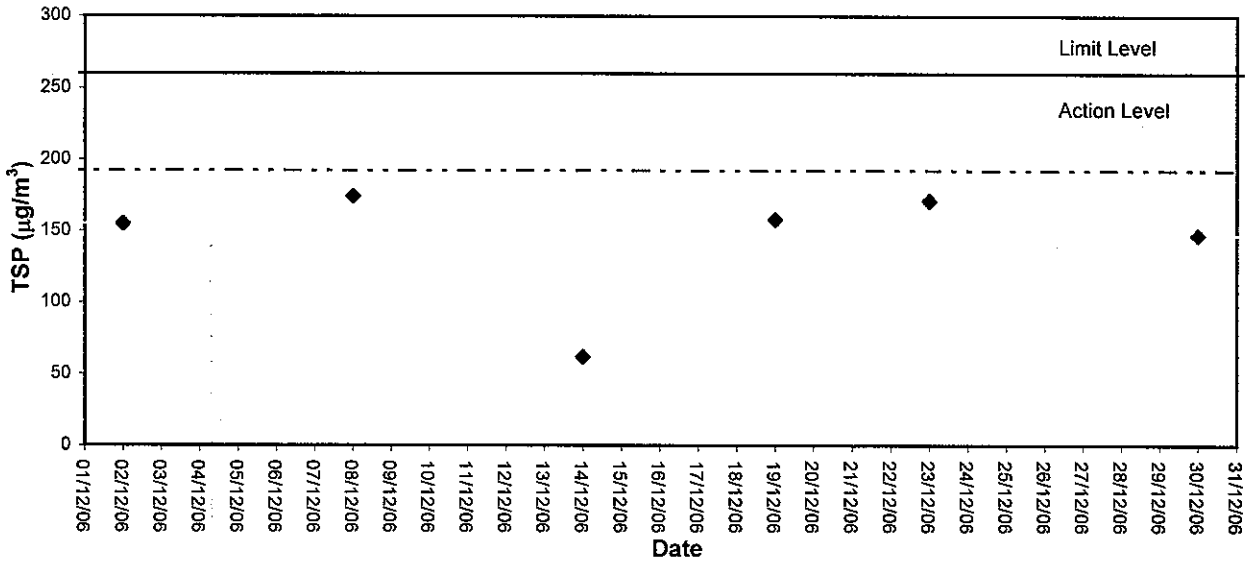


Appendix B3

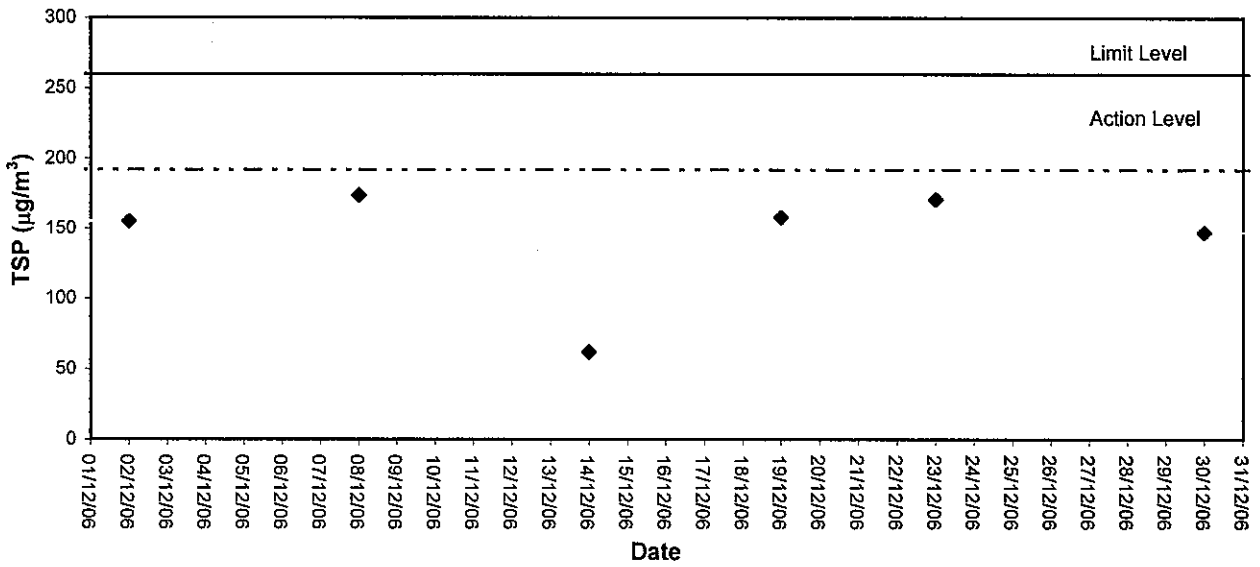
Graphical Plots of Air Quality Monitoring Data



24-hour TSP level at TM-A1

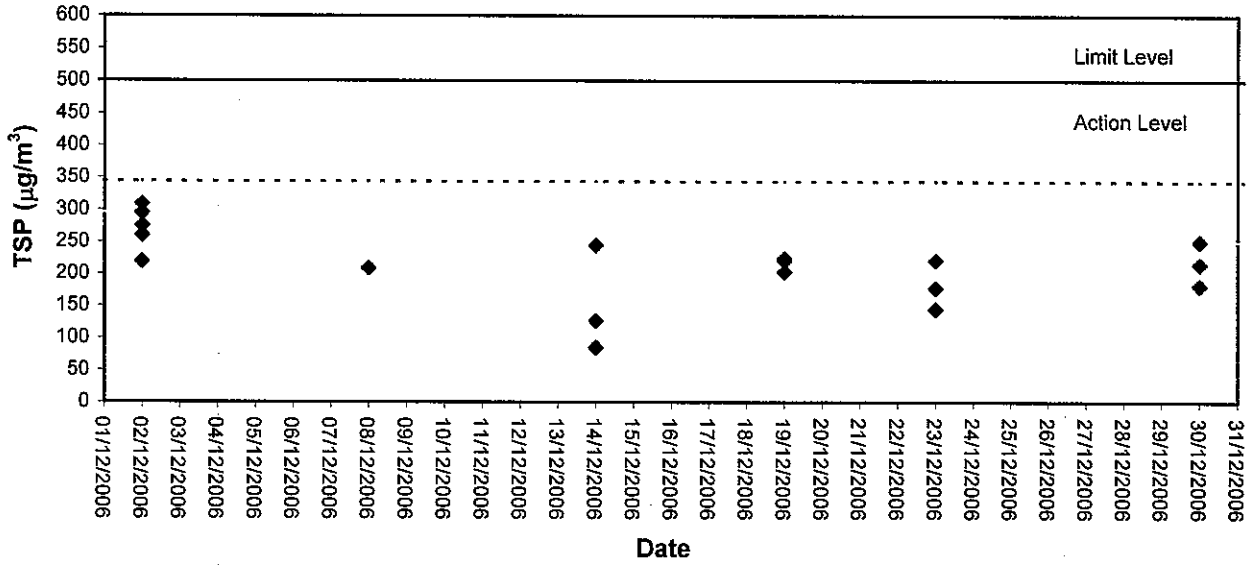


24-hour TSP level at TM-A2

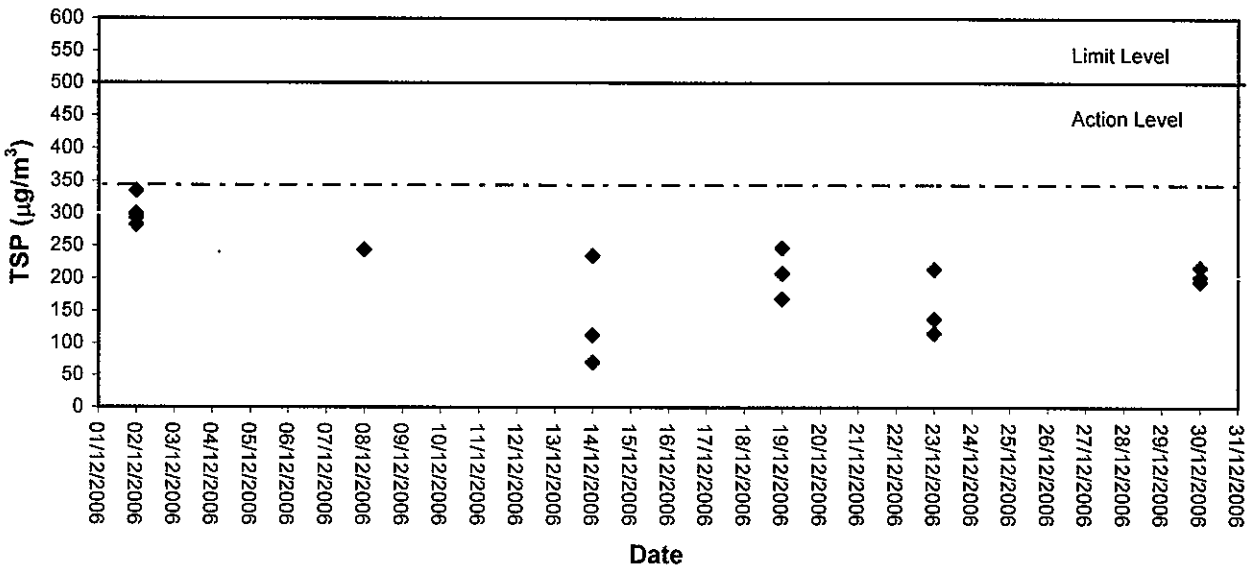




1-hour TSP level at TM-A1



1-hour TSP level at TM-A2





Appendix C1

Calibration Certificates for Marine Water Quality Monitoring Equipments



Internal Calibration Report of Turbidimeter

Equipment Ref. No. : ET/0505/002 Manufacturer : HACH
Model No. : 2100 P Serial No. : 93090003728
Date of Calibration : 28/10/06 Calibration Due : 28/11/07

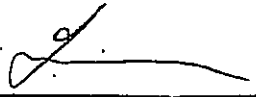
Data

(4.95) 0 - 10 NTU Gelex Vial	(49.0) 10 - 100 NTU Gelex Vial	(409) 100 - 1000 NTU Gelex Vial
4.98	49.2	411

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. : ET/0527/001 Manufacturer : YSI
Model No. : Model 30 Serial No. : 9961183
Date of Calibration : 26/10/06 Due Date : 26/11/07

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

J196A

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.3	2.4%

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 : 



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/ZW/003/001</u>	Manufacturer : <u>YSI</u>
Model No. : <u>95</u>	Serial No. : <u>97H 04071 AD</u>
Date of Calibration : <u>20/11/06</u>	Calibration Due Date : <u>19/2/07</u>

Ref. No. of Reference Thermometer : ET/2403/01
 Ref. No. of Potassium Dichromate : ET/0520/003/02

Temperature Verification

	Temperature (°C)
Thermometer reading	20.0
Meter reading	20.0

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	7.51	7.53	7.52	7.48	7.49	7.49	0.40
5	5.29	5.31	5.30	5.22	5.20	5.21	1.71
10	3.56	3.54	3.55	3.61	3.59	3.60	1.40
Linear regression coefficient						0.9990	

Zero Point Checking

DO meter reading, mg/L	0.00
------------------------	------

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	6.70	6.72	6.71	6.80	6.82	6.81	1.48
30	6.25	6.23	6.24	6.38	6.36	6.37	2.06

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 : PK

Approved by : [Signature]



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/2W/003/001</u>	Manufacturer : <u>- YSI</u>
Model No. : <u>95</u>	Serial No. : <u>97H 04071 AD</u>
Date of Calibration : <u>22/8/06</u>	Calibration Due Date : <u>21/11/06</u>

Ref. No. of Reference Thermometer : ET/2403/01
 Ref. No. of Potassium Dichromate : ET/0520/003/02

Temperature Verification

	Temperature (°C)
Thermometer reading	20.0
Meter reading	20.0

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	7.64	7.66	7.65	7.58	7.60	7.59	0.79
5	5.54	5.56	5.55	5.46	5.44	5.45	1.82
10	3.14	3.16	3.15	3.27	3.29	3.28	4.04
Linear regression coefficient				0.9988			

Zero Point Checking

DO meter reading, mg/L	0.00
------------------------	------

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	7.29	7.31	7.30	7.24	7.26	7.25	0.69
30	6.99	6.97	6.98	6.89	6.87	6.88	1.44

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 : PK

Approved by : [Signature]



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)				
			Surface	Middle		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
02/12/06	16:15 - 16:30	18/Cloudy	Surface	1.0	23.4	29.60	29.6	6.69	6.68	96.3	96.1	9.39	9.40	9.2	9.3	9.3	9.3	9.3	9.3	9.3	9.3
			Middle	9.7	22.8	30.80	30.8	6.66	6.22	88.6	88.9	9.41	8.97	8.8	8.8						
			Bottom	18.4	22.6	30.80	30.8	6.24	5.95	89.2	85.0	8.96	9.94	8.8	9.7						
05/12/06	08:45 - 09:00	20/Sunny	Surface	1.0	22.7	31.40	31.4	5.97	6.31	85.3	88.4	9.95	9.08	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
			Middle	9.2	22.8	32.8	32.7	6.26	6.13	87.7	86.1	9.12	10.20	8.8	10.0						
			Bottom	17.4	22.8	32.7	32.7	6.15	6.07	86.8	85.7	10.10	11.60	10.0	11.0						
07/12/06	09:30 - 09:45	20/Cloudy	Surface	1.0	23.3	32.7	32.7	6.02	6.85	85.5	98.6	11.30	9.98	9.7	9.8	9.8	9.8	9.8	9.8	9.8	9.8
			Middle	9.3	23.0	32.0	32.5	6.83	6.32	98.9	90.9	9.97	9.78	9.8	9.5						
			Bottom	17.6	22.9	32.5	32.5	6.87	5.83	90.7	83.8	9.79	10.55	9.5	10.0						
09/12/06	11:00 - 11:15	20/Cloudy	Surface	1.0	23.3	32.5	32.5	6.33	6.88	91.1	101.0	10.60	9.05	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
			Middle	9.6	22.9	32.1	32.3	6.86	6.45	100.8	94.7	9.03	9.38	8.8	9.3						
			Bottom	18.2	22.8	32.3	32.3	6.43	6.13	94.9	89.5	9.37	10.70	10.0	10.0						
12/12/06	13:30 - 13:45	20/Fine	Surface	1.0	23.5	32.6	32.6	6.11	6.23	89.2	87.9	10.80	9.93	9.7	9.6	9.6	9.6	9.6	9.6	9.6	9.6
			Middle	9.3	23.4	32.6	32.4	6.26	6.21	87.4	87.6	9.85	10.05	9.5	9.5						
			Bottom	17.6	23.6	32.5	32.4	6.19	6.07	87.9	85.5	10.20	11.20	9.8	9.7						
14/12/06	14:45 - 15:00	18/Drizzle	Surface	1.0	21.8	32.4	32.4	6.00	6.34	84.6	90.9	11.00	10.44	10.0	9.8	9.8	9.8	9.8	9.8	9.8	9.8
			Middle	8.0	22.0	32.8	32.9	6.31	6.33	90.2	90.5	9.98	10.20	9.8	10.0						
			Bottom	15.0	22.0	32.7	32.7	6.37	6.26	89.7	89.5	10.10	10.50	10.0	10.0						
16/12/06	15:30 - 15:45	16/Fine	Surface	1.0	22.6	32.4	32.7	6.23	6.32	86.4	89.3	10.70	9.85	10.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5
			Middle	7.8	22.8	32.7	32.7	6.28	6.25	89.8	88.2	9.83	10.35	9.5	9.7						
			Bottom	14.6	22.8	32.8	32.6	6.36	6.20	88.7	87.4	10.00	11.25	10.0	10.0						

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)		
			Surface	Bottom		Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
19/12/06	17:00 - 17:15	18/Sunny	Surface	1.0	20.9	32.7	32.8	7.13	7.10	99.8	99.3	9.30	9.29	9.3	9.2	9.9			
			Middle	7.5	20.8	32.8	32.8	6.69	6.63	98.8	92.9	9.27	10.38	9.0	9.9				
			Bottom	13.9	20.8	32.8	32.8	6.57	5.82	92.0	81.5	10.80	11.55	10.0	10.5				
21/12/06	09:15 - 09:35	16/Sunny	Surface	1.0	19.6	32.9	33.1	5.84	7.25	81.1	96.5	11.20	9.69	9.5	9.5	9.8			
			Middle	8.4	19.4	33.1	33.2	5.79	6.74	97.1	89.7	9.71	10.27	9.5	9.9				
			Bottom	15.7	19.2	33.2	33.2	7.20	6.05	89.1	80.5	10.20	11.05	10.0	10.0				
23/12/06	10:00 - 10:15	16/Sunny	Surface	1.0	20.5	32.9	32.9	6.00	7.16	79.8	95.2	10.90	9.42	9.3	9.3	9.7			
			Middle	7.8	20.4	32.8	32.9	6.10	6.69	81.1	89.0	9.46	10.05	9.3	9.7				
			Bottom	14.6	20.3	33.0	33.0	7.12	5.90	95.6	78.5	9.37	10.85	9.5	10.0				
28/12/06	13:30 - 13:45	19/Sunny	Surface	1.0	22.1	32.7	32.7	5.96	7.13	77.7	95.5	11.00	9.15	9.0	9.0	9.7			
			Middle	7.9	21.8	32.8	32.8	7.15	6.64	95.1	88.9	9.11	10.17	9.0	10.0				
			Bottom	14.8	21.8	32.9	32.9	6.58	6.08	88.2	81.5	10.50	10.65	10.0	10.0				
30/12/06	14:45 - 15:00	15/Fine	Surface	1.0	20.4	32.8	32.9	6.12	7.13	82.0	95.5	11.00	9.28	9.0	9.2	9.7			
			Middle	7.4	20.2	33.1	33.1	7.16	6.50	95.1	87.1	9.23	10.23	9.3	10.0				
			Bottom	13.8	20.0	33.2	33.2	7.10	5.98	86.3	80.2	10.50	10.65	10.0	10.0				

Mid-Flood Tide



英業德動測試驗有限公司
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
02/12/06	15:35 - 15:50	18/Cloudy	Surface	23.6	29.5	29.5	6.75	6.73	6.44	97.2	96.9	8.02	8.03	7.8	7.8	9.1		
			Middle	23.0	30.9	30.9	6.14	6.16	6.44	87.8	88.0	8.04	10.35	7.8	10.0			
			Bottom	22.5	31.4	31.4	5.95	5.93	5.93	88.2	85.4	10.20	9.90	10.0	10.0			
05/12/06	08:05 - 08:20	20/Sunny	Surface	23.0	32.0	32.0	5.91	6.30	6.26	85.1	88.6	9.89	10.00	9.8	9.8	10.2		
			Middle	22.8	32.5	32.5	6.33	6.22	6.26	88.6	87.8	10.70	10.37	9.8	9.9			
			Bottom	22.6	32.7	32.7	6.16	6.07	6.07	87.9	84.9	10.90	11.60	11.0	11.0			
07/12/06	08:50 - 09:05	20/Cloudy	Surface	23.2	32.1	32.1	5.98	6.76	6.65	83.7	97.2	11.40	9.85	9.5	9.5	10.1		
			Middle	23.1	32.4	32.4	6.15	6.54	6.65	86.1	93.5	9.85	9.94	9.5	9.8			
			Bottom	23.1	32.5	32.5	6.77	5.88	5.88	93.2	84.0	9.92	11.55	9.7	11.0			
09/12/06	10:20 - 10:35	20/Cloudy	Surface	23.3	32.0	32.0	5.86	6.92	6.69	84.2	101.7	11.70	9.04	8.8	8.8	9.6		
			Middle	23.0	32.4	32.4	6.94	6.45	6.69	101.4	94.8	9.02	10.65	8.8	10.0			
			Bottom	22.8	32.5	32.5	6.47	5.97	5.97	102.0	87.1	10.60	10.55	10.0	10.0			
12/12/06	12:50 - 13:05	20/Fine	Surface	23.6	32.4	32.4	6.43	6.32	6.24	87.3	89.3	10.50	10.50	9.7	9.9	10.1		
			Middle	23.4	32.6	32.6	5.98	6.16	6.24	86.8	86.9	10.20	10.11	10.0	10.5			
			Bottom	23.5	32.6	32.6	6.28	5.64	5.64	87.4	86.5	10.80	10.90	10.0	10.5			
14/12/06	14:05 - 14:20	18/Drizzle	Surface	22.0	32.8	32.8	6.20	6.29	6.31	87.1	90.0	9.92	10.24	9.8	9.9	9.9		
			Middle	22.0	32.7	32.7	6.32	6.34	6.31	90.4	90.6	10.70	10.60	10.0	10.0			
			Bottom	22.0	32.7	32.7	6.26	6.26	6.26	89.8	89.5	10.30	10.12	10.0	9.9			
16/12/06	14:50 - 15:05	16/Fine	Surface	22.5	32.7	32.7	6.30	6.25	6.23	90.1	88.2	9.93	9.96	9.8	9.8	9.9		
			Middle	22.7	32.6	32.6	6.21	6.22	6.23	87.6	87.6	9.93	10.14	9.8	9.9			
			Bottom	22.7	32.7	32.7	6.29	6.20	6.20	88.7	87.4	10.30	10.45	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
19/12/06	16:20 - 16:35	18/Sunny	Surface	1.0	21.0	32.6	32.6	6.89	6.93	6.69	96.5	97.1	7.81	7.78	7.5	7.5	8.4	
						32.6		6.97			97.6		7.5					
						32.7		6.42			90.0		8.21		8.0			
21/12/06	08:25 - 08:45	16/Sunny	Middle	9.1	21.0	32.7	32.7	6.48	6.45	6.71	90.7	90.4	8.13	8.17	8.0	8.0	8.6	
						32.7		6.11			85.5		10.00		9.7			
						32.7		5.97			83.6		10.60		9.7			
21/12/06	08:25 - 08:45	16/Sunny	Bottom	17.2	20.9	33.0	33.0	6.86	6.83	6.83	90.8	90.8	7.83	7.87	7.5	7.6	8.6	
						33.1		6.80			90.4		7.90		7.7			
						33.2		6.56			87.2		8.90		8.8			
23/12/06	09:20 - 09:35	16/Sunny	Middle	8.8	20.3	33.1	33.2	6.61	6.59	6.66	87.9	87.9	8.81	8.86	8.5	8.7	8.5	
						33.1		6.23			88.6		8.81		8.5			
						33.2		6.15			82.9		9.87		9.5			
23/12/06	09:20 - 09:35	16/Sunny	Bottom	16.8	19.3	33.0	33.2	6.82	6.79	6.19	82.4	82.4	9.98	9.93	9.5	9.5	8.6	
						33.0		6.76			90.7		7.74		7.5			
						33.1		6.48			90.0		7.79		7.5			
28/12/06	12:50 - 13:05	19/Sunny	Surface	1.0	22.0	33.1	33.2	6.56	6.52	6.63	86.7	86.7	8.19	8.17	8.0	8.0	8.5	
						33.1		6.18			82.2		10.20		10.0			
						33.1		6.09			81.0		10.40		10.0			
28/12/06	12:50 - 13:05	19/Sunny	Middle	8.5	21.7	32.8	32.9	6.76	6.79	6.46	91.4	91.0	7.73	7.79	7.5	7.5	8.5	
						32.9		6.43			86.2		8.20		8.0			
						32.9		6.49			86.9		8.26		8.0			
30/12/06	14:05 - 14:20	15/Fine	Surface	1.0	21.6	32.9	32.9	6.00	5.97	5.97	80.4	80.0	10.20	10.35	10.0	10.0	8.5	
						32.9		5.93			79.5		10.50		10.0			
						32.8		6.80			91.1		7.83		7.5			
30/12/06	14:05 - 14:20	15/Fine	Middle	8.7	20.1	32.9	33.1	6.86	6.83	6.85	91.9	91.5	7.97	7.90	7.8	7.7	8.6	
						33.1		6.83			91.5		8.43		8.2			
						33.1		6.91			92.6		8.49		8.2			
30/12/06	14:05 - 14:20	15/Fine	Bottom	16.3	20.0	33.1	33.2	6.53	6.49	6.49	87.5	86.9	10.80	10.40	10.0	9.9	8.6	
						33.1		6.44			86.3		10.00		9.8			
						33.2		6.44			86.3		10.00		9.8			

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)		
			Surface	Bottom		Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	
02/12/06	15:55 - 16:10	18/Cloudy	Surface	1.0	23.6	29.4	29.4	6.84	6.86	6.61	98.4	98.7	9.15	9.17	9.0	9.0	9.5		
			Middle	9.4	22.9	30.9	30.9	6.35	6.37	91.4	91.6	9.18	9.56	9.0	9.5				
			Bottom	17.8	22.6	30.8	30.8	6.38	6.37	91.8	91.6	9.55	9.56	9.5	9.5				
05/12/06	08:25 - 08:40	20/Sunny	Surface	1.0	22.9	31.2	31.2	6.02	6.04	6.04	86.0	86.3	10.30	10.35	10.0	10.0	10.3		
			Middle	8.8	22.8	32.6	32.6	6.06	6.29	87.4	88.2	10.40	10.60	10.0	10.0				
			Bottom	16.6	22.9	32.7	32.7	6.24	6.18	88.9	88.6	11.60	10.95	10.0	10.0				
07/12/06	09:10 - 09:25	20/Cloudy	Surface	1.0	23.3	32.7	32.7	6.12	6.18	6.18	86.0	86.7	12.20	11.85	11.0	11.0	9.8		
			Middle	8.9	22.9	32.5	32.5	6.69	6.67	96.3	96.0	11.50	10.30	10.0	10.0				
			Bottom	16.8	22.8	32.4	32.4	6.65	6.31	95.7	90.1	10.40	9.54	9.5	9.5				
09/12/06	10:40 - 10:55	20/Cloudy	Surface	1.0	23.2	32.5	32.5	5.97	5.95	5.95	85.3	85.0	11.40	11.25	10.0	10.0	9.5		
			Middle	9.4	22.9	32.4	32.4	6.32	6.05	89.9	88.9	11.10	9.90	10.0	10.0				
			Bottom	17.8	22.8	32.5	32.5	6.07	6.05	89.2	88.9	9.89	9.90	9.5	9.7				
12/12/06	13:10 - 13:25	20/Fine	Surface	1.0	23.6	32.1	32.1	6.03	6.24	6.28	87.6	88.0	9.88	9.94	9.5	9.7	10.6		
			Middle	8.8	23.5	32.5	32.5	6.21	6.33	88.3	89.2	10.00	10.90	9.8	10.5				
			Bottom	16.5	23.6	32.6	32.6	6.26	6.21	88.8	88.2	11.20	10.60	11.0	11.5				
14/12/06	14:25 - 14:40	18/Drizzle	Surface	1.0	21.9	32.5	32.5	6.19	6.21	6.21	87.3	88.2	11.80	12.10	12.0	12.0	9.9		
			Middle	8.3	22.0	32.7	32.7	6.23	6.29	89.7	90.0	9.96	10.08	9.8	9.8				
			Bottom	15.6	22.1	32.6	32.6	6.31	6.30	90.2	90.1	10.20	10.35	9.7	9.9				
16/12/06	15:10 - 15:25	16/Fine	Surface	1.0	22.6	32.6	32.6	6.36	6.32	6.29	87.9	87.3	10.70	10.75	10.0	10.0	10.0		
			Middle	8.5	22.7	32.7	32.7	6.08	6.25	87.7	88.2	10.60	10.48	10.0	9.9				
			Bottom	16.0	22.8	32.8	32.8	6.28	6.20	88.5	87.4	10.90	11.25	11.00	10.5				

Mid-Flood Tide



英榮德 勘測 試驗 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	Value	Average	Depth-average	Value	Average	Value	Average
19/12/06	16:40 - 16:55	18/Sunny	Surface	21.0	32.7	32.8	6.81	6.86	95.3	96.0	8.16	8.15	8.0	8.0	9.0			
			Middle	20.8	32.8	6.90	6.57	96.6	92.0	8.13	9.10	8.0	9.0					
			Bottom	20.9	32.6	6.53	6.15	91.1	86.1	9.06	10.40	10.0	9.9					
21/12/06	08:50 - 09:10	16/Sunny	Surface	19.5	33.0	33.0	6.18	6.88	85.7	91.5	8.23	8.27	8.0	8.1	9.0			
			Middle	19.3	33.1	6.89	6.75	91.4	89.8	8.30	9.13	8.2	9.0					
			Bottom	19.2	33.1	6.72	6.18	89.4	82.2	9.10	10.02	9.0	9.9					
23/12/06	09:40 - 09:55	16/Sunny	Surface	20.4	33.2	33.2	6.20	6.73	82.5	89.4	10.10	8.16	8.0	8.0	9.0			
			Middle	20.3	33.2	6.15	6.55	81.8	87.2	9.94	9.06	8.0	8.9					
			Bottom	20.3	33.0	6.68	6.24	90.0	83.0	8.18	10.45	10.0	10.0					
28/12/06	13:10 - 13:25	19/Sunny	Surface	22.0	33.1	33.1	6.27	6.72	83.4	90.1	10.60	8.08	8.0	7.9	8.8			
			Middle	21.8	32.7	6.78	6.52	89.2	87.4	8.12	9.12	7.8	8.9					
			Bottom	21.7	32.8	6.50	6.09	87.1	81.6	9.07	9.90	8.8	9.6					
30/12/06	14:25 - 14:40	15/Fine	Surface	20.4	32.9	32.9	6.12	7.24	82.0	97.0	9.86	9.33	9.0	9.2	9.4			
			Middle	20.2	32.8	7.28	6.66	96.3	89.4	9.36	9.20	9.3	9.0					
			Bottom	20.1	33.0	6.70	6.54	97.6	87.6	9.14	10.50	9.0	10.0					
					33.2	33.2	6.48	6.54	86.8	87.6	10.20	10.80	10.0	10.0				
					33.1	33.1	6.59	6.54	88.3	88.3	10.80	10.80	10.0	10.0				

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	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
02/12/06	15:15 - 15:30	18/Cloudy	Surface	23.4	29.0	29.1	6.89	6.87	6.55	99.2	98.9	7.79	7.78	7.5	7.5	8.7		
					29.1	6.85	6.55	98.6	7.76	7.5								
			Middle	22.9	30.8	30.8	6.21	6.23	8.76	8.76	8.5	8.5	9.13					
					30.8	6.25	8.75	8.5										
			Bottom	22.4	31.2	31.2	5.89	5.87	10.90	10.85	10.0	10.0	10.7					
					31.2	5.85	10.80	10.0										
05/12/06	07:45 - 08:00	20/Sunny	Surface	22.5	32.7	32.7	6.74	6.71	6.59	94.3	93.9	8.63	8.69	8.5	8.5			
					32.7	6.68	6.59	93.5	8.74	8.5								
			Middle	22.9	32.5	32.5	6.40	6.47	10.70	10.35	10.0	10.0	9.98					
					32.5	6.53	10.00	9.8										
			Bottom	22.8	32.6	32.6	6.07	6.10	11.20	10.90	10.0	10.0	10.0					
					32.5	6.12	10.60	10.0										
07/12/06	08:30 - 08:45	20/Cloudy	Surface	23.3	32.0	32.1	6.82	6.84	6.64	98.2	98.5	10.40	10.55	10.0	10.0			
					32.1	6.86	6.64	98.7	10.70	10.0								
			Middle	23.0	32.4	32.4	6.47	6.45	11.70	11.65	11.0	11.0	11.35					
					32.4	6.42	11.60	11.0										
			Bottom	22.9	32.4	32.4	6.02	6.04	11.90	11.85	11.0	11.0	11.0					
					32.4	6.06	11.80	11.0										
09/12/06	10:00 - 10:15	20/Cloudy	Surface	23.3	32.0	32.1	6.82	6.81	6.57	100.2	100.0	8.29	8.28	8.0	8.0			
					32.1	6.79	6.57	99.8	8.26	8.0								
			Middle	23.0	32.4	32.4	6.32	6.34	8.89	8.90	8.5	8.5	8.98					
					32.4	6.35	8.90	8.8										
			Bottom	22.8	32.6	32.6	6.06	6.04	9.78	9.78	9.5	9.5	8.7					
					32.6	6.02	9.77	9.5										
12/12/06	12:30 - 12:45	20/Fine	Surface	23.3	32.6	32.6	6.62	6.65	6.53	93.3	93.8	8.76	8.72	8.5	8.5			
					32.5	6.68	6.53	94.2	8.68	8.5								
			Middle	23.5	32.7	32.7	6.38	6.42	9.85	9.92	9.5	9.5	9.80					
					32.7	6.45	9.98	9.7										
			Bottom	23.5	32.7	32.7	6.16	6.19	10.50	10.75	10.0	10.0	10.0					
					32.6	6.22	11.00	10.0										
14/12/06	13:45 - 14:00	18/Drizzle	Surface	21.9	32.8	32.9	6.47	6.52	6.22	87.4	87.4	8.63	8.67	8.5	8.5			
					32.9	6.56	6.22	92.5	8.70	8.5								
			Middle	22.0	32.7	32.7	6.50	6.54	10.50	10.24	10.0	10.0	10.00					
					32.7	6.58	9.97	9.8										
			Bottom	22.0	32.8	32.8	6.18	6.22	10.80	11.10	10.0	10.0	10.5					
					32.8	6.25	11.40	11.0										
16/12/06	14:30 - 14:45	16/Fine	Surface	22.6	32.6	32.7	6.65	6.69	6.56	88.4	88.9	9.21	9.17	9.0	9.0			
					32.7	6.73	6.56	93.8	9.13	9.0								
			Middle	22.7	32.7	32.7	6.41	6.43	9.86	9.92	9.5	9.5	10.06					
					32.7	6.44	9.97	9.8										
			Bottom	22.7	32.6	32.7	6.12	6.16	10.80	11.10	10.0	10.0	10.5					
					32.7	6.19	11.40	11.0										

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	Value	Depth-average	Value	Average	Value
19/12/06	16:00 - 16:15	18/Sunny	Surface	21.2	32.6	32.7	7.10	7.07	6.80	99.4	99.0	8.46	8.48	8.0	8.3	8.8		
			Middle	21.0	32.6	6.49	6.54	91.5	8.63	8.71	8.50	8.5	8.5					
			Bottom	20.9	32.6	6.58	6.26	87.2	8.78	9.88	8.5	9.5	9.7					
21/12/06	08:00 - 08:20	16/Sunny	Surface	19.5	33.0	33.0	7.01	7.03	6.90	92.9	93.2	9.87	9.82	9.5	9.5	9.4		
			Middle	19.2	32.9	32.9	7.05	6.78	89.9	8.97	9.05	8.8	8.9					
			Bottom	19.0	32.8	6.79	6.45	86.3	9.13	10.15	9.03	9.99	9.9					
23/12/06	09:00 - 09:15	16/Sunny	Surface	20.4	33.0	33.0	7.00	7.07	6.82	93.1	94.0	9.02	8.95	8.0	8.8	9.1		
			Middle	20.2	33.1	6.94	6.57	87.0	8.66	8.70	8.5	8.5						
			Bottom	20.1	33.2	6.60	6.21	82.6	8.74	10.30	9.8	9.9	9.9					
28/12/06	12:30 - 12:45	19/Sunny	Surface	22.0	32.7	32.7	6.75	6.78	6.68	90.5	90.8	8.52	8.55	8.5	8.5	8.8		
			Middle	21.7	32.9	6.53	6.58	88.2	8.64	8.70	8.5	8.5						
			Bottom	21.6	32.9	6.12	6.18	82.0	9.70	9.74	8.5	9.5	9.5					
30/12/06	13:45 - 14:00	15/Fine	Surface	20.4	32.8	32.8	6.79	6.84	6.70	91.0	91.6	8.51	8.55	8.5	8.5	8.8		
			Middle	20.1	33.1	6.53	6.57	88.1	8.72	8.76	8.5	8.5						
			Bottom	20.1	33.1	6.61	6.32	84.7	8.80	9.85	9.5	9.5	9.5					

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	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
02/12/06	09:15 - 09:30	18/Cloudy	Surface	23.2	29.2	29.2	7.05	7.07	6.83	101.5	101.7	8.43	8.44	8.2	8.2	8.8		
			Middle	22.8	30.8	30.9	6.62	6.60	6.83	95.3	95.0	8.84	8.84	8.5	8.5			
			Bottom	22.6	31.2	31.1	6.12	6.14	6.14	94.7	87.8	8.83	9.97	9.7	9.8			
05/12/06	12:00 - 12:15	20/Sunny	Surface	22.7	32.9	32.9	6.62	6.69	6.59	92.7	93.7	8.76	8.79	8.5	8.5	9.8		
			Middle	22.8	32.8	32.8	6.56	6.50	6.59	94.6	90.9	8.82	10.20	10.0	9.9			
			Bottom	22.8	32.7	32.7	6.43	6.15	6.15	90.0	86.1	9.89	11.30	11.0	11.0			
07/12/06	13:15 - 13:30	20/Cloudy	Surface	23.6	32.0	32.1	6.62	6.64	6.39	95.3	95.5	8.96	8.95	8.8	8.8	9.4		
			Middle	23.1	32.3	32.3	6.12	6.14	6.14	88.1	88.3	9.85	9.85	9.5	9.5			
			Bottom	22.9	32.6	32.5	5.90	5.92	5.92	88.5	85.2	9.84	10.50	10.0	10.0			
09/12/06	14:15 - 14:30	20/Cloudy	Surface	23.4	32.1	32.1	6.96	6.95	6.68	102.3	102.1	9.16	9.17	9.0	9.0	9.7		
			Middle	23.1	32.5	32.5	6.43	6.42	6.42	101.8	94.3	10.70	10.55	10.0	10.0			
			Bottom	22.9	32.8	32.7	6.12	6.14	6.14	94.0	89.6	10.40	10.85	10.0	10.0			
12/12/06	17:45 - 18:00	20/Fine	Surface	23.6	32.4	32.4	6.58	6.56	6.46	89.9	93.8	8.87	8.81	8.5	8.5	9.2		
			Middle	23.7	32.6	32.6	6.32	6.36	6.36	93.4	91.0	8.75	9.78	9.5	9.5			
			Bottom	23.7	32.5	32.5	6.40	6.23	6.23	91.5	89.1	9.83	9.97	9.7	9.7			
14/12/06	08:00 - 08:15	16/Rainy	Surface	20.4	32.8	32.8	6.58	6.62	6.56	92.1	92.6	8.59	8.64	8.5	8.5	9.6		
			Middle	20.6	32.8	32.8	6.53	6.50	6.50	93.1	91.0	8.68	10.20	9.7	9.8			
			Bottom	20.6	32.8	32.7	6.47	6.17	6.17	91.4	86.5	10.00	10.35	11.0	10.5			
16/12/06	09:00 - 09:15	15/Fine	Surface	22.3	32.8	32.8	6.77	6.80	6.60	87.0	94.5	8.76	8.78	8.5	8.5	9.8		
			Middle	22.4	32.7	32.7	6.34	6.41	6.41	94.9	89.4	10.20	10.55	9.8	9.9			
			Bottom	22.5	32.7	32.7	6.01	6.05	6.05	90.6	84.0	10.90	11.50	11.0	11.0			

Mid-Ebb Tide



東業德動測試顧問有限公司
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)		
			Surface	Bottom		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
19/12/06	12:00 - 12:15	16/Sunny	Surface	1.0	20.5	32.8	32.9	7.00	6.97	97.3	96.8	8.51	8.50	8.5	8.4	8.2	8.5	8.5	8.8
			Middle	11.0	20.6	32.8	32.8	6.56	6.60	91.2	91.8	8.75	8.79	8.5					
			Bottom	21.0	20.5	32.8	32.8	6.64	6.21	92.3	86.3	8.83	9.89	8.5					
21/12/06	12:30 - 12:50	18/Sunny	Surface	1.0	19.8	32.8	32.8	6.84	6.86	92.3	92.5	9.82	9.84	9.5	9.5	9.5	8.5	8.5	9.2
			Middle	12.6	19.4	33.0	33.0	6.87	6.66	88.7	89.6	8.78	8.81	8.5					
			Bottom	24.2	19.0	33.1	33.2	6.70	6.52	90.4	88.0	8.83	9.92	9.5					
23/12/06	14:00 - 14:15	18/Sunny	Surface	1.0	20.6	32.8	32.8	6.82	6.86	91.4	91.9	9.12	9.08	9.0	8.9	8.8	8.5	8.5	9.0
			Middle	12.0	20.3	33.1	33.1	6.89	6.55	87.4	87.8	9.03	8.67	8.5					
			Bottom	23.0	20.1	33.2	33.2	6.52	6.30	88.2	84.4	8.70	9.89	9.5					
28/12/06	08:00 - 08:15	17/Sunny	Surface	1.0	21.9	32.6	32.7	6.84	6.88	90.9	91.5	8.46	8.48	8.2	8.2	8.2	8.5	8.5	8.7
			Middle	10.7	21.7	32.9	32.9	6.61	6.63	87.9	88.2	8.49	8.78	8.5					
			Bottom	20.4	21.6	32.9	32.9	6.65	6.17	88.4	82.1	8.80	9.77	8.5					
30/12/06	07:45 - 08:00	14/Fine	Surface	1.0	20.2	33.0	33.0	6.89	6.91	91.6	91.9	8.48	8.53	8.2	8.4	8.5	8.5	8.5	8.9
			Middle	11.2	20.1	33.1	33.1	6.93	6.53	92.2	86.8	8.57	8.73	8.5					
			Bottom	21.3	20.0	33.1	33.2	6.48	6.26	87.4	83.3	8.69	9.93	8.5					

Mid-Ebb Tide



東業德勤測試顧問有限公司
ETS-TEST CONSULT 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	Depth-average	
02/12/06	09:35 - 09:50	18/Cloudy	Surface	23.1	29.4	6.98	6.96	100.5	100.2	7.96	7.96	7.7	7.9	8.6				
			Middle	22.8	30.7	6.43	6.42	92.1	92.3	8.25	8.24	8.0	8.0					
			Bottom	22.6	31.4	5.97	5.95	85.3	85.0	10.40	10.25	10.0	10.0					
05/12/06	12:20 - 12:35	20/Sunny	Surface	23.0	32.4	6.31	6.36	88.3	89.0	9.84	10.02	9.5	9.8	9.8				
			Middle	23.1	32.7	6.20	6.25	86.8	87.5	10.70	10.34	10.0	9.9					
			Bottom	23.1	32.9	6.12	6.06	85.7	84.9	10.80	10.37	10.0	9.9					
07/12/06	13:35 - 13:50	20/Cloudy	Surface	23.5	31.9	6.47	6.45	93.1	92.8	9.75	9.74	9.5	9.5	9.8				
			Middle	23.1	32.4	6.09	6.08	87.0	86.8	10.50	10.45	10.0	10.0					
			Bottom	23.0	32.6	5.83	5.85	83.3	83.6	10.90	10.85	10.0	10.0					
09/12/06	14:35 - 14:50	20/Cloudy	Surface	23.4	32.0	7.06	7.05	103.3	103.5	8.86	8.88	8.5	8.5	9.8				
			Middle	23.1	32.6	6.52	6.54	95.8	96.0	10.20	10.30	10.0	10.0					
			Bottom	22.8	32.7	6.07	6.05	89.2	88.9	11.20	11.30	11.0	11.0					
12/12/06	18:05 - 18:20	20/Fine	Surface	23.8	32.6	6.30	6.33	90.1	90.5	10.50	10.35	10.0	10.0	10.0				
			Middle	23.6	32.4	6.17	6.13	88.2	87.6	10.10	10.00	10.0	9.9					
			Bottom	20.6	32.7	6.30	6.33	88.2	88.6	9.92	9.96	9.7	9.9					
14/12/06	08:20 - 08:35	16/Rainy	Surface	20.8	32.8	6.15	6.18	86.1	86.5	10.60	10.28	10.0	9.9	9.9				
			Middle	20.8	32.8	6.20	6.18	86.8	86.5	9.96	10.28	10.0	9.9					
			Bottom	20.8	32.8	6.15	6.18	86.1	86.5	10.60	10.28	10.0	9.9					
16/12/06	09:20 - 09:35	15/Fine	Surface	22.4	32.8	6.26	6.30	87.0	87.6	9.92	10.11	9.7	9.9	9.9				
			Middle	22.6	32.6	6.18	6.22	85.9	86.4	10.20	10.05	10.0	9.9					
			Bottom	22.5	32.7	6.15	6.11	85.5	85.0	10.20	10.08	10.0	9.9					

Mid-Ebb Tide



東業 儀器 動測 試 廠 周 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	Depth-average	
19/12/06	12:20 - 12:35	16/Sunny	Surface	20.6	32.9	33.0	6.86	6.92	6.68	95.4	96.2	7.78	7.83	7.5	7.5	8.5		
			Middle	20.5	32.9	32.9	6.47	6.44	6.88	97.0	89.5	7.88	8.23	7.5	8.0			
			Bottom	20.4	33.0	33.0	6.40	6.01	6.01	89.0	83.5	8.25	10.65	8.0	9.9			
21/12/06	12:55 - 13:15	18/Sunny	Surface	19.8	32.8	32.8	6.03	6.76	6.68	83.8	91.2	7.72	7.80	7.5	7.5	8.7		
			Middle	19.4	32.2	32.2	6.78	6.61	6.34	91.5	89.2	7.88	8.93	9.0	8.9			
			Bottom	19.3	33.2	33.2	6.63	6.34	6.34	89.5	85.6	8.95	9.89	8.8	9.7			
23/12/06	14:20 - 14:35	18/Sunny	Surface	20.6	32.8	32.8	6.30	6.82	6.68	85.1	91.4	7.77	7.79	7.5	7.5	8.5		
			Middle	20.4	33.1	33.2	6.38	6.54	6.28	86.1	87.7	8.00	8.05	8.0	8.0			
			Bottom	20.2	33.1	33.1	6.58	6.28	6.28	88.2	84.1	8.09	10.28	10.0	9.9			
28/12/06	08:20 - 08:35	17/Sunny	Surface	21.9	32.8	32.8	6.23	6.89	6.67	90.9	91.7	7.72	7.74	7.5	7.5	8.5		
			Middle	21.7	32.9	32.9	6.78	6.45	6.28	91.5	85.8	7.76	8.19	8.0	8.0			
			Bottom	21.6	32.9	32.9	6.43	6.01	6.01	85.5	79.9	8.22	10.40	9.8	9.9			
30/12/06	08:10 - 08:25	14/Fine	Surface	20.3	33.0	33.0	6.05	6.76	6.63	80.5	89.9	10.10	7.89	7.70	7.6	8.5		
			Middle	20.2	33.0	33.0	5.96	6.50	6.34	89.5	86.5	7.94	8.34	8.00	8.1			
			Bottom	20.1	33.1	33.2	6.78	6.06	6.06	90.2	79.7	7.83	9.98	9.70	9.8			

Mid-Ebb Tide



東業 德 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
02/12/06	09:55 - 10:10	18/Cloudy	Surface	23.1	29.4	29.4	6.87	6.85	6.69	98.9	98.6	8.05	8.06	7.7	7.7	8.8		
			Middle	22.7	30.8	30.8	6.51	6.53	6.93	93.0	93.3	8.93	8.94	8.8				
			Bottom	22.5	31.4	31.4	6.04	6.06	6.06	86.3	86.6	10.20	10.30	10.0				
05/12/06	12:40 - 12:55	20/Sunny	Surface	23.1	32.5	32.6	6.36	6.42	6.36	89.0	89.9	10.50	10.65	10.0	10.0	10.3		
			Middle	23.0	32.7	32.7	6.33	6.29	6.36	88.6	88.1	10.80	11.00	10.0				
			Bottom	29.9	32.7	32.8	6.07	6.11	6.11	84.9	85.5	11.30	11.65	10.0				
07/12/06	13:55 - 14:10	20/Cloudy	Surface	23.5	31.9	31.9	6.59	6.57	6.37	94.8	94.6	9.43	9.46	9.3	9.3	9.9		
			Middle	23.1	32.4	32.4	6.15	6.17	6.17	87.9	88.1	10.20	10.30	10.0				
			Bottom	22.9	32.5	32.5	5.72	5.74	5.74	81.7	82.0	11.20	11.30	10.0				
09/12/06	14:55 - 15:10	20/Cloudy	Surface	23.5	32.2	32.0	6.98	6.96	6.63	102.6	102.3	8.75	8.76	8.5	8.5	9.5		
			Middle	23.2	32.6	32.6	6.31	6.30	6.30	92.1	91.9	10.70	10.80	10.0				
			Bottom	22.9	32.8	32.8	6.11	6.13	6.13	89.2	89.5	10.90	10.75	10.0				
12/12/06	18:25 - 18:40	20/Fine	Surface	23.9	32.5	32.6	6.24	6.27	6.31	89.2	89.6	9.72	9.76	9.5	9.5	10.0		
			Middle	23.9	32.5	32.5	6.38	6.36	6.36	91.2	90.9	10.30	10.65	10.0				
			Bottom	23.7	32.6	32.6	6.33	6.14	6.14	87.2	87.7	11.20	11.50	10.0				
14/12/06	08:40 - 08:55	16/Rainy	Surface	20.8	32.6	32.6	6.32	6.39	6.34	88.5	89.4	9.93	10.17	9.8	9.9	10.1		
			Middle	20.8	32.5	32.5	6.26	6.29	6.29	87.6	88.0	10.30	10.55	10.0				
			Bottom	20.8	32.7	32.8	6.08	6.12	6.12	85.1	85.6	11.00	11.30	10.0				
16/12/06	09:40 - 09:55	15/Fine	Surface	22.5	32.8	32.9	6.31	6.36	6.33	87.7	88.4	9.98	10.29	9.8	9.9	10.1		
			Middle	22.6	32.8	32.8	6.26	6.30	6.30	87.0	87.6	10.60	10.90	10.0				
			Bottom	22.6	32.7	32.8	6.11	6.15	6.15	85.0	85.5	11.50	11.90	10.0				

Mid-Ebb Tide



東 榮 德 勘 測 試 驗 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
19/12/06	12:40 - 12:55	16/Sunny	Surface	20.6	32.8	32.8	6.76	6.80	6.67	93.9	94.5	8.12	8.08	8.0	7.9	8.9	
			Middle	20.5	32.8	6.57	6.54	91.3	90.9	9.02	8.99	7.7	8.8				
			Bottom	20.5	32.8	6.50	6.09	90.4	84.7	8.95	10.35	8.8	10.0				
21/12/06	13:20 - 13:40	18/Sunny	Surface	19.7	33.1	33.0	6.07	6.78	6.76	84.4	91.6	10.30	8.40	8.2	8.2	9.0	
			Middle	19.4	33.0	6.70	6.74	91.8	91.0	8.35	9.17	8.2	9.0				
			Bottom	19.2	33.1	6.22	6.24	91.3	84.2	9.13	10.24	9.0	9.8				
23/12/06	14:40 - 14:55	18/Sunny	Surface	20.6	32.8	32.8	6.72	6.75	6.61	84.5	90.4	10.50	8.22	8.0	8.0	9.0	
			Middle	20.3	33.0	6.42	6.48	90.7	86.8	8.24	9.13	8.0	9.0				
			Bottom	20.3	33.1	6.54	5.97	86.0	80.0	9.15	10.35	9.0	10.0				
28/12/06	08:40 - 08:55	17/Sunny	Surface	21.9	32.7	32.8	6.70	6.75	6.66	79.5	89.8	10.20	8.11	8.0	7.9	8.8	
			Middle	21.8	32.8	6.56	6.58	90.4	87.4	8.06	9.08	7.7	8.8				
			Bottom	21.7	32.9	6.59	6.05	87.2	80.5	9.03	10.02	9.0	9.7				
30/12/06	08:30 - 08:45	14/Fine	Surface	20.2	32.9	33.0	6.09	6.72	6.67	81.0	89.3	10.10	8.19	8.0	8.0	9.0	
			Middle	20.1	33.1	6.66	6.63	90.2	88.1	8.15	9.16	8.0	9.0				
			Bottom	20.0	33.1	6.59	6.40	87.6	85.1	9.18	10.75	9.0	10.0				
					33.1	33.1	6.46	6.40	6.40	84.2	10.60	10.75	10.0	10.0			

Mid-Ebb Tide



東業 獲 勘 測 試 驗 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	
02/12/06	10:15 - 10:30	18/Cloudy	Surface	23.2	29.4	29.4	7.15	7.17	102.9	103.1	9.27	9.27	9.0	9.0	10.0			
			Middle	22.8	30.8	30.8	6.49	6.47	93.3	93.1	9.26	10.60	10.0	10.0				
			Bottom	22.6	31.4	31.4	5.88	5.87	92.8	84.4	10.50	11.15	11.0	11.0				
05/12/06	13:00 - 13:15	20/Sunny	Surface	22.9	32.7	32.7	5.85	6.38	84.2	89.3	11.30	9.94	9.8	9.7	10.1			
			Middle	22.9	32.6	32.6	6.23	6.28	89.9	87.9	9.87	10.65	10.0	10.0				
			Bottom	22.8	32.8	32.8	6.12	6.15	88.5	86.1	10.40	11.35	10.0	10.5				
07/12/06	14:15 - 14:30	20/Cloudy	Surface	23.4	32.0	32.0	6.18	6.65	85.7	95.7	11.00	8.96	8.8	8.8	9.9			
			Middle	23.1	32.4	32.4	6.67	6.16	86.5	88.1	8.97	11.45	10.0	10.0				
			Bottom	22.8	32.6	32.6	6.63	5.90	87.8	84.3	11.20	11.30	11.0	11.0				
09/12/06	15:15 - 15:30	20/Cloudy	Surface	23.5	32.2	32.2	5.92	6.86	84.6	100.7	8.92	8.94	8.8	8.8	9.8			
			Middle	23.2	32.5	32.5	6.84	6.42	100.9	93.7	8.95	9.89	9.5	9.5				
			Bottom	23.0	32.8	32.8	6.40	6.07	94.0	88.6	9.88	11.30	11.0	11.0				
12/12/06	18:45 - 19:00	20/Fine	Surface	23.8	32.6	32.6	6.05	6.27	88.9	89.6	10.80	10.55	10.0	10.0	10.1			
			Middle	23.7	32.3	32.3	6.24	6.16	89.2	88.1	11.20	11.40	10.0	10.5				
			Bottom	23.6	32.2	32.2	6.22	6.21	88.9	88.8	10.40	11.60	10.0	10.5				
14/12/06	09:00 - 09:15	16/Rainy	Surface	20.9	32.7	32.7	6.15	6.31	87.6	88.3	9.92	10.01	9.8	9.8	10.1			
			Middle	20.9	32.6	32.6	6.26	6.25	88.9	87.6	10.10	10.75	10.0	10.0				
			Bottom	20.9	32.8	32.8	6.35	6.18	87.0	86.5	10.50	11.15	10.0	10.5				
16/12/06	10:00 - 10:15	15/Fine	Surface	22.4	32.9	32.9	6.29	6.39	86.2	88.8	10.70	10.17	10.0	9.9	10.3			
			Middle	22.7	32.8	32.8	6.41	6.25	89.1	87.5	10.40	10.55	10.0	10.0				
			Bottom	22.6	32.7	32.7	6.36	6.23	88.4	86.6	10.80	11.40	11.0	11.0				

Mid-Ebb Tide



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	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average
19/12/06	13:00 - 13:15	16/Sunny	Surface	20.5	32.9	33.0	7.00	7.08	6.78	97.3	98.4	9.23	9.28	9.0	9.2	9.9		
			Middle	20.4	33.0	6.52	6.48	6.78	99.5	90.0	9.33	10.40	9.3	10.0				
			Bottom	20.5	32.9	6.43	5.85	5.85	89.4	81.4	10.10	11.80	10.0	10.5				
21/12/06	13:45 - 14:05	18/Sunny	Surface	19.8	33.0	32.9	7.18	7.15	6.90	96.9	96.5	9.78	9.72	9.5	9.5	9.8		
			Middle	19.4	33.1	6.63	6.66	6.90	96.1	89.9	9.65	10.25	10.0	9.9				
			Bottom	19.3	33.2	6.68	6.18	6.18	89.5	83.4	10.60	10.40	9.90	10.0	9.9			
23/12/06	15:00 - 15:15	18/Sunny	Surface	20.6	32.7	32.7	7.10	7.17	6.93	96.3	96.6	9.56	9.52	9.5	9.4	9.7		
			Middle	20.3	32.8	6.65	6.69	6.93	96.9	89.6	9.47	9.92	9.3	9.7				
			Bottom	20.3	32.9	6.72	6.09	6.09	89.2	81.6	9.88	10.55	9.5	10.0				
28/12/06	09:00 - 09:15	17/Sunny	Surface	21.8	32.8	32.8	7.12	7.09	6.90	94.7	94.3	9.18	9.22	9.0	9.0	9.8		
			Middle	21.8	32.8	6.66	6.70	6.90	93.9	89.1	9.26	10.85	9.0	10.0				
			Bottom	21.8	32.9	6.74	5.98	5.98	88.6	79.5	10.70	11.30	10.0	10.5				
30/12/06	09:00 - 09:15	14/Fine	Surface	20.2	33.0	33.0	7.11	7.15	6.81	94.6	95.1	9.26	9.31	9.0	9.2	10.1		
			Middle	20.2	33.1	6.50	6.47	6.81	95.6	86.0	9.35	10.50	9.3	10.0				
			Bottom	20.0	33.2	6.43	5.97	5.97	85.5	79.4	10.20	11.40	10.0	11.0				

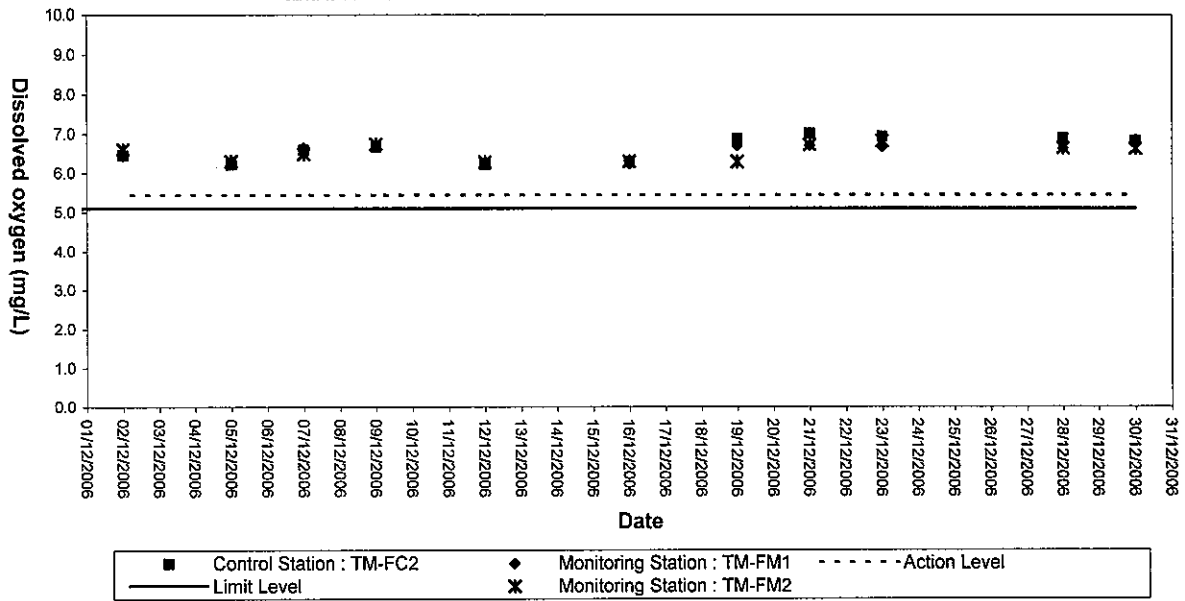


Appendix C3

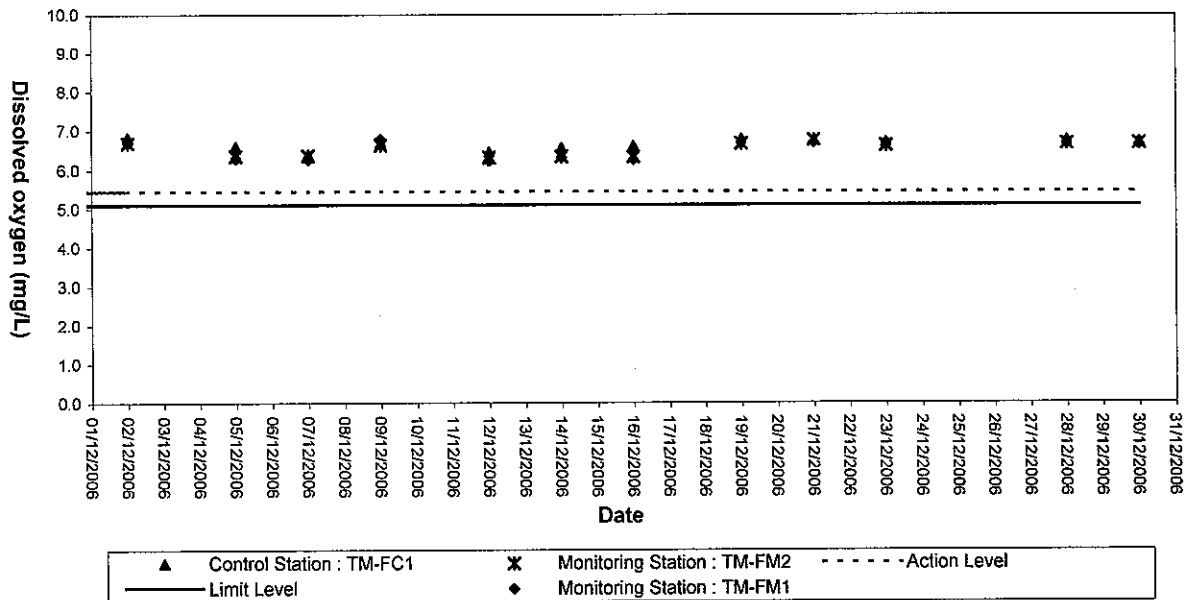
Graphical Plots of Impact Marine Water Quality Monitoring Data



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

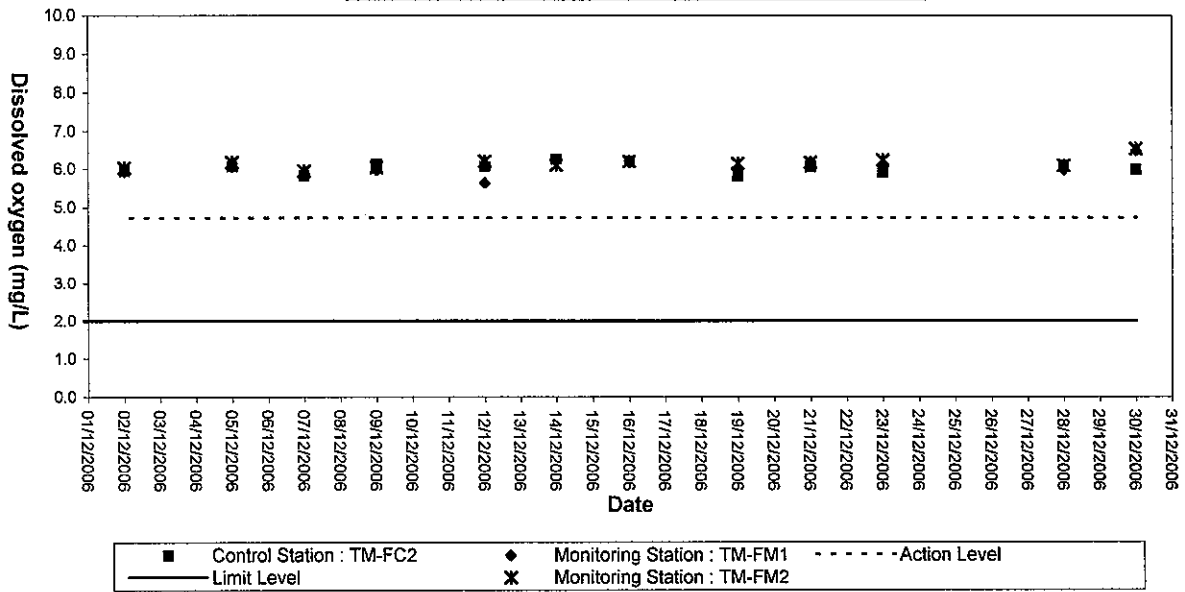


Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

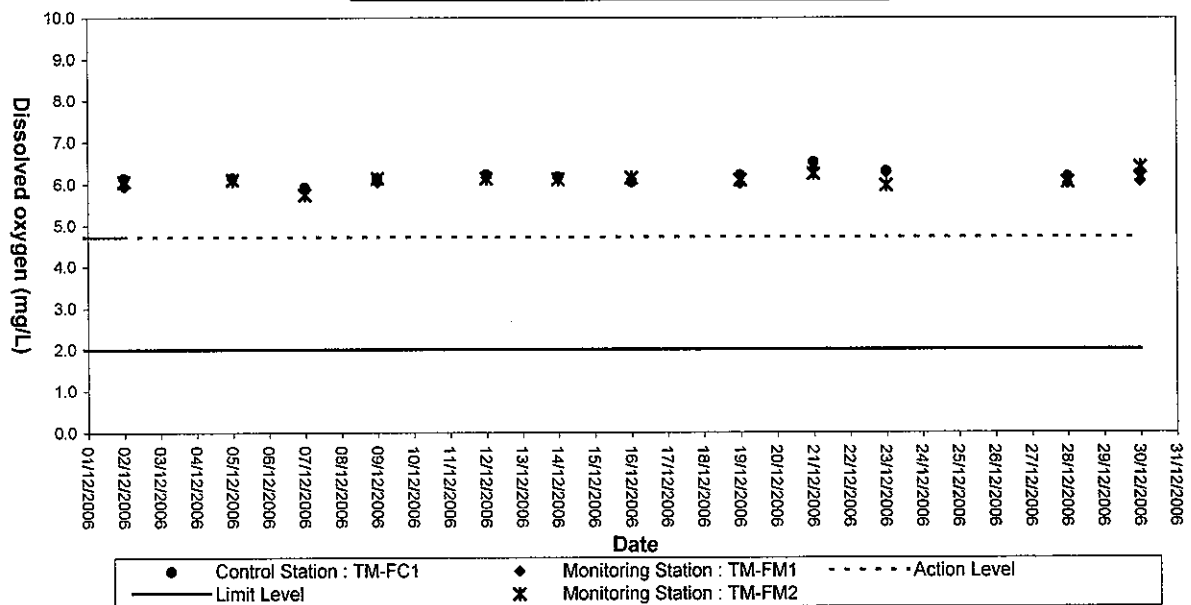




Dissolved Oxygen (Bottom) at Mid-Flood Tide

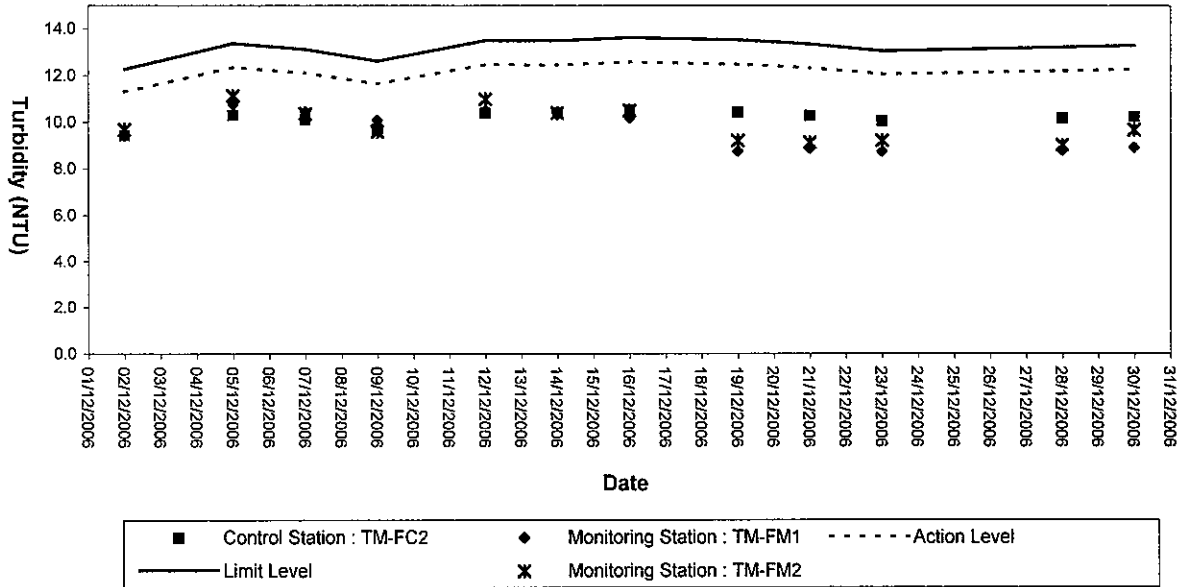


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

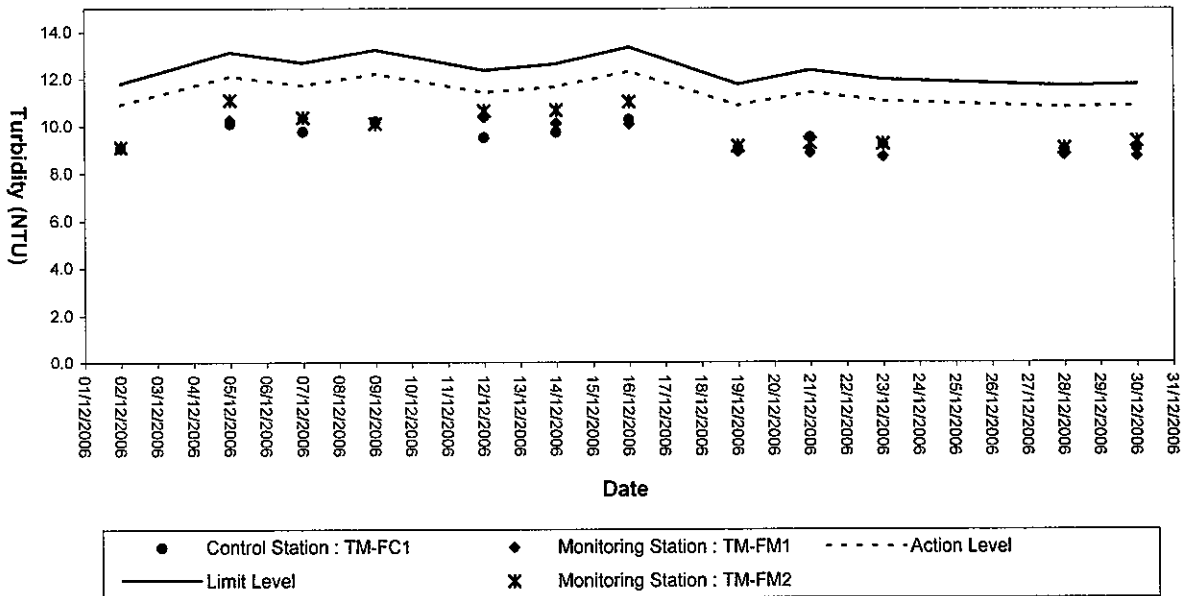




Turbidity (Depth-average) at Mid-Flood Tide

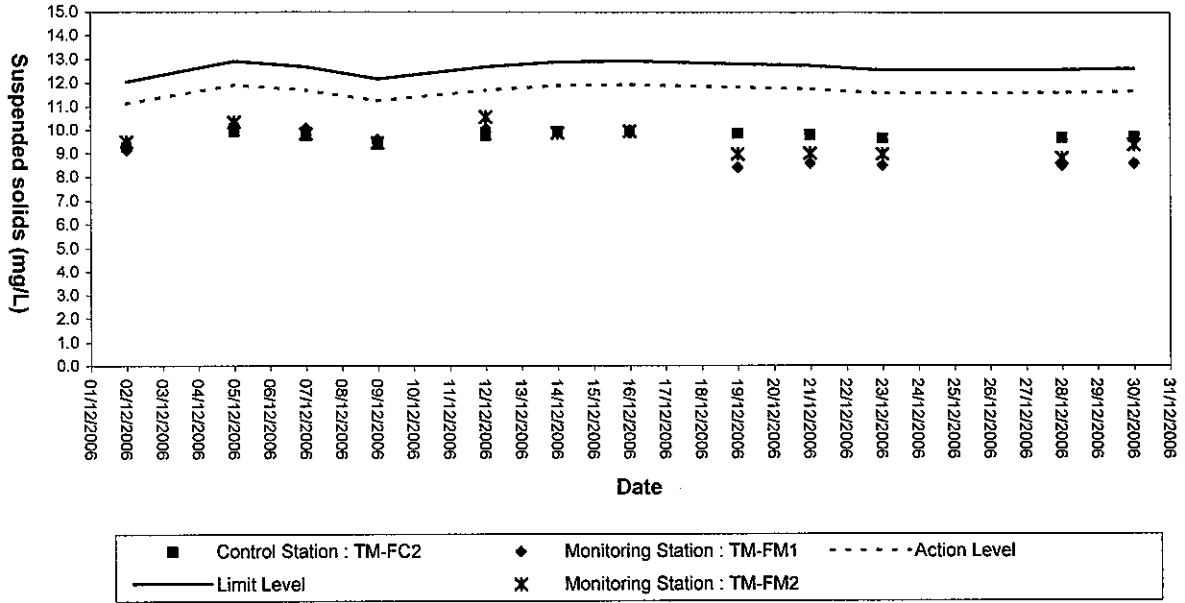


Turbidity (Depth-average) at Mid-Ebb Tide

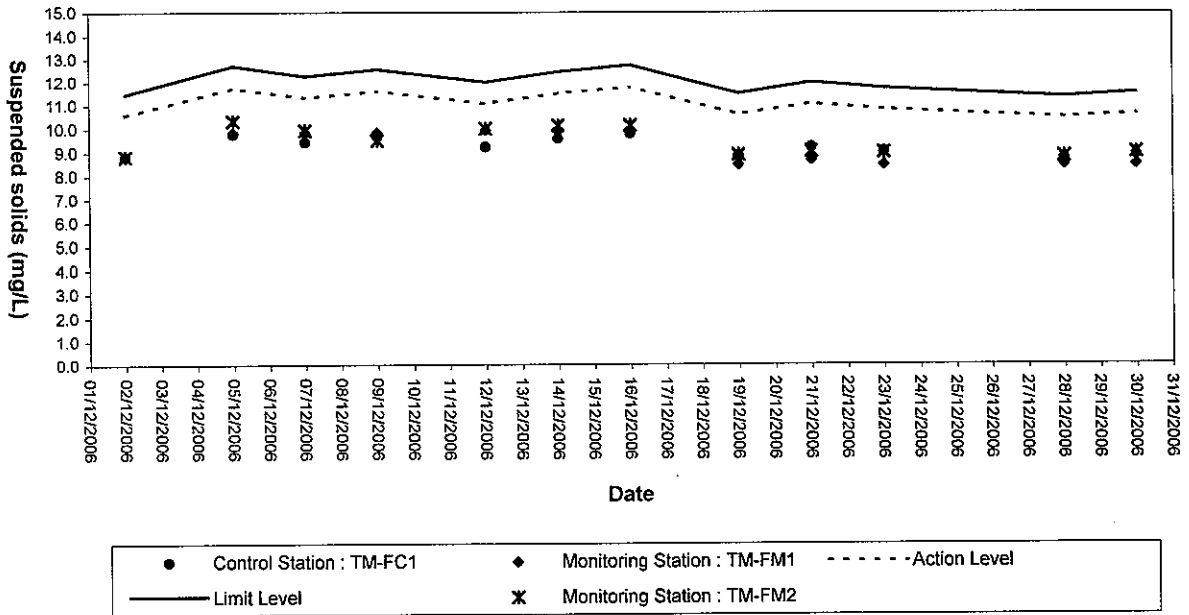




Suspended solids (Depth-average) at Mid-Flood Tide



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





Appendix D

Weather Condition



Climatological Information Services > Climatological Data > Extract of Automatic Weather Station > Station: Tuen Mun Automatic Weather Station, Year: 2006, Month: December

Extract of Meteorological Observations for Tuen Mun Automatic Weather Station, December

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Dec 1	*****	22.8	18.7	15.8	11.9	80	65	49
Dec 2	*****	22.1	17.7	14.0	11.3	73	67	56
Dec 3	*****	23.1	19.2	15.8	12.6	77	66	54
Dec 4	*****	23.7	19.4	15.3	13.2	81	68	53
Dec 5	*****	25.6	21.1	17.0	16.1	90	74	53
Dec 6	*****	24.5	21.7	19.5	17.3	90	77	55
Dec 7	*****	27.3	23.3	20.6	20.3	94	83	70
Dec 8	*****	29.7	24.6	21.8	20.2	98	78	54
Dec 9	*****	23.8	21.1	16.9	15.8	92	72	58
Dec 10	*****	20.1	17.2	15.3	11.4	74	69	61
Dec 11	*****	23.6	18.7	14.8	12.9	77	69	56
Dec 12	*****	24.9	21.3	18.3	15.8	83	71	58
Dec 13	*****	21.7	19.0	15.8	18.1	100	95	79
Dec 14	*****	16.4	15.4	14.4	14.2	100	93	85
Dec 15	*****	17.2	15.5	13.2	12.3	94	82	73
Dec 16	*****	18.4	16.1	14.0	5.6	92	54	27
Dec 17	*****	20.3	15.6	12.5	-2.6	50	30	17
Dec 18	*****	19.9	14.9	11.1	1.1	52	39	29
Dec 19	*****	21.0	16.3	11.9	5.1	60	48	36
Dec 20	*****	22.1	17.6	13.8	6.4	59	48	38
Dec 21	*****	22.2	17.4	13.9	6.2	62	48	41
Dec 22	*****	22.9	18.2	14.5	4.4	63	41	25
Dec 23	*****	20.9	17.6	13.2	9.5	78	60	40
Dec 24	*****	23.3	19.0	16.2	12.2	82	66	41
Dec 25	*****	23.6	18.5	15.0	6.1	67	46	23
Dec 26	*****	22.8	18.1	14.4	11.1	80	64	48
Dec 27	*****	24.8	18.6	14.1	11.3	78	64	31
Dec 28	*****	22.4	18.0	15.2	8.2	83	55	32
Dec 29	*****	18.6	14.6	11.2	8.0	76	65	51
Dec 30	*****	21.7	16.4	13.0	9.8	82	66	44
Dec 31	*****	23.8	18.2	13.8	12.8	88	72	49
Mean	*****	22.4	18.3	15.0	10.9	79	64	48
Maximum	*****	29.7	24.6	21.8	20.3	100	95	85
Minimum	*****	16.4	14.6	11.1	-2.6	50	30	17

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Dec 1	*****	020	11.5
Dec 2	*****	030	12.0
Dec 3	*****	030	9.5
Dec 4	*****	030	8.4
Dec 5	*****	020	5.5
Dec 6	*****	160	7.8
Dec 7	*****	020	5.0
Dec 8	*****	170	4.7
Dec 9	*****	030	11.1
Dec 10	*****	020	10.9
Dec 11	*****	020	8.5
Dec 12	*****	020	6.5
Dec 13	*****	020	10.0
Dec 14	*****	020	13.7
Dec 15	*****	030	9.5
Dec 16	*****	020	10.8
Dec 17	*****	020	11.0
Dec 18	*****	030	9.3
Dec 19	*****	020	6.5
Dec 20	*****	020	8.0
Dec 21	*****	030	9.7
Dec 22	*****	030	8.5
Dec 23	*****	020	7.0
Dec 24	*****	020	4.7
Dec 25	*****	020	6.6
Dec 26	*****	310	3.5
Dec 27	*****	020	4.1
Dec 28	*****	020#	6.3#
Dec 29	*****	030	9.7
Dec 30	*****	020	6.7
Dec 31	*****	020	6.5
Mean	-----	020#	8.2#
Total	*****	---	-----
Maximum	*****	---	13.7#
Minimum	*****	---	3.5#

*** 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 E

Event-Action Plans

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

ACTION

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

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			Contractor
	E.T Leader	IC(E)	ER	
<p>2. Exceedance for two or more consecutive samples</p>	<p>1. Identify source, investigate the causes of exceedance and propose remedial measures</p> <p>2. Notify IC(E), ER, EPD and Contractor</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented</p> <p>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</p> <p>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</p> <p>3. Supervise the implementation of remedial measures</p>	<p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented</p> <p>4. Ensure remedial measures are properly implemented</p> <p>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</p>	<p>1. Take immediate action to avoid further exceedances</p> <p>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Resubmit proposals if problem still not under control</p> <p>5. Stop the relevant activity of works as determined by the ER until the exceedance is abated</p>

EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

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

EVENT AND ACTION PLAN FOR WATER QUALITY

ACTION

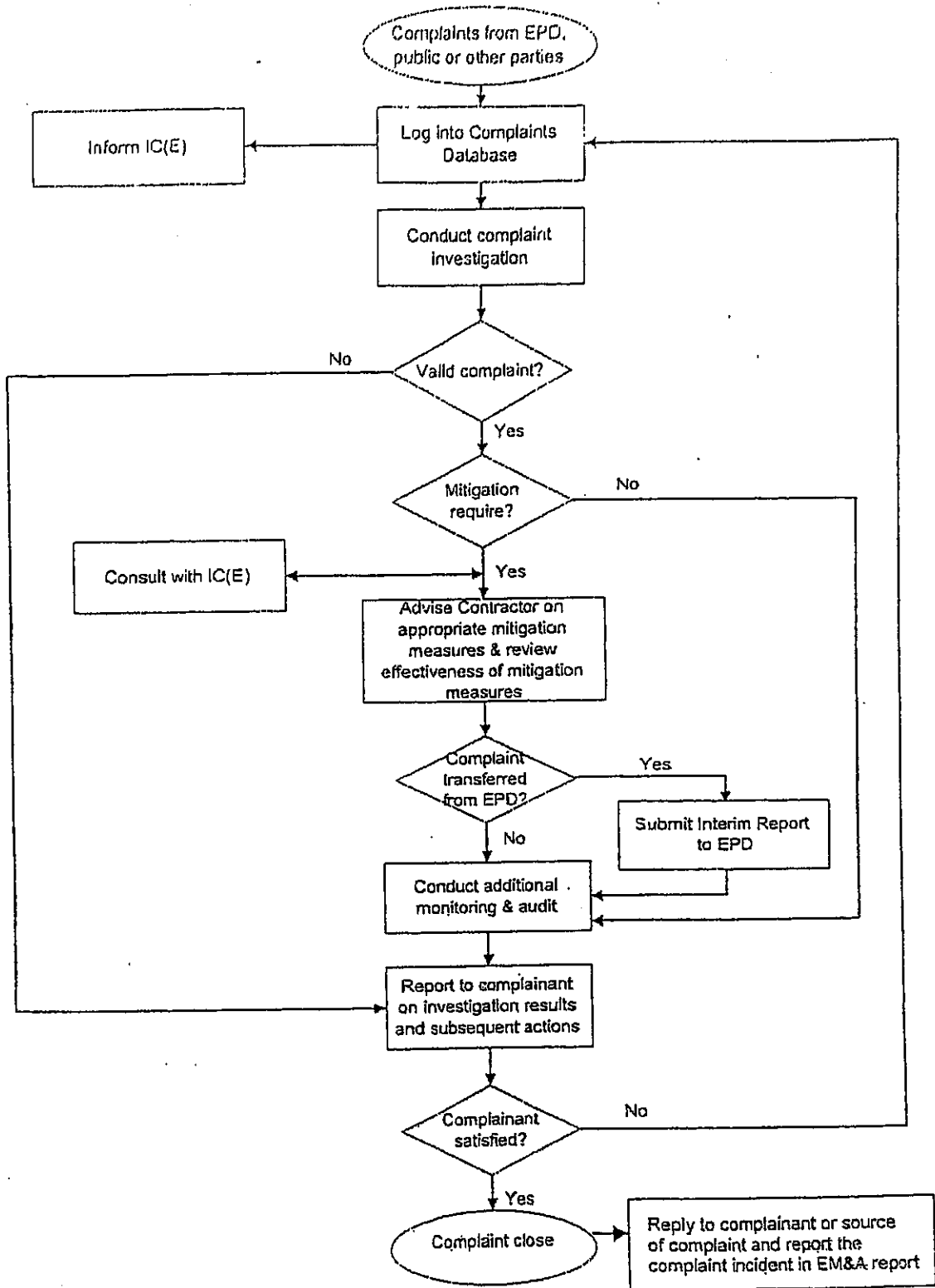
Event	ET Leader	Contractor	ER	IEC
<p>Action level being exceeded by more than one consecutive sampling days</p>	<ol style="list-style-type: none"> 1. Identify source(s) of impact; 2. Repeat in-situ measurement to confirm findings 3. Notify Contractor in writing within 24 hours of identification 4. Check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

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

EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

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



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

Scale : ---

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

Date issued :
December 2006



東樂德諮詢顧問有限公司
ETS-TESTCONSULT LIMITED



Appendix F

Construction Programme

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish	2007																	
							NOV	DEC	JAN	FEB	MAR													
RHB40100	Record House B4 erection	30	30	0	21/12/06	19/01/07	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	
RHB40200	Record House B4 Servicing 21mths	640	640	0	28/01/07	28/10/08																		
GW010200	Erection of Hoarding type I for Portion B	28	28	0	26/12/06*	22/01/07																		
HK040200	TM Crushing Plant Set Up	32	32	0	28/12/06	28/01/07																		
HK040300	TM Crushing Plant Trial Testing	7	7	0	29/01/07	04/02/07																		
HK050200	Sorting of Stockpiled Public fill	731	711	3	01/12/06A	30/11/08																		
HK050300	Removal of Stockpiled Public Fill (Contractor's)	731	711	3	01/12/06A	30/11/08																		
HK050400	Removal of Stockpiled Public Fill (other)	731	711	3	01/12/06A	30/11/08																		
HK050500	Disposal of unsuitable Material	731	711	3	01/12/06A	30/11/08																		
HK050600	Compaction of Public Fill	731	711	3	01/12/06A	30/11/08																		
HK110300	TM Tipping Halls Operation 308nr-wks	731	711	3	01/12/06A	30/11/08																		

Sheet 2 of 2

China Harbour Engineering Company Limited

Delivery of Reclamation Material to Mainland

3Mths Rolling Programme for EP - 21/12/06

10/11/06 Start Date

30/01/09 Finish Date

21/12/06 Data Date

04/01/07 17:42 Run Date

Early Bar

Progress Bar

Critical Activity

1A01

?Primavera Systems, Inc.



Appendix G

Weekly ET's Site Inspection Record

CEDD Contract No.: CV2005/01
 Project: Delivery of Reclamation materials at Tuen Mun Area 38

Inspection Date : 08 December 2006
 Time : 11:00

Inspected by: T.W. Chang (CEDD), Arthur Cheng (IEC)
 Sunny Chan (Contractor), H T CHOW (ET)

Weather : Sunny/Fine/ Cloudy /Overcast/Drizzle/Rain/ Storm/Hazy
 Wind : Calm/ Light/Breeze/ Strong

Temperature : 21°C
 Humidity : High/Moderate/Low

Environmental Checklist

	Implementation Stages*		Remark
	Yes	No	
Fugitive Dust Emission			
▪ 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 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.	✓		
Noise Impact			
▪ 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.: CV/2005/01
Project: Delivery of Reclamation materials at Tuen Mun Area 38

Environmental Checklist

	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.	✓			
▪ 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.	✓			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓			
▪ 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 compacting, 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.	✓			
▪ 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.			✓	
Landscape and Visual				
▪ 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.			✓	

Waste Management			
Construction Waste Management			
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/oils shall be removed from site and the void created shall be filled with suitable materials.		√	
Chemical Waste Management			
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.		√	
Warning panels should be displayed at the waste storage area.		√	
Waste storage area should be cleaned and maintained regularly.		√	

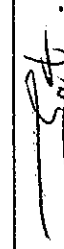

CEDD Contract No.: CV/2005/01
 Project: Delivery of Reclamation materials at Tuen Mun Area 38

<ul style="list-style-type: none"> ▪ Chemical waste should be transported by a registered chemical waste collector to a facility licensed to receive chemical waste. 	√		
<ul style="list-style-type: none"> ▪ All generators, fuel and oil storage should be within bundle areas. 	√		
<ul style="list-style-type: none"> ▪ Oil leakage from machinery, vehicle and plant should be prevented. 	√		
<ul style="list-style-type: none"> ▪ In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed. 	√		
<ul style="list-style-type: none"> ▪ The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place. 	√		
Good Site Practices			
<ul style="list-style-type: none"> o 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. 	√		
<ul style="list-style-type: none"> o Training of site personnel in proper waste management and chemical handling procedures should be provided. 	√		
<ul style="list-style-type: none"> • 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. 	√		
<ul style="list-style-type: none"> • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. 	√		
<ul style="list-style-type: none"> • The Environmental Permit should be displaced conspicuously on site. 	√		
<ul style="list-style-type: none"> • Construction noise permits should be posted at site entrance or available for site inspection. 		√	
<ul style="list-style-type: none"> o Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	√		
<ul style="list-style-type: none"> o Chemical storage area provided with lock and located on sealed areas. 	√		
<ul style="list-style-type: none"> o All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). 	√		
<ul style="list-style-type: none"> o Any unused chemicals or those with remaining functional capacity should be recycled. 	√		
<ul style="list-style-type: none"> o Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. 	√		
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ 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. 		√	
<ul style="list-style-type: none"> ▪ 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 1
<ul style="list-style-type: none"> ▪ Remove wastes in a timely manner. 		√	Item 1

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Photo Ref.	Further Action Required (Yes/No)
1	Trip trap was not provided for oil containers at water truck filling station and the labels were missing. The Contractor was reminded to provide trip trap and appropriate labels for all oil containers.	Photo 061208_001	Yes
2	Waste was spotted in front of fill checking station.	Photo 061208_002	Yes
3	Black smoke was emitted from a bulldozer at TP2.	Photo 061208_003	Yes

Remark

Name	Signature	Date
Inspected by H. T. Chow		08 December 2006
Checked by Louisa Fung		08 December 2006

Photos



Photo 061208_001

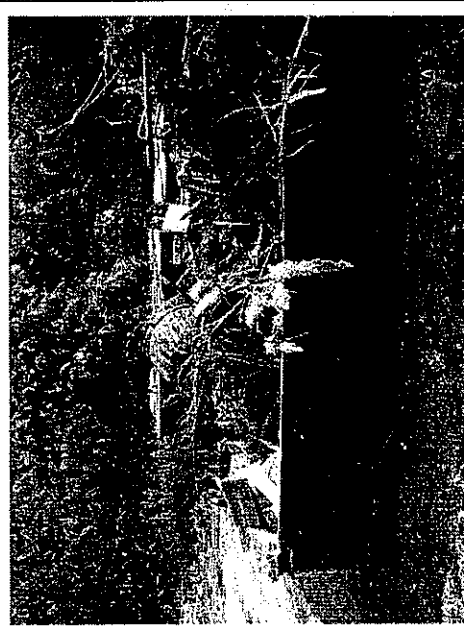


Photo 061208_002

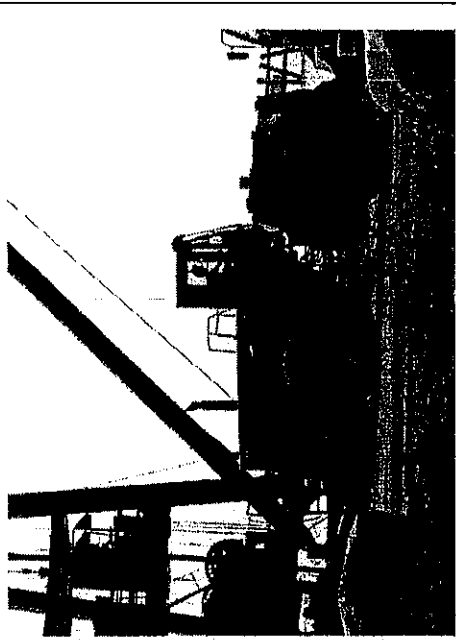


Photo 061208_003

CEDD Contract No.: CV/2006/02
Project: Fill Bank at Tuen Mun Area 38

Inspection Date : 14 December 2006
Time : 10:10

Weather : Sunny/Fine/Cloudy/Overcast/Drizzle/Rain/Sterrm/Hazy
Wind : Calm/Light/Breeze/Strong

Witnessed by: T.W Chang (CEDD),
Ricky Lal (Contractor)

Temperature : 17°C
Humidity : High / Moderate/Low

	Implementation Stages*		Remark
	Yes	No	
Fugitive Dust Emission			
▪ 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 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.	✓		
Noise Impact			
▪ 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	
Water Quality				
▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.	✓			
▪ 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.	✓			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓			
▪ 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 hardcores 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.	✓			
▪ 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.			✓	
Landscape and Visual				
▪ 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.			✓	



Waste Management			
Construction Waste Management			
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/oils shall be removed from site and the void created shall be filled with suitable materials.	✓		
Chemical Waste Management			
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.	✓		
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.	✓		

<ul style="list-style-type: none"> ▪ All generators, fuel and oil storage should be within bundle areas. 	√		
<ul style="list-style-type: none"> ▪ Oil leakage from machinery, vehicle and plant should be prevented. 	√		
<ul style="list-style-type: none"> ▪ In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed. 	√		
<ul style="list-style-type: none"> ▪ The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place. 	√		
<ul style="list-style-type: none"> ▪ Good Site Practices 	√		
<ul style="list-style-type: none"> ○ 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. 	√		
<ul style="list-style-type: none"> ○ Training of site personnel in proper waste management and chemical handling procedures should be provided. 	√		
<ul style="list-style-type: none"> • 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. 	√		
<ul style="list-style-type: none"> • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. 	√		
<ul style="list-style-type: none"> • The Environmental Permit should be displaced conspicuously on site. 	√		
<ul style="list-style-type: none"> • Construction noise permits should be posted at site entrance or available for site inspection. 	√	√	
<ul style="list-style-type: none"> ○ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	√		
<ul style="list-style-type: none"> ○ Chemical storage area provided with lock and located on sealed areas. 	√		
<ul style="list-style-type: none"> ○ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). 	√		
<ul style="list-style-type: none"> ○ Any unused chemicals or those with remaining functional capacity should be recycled. 	√		
<ul style="list-style-type: none"> ○ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. 	√		
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ 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. 	√	√	
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ Remove wastes in a timely manner. 	√		

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 previous item on 08/12/06, Trip trap was provided for fill tank but label was still missing.	Photo 061214_001	Yes
2	Follow up action to previous item on 08/12/06, Waste in front of fill checking station was cleared. No further action is necessary	Photo 061214_002	No
3	An appropriate label was not provided for oil storage at TP1	Photo 061214_003	Yes
4	Follow up action to previous item on 08/12/06, The bulldozer at TP2 was repaired. No further action is necessary	Photo 061214_004	No
5	Direct discharge of Muddy water was spotted. Contractor was advised to provide a proper drainage system and reallocate the waste water to suitable sept tank before discharge.	Photo 061214_005-6	Yes

Remark

Name	Signature	Date
H. T. Chow		14 December 2006
Louisa Fung		14 December 2006

Photos

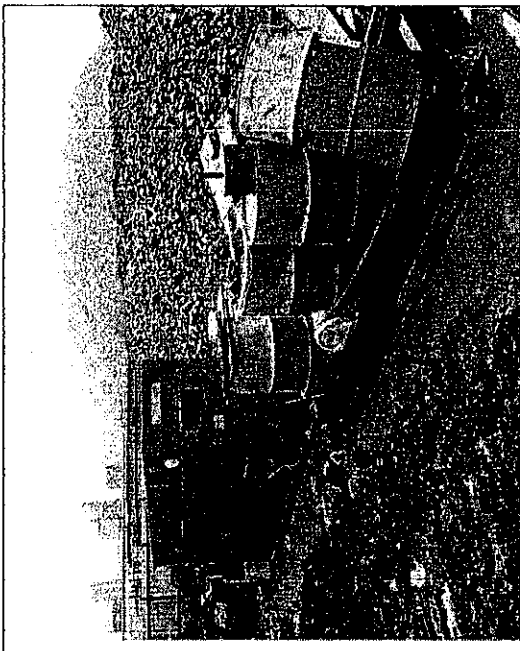


Photo 061214_003

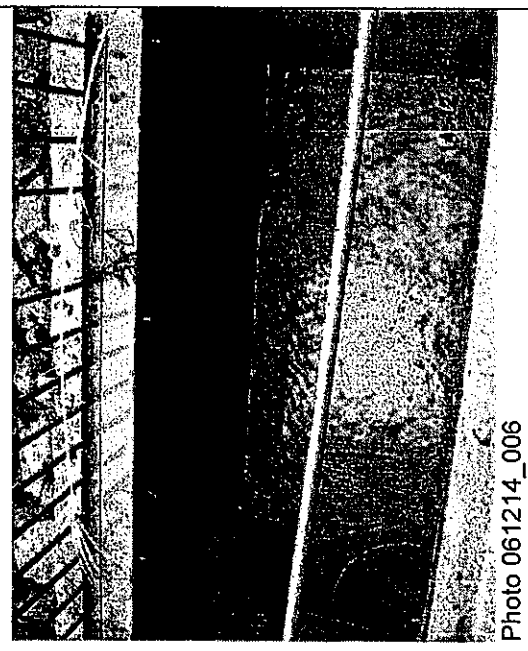


Photo 061214_006



Photo 061214_002

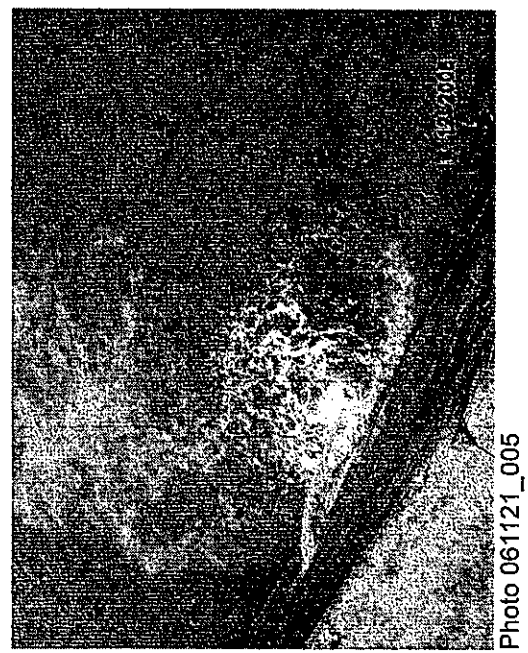


Photo 061121_005

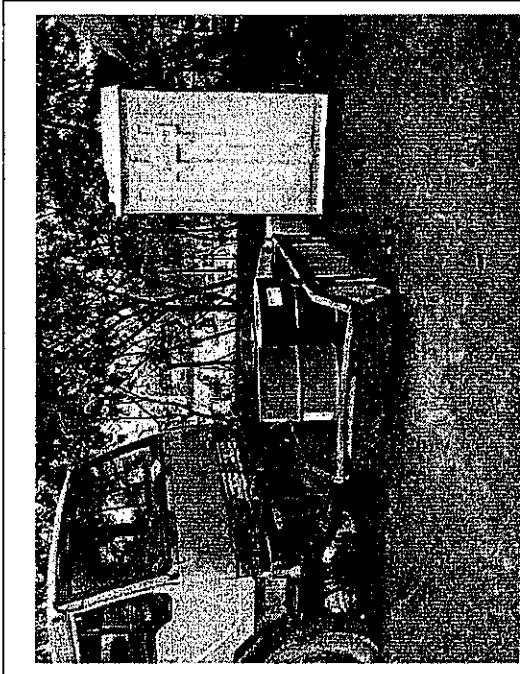


Photo 061214_001

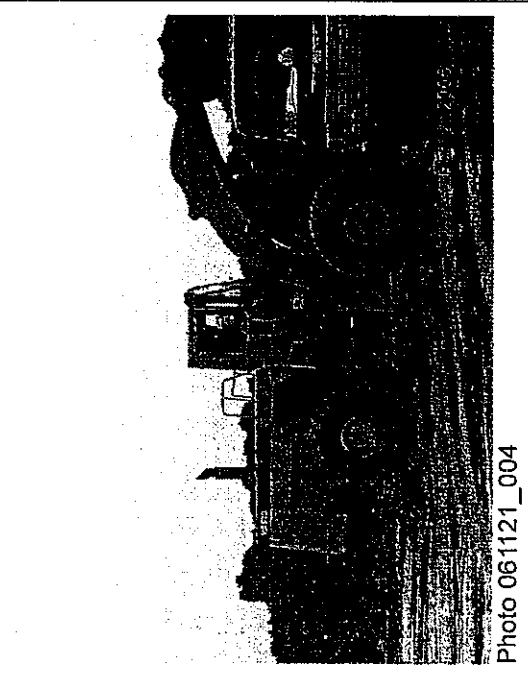


Photo 061121_004

CEDD Contract No.: CV/2006/02
Project: Fill Bank at Tuen Mun Area 38

Inspection Date : 19 December 2006
Time : 10:30

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
Wind : Calm / Light / Breeze / Strong

Witnessed by: T.W Chang (CEDD), Gary TSE (Contractor)
Ricky Lai (Contractor)

Temperature : 17°C
Humidity : High / Moderate / Low

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ 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 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.	✓			
Noise Impact				
▪ 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.: CV/2006/02
 Project: Fill Bank at Tuen Mun Area 3B

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Water Quality					
	<ul style="list-style-type: none"> ▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained. ▪ 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. ▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge. ▪ 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. ▪ 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 light 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. 	✓			
	<ul style="list-style-type: none"> ▪ Landscape and Visual ▪ 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. 	✓			

CEDD Contract No.: CV/2006/02
 Project: Fill Bank at Tuen Mun Area 38

Waste Management		
Construction Waste Management		
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/oils shall be removed from site and the void created shall be filled with suitable materials.	✓	
Chemical Waste Management		
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 disposed as chemical waste if necessary).	✓	
Be arranged so that incompatible materials are adequately separated.	✓	
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.	✓	



CEDD Contract No.: CV/2006/02
 Project: Fill Bank at Tuen Mun Area 38

<ul style="list-style-type: none"> ▪ All generators, fuel and oil storage should be within bundle areas. 	√		
<ul style="list-style-type: none"> ▪ Oil leakage from machinery, vehicle and plant should be prevented. 	√		
<ul style="list-style-type: none"> ▪ In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed. 	√		
<ul style="list-style-type: none"> ▪ The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place. 	√		
<ul style="list-style-type: none"> ▪ Good Site Practices <ul style="list-style-type: none"> ○ 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. 	√		√
<ul style="list-style-type: none"> ○ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	√		
<ul style="list-style-type: none"> ○ Chemical storage area provided with lock and located on sealed areas. 	√		
<ul style="list-style-type: none"> ○ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). 	√		
<ul style="list-style-type: none"> ○ Any unused chemicals or those with remaining functional capacity should be recycled. 	√		
<ul style="list-style-type: none"> ○ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. 	√		
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ 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. 			√
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ Remove wastes in a timely manner. 	√		

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 previous item 1 on 14/12/06 and item 1 on 08/12/06, Label was mounted on oil drum. Hence no further action is required.	Photo 061219_001	No
2	Follow up action to previous item 3 on 14/12/06, an appropriate label was provided for oil storage at TP1. No further action is necessary	Photo 061219_002	No
3	Follow up action to previous item 5 on 14/12/06, the catchpit of drainage channel was improved and no further runoff has spotted. No more further action is required.	Photo 061219_003	No
4	Drip Tray was absent underneath the generator at Temporary workshop.	Photo 061219_004	Yes
5	Trip Ticket and Mosquito oil spraying record was recorded.	Photo 061219_5-6	N/A

Remark

Inspected by	Name	Signature	Date
	H. T. Chow		19 December 2006
Checked by	Name	Signature	Date
	Louisa Fung		19 December 2006

CEDD Contract No.: CV/2005/01
 Project: Delivery of Reclamation materials at Tuen Mun Area 38

Inspection Date : 30 December 2006
 Time : 10:15
 Witnessed by: Mr SYLim (CEDD), Gary (CHEC)
 Ricky Kwok (Sub-Contractor)

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 19°C
 Humidity : High / Moderate / Low

Environmental Checklist

Remark	Implementation Stages*		
	Yes	No	N/A
Fugitive Dust Emission			
▪ 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 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.	✓		
Noise Impact			
▪ 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.	✓		

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Waste Management				
Construction Waste Management				
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 2	
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.	√			
Chemical Waste Management				
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 disposed as chemical waste if necessary).	√			
Be arranged so that incompatible materials are adequately separated.	√			
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.	√			



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Project: Delivery of Reclamation materials at Tuen Mun Area 38

<ul style="list-style-type: none"> ▪ All generators, fuel and oil storage should be within bundle areas. 	√		
<ul style="list-style-type: none"> ▪ Oil leakage from machinery, vehicle and plant should be prevented. 	√		
<ul style="list-style-type: none"> ▪ In the event of chemical waste / dangerous goods / chemicals spillage or leakage, the procedures as outlined in the Spillage Response Plan should be followed. 	√		
<ul style="list-style-type: none"> ▪ The dangerous goods / chemical spillage or leakage procedures (including equipments) should be in place. 	√		
<ul style="list-style-type: none"> ▪ Good Site Practices 			
<ul style="list-style-type: none"> ○ 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. 	√		
<ul style="list-style-type: none"> ○ Training of site personnel in proper waste management and chemical handling procedures should be provided. 	√		
<ul style="list-style-type: none"> • 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. 	√		
<ul style="list-style-type: none"> • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. 	√		
<ul style="list-style-type: none"> • The Environmental Permit should be displaced conspicuously on site. 	√		
<ul style="list-style-type: none"> • Construction noise permits should be posted at site entrance or available for site inspection. 		√	
<ul style="list-style-type: none"> ○ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	√		
<ul style="list-style-type: none"> ○ Chemical storage area provided with lock and located on sealed areas. 	√		
<ul style="list-style-type: none"> ○ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). 	√		
<ul style="list-style-type: none"> ○ Any unused chemicals or those with remaining functional capacity should be recycled. 	√		
<ul style="list-style-type: none"> ○ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. 	√		
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ 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. 		√	
<ul style="list-style-type: none"> ▪ 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. 	√		
<ul style="list-style-type: none"> ▪ Remove wastes in a timely manner. 	√		

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 previous item 4 on 19/12/06, Trip trap was absent for generator at TP1.	Photo 061230_001	Yes
2	Direct discharge of Muddy water to seabody was spotted. Contractor was advised to provide a proper drainage system and reallocate the waste water to suitable sept tank before discharge.	Photo 061230_002-003	Yes

Remark

Name	Signature	Date
Inspected by H. T. Chow		30 December 2006
Checked by Louisa Fung		30 December 2006

Photos

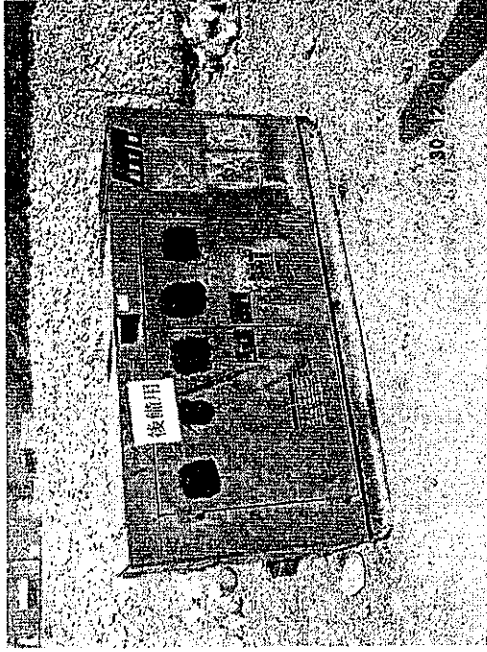


Photo 061230_001



Photo 061230_002

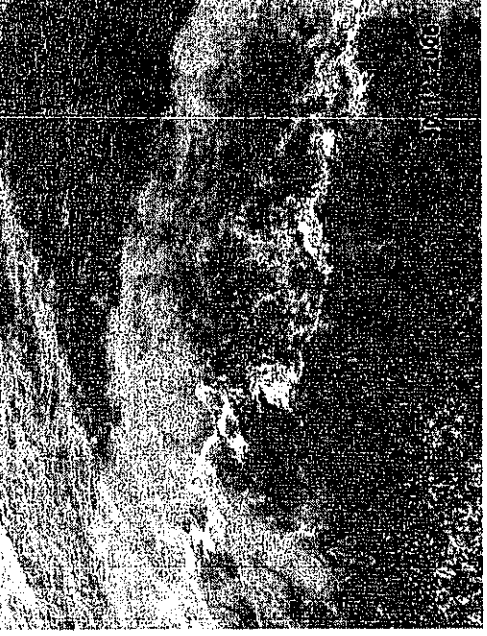


Photo 061230_003



Appendix H

Implementation Schedule of Mitigation Measures

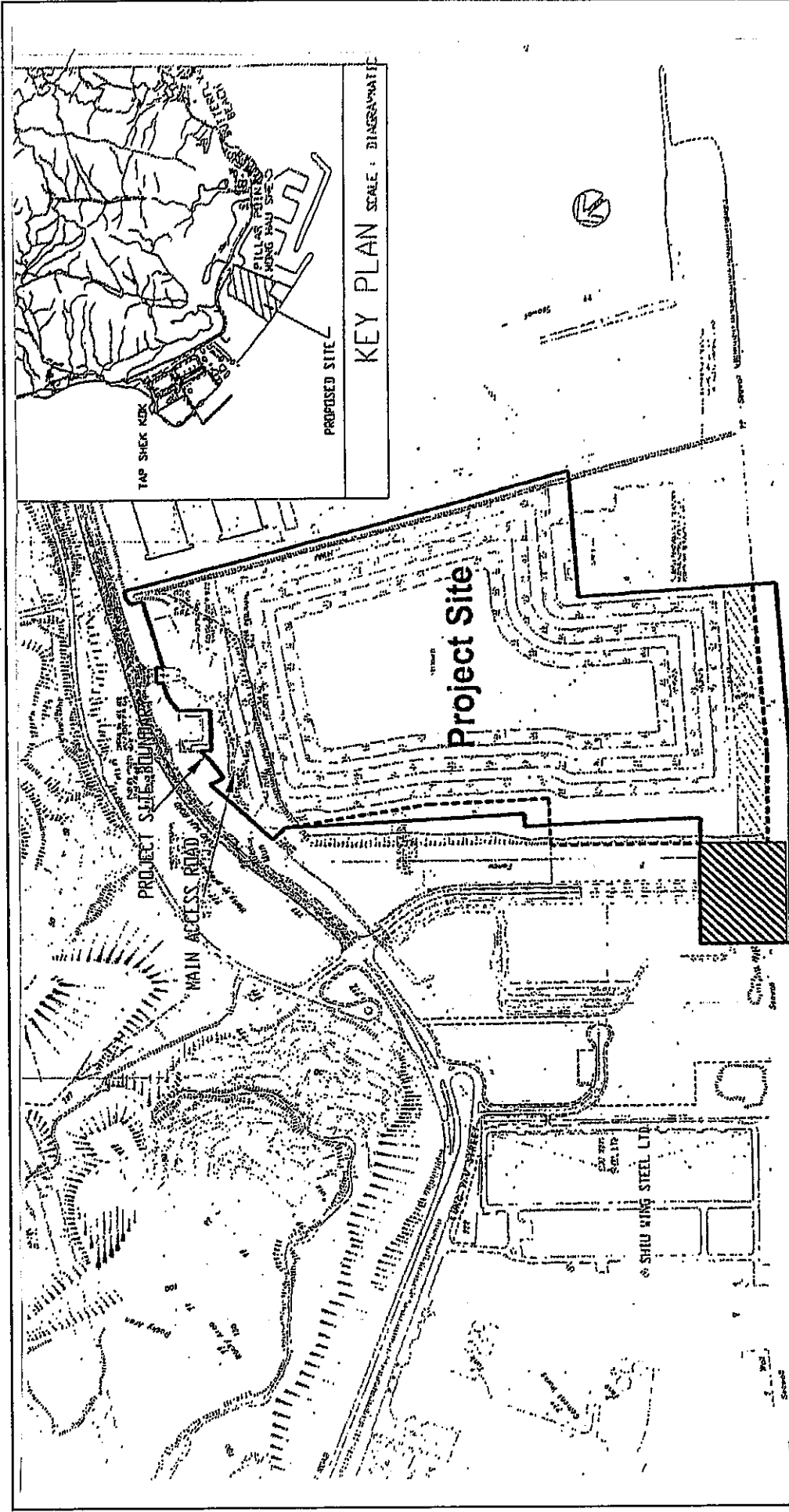
Environmental Mitigation Implementation Schedule

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
Air Quality				
<ul style="list-style-type: none"> ▪ 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 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. 				
Noise Impact				
<ul style="list-style-type: none"> ▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. ▪ 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. ▪ 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. 				

	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality					
<ul style="list-style-type: none"> ▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained. ▪ 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. ▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge. ▪ 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. ▪ 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 hardcores 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. ▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer. ▪ A waste collection vessel shall be deployed to remove floating debris. 					
Landscape and Visual					
<ul style="list-style-type: none"> • 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. 					
Waste Management					
Construction Waste Management					
<ul style="list-style-type: none"> ▪ 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. 					



Appendix I
Site General Layout plan



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

Figure 1 Site Layout Plan - Tuen Mun Area 38 Fill Bank

Scale : —
Date issued : December 2006



Appendix J

QA/QC Results of Laboratory Analysis



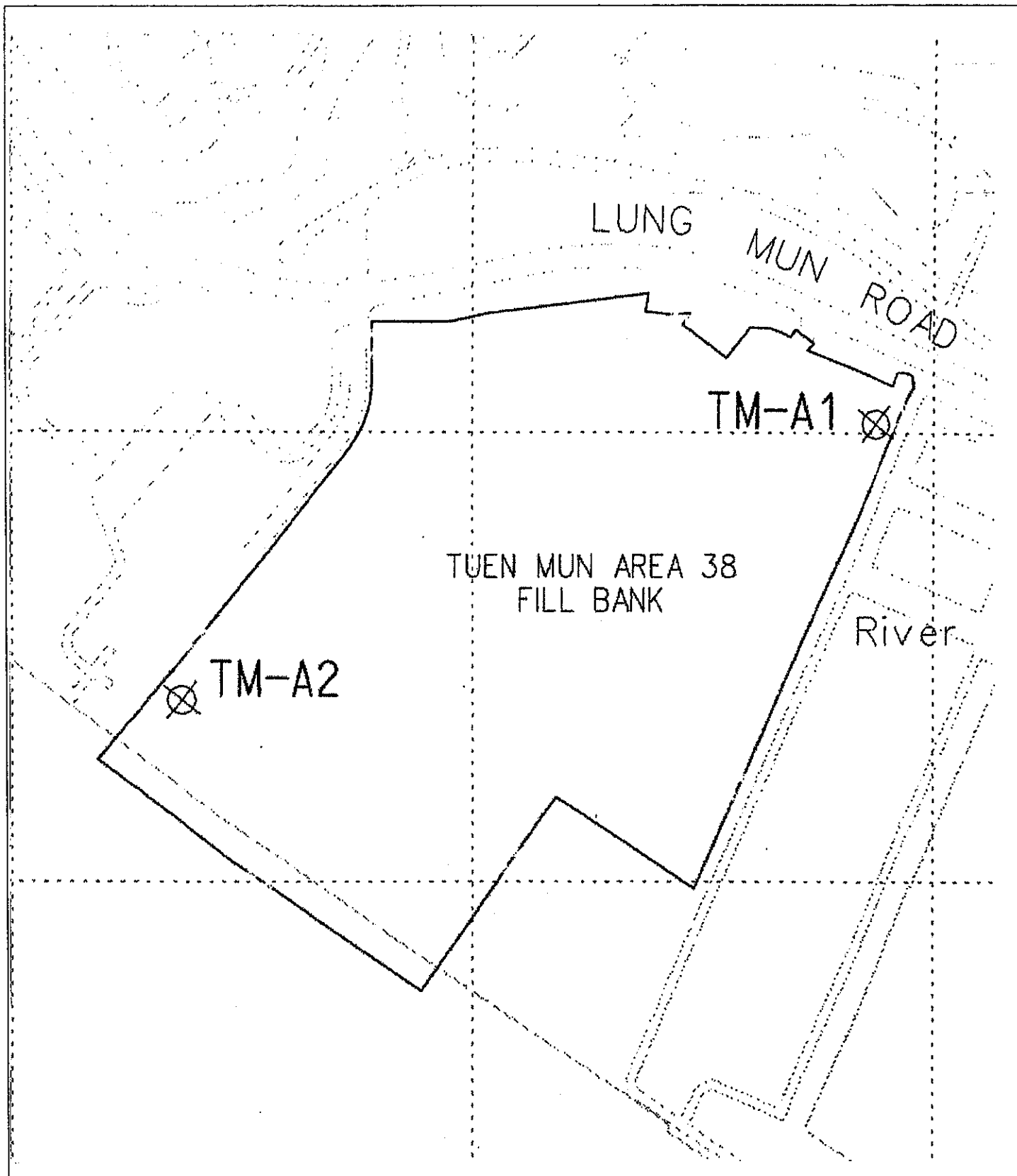
QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample Analysis	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
02/12/06	92.8	FC1-S	0.0	FM2-M	105
	102.9	FM2-B	0.0	EM1-S	104.8
	99.8	EM1-M	0.0	EC2-B	106.5
05/12/06	93	FC1-S	0.0	FM2-M	105.3
	93.9	FM2-B	0.0	EM1-S	98
	93.3	EM1-M	0.0	EC2-B	94.5
07/12/06	98.1	FC1-S	0.0	FM2-M	100
	106.7	FM2-B	0.0	EM1-S	105.8
	103	EM1-M	0.0	EC2-B	98.5
09/12/06	93.8	FC1-S	0.0	FM2-M	100
	105.5	FM2-B	0.0	EM1-S	104.4
	98.6	EM1-M	0.0	EC2-B	103.1
12/12/06	103.1	FC1-S	0.0	FM2-M	98
	101.5	FM2-B	0.0	EM1-S	110.1
	102.5	EM1-M	0.0	EC2-B	100
14/12/06	100.6	FC1-S	0.0	FM2-M	100
	94.2	FM2-B	0.0	EM1-S	100
	98.9	EM1-M	0.0	EC2-B	88.5
16/12/06	107.4	FC1-S	0.0	FM2-M	109.1
	100.8	FM2-B	0.0	EM1-S	105.9
	92.9	EM1-M	0.0	EC2-B	90.2
19/12/06	99	FC1-S	0.0	FM2-M	100
	102.8	FM2-B	0.0	EM1-S	98.4
	92.3	EM1-M	0.0	EC2-B	98.2
21/12/06	98.3	FC1-S	0.0	FM2-M	101.7
	94.8	FM2-B	0.0	EM1-S	100
	99.8	EM1-M	0.0	EC2-B	103.3
23/12/06	98.5	FC1-S	0.0	FM2-M	109.4
	95.2	FM2-B	0.0	EM1-S	101.4
	99.3	EM1-M	0.0	EC2-B	102
28/12/06	99.4	FC1-S	0.0	FM2-M	103.7
	103.9	FM2-B	0.0	EM1-S	100
	104.7	EM1-M	0.0	EC2-B	108.8
30/12/06	106.3	FC1-S	0.0	FM2-M	104.3
	99.4	FM2-B	0.0	EM1-S	103.1
	94.6	EM1-M	0.0	EC2-B	90.9

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

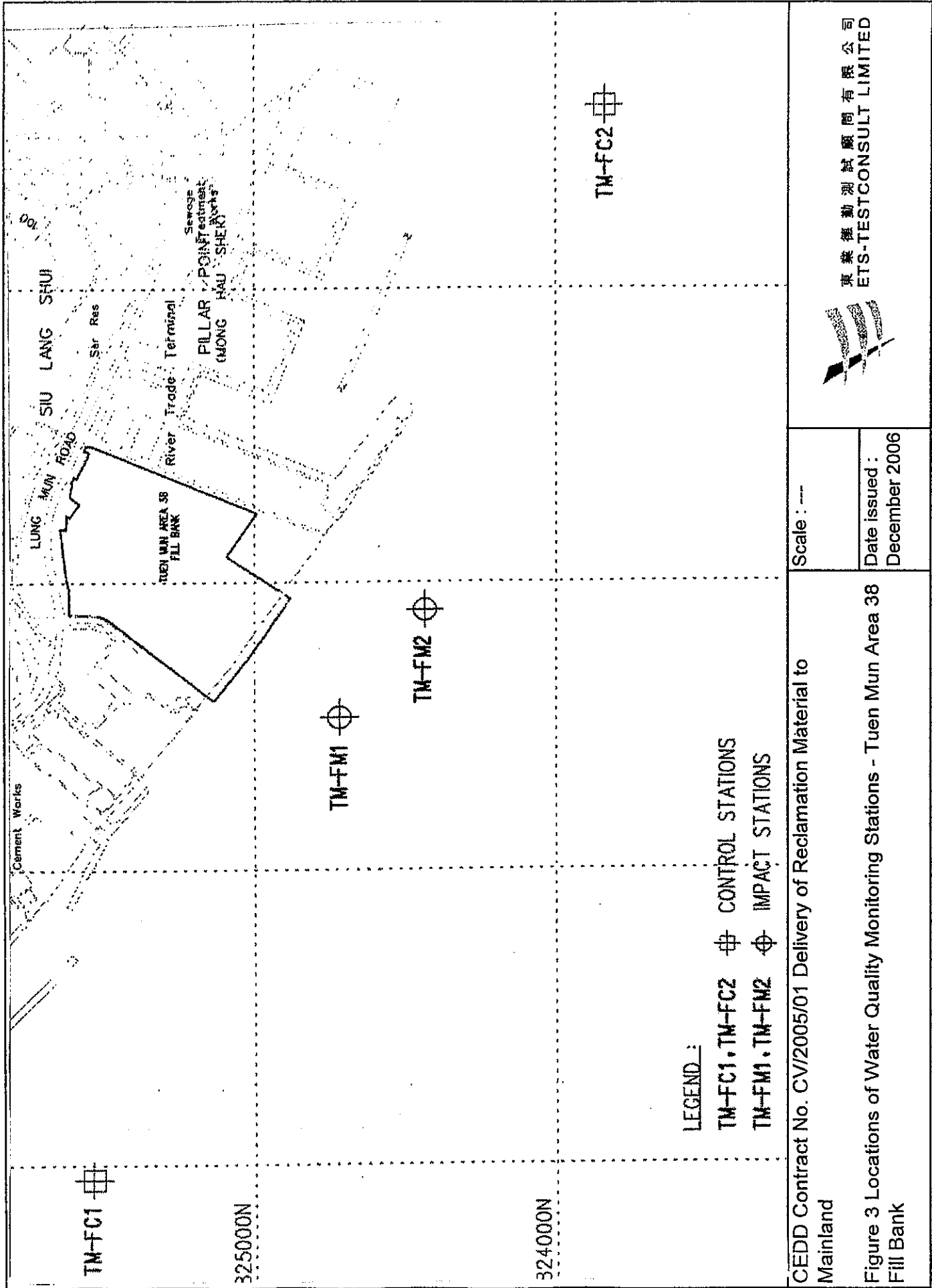


Contract No. CV/2005/01
Delivery of Reclamation Material to Mainland

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



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ETS-TESTCONSULT LIMITED



LEGEND :

TM-FC1, TM-FC2 CONTROL STATIONS

TM-FM1, TM-FM2 IMPACT STATIONS

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

Scale : ---

Figure 3

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

Date issued :
December 2006



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