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TEST REPORT

PENTA-OCEAN CONSTRUCTION CO. LTD.

OPERATION OF FILL BANK AT TSEUNG KWAN O AREA 137 AND BARGING FACILITIES AT HONG KONG ISLAND AND MUI WO (CONTRACT NO.: CV/2005/05)

TSEUNG KWAN O AREA 137

MONTHLY EM&A REPORT (JULY 2005)

Prepared by: _____
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Environmental Officer

Checked by: _____
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Approved by: _____
Tony Wong
Operations Manager

BMT Asia Pacific Limited

16 August 2005
Our Ref: 8116/2029

By Post

Penta-Ocean Construction Co., Ltd.
30 Floor
248 Queen's Road East
Wanchai
Hong Kong

For the attention of Mr. Stephen Choi

Dear Sir

Contract No. CV/2005/05
Fill Bank at Tseung Kwan O Area 137
Monthly EM&A Report

Following review of the Monthly EM&A Report No. 1 for the reporting period July 2005, the IEC has verified the information presented.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned.

Yours sincerely
BMT Asia Pacific Limited

Ben Ridley
IEC

cc:			
	CEDD	Lawrence Ng	2714-0113
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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/2005/05 Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo" (The Project).

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 in July 2005.

According the letter (Ref. FBTKO/504/H2.10/11.07/L/0026) issued by the Contractor, Penta-Ocean Construction Co Ltd (POC), it was noted that the environmental monitoring and inspection works were delayed until 18 July 2005. Hence, the monitoring period for this Project in this reporting month was from 18 to 31 July 2005 only. The environmental monitoring carried out under the previous contract (CV/2002/08) by the previous ET, Maunsell Environmental Management Consults Ltd (Maunsell), between 01 and 07 July 2005 is also included in this monthly report.

Construction Progress

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

- *Manage the incoming public fill dump trucks arriving through land access;*
- *Transport temporary stockpiled public fill from the Barge Handling Area (BHA) to Stockpile Areas or the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Transport stockpile public fill from Stockpile Areas to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Direct some incoming public fill dump trucks to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2) for unloading;*
- *Routine site cleaning and maintenance of internal haul roads and access roads; and*
- *Routine implementation of environmental mitigation measures such as dust suppression by water spraying, cleaning of nearby public roads by using road sweeper and collection of floating debris inside a berthing basin within the site boundary.*

Environmental Monitoring Progress

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

- *Noise Monitoring (Day-time): 1 Occasion at 1 designated location*
- *24-hour TSP Monitoring: 3 Occasions at 2 designated locations*
- *1-hour TSP Monitoring: 3 Occasions at 2 designated locations*
- *Marine Water Quality Monitoring: 9 Occasions at 2 designated locations*
- *Weekly-site inspection: 3 Occasions*

Noise Monitoring

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

Air Monitoring

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

Marine Water Quality Monitoring

According to the summary of marine water monitoring results, one exceedance of turbidity in Action Level was recorded during the monitoring on 29 July 2005 (mid-ebb) but not related to the Fill Bank operation. Hence, no further actions were required.

Besides, there were three exceedances of suspended solids in Limit Level recorded from the previous contract (CV/2002/08) during the monitoring on 04 and 06 July 2005 by Maunsell. However, all of them were not project related and no further actions were required.

Site Inspection

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

Concerned Parties	*Dates of Audit / Inspection*
Weekly site inspection (ET)	*22, 26*
Monthly site inspection (RE/IEC/POC/ET)	*11, 22, 29*

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

Landscape and Visual

The germination rate on the panel at Portion A, B, G and H was satisfactory in this reporting month. The Contractor was reminded to maintain the panel properly.

Environmental Complaints, Notification of summons and successful prosecutions

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

Permits and Licenses

An Amended Environmental Permit (No.: EP-134/2002/E) (the EP) was granted to the Project by EPD on 02 February 2005. Effluent discharge licence (Ref. No.: TE/D1152/839/1) for the site toilet and shower room issued on 06 June 2003 obtained from the previous contract was valid in this Project. Construction Noise Permit and Chemical Waste Producer Licence were applied on 27 and 13 July 2005 respectively and the applications were still in process in this reporting month.

Future Key Issues

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

- Noise and air quality impact due to construction works;
- Maintain wheel washing facilities properly;
- Maintain all drainage and desilting facilities properly;
- Use and maintain silt curtain properly;
- Clean up the fill material on concrete pavement along the BHA frequently;
- Watering, hydroseeding or covering all opening slopes and stockpiles with tarpaulin to avoid wind and water erosion;
- Sufficient drip trays for all oil drums / chemical containers;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;
- Maintain good site practice and waste management to minimize environmental impacts at the site; and
- Follow-up improvements on waste management issues.

1.0 INTRODUCTION

Penta-Ocean Construction Co Ltd (POC) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the "Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo" (Contract No.: CV/2005/05) (The Project).

In accordance with the Amended Environmental Permit (No.: EP-134/2002/E) (the EP), an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-060/2002). The EM&A programme for this study as stated in Section 2.3.1 of the EM&A Manual covers the following environmental aspects during the establishment, operation and removal phases of the Fill Bank at Tseung Kwan O Area 137:

- Fugitive Dust;
- Noise generation from onsite activities;
- Water Quality; and
- Landscape and Visual.

The EM&A programme requires environmental monitoring for air quality, noise and water quality and environmental site inspections for air quality, noise, 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 EIA study final report; and
- Environmental requirements in contract documents.

Baseline monitoring was completed in August and September 2002 by the MateriaLab. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

According the letter (Ref. FBTKO/504/H2.10/11.07/L/0026) issued by the Contractor, Penta-Ocean Construction Co Ltd (POC), it was noted that the environmental monitoring and inspection works were delayed until 18 July 2005. Hence, the monitoring period for this Project in this reporting month was from 18 to 31 July 2005 only. The environmental monitoring carried out under the previous contract (CV/2002/08) by Maunsell Environmental Management Consults Ltd (Maunsell) between 01 and 07 July 2005 is also included in this monthly report.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The scale and scope of the Project as stated in the EP include:

- Site clearance;
- Construction of 6 million m^3 of public fill;
- Stockpile up two barging points;
- Setting up two barging points: one at the Tseung Kwan O Basin (TKO Basin) and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;
- Setting up a temporary barging point at the existing Explosive Off-loading Barging Point located in the south-eastern part of Area 137 for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge;
- Construction and operation of a Construction and Demolition Material Sorting Facility (C&DMSF);
- Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and
- Remove the temporary fill bank.

2.2 Site Description

Tseung Kwan O Area 137 is located at the southern end of Wan Po Road. In the vicinity of the site are other industrial uses such as SENT landfill, TKO Industrial Estate, etc. Both Island Resort and Fullview Garden are also situated at more than 1.8km from the site. Other existing ASRs and NSRs, including resident developments and schools, are located at a further distance away from TKO Area 137.

2.3 Construction Programme

Details of construction programme are shown in Appendix G.

2.4 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.

2.5 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. Lawrence Ng*	*Engineer*	*2762 5582*	*2714 0113*
IEC (BMT)	*Mr Ben Ridley*	*IEC*	*2815 2221*	*2815 3377*
Contractor (POC)	*Mr. Stephen Choi*	*Site Agent*	*9400 7690*	*2623 9128*
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:

- *Manage the incoming public fill dump trucks arriving through land access;*
- *Transport temporary stockpiled public fill form the Barge Handling Area (BHA) to Stockpile Areas or the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Transport stockpile public fill from Stockpile Areas to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Direct some incoming public fill dump trucks to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2) for unloading;*
- *Routine site cleaning and maintenance of internal haul roads and access roads; and*
- *Routine implementation of environmental mitigation measures such as dust suppression by water spraying, cleaning of nearby public roads by using road sweeper and collection of floating debris inside a berthing basin within the site boundary.*

4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

TSP levels were monitored in the reporting month in accordance with the EM&A Manual. Table 4.5 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 and portable dust meter are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	*Model and Make*
HVS	*Greasby GMWS2310*
Calibrator	*Tisch TE-5025A*

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

Parameter	*Duration*	*Frequency*
24-hr TSP	*24 hr*	*Once every six days*
1-hr TSP	*1 hr*	*Three times per day every six days*

4.4 Monitoring Locations and Schedule

Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Monitoring station	*Location*
AA1	*Outside CEDD Site Office*
AA2	*Site Egress*

The air quality monitoring schedule for 24-hr and 1-hr TSP monitoring at designated monitoring locations is summarized in table 4.4.

Table 4.4 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	*Location*	*Monitoring Period*						
		24-hr TSP				*1-hr TSP*		
		Start		*Finish*		*Date*	*Start*	*Finish*
		Date	*Time*	*Date*	*Time*			
AA1	*Outside CEDD Site Office*	---				*06/07/05 **	*08:00*	*09:00*
							09:00	*10:00*
							10:00	*11:00*
						20/07/05	*11:30*	*12:30*
							13:20	*14:20*
							14:23	*15:23*
						26/07/05	*09:45*	*10:47*
							11:00	*12:02*
							13:00	*14:00*
AA2	*Site Egress*	---				*06/07/05 **	*08:00*	*09:00*
							09:00	*10:00*
							10:00	*11:00*
						20/07/05	*11:30*	*12:30*
							13:30	*14:30*
							14:35	*15:35*
						26/07/05	*09:45*	*10:44*
							11:00	*11:59*
							13:00	*14:00*
AA1	*Outside CEDD Site Office*	*05/07/05 **	*09:00*	*06/07/05*	*09:00*	---		
		20/07/05	15:28	21/07/05	15:28			
		26/07/05	14:15	27/07/05	14:24			
AA2	*Site Egress*	*05/07/05 **	*09:00*	*06/07/05*	*09:00*	---		
		20/07/05	15:39	21/07/05	15:39			
		26/07/05	14:15	27/07/05	14:15			

Remark (*): The monitoring was carried out under the previous contract (CV/2002/08) by Maunsell.

4.5 Monitoring Methodology

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

Instrumentation

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

Installation

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

Operation/Analytical Procedures

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

Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m^3/min and 1.7m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- 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 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%.
- All measurement procedures in Section 2.3 of the EM&A Manual were followed during the reporting month.

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

Since the wind station will be set up near the CEDD combined reception office in early August 2005, wind data (wind speed and wind direction) from 01 to 31 July 2005 were directly extracted from Tseung Kwan O Station of Hong Kong Observatory. All wind data during this reporting month are shown in Appendix E.

4.6 Action and Limit Levels

Table 4.5 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.5 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	*24-hr TSP (μg/m³)*		*1-hr TSP (μg/m³)*	
	*Action Level **	*Limit Level **	*Action Level **	*Limit Level **
AA1	*210*	*260*	*376*	*500*
AA2	*210*	*260*	*376*	*500*

* Traceable to Method Statement (Marine Water Quality Monitoring and Audit Manual) of Contract No.CV/2002/08, Rev. 2, Section 3.1 – 3.21

4.7 Event-Action Plans

Please refer to Appendix F for details.

4.8 Results and Observation

4.8.1 1-hour and 24-hour TSP Monitoring results

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 E. Table 4.6 summarizes 1-hr TSP and 24-hr TSP monitoring results.

Table 4.6 Summary of 1-hr TSP and 24-hr TSP Monitoring Results

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP			1-hr TSP			
		Date	Result ($\mu g/m^3$)	Exceedance #	Date	Start Time	Result ($\mu g/m^3$)	Exceedance #
AA1	Outside CEDD Site Office	06/07/05 *	80.2	X	06/07/05 *	08:00	123	X
						09:00	128	
						10:00	128	
		20/07/05	202	X	20/07/05	11:30	372	X
						13:20	372	
						14:23	370	
		26/07/05	206	X	26/07/05	09:45	355	X
						11:00	370	
						13:00	322	
AA2	Site Egress	06/07/05 *	50.9	X	06/07/05 *	08:00	112	X
						09:00	122	
						10:00	118	
		20/07/05	210	X	20/07/05	11:30	364	X
						13:30	367	
						14:35	361	
		26/07/05	190	X	26/07/05	09:45	309	X
						11:00	329	
						13:00	306	

Remark (#): L=Limit Level exceedance, A=Action Level exceedance and X= not an exceedance
(*): The monitoring was carried out under the previous contract (CV/2002/08) by Maunsell.

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

4.8.2 Observation

Generally, the Contractor implemented sufficient dust mitigation measures, including operation of the mist spraying systems at the CEDD Combined Reception Office and the site egress area, wheel washing facilities, road dampening by water bowsers and automatic water sprinklers on the main haul roads. Further, hydroseeding had been conducted on several slopes on the stockpiling areas as a means to prevent dust generation from wind erosion of the exposed surfaces.

However, a vehicle was observed leaving the site without passing through the wheel wash bay at the site entrance during the weekly site inspection on 22 July 2005. The Contractor was reminded to take necessary measures to ensure that all trucks pass through the wheel wash bays prior to leave the site.

Besides the Fill Bank operation, the other dust sources near TKO Area 137 also included operation of C&DMSF at PBR2 Project and dumping activities at the SENT Landfill.

5.0 Noise Monitoring

5.1 Monitoring Requirements

Noise monitoring was conducted at 1 monitoring station as specified in the approved EM&A Monitoring Proposal for good site practice. The equipment, parameter, frequency, duration, methodology, calibration details, results and observations of the noise monitoring for the reporting month are presented in this section.

5.2 Monitoring Equipment

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

Table 5.1 summarizes noise monitoring equipment model being used. A copy of the calibration certificate for noise meter and calibrator are attached in Appendix C1.

Table 5.1 Noise Monitoring Equipment

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

5.3 Monitoring Parameters, Duration and Frequency

Duration, frequencies and parameters of noise measurement are presented in Table 5.2.

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

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

5.4 Monitoring Locations and Period

Noise monitoring was conducted at the noise monitoring location, N1 as shown in Figure 3.1 during the reporting month. Table 5.3 describes the location of the monitoring station.

Table 5.3 Noise Monitoring Locations

Monitoring station	*Location*	*Type of Measurement*
N1	*Outside site Egress along Wan Po Road*	*Façade*

The noise-monitoring period of monitoring station is summarized in Table 5.4.

Table 5.4 Monitoring Period for noise monitoring stations

Noise monitoring stations	*Monitoring Period*	
	Day-time	
N1	*20/07/05*	*13:38*

5.5 Monitoring Procedures and Calibration Details

Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.

- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - *Frequency weighting: A*
  - *Time weighting : Fast*
  - *Time measurement : 5 mins*
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Free Field correction to the measurements should be made. Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

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

5.6 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.5.

Table 5.5 Action and Limit Levels for noise monitoring

Time Period	*Time Period*	*Action **	*Limit **
Normal hours	*0700-1900 hrs on normal weekdays*	*When one documented complaint is received*	*75 dB(A)*

* Traceable to Method Statement (Marine Water Quality Monitoring and Audit Manual) of Contract No.CV/2002/08, Rev. 2, Section 3.1 – 3.21

5.7 Event-Action Plans

Please refer to the Appendix F for details.

5.8 Results and Observation

5.8.1 Results

Only Day-time noise monitoring was carried out at monitoring station, N1 in this reporting month. Noise level is provided in Appendix C2. Graphical presentation of the monitoring result for the reporting month is shown in Appendix C3. A summary of the monitoring result is presented in Table 5.6.

Table 5.6 Summary of Impact Noise Level

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)		
		$L_{eq(30min)}$	L_{10}	L_{90}
20/07/05	13:38	71.8	73.0	58.7

No Day-time noise monitoring result at monitoring station N1 exceeded the Action Level since no documented complaints on noise issue were received in this reporting month. Besides, no exceedances in Limit Level were recorded according to the result from Day-time noise monitoring.

5.8.2 Observation

The major noise source during the monitoring event was the dump truck traffic. Operation of the Fill Bank was from 08:00 to 21:00 from Monday to Sunday in the reporting month. Whereas the operation hours for barge activities in the TKO Basin was from 08:00 to 23:00. The monitoring result complied with the noise limit of 75 dB(A).

6.0 MARINE WATER QUALITY MONITORING

6.1 Monitoring Requirements

In accordance with the EM&A Manual, 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 the Control Station, C1 and Monitoring Station, M4.

6.2 Monitoring Locations

For the Reclamation Project, there were 4 Designated Monitoring Stations and 2 Designated Control Stations specified in the EM&A Manual. Upon the completion of the monitoring programme under Stage 2 reclamation works, the ET started monitoring events at the impact station M4 and the control station C1 from 18 May 2004 onwards. Figure 4.1 shows the location of the marine water quality monitoring stations. Table 6.1 describes the locations of the monitoring stations in the reporting month.

Table 6.1 Location of Marine Water Monitoring Stations

Station Description	*Code*	*HK Metric Grid E*	*HK Metric Grid N*
Control Station (Ebb tide)	*C1*	*844 740.208*	*815 371.502*
Monitoring Station, Tung Lung Chau Fish Culture Zone	*M4*	*847 741.029*	*812 977.878*

6.3 Monitoring Parameters

Monitoring of the marine water quality parameters are listed in Table 6.2.

Table 6.2 Marine Water Quality Monitoring Parameters

In-situ measurement	*Laboratory analysis*
Depth (m)	*Suspended solids (mg/L)*
Temperature (°C)	
Dissolved Oxygen (mg/L and % saturation)	
Turbidity (NTU)	
Salinity (ppt)	

6.4 Monitoring Frequency

The monitoring frequency of the marine water monitoring is summarized in Table 6.3.

Table 6.3 The monitoring frequency of the marine water

Parameter	*Frequency*	*No. of Location*	*No. of Depths*
Temperate	*3 days/week, 2 tides/day*	*2 (C1 and M4)*	*3 (Surface, mid-depth & bottom)*
Salinity			
DO			
Turbidity			
pH value			
Suspended solids			

6.5 Monitoring Methodology and Equipment Used

For Location of the monitoring stations

Global Positing 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 measurement at each monitoring location

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. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

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 6.4.

Table 6.4 Summary of testing procedures

Laboratory Analysis	*Testing Procedure*	*Detection Limit*
Total suspended solids	*In house method based on APHA 19th 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 measurement at each monitoring location.

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, duplicate measurements were performed by dropping the calibrated probes of the corresponding monitoring equipments to the designated depths of the water column and taking readings after stabilized. The duplicate measurements were averaged if the difference was not greater than 25%.

Table 6.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix D1.

Table 6.5 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*	*01-06-2005*	*31-08-2005*	*EW/003/001**
Turbidity	*HACH Model 2100P Turbid Meter*	*27-04-2005* *27-07-2005*	*26-07-2005* *26-10-2005*	*ET/0505/002*
Salinity	*YSI Model 30M*	*27-04-2005* *27-07-2005*	*26-07-2005* *26-10-2005*	*ET/0527/001*
Water Depth	*EAGLE Strata 128 Sonar*	-----	-----	*EW/002/02*

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

6.6 Action and Limit Level

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

Table 6.6 Water Quality Action and Limit Levels

Parameter	Action Level *	Limit Level *
DO (mg/L)	Surface & Middle <5.45 mg/L (5%-ile of baseline data) Bottom <4.72 mg/L (5%-ile of baseline data)	Surface & Middle <5.10 mg/L (1%-ile of baseline data) Bottom <2 mg/L
SS (mg/L) (Depth-averaged)	>6.74 mg/L (95%-ile of baseline data) or >120% of the upstream control station's SS at the same tide on the same day	>7.67 mg/L (99%-ile of baseline data) or >130% of the upstream control station's SS at the same tide on the same day
Turbidity (NTU) (Depth-averaged)	>4.28 NTU (95%-ile of Impact data) or >120% of the upstream control station's turbidity at the same tide on the same day	>4.58 NTU (99%-ile of Impact data) or >130% of the upstream control station's turbidity at the same tide on the same day

*** Traceable to Method Statement (Marine Water Quality Monitoring and Audit Manual) of Contract No.CV/2002/08, Rev. 2, Section 3.1 – 3.21**

6.7 Event and Action Plan

Please refer to the Appendix F for details.

6.8 Monitoring Duration and Period in this reporting month

Below is the time schedule that water quality monitoring was performed in this reporting month:

Table 6.7 Time Schedule of Water Quality Monitoring

July 2005						
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	*25* ▼	*26*	*27* ▼	*28*	*29* ▼	*30*
31						

▼ = *Marine water quality monitoring carried out by ET and*
♦ = ***Monitoring was carried out from the previous contract CV/2002/08t by Maunsell.***

The daily marine water quality monitoring duration are detailed in Appendix D2.

6.9 Marine Water Quality Monitoring Results

The impact water quality measurement results are detailed in Appendix D2. Appendix D3 presents the water quality monitoring data and graphical presentations of monitoring results respectively.

The summary of marine water quality exceedances is shown in Table 6.8 and Table 6.9.

Table 6.8 Summary of Marine Water Quality Exceedances in this reporting month

Station	*Exceedance Level*	*DO*		*Turbidity*		*SS*		*Total*	
		Flood	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*
M4	*Action*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*
	Limit	*0*	*0*	*0*	*0*	*1*	*2*	*1*	*2*

One exceedance of turbidity in Action Level was recorded on 29 July 2005 in this reporting month. Besides, there were three exceedances of suspended solids in Limit Level recorded from the previous contract (CV/2002/08) during the monitoring on 04 and 06 July 2005 by Maunsell.

6.10 Assessment of the Exceedances

Monitoring Date	Tide	Exceedance parameters	Locations	ET Verification	Implementation of Event and Action Plan
04/07/05 *	Mid-Ebb	Suspended solids (Limit Level)	M4	After the site inspection, no sediment plume was observed from the Fill Bank during the environmental event. Therefore, the exceedances were considered not due to the Fill Bank operation. It might be due to natural fluctuation of SS in the water body around the area and local discharge form the nearby residents at Tung Lung Chau.	No further mitigation measures should be taken since the exceedances were not related to the operation of Fill Bank.
06/07/05 *	Mid-Flood and Mid-Ebb	Suspended solids (Limit Level)	M4	After the site inspection, no sediment plume was observed from the Fill Bank during the environmental event. Therefore, the exceedances were considered not due to the Fill Bank operation. It might be due to natural fluctuation of SS in the water body around the area and local discharge form the nearby residents at Tung Lung Chau.	No further mitigation measures should be taken since the exceedances were not related to the operation of Fill Bank.
29/07/05	Mid-Ebb	Turbidity (Action Level)	M4	After the site inspection, no sediment plume was observed from the Fill Bank during the environmental event. Therefore, the exceedances were considered not due to the Fill Bank operation. It might be due to natural fluctuation of Turbidity in the water body around the area and local discharge form the nearby residents at Tung Lung Chau.	No further mitigation measures should be taken since the exceedances were not related to the operation of Fill Bank.

(*) The exceedances were recorded under the previous contract CV/2002/08 by Maunsell.

Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET (for this contract) and by Maunsell (for the previous contract CV/2002/08). The summary of NOE is attached in Appendix K.

7 SITE INSPECTION

7.1 IEC Site Audits

During this reporting month, the IEC team conducted three independent site audits. The details of the IEC site audits are present in Table 7.1.

Table 7.1 Dates of IEC Site Audits in this reporting month

Date of Audit	*Work Period*	*Site Audit Checklist Submitted under IEC's Ref No.*
11 July 2005	*Operation*	*8116/1929*
22 July 2005	*Operation*	*8116/1963*
29 July 2005	*Operation*	*8116/1981*

Full details are provided in the IEC site audit checklists presented in Appendix H. IEC site audit summary is also attached in Appendix H.

7.2 Weekly ET Site Inspections

Weekly ET site inspections were carried by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting month, two weekly site inspections were conducted (22 and 26 July 2005). After each site inspection, the Contractor was notified of the ET's observations and recommendations. A follow-up action plan detailing the environmental observations had also been prepared by the ET. The Contractor then completed this plan to propose / report their remedial works. The Contractor should also submit the completed the follow-up action report to IEC and ET by fax. This follow-up action plan submission procedure was adopted for each subsequent ET's inspection to notify all the relevant parties of the Contractor's follow up actions. The weekly site inspection reports are attached in Appendix I. Summaries of the weekly site inspection findings 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;
- A road sweeper was used to remove settled dust particulates outside the site egress on Wan Po Road;
- Several automatic sprinklers served to dampen the haul roads outside the site office and on the ramp to the stockpiling area;
- A vehicle (Licence plate no. KY 6979) by-passed both wheel wash bays before leaving the site during weekly site inspection on 22 July 2005. The Contractor should remind all vehicle drivers to pass through both wheel wash bays prior to leave the site.
- Only one of the automatic wheel washing facilities was operating since the other was repaired during weekly site inspection on 26 July 2005. However, the Contractor operated several mist spraying systems at the site egress and weighbridge respectively. The truckloads were dampened during inspection of fill material at the CEDD Combined Reception Office;
- 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;
- The fill material was usually dampened on the barge. Dust impact was minimal from the barge delivery and unloading activity at the BHA;
- No dark emission was noted from the site machines in the reporting month. Generally, all the powered mechanical equipment (PME) were maintained regularly; and
- Other than the Fill Bank operation, dust sources also included road paving works of Wan Po Road outside the site egress, operation of PBR2 at Portion J of the Fill Bank, delivery of rock fill material from the SENT Landfill to the EPD's barging point and associated dumping activity, operation of the SENT Landfill, vehicular movement and wind erosion on Wan Po Road.

Noise

- The major noise source was dump truck traffic in the Fill Bank. Since the nearby NSR were remote from the Fill Bank, the noise impact was minimal. There was no specific observation noted regarding noise issue.

Water Quality

- During the ET's weekly site inspections on 22 and 26 July 2005, it was noted that a lot of silt and sand were deposited in the open surface channel connecting DP3 and DP4. The Contractor was reminded to clean up them so as to maintain the drainage capacity of the surface channel;
- Many of the rain water puddles was observed in Portion I. The Contractor was reminded to drain the rainwater and refill these areas. Besides, the regular use of pesticide was recommended to avoid mosquito breeding.
- Rainwater was accumulated in the drip tray at the Workshop. The Contractor was reminded to drain the rain water out and cover the drip tray with tarpaulin sheet;
- Standing water was accumulated in the drainage channel near Gammon Site Office at Portion K. The Contractor was reminded to apply pesticide regularly to avoid mosquito breeding.

Chemical and Waste Management

- The Contractor provided waste skips to collect general refuse and disposal of them regularly to the SENT Landfill. Total 7.51 tons C&D waste was disposed in this reporting month;
- Equipment maintenance was undertaken at the workshop area. Tarpaulin sheeting and containers were usually laid underneath the maintained equipment to collect leaked oil and avoid further contamination. However, oil leakage was noted from site equipment in the workshop and sign of oil spillage was observed on the ground during weekly site inspection on 22 July 2005. The Contractor was reminded to avoid oil leakage. In the event there was any oil leakage, the Contractor should clean up the stains immediately to avoid the afore-said problems. The Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;
- The chemical waste was stored in the Chemical Waste Storage Area (CWSA). No disposal was made in this reporting month. The Contractor should dispose the chemical wastes regularly to avoid the over accumulation of chemical waste on site;

Landscape and Visual

- The germination rate on the panel at Portion A, B, G and H was satisfactory in this reporting month. The Contractor should properly maintain the panel.
- Sufficient lighting was provided for the Fill Bank operation in the evening.

Landfill Gas

- The registered safety officer carried out oxygen gas monitoring twice per day for each temporary office. All the monitoring results were satisfactory. However, other two landfill gas parameters, methane and carbon dioxide, should also be monitored according to the EP. Hence, the Contractor was reminded to monitor these two landfill gas parameters during landfill gas monitoring.

7.3 Review of Environmental Monitoring Procedures

The monitoring works conducted by the Environmental Team were inspected regularly. The observations for the monitoring works were recorded and summarized as follows:

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.

Noise Monitoring

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

Water Quality Monitoring

The monitoring team recorded the observations around the monitoring stations, which might affect the results.

7.4 Assessment of Environmental Monitoring Results

All monitoring results were audited against the Action and Limit levels and any exceedances would be validated. In this reporting month, there were totally one exceedance of turbidity and three exceedances of suspended solids recorded in marine water quality monitoring and the NOEs were issued to EPD, ER, IEC and the Contractor.

The monitoring results in this reporting period were comparable with those of baseline period. Detailed discussions were given in Section 2, 3 and 4 of this Report.

7.5 Advice on the Solid and Liquid Waste Management Status

During the site inspection, drip trays were found covered by tarpaulin sheets. However, some tarpaulin sheets were dirty and broken. The Contractor should replace the old and broken tarpaulin sheets to minimize rainfall accumulation.

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 using for this cleaning works as chemical waste.

Concrete bundings were erected outside the CEDD combined reception office and near automatic wheel washing facilities for storing generator sets and oil drums. 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 at the drainage system, including permanent desilting chambers, desilting facilities, oil interceptor bypass tank, DP3 and DP4 and all the trapezoidal channels. Moreover, the Contractor should apply pesticides in the stagnant water ponds.

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

8.0 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 8.1.

Table 8.1 Summary of environmental licensing and permit status

Description	*Permit No.*	*Valid Period*		*Section*
		From	*To*	
Amended Environmental Permit	*EP-134/2002/E*	*02/02/05*	---	*(Valid)* ▪ *Site clearance* ▪ *Construction of a temporary storm water system* ▪ *Stockpiling of 6 million m3 of public fill* ▪ *Setting up two barging points for transporting the stockpiled public fill by barges* ▪ *Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge* ▪ *Construction of operation of a construction and Demolition Material Sorting Facility (C&DMSF)* ▪ *Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin* ▪ *Remove the temporary fill bank*
Effluent Discharge License	*TE/D1152/839/1*	*06/06/03*	*30/06/08*	▪ *For effluent from site toilet and shower room* ▪ *For aerobic wastewater treatment plant*
Construction Noise Permit	*Application in process*			
Chemical Waste Producer	*Application in process*			

9.0 ENVIRONMENTAL NON-CONFORMANCE

9.1 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.

No day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month.

According to the summary of marine water monitoring results in this reporting month, one exceedance of turbidity and three exceedances of suspended solids were recorded but all of them were not related to the Fill Bank operation. Hence, no further actions were required.

9.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

9.3 Summary of Notification of Summons and Prosecution

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

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix J. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

10.2 Implementation Status of Event and Action Plan

There were no exceedances in air quality and noise monitoring parameters recorded in this monitoring month. However, there was totally four marine water quality exceedances recorded. The exceedances were considered not related to the Project and hence no further actions were required. Details of the exceedance events refer to the Sections 4 of the Report.

The event action plan and interim notification of exceedance (NOE) are attached in Appendix F and K respectively.

10.3 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 and prosecutions was given in Table 10.1.

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful Prosecution	
July 2005	Cumulative	July 2005	Cumulative	July 2005	Cumulative
0	0	0	0	0	0

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

Impact noise level monitoring was performed on 20 July 2005. The noise level measured at the monitoring station complied with the Limit Level of 75dB(A). No complaint was received regarding noise issue.

According to the summary of marine water monitoring results in the reporting month, one exceedance of turbidity and three exceedance of suspended solids were recorded but all of them were not related to the operation of Fill Bank. Hence, no further actions were required.

According to the ET weekly site inspection and IEC site audit carried out this month, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. 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 July 2005.

New Construction Noise Permit and Licence for Chemical Waste Producer were under application in the 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 the public road and the main haul roads outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowers;
- 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 b 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, permanent desilting chambers, DP3 & DP4 regularly;
- Operate and maintain the silt curtains regularly;

- Check and maintain the silt curtain regularly;
- Operate the cleaning vessel within the TKO Basin regularly;
- Provide proper treatment for the oil discharge from the area near air monitoring station AA1;
- Clean up the fill material on the concrete pavement at BHA frequently; and
- Remove the stagnant water or provide pesticide 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 mesh screen on top of the additional drainage, DP3 to avoid improper dumping of rubbish;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

Landscape and Visual

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

12.0 FUTURE KEY ISSUES

12.1 Construction Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- *Manage the incoming public fill dump trucks arriving through land access;*
- *Transport temporary stockpiled public fill form the Barge Handling Area (BHA) to Stockpile Areas or the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Transport stockpile public fill from Stockpile Areas to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2);*
- *Direct some incoming public fill dump trucks to the Sorting Facility for Penny's Bay Reclamation Stage 2 (PBR2) for unloading;*
- *Routine site cleaning and maintenance of internal haul roads and access roads; and*
- *Routine implementation of environmental mitigation measures such as dust suppression by water spraying, cleaning of nearby public roads by using road sweeper and collection of floating debris inside a berthing basin within the site boundary.*

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- Chemical and waste management
- Treatment of runoff and wastewater prior to discharge
- Dust generated from loading and unloading activities; and
- Dust generated from dump trucks traffic.

Mitigation measures to be required in the coming month:

Air Quality Impact

- To provide adequate water spraying on haul roads and working platform;
- To operate and maintain automatic wheel washing facilities properly;
- To dampen the fill material prior to unloading or movement;
- To provide road sweeping on the haul road near site egress and the public roads outside site egress;
- To ensure implementation of the dust mitigation measures for the construction activities;
- To maintain proper operation of the mist spraying system;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers.

Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site;
- To follow up any exceedance caused by the Fill Bank operation;
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality Impact

- To maintain the drainage system in the Fill Bank;
- To ensure the cleanliness of oil interceptor bypass tanks and all the drainage channels;
- To maintain the existing silt trap to ensure good efficiency of wheel wash facilities;
- To repair, inspect and maintain the silt curtains regularly;
- To provide covers for the drip trays to avoid stagnant water pond due to rainfall;
- To provide proper treatment for oily water discharged form the area around air monitoring station AA1;
- To deploy a cleaning vessel to remove floating rubbish in the TKO Basin;

- To clean up the concrete paved area at Portion I every night to avoid fill materials form being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding in the Fill Bank.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To remove existing unwanted material in the stockpiles and avoid improper disposal at the Fill Bank through inspection of imported truckloads;
- To maintain proper housekeeping at the workshop area;
- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste;
- To maintain mesh screen on top of the additional drainage, DP3 opening to avoid improper dumping of rubbish into this channel; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

12.3 Monitoring Schedule for the Coming Month

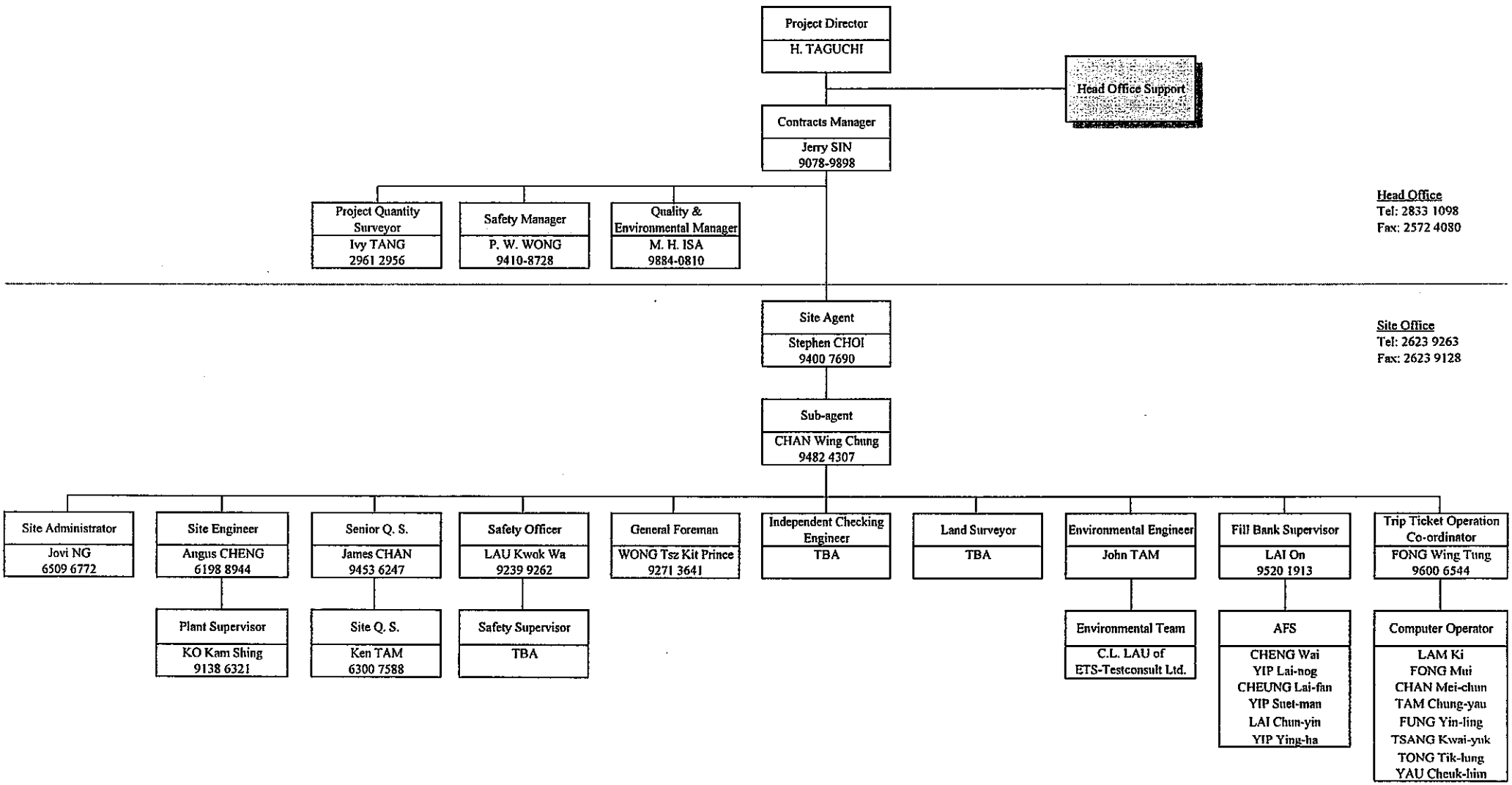
The Proposed EM&A program in coming month are presented in Appendix M:

Appendix A

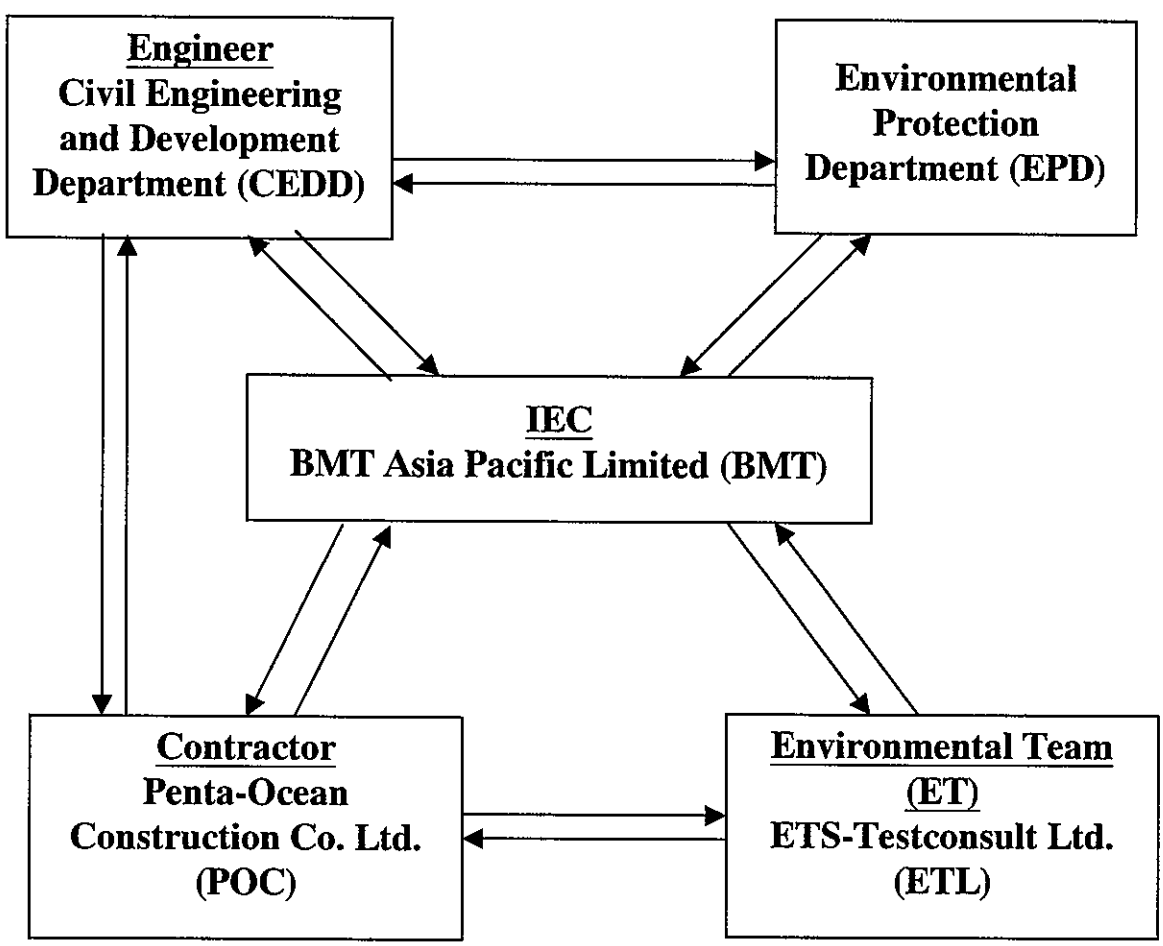
Organization Chart and Lines of Communication

Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137
and Barging Facilities at Hong Kong Island and Mui Wo

Site Organization Chart - Rev. 1 (effective on 13 July 2005)



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 : Greasby GMW

Date of Calibration : 16 July 2005

Serial No. : 10347 (EA/003/06)

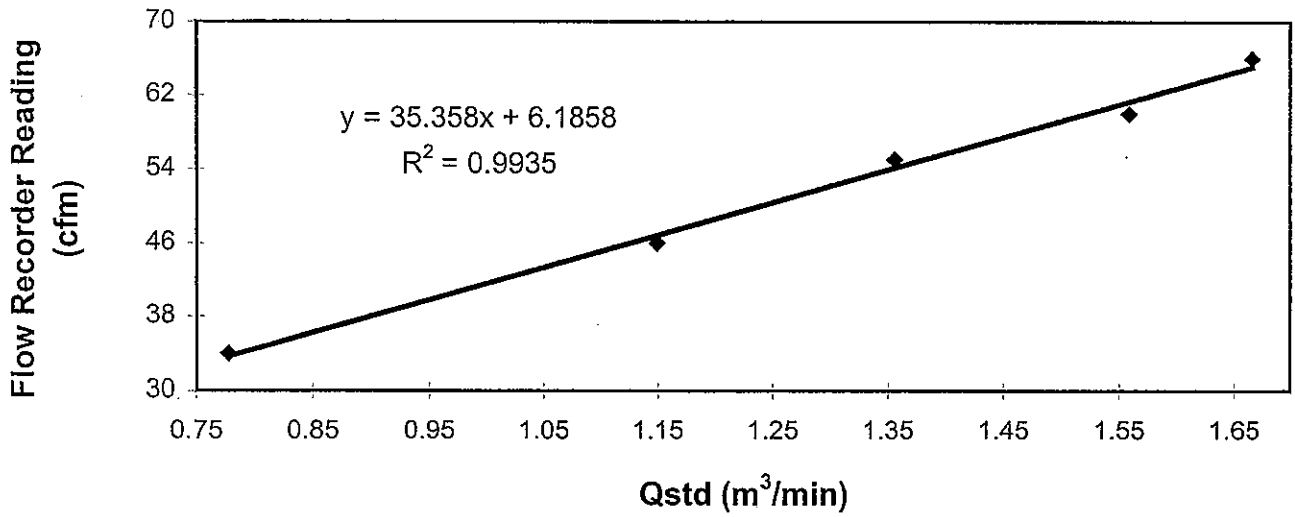
Calibration Due Date : 15 September 2005

Method : Based on Operations Manual for in series calibration method by TISCH ENVIROMENTAL Model Te-5025A calibration kit

Results :

Flow recorder reading (cfm)	66	60	55	46	34
Qstd (Actual flow rate, m^3/min)	1.67	1.56	1.36	1.15	0.78
Pressure : 754.56 mm Hg		Temp. : 300 K			

Air Sampler 10347 Calibration Curve
Site:Tseung Kwan O (AA1)
Date of Calibration: 16 July 2005



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 : _____
Felix Tin
(Technician)

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

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 : Greasby GMW

Date of Calibration : 16 July 2005

Serial No. : 1176 (EA/003/05)

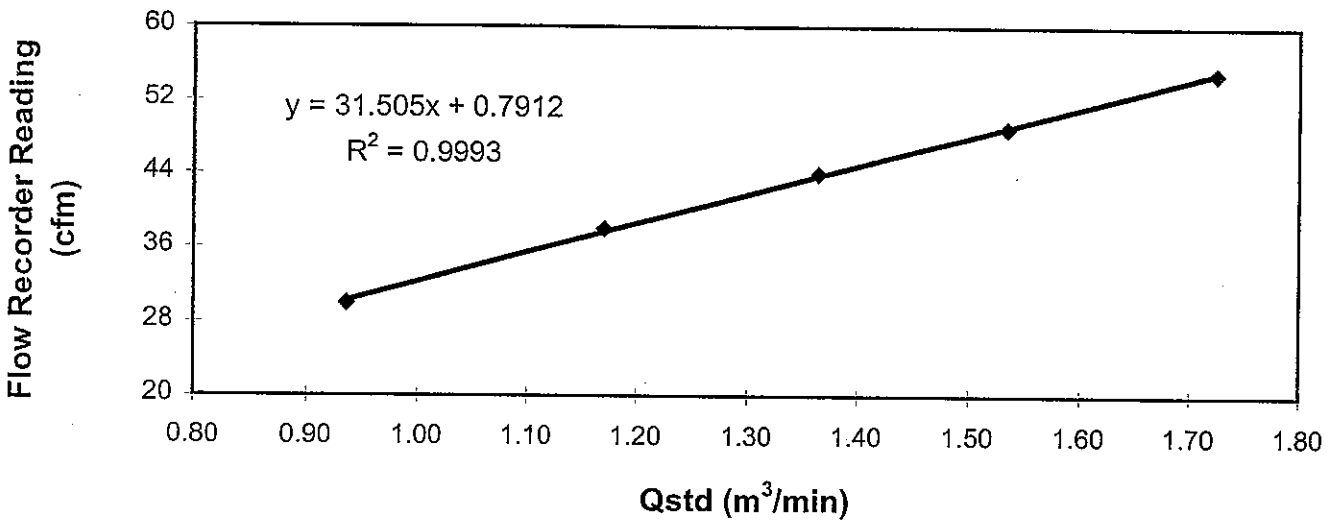
Calibration Due Date : 15 September 2005

Method : Based on Operations Manual for in series calibration method by TISCH ENVIROMENTAL Model Te-5025A calibration kit

Results :

Flow recorder reading (cfm)	55	49	44	38	30
Qstd (Actual flow rate, m^3/min)	1.72	1.53	1.37	1.17	0.94
Pressure : 754.56 mm Hg		Temp. : 300 K			

Air Sampler 1176 Calibration Curve
Site: Tseung Kwan O (AA2)
Date of Calibration: 16 July 2005



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 : Felix Tin (Technician)

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

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jun 24, 2005 Rootsmeter S/N 9833620 Ta (K) - 292
Operator Tisch Orifice I.D. - 0873 Pa (mm) - 761.24

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	1.4090	3.1	2.00
2	NA	NA	1.00	0.9980	6.2	4.00
3	NA	NA	1.00	0.8930	7.8	5.00
4	NA	NA	1.00	0.8510	8.6	5.50
5	NA	NA	1.00	0.7020	12.5	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0180	0.7225	1.4298		0.9959	0.7068	0.8759
1.0139	1.0159	2.0221		0.9919	0.9938	1.2387
1.0118	1.1330	2.2608		0.9898	1.1084	1.3849
1.0106	1.1876	2.3711		0.9887	1.1618	1.4525
1.0054	1.4322	2.8597		0.9835	1.4010	1.7518
Qstd slope (m) =		2.01640		Qa slope (m) =		1.26264
intercept (b) =		-0.02588		intercept (b) =		-0.01585
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

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

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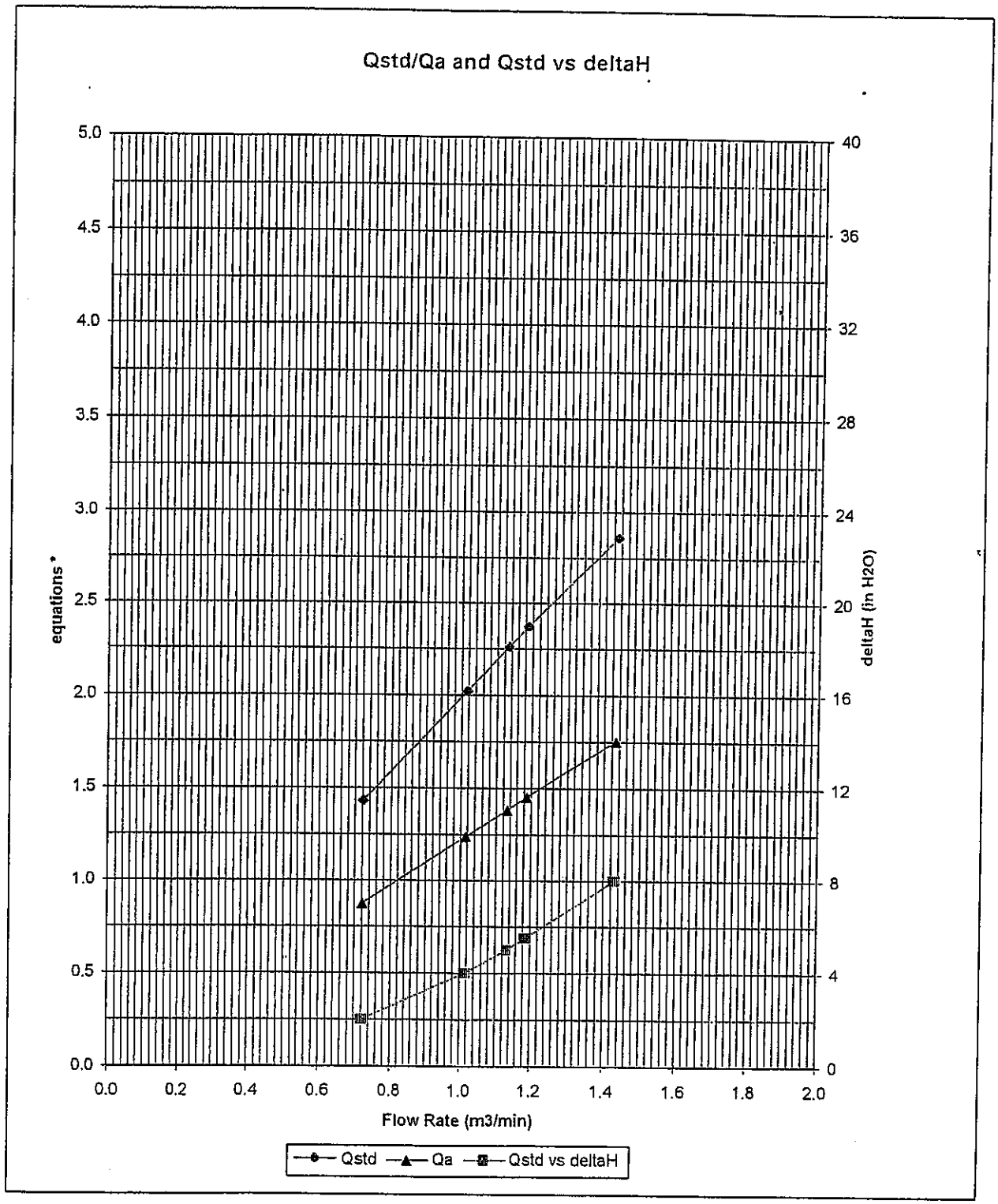
AIR POLLUTION MONITORING EQUIPMENT



*** y-axis equations:**

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

#0873

Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AA1
Location : Outside CEDD Site Office

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
05/07/05 *	09:00	06/07/05	09:00									80.2
20/07/05	15:28	21/07/05	15:28	7379.56	7403.56	24.00	1.52	1.52	1.52	2.8998	3.3428	202
26/07/05	14:15	27/07/05	14:24	7406.63	7430.83	24.20	1.66	1.66	1.66	2.8926	3.3891	206

Remark (*): The monitoring was carried out from the previous contract CV/2002/08 by Maunsell.

Monitoring Station : AA2
Location : Site Egress

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
05/07/05 *	09:00	06/07/05	09:00									50.9
20/07/05	15:39	21/07/05	15:39	10677.69	10701.69	24.00	1.09	1.09	1.09	2.9012	3.2303	210
26/07/05	14:15	27/07/05	14:15	10704.67	10728.67	24.00	1.09	1.09	1.09	2.9150	3.2195	194

Remark (*): The monitoring was carried out from the previous contract CV/2002/08 by Maunsell.

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AA1
Location : Outside CEDD Site Office

Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
06/07/05 *	09:00	10:00									123
	10:00	11:00									128
	11:00	09:00									128
20/07/05	11:30	12:30	7376.56	7377.56	1.00	1.52	1.52	1.52	2.9281	2.9621	372
	13:20	14:20	7377.56	7378.56	1.00	1.52	1.52	1.52	2.9198	2.9536	372
	14:23	15:23	7378.56	7379.56	1.00	1.52	1.52	1.52	2.9292	2.9629	370
26/07/05	09:45	10:47	7403.56	7404.59	1.03	1.52	1.52	1.52	2.8778	2.9111	355
	11:00	12:02	7404.59	7405.63	1.04	1.52	1.52	1.52	2.8983	2.9334	370
	13:00	14:00	7405.63	7406.63	1.00	1.52	1.52	1.52	2.9035	2.9329	322

Remark (*): The monitoring data was carried out from the previous contract by Maunsell.

Monitoring Station : AA2
Location : Site Egress

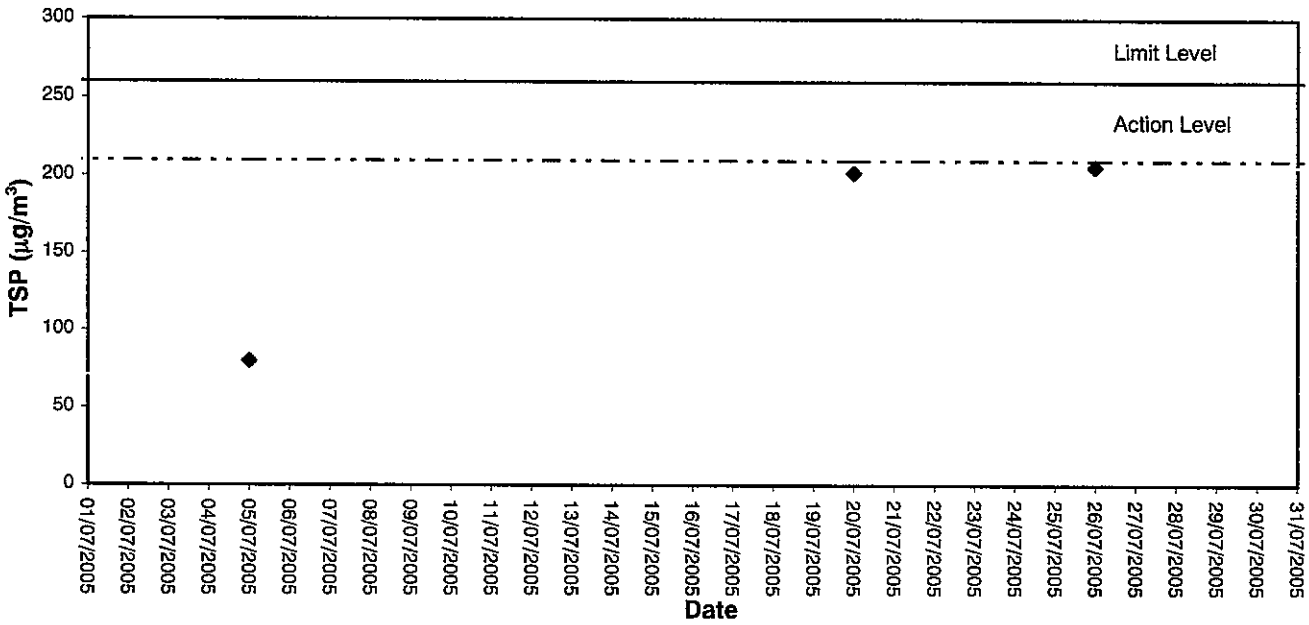
Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
05/07/05 *	09:00	10:00									112
	10:00	11:00									122
	11:00	12:00									118
20/07/05	11:30	12:30	10674.69	10675.69	1.00	1.09	1.09	1.09	2.9050	2.9288	364
	13:30	14:30	10675.69	10676.69	1.00	1.09	1.09	1.09	2.9031	2.9271	367
	14:35	15:35	10676.69	10677.69	1.00	1.09	1.09	1.09	2.9006	2.9242	361
26/07/05	09:45	10:44	10701.69	10702.68	0.99	1.05	1.05	1.05	2.9295	2.9488	309
	11:00	11:59	10702.68	10703.67	0.99	1.09	1.09	1.09	2.9066	2.9279	329
	13:00	14:00	10703.67	10704.67	1.00	1.09	1.09	1.09	2.9357	2.9557	306

Remark (*): The monitoring data was carried out from the previous contract CV/2002/08 by Maunsell.

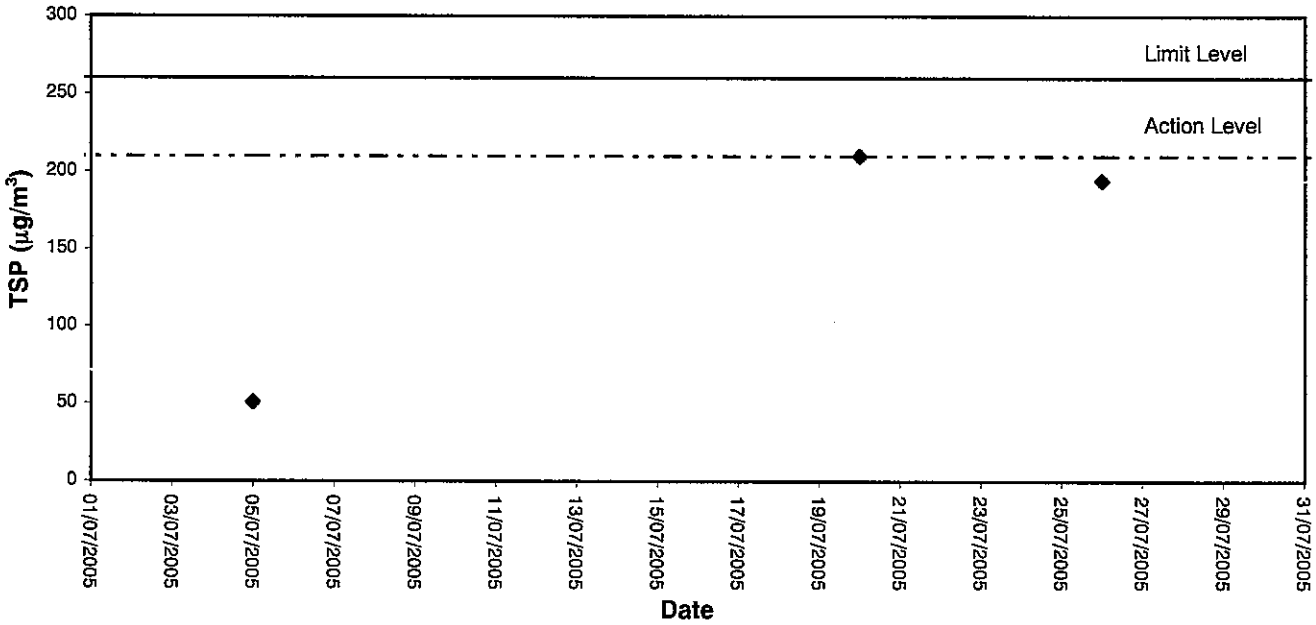
Appendix B3

Graphical Plots of Air Quality Monitoring Data

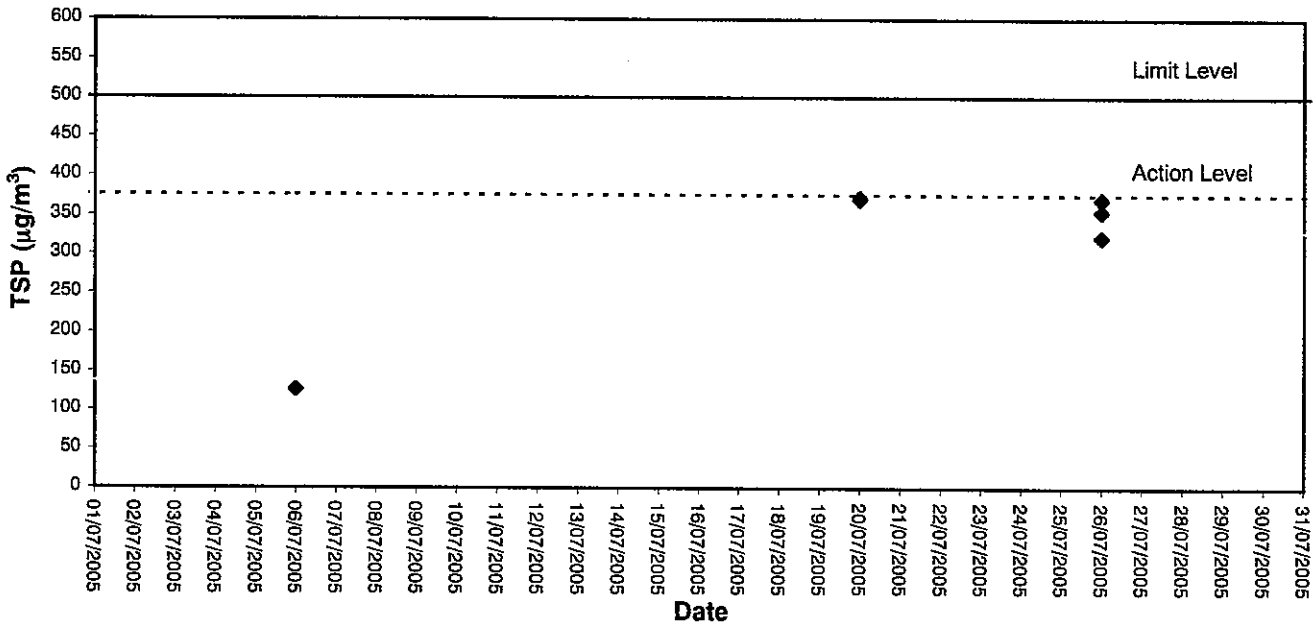
24-hour TSP level at AA1 (Outside CEDD Site Office)



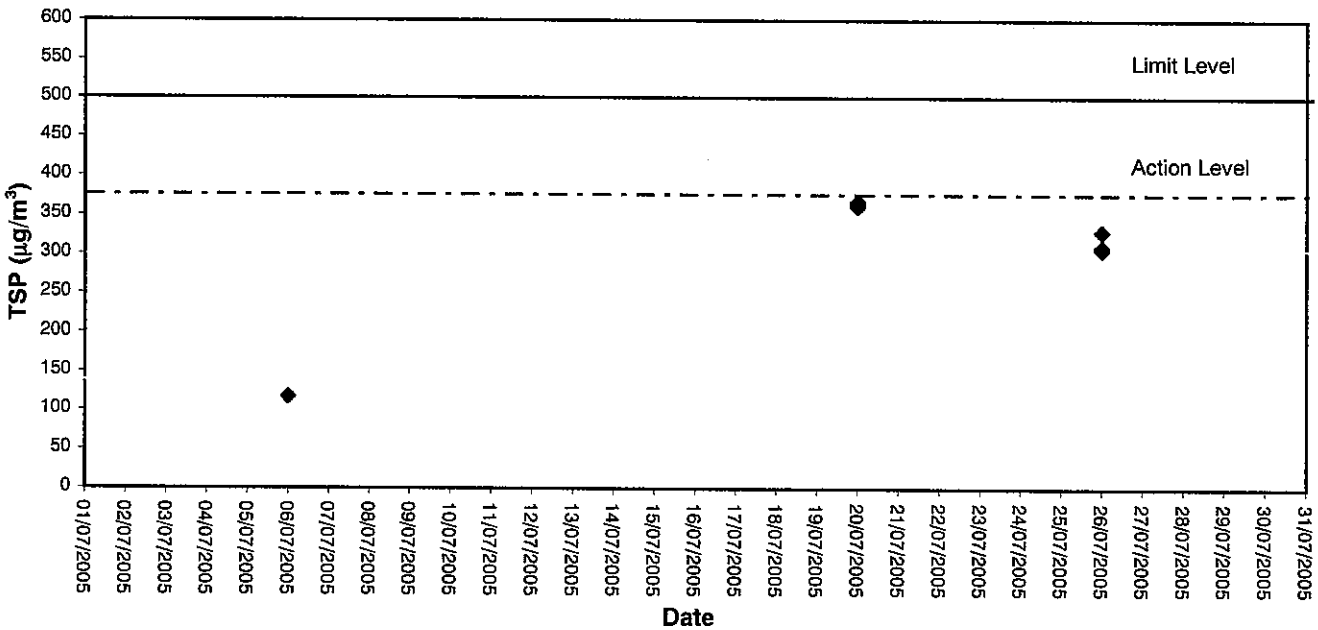
24-hour TSP level at AA2 (Site Egress)



1-hour TSP level at AA1 (Outside CEDD Site Office)



1-hour TSP level at AA2 (Site Egress)



Appendix C1

Calibration Certificates for Noise Monitoring Equipments

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. 51473

Customer : ETS-Testconsult Limited

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

Order No. : Q50535 **Date of receipt :** 7-Apr-05

Item Tested

Description : Sound Level Calibrator (Eqip No.: ET/0527/004)

Manufacturer : Rion

Model : NC-73 **Serial No. :** 10196943

Test Conditions

Date of Test : 20-Apr-05 **Supply Voltage :** --

Ambient Temperature : (22.5 ± 2.5)°C **Relative Humidity :** (50 ± 20) %

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

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

Test equipment used:

Equipment No.	Cert. No.	Due Date	Traceable to
S014	43147	7-Jul-05	PRC-NIM
S024	S41431	22-May-05	PRC-NIM
S041	43734	12-Aug-05	PRC-NIM

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

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

Calibrated by : _____ **Approved by :** _____
Alan Chu - Manager

Date: 20-Apr-05

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

Calibration Certificate

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.1 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.991 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %
Mfr's Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 000 hPa
4. The above measured values are the mean of 3 measurement.

---------- END ----------

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 51472

Customer : ETS-Testconsult Limited

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

Order No. : Q50535 **Date of receipt :** 7-Apr-05

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00531142

Test Conditions

Date of Test : 20-Apr-05 **Supply Voltage :** --

Ambient Temperature : (22.5 ± 2.5)°C **Relative Humidity :** (50 ± 20) %

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : Z01.

Test Results

All results were within the manufacturer's, IEC 651 Type 1, IEC 804 Type 1 specification.

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

Test equipment used:

Equipment No.	Cert. No.	Due Date	Traceable to
S017	C051022	21-Mar-06	PRC-NIM
S024	S41431	22-May-05	PRC-NIM

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

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

Calibrated by : _____ **Approved by :** _____
Alan Chu - Manager

Date: 20-Apr-05

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

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			UUT Reading (dB)	Correction (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L_C	Fast		0.0
	Lp	Fast		0.0
30 – 120	L_A	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L_C	Fast		+ 0.1
	Lp	Fast		+ 0.1
30 – 120	L_A	Fast	114.0	+ 0.1
		Slow		+ 0.1
	L_C	Fast		0.0
	Lp	Fast		0.0

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.01 dB

Calibration Certificate

3. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.6	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.2	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.3	+ 1.2 dB, ± 1 dB
5 kHz	+ 1.1	+ 1.0 dB ,± 1 dB
8 kHz	- 1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

4. Time Averaging

Applied Burst duty Factor	UUT Reading (dB)	Correction (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	39.9	+ 0.1	± 0.5 dB
$1/10^2$	39.9	+ 0.1	
$1/10^3$	39.9	+ 0.1	± 1.0 dB
$1/10^4$	39.8	+ 0.2	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. True Value = UUT Reading + Correction.
3. The uncertainty claimed is for a confidence probability of not less than 95%.
4. Atmospheric Pressure : 1 000 hPa.

---------- END ----------

Appendix C2

Noise Monitoring Results

Day-time Noise Monitoring

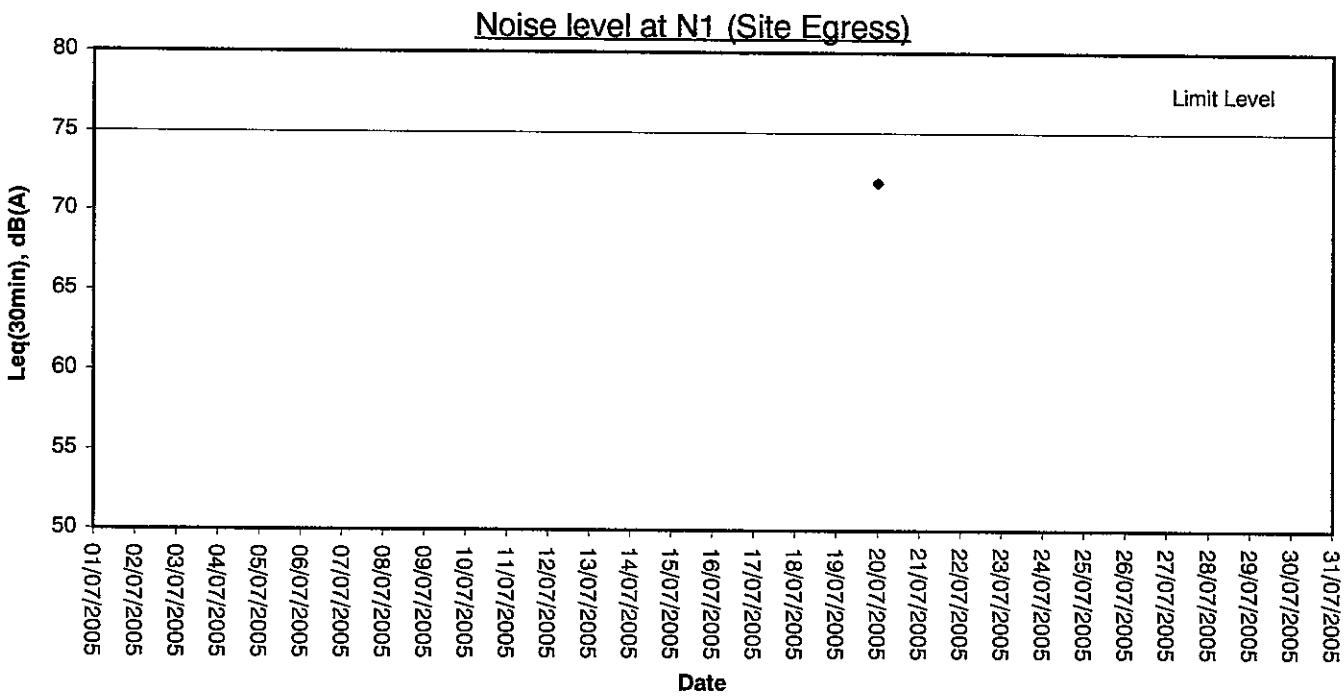
Monitoring Location: N1 (Site Egress)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L_{10}	L_{90}		
20/07/05	13:38	71.8	73.0	58.7	4.1	Cloudy

Appendix C3

Graphical Plots of Noise Monitoring Data

Noise Monitoring (Day-time)



Appendix D1

Calibration Certificates for Marine Water Quality Monitoring Equipments

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No.	:	ET/EW/003/001	Manufacturer	:	YSI
Model No.	:	9X	Serial No.	:	97H 0407IAD
Date of Calibration	:	01/06/05	Calibration Due Date	:	31/08/05

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

Lineality 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	7.10	7.08	7.09	7.00	6.98	6.99	1.42
5	5.10	5.08	5.09	5.11	5.09	5.10	0.20
10	3.33	3.31	3.32	3.21	3.19	3.20	3.68
Linear regression coefficient				0.9987			

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	6.84	6.86	6.85	6.82	6.84	6.83	0.29
30	6.19	6.17	6.18	6.11	6.09	6.10	1.30

Acceptance Criteria

(1) Differenc 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 : Linda Lam

Approved by : [signature]

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Internal Calibration Report of Turbidimeter

Equipment Ref. No. : ET/0585/002 Manufacturer : HACH

Model No. : 2100P Serial No. : 9309000003728

Date of Calibration : 27/4/05 Calibration Due : 26/7/05

Data

(4.95) 0 - 10 NTU Gelex Vial	(49.0) 10 - 100 NTU Gelex Vial	(409) 100 - 1000 NTU Gelex Vial
4.92	48.3	405

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

* Delete as appropriate

Calibrated by : RK Approved by : [illegible]

Internal Calibration Report of Turbidimeter

Equipment Ref. No. : ET/0505/002 Manufacturer : HACH

Model No. : 2100P Serial No. : 9309000037 28

Date of Calibration : 27/7/05 Calibration Due : 26/10/05

Data

(4.95)	(49.0)	(409)
0 - 10 NTU Gelex Vial	10 - 100 NTU Gelex Vial	100 - 1000 NTU Gelex Vial
4.96	48.1	411

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

* Delete as appropriate

Calibrated by : [signature] Approved by : [signature]

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Salinity Meter

Equipment Ref. No. : ET/0527/001 Manufacturer : YSI

Model No. : Model 30 Serial No. : 9967 1183

Date of Calibration : 27 July 2005 Due Date : 26 Oct. 2005

Ref. No. of Salinity Standard used (30ppt)	J196A

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.6	1.3

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 : RL Approved by : Linda Law

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Salinity Meter

Equipment Ref. No. :	ET/057/001	Manufacturer :	YSI
Model No. :	Model 30	Serial No. :	99G 1183
Date of Calibration :	27 Apr 2005	Due Date :	26 July 2005

Ref. No. of Salinity Standard used (30ppt)	J196A

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.8	0.7

Acceptance Criteria

Difference : <10 %

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

Checked by : _____ Approved by : _____

Appendix D2

Impact Marine Water Quality Monitoring Results

Date: 02-07-05

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	16:32	Fine	18.6	28.9	25.9	27.2	22.7	22.9	22.8	31.1	30.8	31.0	34.4	34.6	34.5	7.89	7.90	7.90	4.33	4.63	4.48	6.19	2.65	2.54	2.60	111.3	111.7	111.5	60.2	64.5	62.4	39.8	38.1	39.0	1.32	1.37	1.30	1.46	1.51	1.50	3.07	3.14	3.10	2.00	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0	6.0	7.0
M4	15:43	Fine	9.2	28.9	26.2	25.5	23.0	22.8	22.9	30.6	30.9	30.8	31.4	31.7	31.6	8.06	7.72	7.89	6.37	6.32	6.35	7.12	5.47	4.97	5.22	113.9	110.0	112.0	90.2	89.1	89.7	77.4	71.6	74.5	1.17	1.19	1.20	1.21	1.17	1.20	1.08	1.03	1.00	1.10	6.0	6.0	6.0	5.0	5.0	5.0	9.0	9.0	9.0	6.7

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	10:21	Fine	18.9	26.9	23.8	28.2	23.3	23.4	23.4	30.0	30.2	30.1	33.9	34.0	34.0	7.67	7.59	7.63	4.36	4.35	4.36	6.00	2.74	2.68	2.71	110.9	108.7	109.8	61.5	61.1	61.3	41.4	40.0	40.7	1.13	1.09	1.11	1.11	1.17	1.14	2.23	2.41	2.32	1.50	5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0	4.3
M4	9:34	Fine	9.4	27.1	23.9	23.4	23.4	23.5	23.5	30.1	30.1	30.1	30.4	30.5	30.5	7.50	7.58	7.54	7.14	6.86	7.00	7.27	4.75	4.83	4.79	107.4	108.0	107.7	101.3	98.2	99.8	67.1	68.5	67.8	1.20	1.27	1.24	1.35	1.41	1.38	2.14	2.06	2.10	1.50	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.3

Date: 04-07-05

東業檢勘測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	16:07	Sunny	19.7	29.5	25.0	24.0	22.2	21.9	22.1	28.4	29.1	28.8	34.6	35.1	34.9	9.10	9.29	9.20	6.73	6.84	6.79	8.00	2.33	2.67	2.50	129.9	134.8	132.4	96.7	99.8	98.3	33.6	39.7	36.7	1.30	1.02	1.00	1.00	0.98	1.00	1.00	1.71	1.84	1.80	1.30	6.0	6.0	6.0	10	10	10	6.0	6.0	6.0	7.3
M4	17:26	Sunny	9.4	29.8	27.4	25.1	22.7	22.4	22.6	28.8	28.6	28.7	28.9	28.1	28.5	9.22	9.28	9.25	8.01	7.64	7.83	8.54	7.71	7.83	7.77	138.4	134.7	136.6	108.7	110.3	109.5	105.6	112.1	108.9	1.20	1.07	1.01	1.00	1.09	1.14	1.10	1.46	1.44	1.50	1.20	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0	4.7

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	10:46	Sunny	20.6	28.4	25.0	23.8	22.7	22.9	22.8	28.6	28.3	29.0	33.0	33.2	33.1	9.34	9.41	9.38	6.88	6.93	6.91	8.15	3.06	2.69	2.88	135.3	139.4	137.4	98.3	101.7	100.0	44.1	38.6	41.4	1.30	0.99	1.01	1.00	1.14	1.21	1.18	1.67	1.69	1.68	1.30	6.0	6.0	6.0	4.0	4.0	4.0	6.0	6.0	6.0	5.3
M4	11:28	Sunny	9.9	28.6	26.7	24.3	22.9	22.9	22.9	29.1	29.3	29.2	29.9	30.1	30.0	9.27	9.36	9.32	6.92	6.87	6.90	8.11	6.21	6.10	6.16	140.1	138.7	139.4	100.4	101.7	101.1	87.2	84.3	85.8	1.20	0.94	0.98	0.96	1.12	1.21	1.17	1.34	1.37	1.36	1.20	7.0	7.0	7.0	9.0	9.0	9.0	6.0	6.0	6.0	7.3

Date: 06-07-05

東業儀勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	19:13	Fine	19.7	26.9	27.5	26.2	23.4	23.6	23.5	2.1	26.8	14.5	33.4	33.9	33.7	12.8	12.8	12.8	8.88	8.79	8.84	10.82	3.33	3.41	3.37	187.7	190.3	189.0	132.4	124.7	128.6	41.8	43.8	42.8	1.50	1.61	1.60	1.34	1.38	1.40	1.56	1.71	1.60	1.50	9.0	9.0	9.0	9.0	9.0	9	12	12	12	10
M4	16:21	Fine	9.8	28.8	28.2	27.6	23.3	23.2	23.3	29.1	29.8	29.0	31.6	32.4	32.0	12.7	12.7	12.7	8.61	8.73	8.67	10.69	8.64	8.67	8.66	184.6	180.9	182.8	119.1	124.7	121.9	126.3	127.7	127.0	1.50	1.41	1.40	1.49	1.56	1.50	1.63	1.66	1.60	1.50	10	10	10	10	10	10	16	16	16	12

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	12:40	Sunny	19.4	27.2	26.7	25.9	25.1	25.3	25.2	26.7	26.8	26.8	32.7	33.1	32.9	12.8	12.8	12.8	8.76	8.64	8.70	10.76	3.61	3.44	3.53	192.4	186.7	189.6	123.8	118.2	121.0	47.8	43.2	45.5	1.50	1.57	1.56	1.21	1.20	1.21	1.69	1.70	1.70	1.50	7.0	7.0	7.0	10	10	10	6.0	6.0	6.0	7.7
M4	11:52	Sunny	9.5	27.4	27.5	26.9	25.2	25.3	25.3	26.1	26.1	26.1	26.7	26.8	26.8	12.7	12.7	12.7	8.92	8.83	8.88	10.81	8.61	8.67	8.64	186.3	183.7	185.0	129.6	128.4	129.0	119.4	121.1	120.3	1.72	1.61	1.67	1.64	1.67	1.66	1.57	1.59	1.58	1.60	12	12	12	8.0	8.0	8.0	12	12	12	11

Date: 18-07-05

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)										Dissolved Oxygen Saturation, DOS (%)										Turbidity (NTU)										Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	16:55 - 17:07	32 / Sunny	20.4	26.8	26.3	24.0	28.6	28.6	28.6	33.0	33.0	33.0	33.9	33.9	33.9	7.22	7.12	7.17	6.72	6.62	6.67	6.92	7.10	7.00	7.05	105.9	105.0	105.5	98.6	98.0	98.3	104.2	103.2	103.7		3.71	3.61	3.70	3.59	3.50	3.50	3.62	3.52	3.60	3.60	6.2	6.2	6.2	6.0	6.0	6.0	6.4	6.4	6.4	6.2
M4	16:15 - 16:27	32 / Sunny	8.4	27.0	26.4	24.2	29.1	29.1	29.1	29.9	29.9	29.9	33.1	33.1	33.1	7.38	7.30	7.34	6.89	6.80	6.85	7.10	7.03	6.93	6.98	108.4	107.4	107.9	101.1	100.1	100.6	103.2	102.2	102.7		2.79	2.70	2.70	2.60	2.50	2.60	3.14	3.04	3.10	2.80	5.0	5.0	5.0	4.8	4.8	4.8	5.2	5.2	5.2	5.0

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)										Dissolved Oxygen Saturation, DOS (%)										Turbidity (NTU)										Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	09:45 - 09:57	32 / Sunny	19.4	26.4	23.7	23.2	28.8	28.8	28.8	33.1	33.1	33.1	34.3	34.3	34.3	7.46	7.36	7.41	6.59	6.50	6.55	6.98	7.36	7.26	7.31	107.3	106.3	106.8	100.9	100.0	100.5	102.3	101.2	101.8		3.28	3.20	3.24	3.41	3.31	3.36	3.91	3.81	3.86	3.50	5.2	5.0	5.1	5.5	5.4	5.5	6.6	6.6	6.6	5.7
M4	09:00 - 09:13	32 / Sunny	8.0	27.6	26.1	23.7	28.9	28.9	28.9	29.1	29.1	29.1	33.6	33.6	33.6	7.46	7.40	7.43	6.93	6.83	6.88	7.16	7.11	7.01	7.06	109.8	109.0	109.4	100.1	99.1	99.6	101.4	100.4	100.9		2.53	2.43	2.48	2.71	2.61	2.66	5.10	5.00	5.05	3.40	4.2	4.0	4.1	4.5	4.5	4.5	10	10	10	6.2

Date: 20-07-05

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	16:40 - 16:55	32 / Cloudy	21	26.6	24.7	24.0	32.3	32.3	32.3	33.8	33.8	33.8	34.0	34.0	34.0	7.17	7.10	7.14	6.31	6.21	6.26	6.70	5.80	5.70	5.75	106.5	105.5	106.0	93.7	93.0	93.4	84.6	84.0	84.4	2.46	2.40	2.40	2.27	2.20	2.20	2.66	2.60	2.60	2.40	4.8	4.6	4.7	4.2	4.2	4.2	5.5	5.4	5.5	4.8
M4	17:25 - 17:39	32 / Cloudy	9.0	26.5	24.4	24.0	32.7	32.7	32.7	34.0	34.0	34.0	34.3	34.3	34.3	7.58	7.50	7.54	6.37	6.30	6.34	6.94	5.96	5.90	5.93	112.6	111.6	112.1	92.7	92.0	92.4	87.1	86.1	86.6	2.29	2.20	2.20	1.99	1.90	1.90	2.89	2.80	2.80	2.30	4.4	4.3	4.4	3.8	3.6	3.7	5.0	5.0	5.0	4.4

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	09:25 - 09:40	32 / Cloudy	19.6	26.2	24.3	23.4	32.1	32.0	32.1	33.6	33.6	33.6	33.8	33.8	33.8	7.34	7.24	7.29	6.13	6.03	6.08	6.69	5.92	5.82	5.87	108.9	108.0	108.5	88.9	88.0	88.5	85.3	84.3	84.8	2.31	2.21	2.26	2.00	1.90	1.95	2.58	2.50	2.54	2.30	4.2	4.1	4.2	3.8	3.6	3.7	5.0	5.0	5.0	4.3
M4	09:56 - 10:10	32 / Cloudy	9.8	26.2	24.2	24.3	32.2	32.2	32.2	34.2	34.1	34.2	34.5	34.5	34.5	7.45	7.35	7.40	6.1	6.0	6.00	6.70	5.71	5.61	5.66	110.7	109.7	110.2	88.1	87.1	87.6	83.5	82.5	83.0	2.12	2.02	2.07	1.81	1.71	1.76	2.09	2.00	2.05	2.00	4.0	4.0	4.0	3.5	3.5	3.5	4.0	4.0	4.0	3.8

Date: 22-07-05

東業檢勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)										Dissolved Oxygen Saturation, DOS (%)										Turbidity (NTU)										Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	19:00 - 19:10	28/Rainy	20.2	27.2	23.5	23.2	27.9	27.7	27.8	33.0	33.0	33.0	33.4	33.4	33.4	7.46	7.43	7.45	6.61	6.65	6.63	7.04	6.46	6.50	6.48	106.6	106.2	106.4	94.5	94.8	94.7	92.3	92.8	92.6	2.87	2.88	2.90	2.96	2.95	3.00	3.10	3.12	3.10	3.00	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.2
M4	19:50 - 20:00	28/Rainy	8.2	27.4	23.6	23.3	27.8	27.8	27.8	32.8	32.8	32.8	33.2	33.2	33.2	7.60	7.57	7.59	6.74	6.77	6.76	7.18	6.59	6.62	6.61	107.9	107.4	107.7	95.7	96.1	95.9	93.5	94.0	93.8	2.69	2.70	2.70	2.58	2.59	2.60	2.87	2.88	2.90	2.70	4.5	4.5	4.5	4.5	4.5	4.5	4.8	4.8	4.8	4.6

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)										Dissolved Oxygen Saturation, DOS (%)										Turbidity (NTU)										Suspended Solids, SS (mg/L)									
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	12:00 - 12:12	28/Rainy	19.6	27.5	24.0	23.4	27.9	27.9	27.9	32.9	32.9	32.9	33.5	33.5	33.5	7.69	7.73	7.71	6.45	6.48	6.47	7.09	6.67	6.83	6.85	109.9	110.4	110.2	92.3	92.7	92.5	98.5	98.0	98.3	2.96	2.97	2.97	2.82	2.83	2.83	3.36	3.37	3.37	3.10	5.0	5.0	5.0	4.8	4.8	4.8	6.3	6.3	6.3	5.4
M4	12:50 - 13:00	28/Rainy	8	27.8	24.9	23.8	27.8	27.8	27.8	32.6	32.6	32.6	33.8	33.8	33.8	7.58	7.54	7.56	6.52	6.55	6.54	7.05	6.68	6.65	6.67	108.6	108.2	108.4	93.2	93.6	93.4	95.5	95.0	95.3	2.42	2.43	2.43	2.77	2.78	2.78	3.06	3.05	3.06	2.80	4.5	4.5	4.5	5.0	4.7	4.9	5.7	5.7	5.7	5.0

Date: 25-07-05

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	07:30 - 07:42	33 / Sunny	20	25.8	24.2	23.6	31.9	31.9	31.9	33.0	33.0	33.0	33.4	33.4	33.4	7.14	7.18	7.16	6.79	6.75	6.77	6.97	6.80	6.84	6.82	105.6	106.2	105.9	100.4	99.9	100.2	100.6	101.2	100.9	2.65	2.67	2.70	2.84	2.85	2.80	2.26	2.27	2.30	2.60	4.5	4.5	4.5	4.8	4.7	4.8	4.0	4.0	4.0	4.4
M4	08:12 - 08:25	33 / Sunny	8.6	26.2	24.5	24.0	32.1	32.1	32.1	33.2	33.2	33.2	33.4	33.4	33.4	7.27	7.24	7.26	6.82	6.80	6.81	7.04	6.60	6.63	6.62	107.5	107.1	107.3	100.9	100.6	100.8	97.6	98.1	97.9	2.97	2.98	3.00	2.60	2.61	2.60	3.01	3.02	3.00	2.90	5.0	5.0	5.0	4.5	4.5	4.5	6.0	6.0	6.0	5.2

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
							S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
				S	M	B	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	14:15 - 14:28	33 / Sunny	19.6	26.9	25.0	24.1	32.2	32.2	32.2	33.4	33.4	33.4	33.6	33.6	33.6	7.09	7.12	7.11	6.64	6.61	6.63	6.87	6.42	6.39	6.41	104.9	105.3	105.1	98.2	97.8	98.0	95.0	94.5	94.8	2.97	2.98	2.98	2.43	2.44	2.44	2.72	2.71	2.72	2.70	6.0	6.0	6.0	4.5	4.5	4.5	5.0	5.0	5.0	5.2
M4	14:58 - 15:10	33 / Sunny	8.2	27.0	25.2	24.6	32.2	32.2	32.2	33.4	33.4	33.4	33.6	33.6	33.6	7.11	7.08	7.10	6.70	6.73	6.72	6.91	6.63	6.60	6.62	105.2	104.7	105.0	99.1	99.6	99.4	98.1	97.6	97.9	3.04	3.06	3.05	2.81	2.80	2.81	2.96	2.97	2.97	2.90	6.5	6.5	6.5	5.0	5.0	5.0	6.3	6.3	6.3	5.9

Date: 27-07-05

ETS-TESTCONSULT LIMITED 東業德勤測試顧問有限公司

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C) S	Water Temp (°C) M	Water Temp (°C) B	Salinity (ppt) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.
C1	09:30 - 09:45	33 / Sunny	20	24.8	24.2	23.4	32.6	32.5	32.6	33.0	33.1	33.1	33.4	33.3	33.4
M4	10:00 - 10:15	33 / Sunny	9.0	25.2	24.7	24.2	32.2	32.3	32.3	33.8	33.7	33.8	34.2	34.1	34.2

Station	Dissolved Oxygen, DO (mg/L) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	Depth Ave. (S&M)	B 1st	B 2nd	B Ave.	Dissolved Oxygen Saturation, DOS (%) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.
C1	7.26	7.18	7.22	6.29	6.21	6.25	6.74	5.97	5.91	5.94	107.4	106.3	106.9	93.1	91.9	92.5	88.4	87.5	88.0
M4	7.32	7.24	7.28	6.34	6.26	6.30	6.79	6.10	6.02	6.06	108.3	107.2	107.8	93.8	92.6	93.2	90.3	89.1	89.7

Station	Turbidity (NTU) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.	Depth Ave. (S,M,B)	Suspended Solids, SS (mg/L) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.	Depth Ave. (S,M,B)
C1	2.09	2.07	2.10	1.83	1.82	1.80	2.02	2.01	2.00	2.00	4.0	4.3	4.2	3.8	3.8	3.8	4.0	4.0	4.0	4.0
M4	2.25	2.25	2.30	1.94	1.94	1.90	2.13	3.14	2.60	2.30	4.5	4.5	4.5	4.0	4.0	4.0	4.5	4.5	4.5	4.3

Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C) S	Water Temp (°C) M	Water Temp (°C) B	Salinity (ppt) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.
C1	14:45 - 16:00	33 / Sunny	21	25.3	24.6	24.1	32.4	32.3	32.4	33.5	33.4	33.5	34.1	34.0	34.1
M4	16:28 - 16:43	33 / Sunny	9.2	25.1	24.7	24.3	31.8	31.9	31.9	33.2	33.1	33.2	33.8	33.8	33.8

Station	Dissolved Oxygen, DO (mg/L) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	Depth Ave. (S&M)	B 1st	B 2nd	B Ave.	Dissolved Oxygen Saturation, DOS (%) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.
C1	7.06	6.96	7.01	6.14	6.08	6.11	6.56	5.87	5.93	5.90	104.3	103.0	103.7	90.9	90.0	90.5	86.8	87.8	87.3
M4	7.46	7.38	7.42	6.25	6.19	6.22	6.82	5.91	5.99	5.95	110.4	109.2	109.8	92.5	91.6	92.1	87.5	88.7	88.1

Station	Turbidity (NTU) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.	Depth Ave. (S,M,B)	Suspended Solids, SS (mg/L) S 1st	S 2nd	S Ave.	M 1st	M 2nd	M Ave.	B 1st	B 2nd	B Ave.	Depth Ave. (S,M,B)
C1	2.38	2.37	2.38	2.19	2.19	2.19	2.51	2.50	2.51	2.40	5.0	4.7	4.9	4.5	4.5	4.5	5.0	5.0	5.0	4.8
M4	2.16	2.16	2.16	1.83	1.84	1.84	2.42	2.40	2.41	2.10	4.5	4.5	4.5	4.0	4.0	4.0	5.0	5.0	5.0	4.5

Date: 29-07-05

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Mid-Flood

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
				S	M	B	S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
							1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	12:30 - 12:40	30 / Cloudy	19.2	27.3	26.6	26.7	31.7	31.4	31.6	32.3	32.0	32.2	31.7	31.7	31.7	7.30	7.29	7.30	7.26	7.29	7.28	7.29	7.24	7.21	7.23	110.0	110.0	110.0	108.8	109.4	109.1	108.2	107.9	108.1	1.60	1.69	1.65	1.70	1.60	1.59	1.60	1.55	1.57	1.60	1.60	3.0	3.0	3.0	2.8	2.7	2.8	2.8	2.7	2.8	2.9
M4	13:05 - 13:17	30 / Cloudy	8.0	27.3	27.3	27.2	31.5	31.7	31.6	31.8	31.9	31.9	31.3	31.8	31.6	7.14	7.17	7.16	7.10	7.16	7.13	7.15	7.15	7.12	7.14	107.1	108.2	107.7	107.1	107.8	107.5	107.7	107.2	107.5	2.30	1.74	1.78	1.80	1.28	1.30	1.30	3.83	3.79	3.80	2.30	3.2	3.2	3.2	2.5	2.5	2.5	6.0	6.0	6.0	3.9

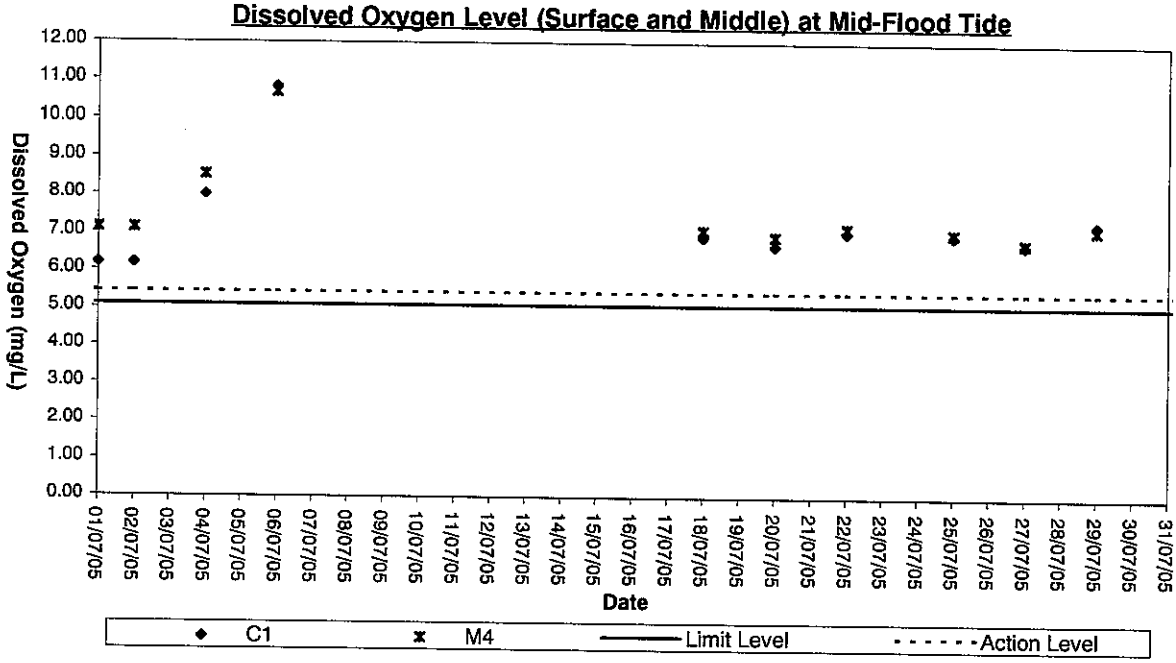
Mid-Ebb

Station	Duration	Ambient Temp (°C) / Weather Condition	Water Depth (m)	Water Temp (°C)			Salinity (ppt)									Dissolved Oxygen, DO (mg/L)									Dissolved Oxygen Saturation, DOS (%)									Turbidity (NTU)									Suspended Solids, SS (mg/L)								
				S	M	B	S			M			B			S			M			Depth Ave. (S&M)	B			S			M			B			Depth Ave. (S,M,B)	S			M			B			Depth Ave. (S,M,B)
							1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.		1st	2nd	Ave.	1st	2nd	Ave.	1st	2nd	Ave.	
C1	17:45 - 17:55	30 / Cloudy	19.8	27.5	26.4	26.5	31.6	31.6	31.6	32.4	32.3	32.4	31.8	31.8	31.8	7.39	7.36	7.38	7.18	7.22	7.20	7.29	7.31	7.27	7.29	110.8	110.5	110.7	106.9	107.3	107.1	108.9	108.5	108.7	1.60	1.72	1.74	1.73	1.58	1.59	1.59	1.47	1.49	1.48	1.60	3.0	3.0	3.0	3.0	3.0	3.0	2.7	2.8	2.8	2.9
M4	18:25 - 18:37	30 / Cloudy	8.4	27.5	26.4	26.5	31.5	31.5	31.5	31.9	31.9	31.9	31.4	31.6	31.5	7.11	7.14	7.13	7.05	7.08	7.07	7.10	7.19	7.15	7.17	106.6	106.9	106.8	105.0	105.4	105.2	107.8	107.3	107.6	2.00	1.68	1.69	1.69	1.42	1.44	1.43	2.87	2.89	2.88	2.00	3.0	3.0	3.0	2.5	2.5	2.5	5.0	5.0	5.0	3.5

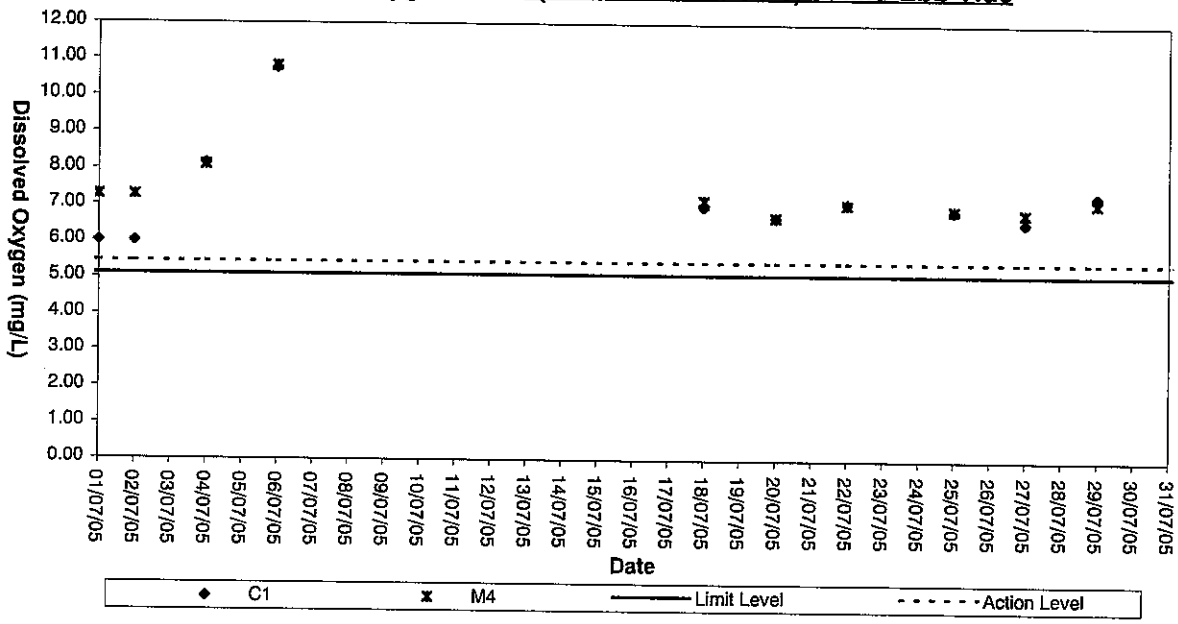
Appendix D3

Graphical Plots of Impact Marine Water Quality Monitoring Data

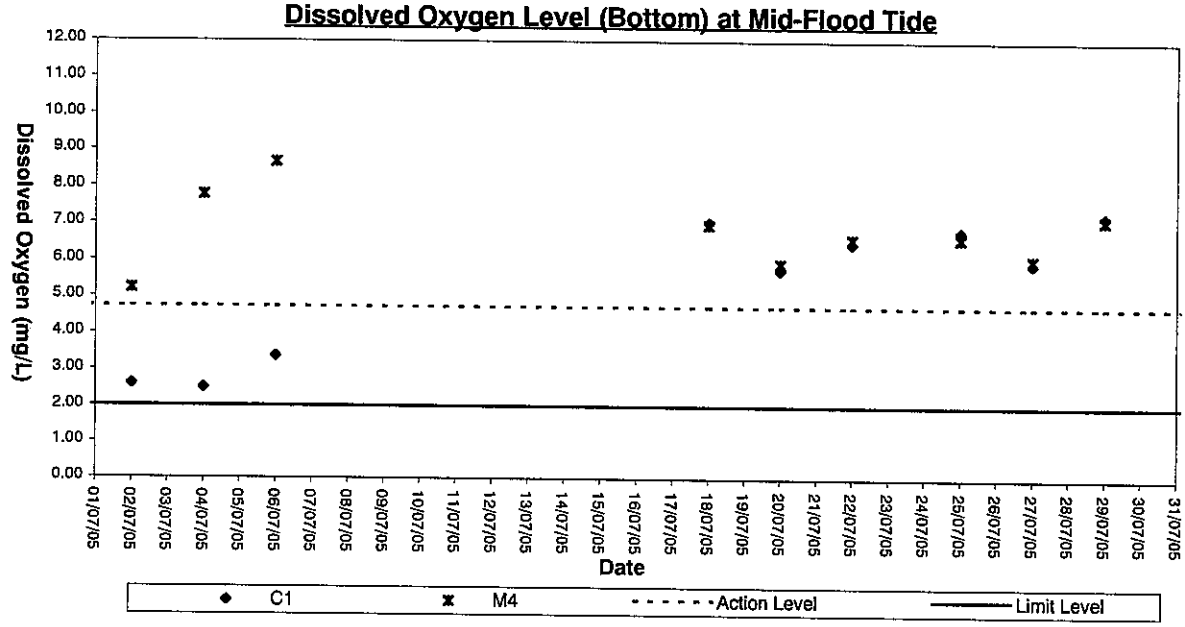
Dissolved Oxygen Level (Surface and Middle) at Mid-Flood Tide



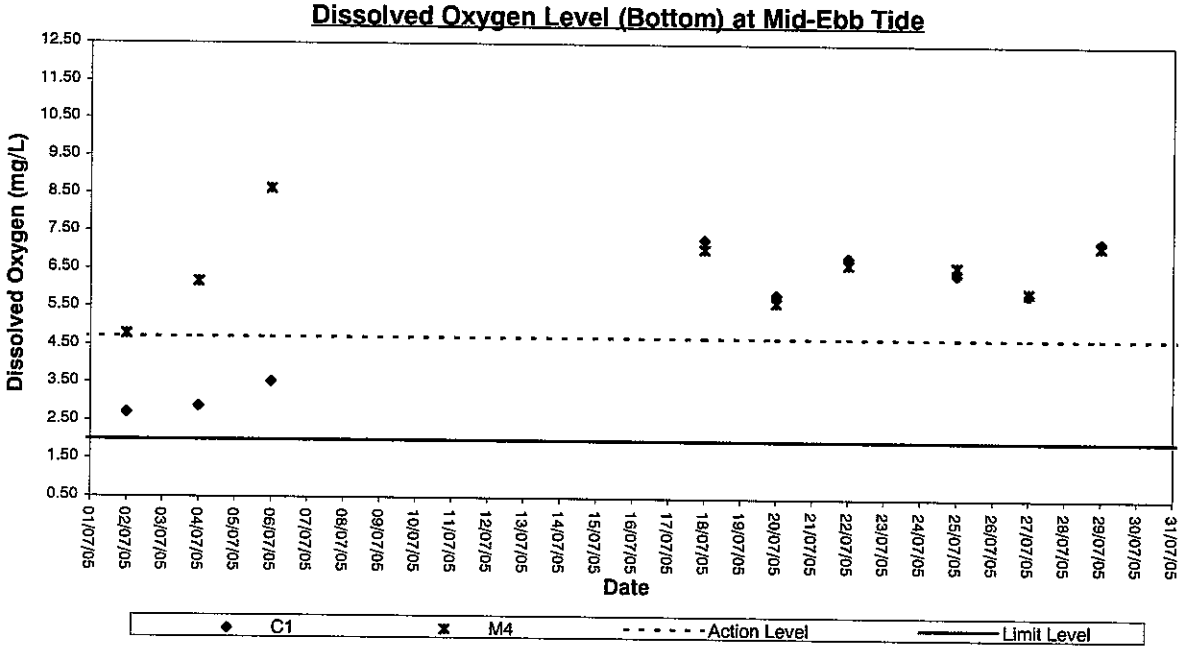
Dissolved Oxygen Level (Surface and Middle) at Mid-Ebb Tide



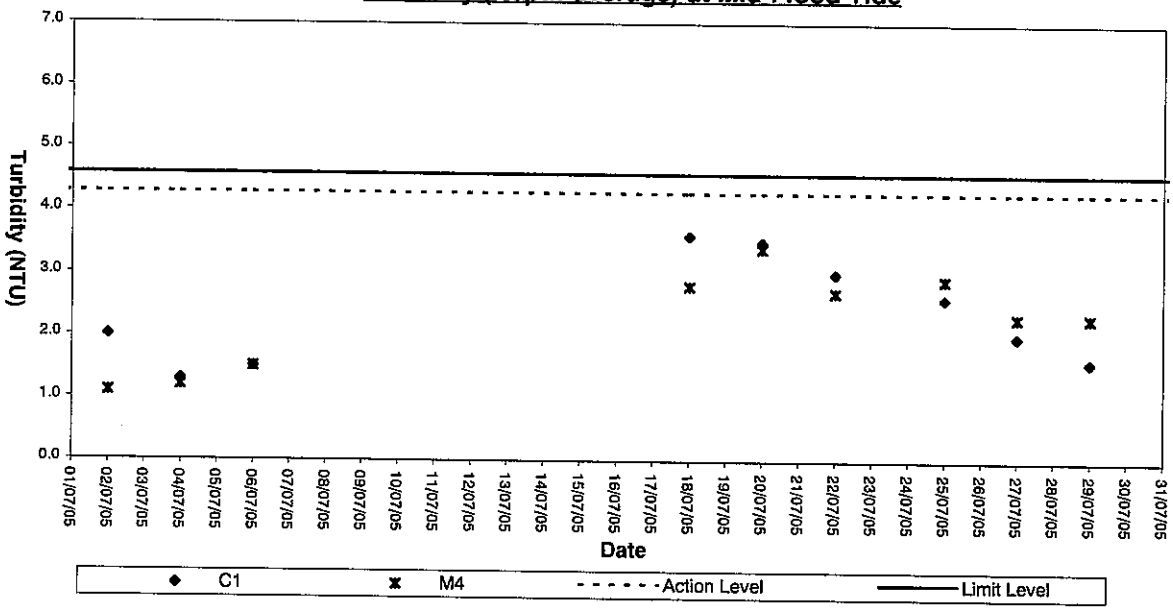
Dissolved Oxygen Level (Bottom) at Mid-Flood Tide



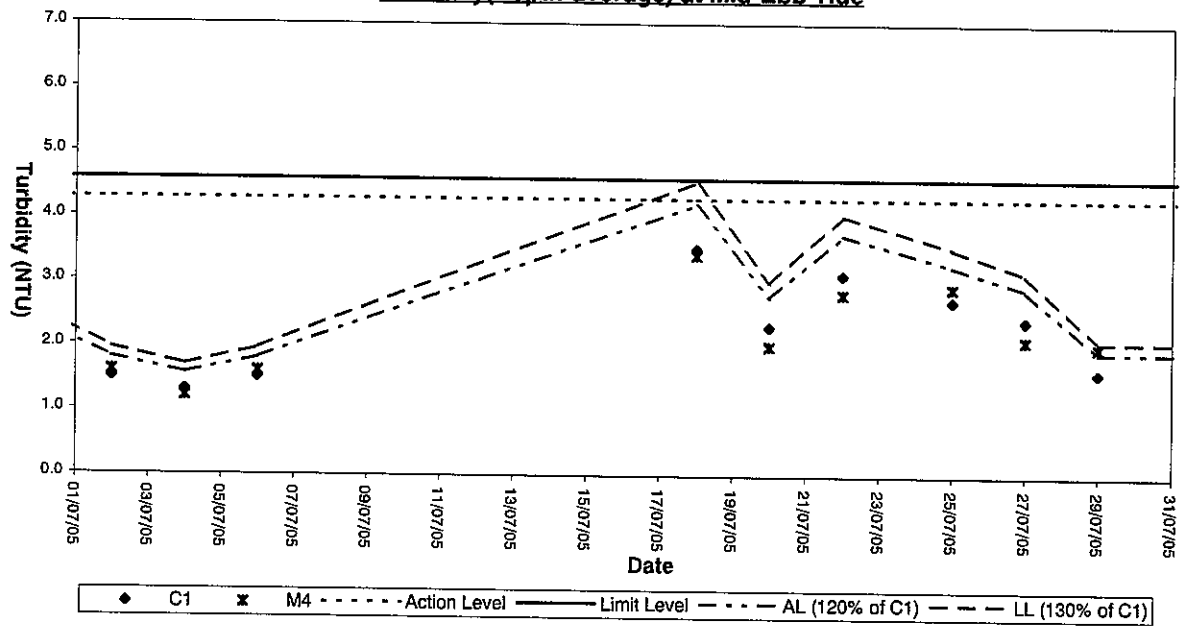
Dissolved Oxygen Level (Bottom) at Mid-Ebb Tide



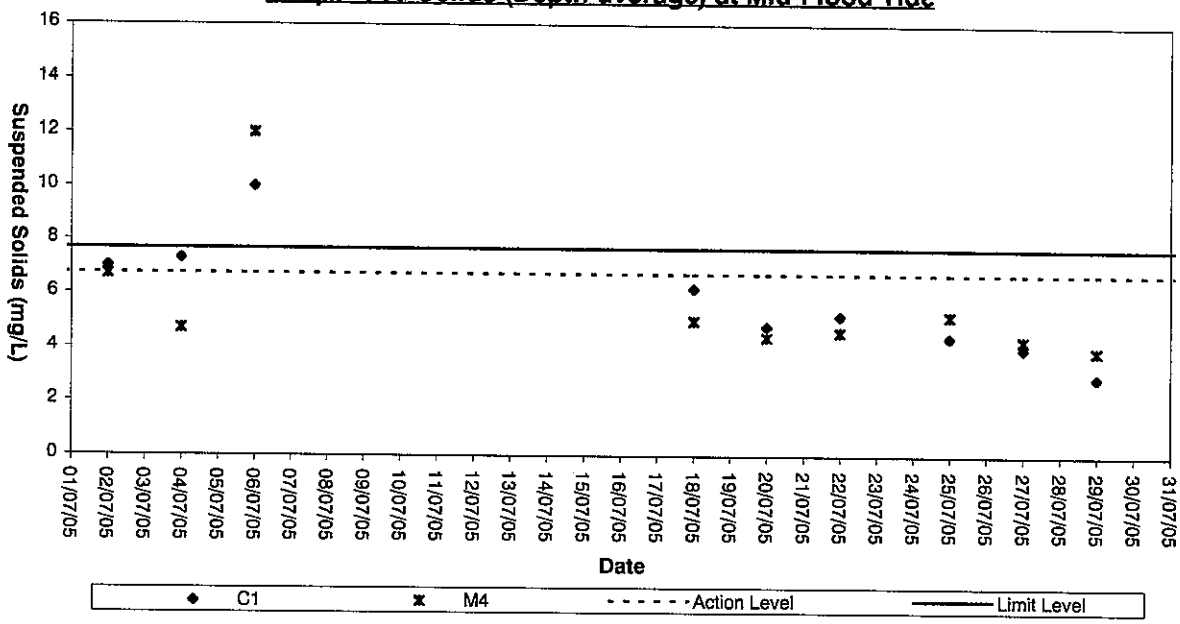
Turbidity (Depth-average) at Mid-Flood Tide



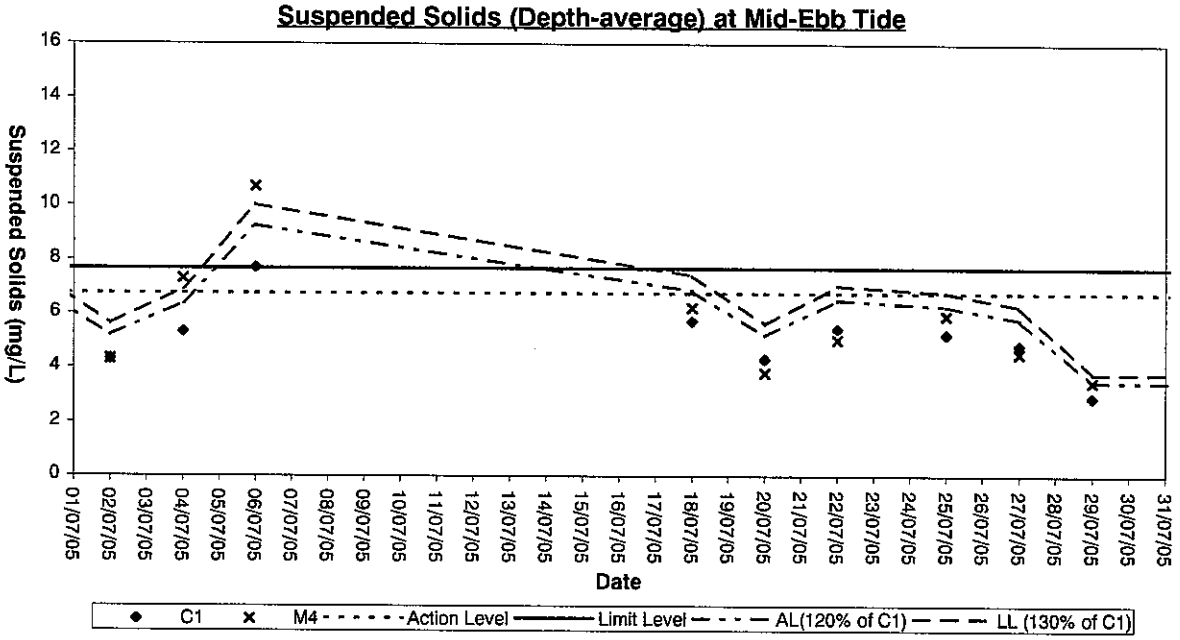
Turbidity(Depth-average) at Mid-Ebb Tide



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



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



Appendix E

Weather Condition

Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/07/05	18.4	29.8	24.7	90	SE	5.8
02/07/05	-	31.0	26.7	87	SE	3.8
03/07/05	-	32.1	27.4	82	SE	3.2
04/07/05	-	33.2	28.0	78	S	3.6
05/07/05	-	33.3	28.0	75	SW	3.0
06/07/05	-	33.0	27.6	74	W	1.7
07/07/05	38.1	29.4	26.0	85	N	4.0
08/07/05	Trace	31.0	26.9	77	SW	7.4
09/07/05	33.5	29.1	24.9	86	S	4.9
10/07/05	4.3	31.8	26.4	80	S	6.9
11/07/05	-	32.5	27.8	75	S	3.5
12/07/05	-	32.5	28.0	73	SW	2.9
13/07/05	0.2	32.5	28.0	75	SW	5.6
14/07/05	-	32.6	28.3	75	SW	5.2
15/07/05	-	33.3	28.2	77	SE	2.4
16/07/05	Trace	33.0	28.6	74	NE	2.5
17/07/05	-	33.1	28.2	71	W	5.1
18/07/05	-	34.4	29.0	72	W	9.0
19/07/05	28.5	35.4	26.9	69	W	8.9
20/07/05	20.4	34.4	24.6	76	W	4.4
21/07/05	4.4	32.9	24.8	79	W	5.2
22/07/05	79.7	29.0	24.8	89	NE	3.1
23/07/05	-	30.2	26.1	82	NE	2.8
24/07/05	-	31.4	26.7	82	NE	2.5
25/07/05	-	32.7	27.0	76	N	1.9
26/07/05	-	32.5	26.9	75	SW	2.4
27/07/05	-	31.8	27.6	78	E	4.0
28/07/05	0.8	31.8	28.0	81	E	9.1
29/07/05	35.4	28.7	25.5	92	E	10.5
30/07/05	47.3	28.8	26.0	94	SE	9.4
31/07/05	49.5	28.3	26.0	94	SE	6.7

Remark: Data of wind speed and wind direction were extracted from Hong Kong Observatory (TKO Station).

Appendix F

Event-Action Plans

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			
	ET Leader	IC(E)	ER	Contractor
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, IC(E) and Contractor 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by the ET 2. Check contractor's working method	1. Notify Contractor	1. Rectify any unacceptable practise 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform IC(E) and Contractor 3. Repeat measurements to confirm finding 4. Increase monitoring frequency to daily 5. Discuss with IC(E) and Contractor on remedial actions 6. If exceedance continues, arrange meeting with IC(E) and ER. 7. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by the ET Leader 2. Check the Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial actions to IC(E) within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, Contractor and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results	1. Check monitoring data submitted by the ET Leader 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate.

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

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

EVENT	EVENT/ACTION PLAN FOR NOISE EXCEEDANCE			
	ACTION			
	ET Leader	IC(E)	ER	Contractor
Action Level	1. Notify the IC(E) and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IC(E) and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IC(E). 2. Implement noise mitigation proposals.
Limit Level	1. Notify the IC(E), the ER, the EPD and the Contractor. 2. Identify source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IC(E), the ER and the EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results 8. If exceedance due to the construction works stops, cease additional monitoring	1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedances continue, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedances is abated.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedances is abated.

Event	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Action level being exceeded by one sampling day	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	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	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	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	EVENT AND ACTION PLAN FOR WATER QUALITY			
	ACTION			
	ET Leader	Contractor	ER	IEC
Action level being exceeded by more than one consecutive sampling days	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.	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	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	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	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Limit level being exceeded by one sampling day	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.	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	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.	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	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Limit Level being exceeded by more than one consecutive sampling days	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.	1. Notify ER and IEC in writing within 24 hours of the identification of the exceedance and 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 8. 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 actives.	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.	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.

Appendix G

Construction Programme

CEDD Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Wo

Master Programme of Works - Fill Bank at Tseung Kwan O Area 137

Date: *8 July 2005 (Friday)*

Section of Works	Description	Earliest Start Date	*Latest Start Date*	Finish Date	Duration	2005 June 2005 / July 2005 / Aug 2005 / Sep 2005 / Oct 2005 / Nov 2005 / Dec 2005
Section D1	Taking over, operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site]	18 Jun 2005	*8 July 2005*	31 Oct 2005	116 days	
Section D2	Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - *Section Subject to Excision*	1 Nov 2005	*1 Nov 2005*	30 Nov 2005	30 days	
Section D3	Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - *Section Subject to Excision*	1 Dec 2005	*1 Dec 2005*	31 Dec 2005	31 days	

CEDD Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Wo

3-Month Rolling Programme of Works - Fill Bank at Tseung Kwan O Area 137

Date: *8 July 2005 (Friday)*

Forthcoming Rolling 3 Months : Jul 2005 ⇨ Sep 2005

Section of Works	Description	Earliest Start Date	*Latest Start Date*	Finish Date	Duration	2005
						June 2005 July 2005 Aug 2005 Sep 2005 Oct 2005 Nov 2005 Dec 2005
Section D1	Taking over, operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site]	18 Jun 2005	*8 July 2005*	31 Oct 2005	116 days	
Section D2	Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - *Section Subject to Excision*	1 Nov 2005	*1 Nov 2005*	30 Nov 2005	30 days	
Section D3	Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - *Section Subject to Excision*	1 Dec 2005	*1 Dec 2005*	31 Dec 2005	31 days	

Remarks :- *(1) Works to be carried out in the forthcoming 3 months (8 Jul 2005 ~ 30 Sep 2005) :*

Section B1 of the Works: Taking over, operation and maintenance of the Public Filling Barging Point (PFBP) at Quarry Bay [Portion B of the Site]
Section C1 of the Works: Taking over, operation and maintenance of the Public Fill Reception Facility (PFRF) at Mui Wo [Portion C of the Site]
Section D1 of the Works: Taking over, operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site]

(2) Remainder of the Works after the forthcoming 3 months (i.e., remaining period from 1 Oct 2005 to 31 Dec 2005) :

Section B1 of the Works: Taking over, operation and maintenance of the Public Filling Barging Point (PFBP) at Quarry Bay [Portion B of the Site]
Section B2 of the Works: Operation and maintenance of the Public Filling Barging Point (PFBP) at Quarry Bay [Portion B of the Site] - Section Subject to Excision
Section B3 of the Works: Operation and maintenance of the Public Filling Barging Point (PFBP) at Quarry Bay [Portion B of the Site] - Section Subject to Excision

Section C1 of the Works: Taking over, operation and maintenance of the Public Fill Reception Facility (PFRF) at Mui Wo [Portion C of the Site]
Section C2 of the Works: Operation and maintenance of the Public Fill Reception Facility (PFRF) at Mui Wo [Portion C of the Site] - Section Subject to Excision
Section C3 of the Works: Operation and maintenance of the Public Fill Reception Facility (PFRF) at Mui Wo [Portion C of the Site] - Section Subject to Excision

Section D1 of the Works: Taking over, operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site]
Section D2 of the Works: Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - Section Subject to Excision
Section D3 of the Works: Operation and maintenance of the Fill Bank at Tseung Kwan O Area 137 [Portion D of the Site] - Section Subject to Excision

Appendix H

IEC's Site Audit Record

1.1 IEC Site Audits

1.1.1 During this reporting period, the IEC team conducted three independent site audits.

1.1.2 Findings of the site audits have been recorded on site checklists, copies of which were submitted to the Contractor for their further action as appropriate, and to the Client for their records. Key issues were highlighted to the Contractor's representative at the completion of each site audit to ensure that they were aware of the problem(s) identified and where necessary, to take immediate corrective actions. A copy of the completed checklists are appended to this report in Appendix A.

Table 3.1: Dates of Site Audits in July 2005

Date of Audit	Work Period	Site Audit Checklist Submitted Under IEC's Ref No.
11 July 2005	Operation	8116/1929
22 July 2005	Operation	8116/1963
29 July 2005	Operation	8116/1981

1.1.3 The major findings recorded during the site audits conducted during this reporting period are summarized below. Full details are provided in the site audit checklists presented in Appendix A.

Table 3.2: Key Findings of Site Audits in July 2005

Date	Key Findings	Action
11 July 2005	• While water bowsers were observed to be watering the road surfaces at the site entrance area and parts of the main haul road inside the site, working platforms in Portion D and I were noted to be dry. Dump trucks travelling across the platforms generated fugitive dust.	• Contractor is reminded to ensure that all work platforms are also wetted to prevent fugitive dust generation.
	• The hydroseeded slopes in Portions A, B, G & H were observed to have healthy vegetation growth. The vegetation growth in the hydroseeded areas at Portion I appeared to be "yellowing".	• Contractor is reminded to ensure that the hydroseeded slopes are regularly watered.
	• The permanent desilting chambers (PDC) B&C have been cleared of vegetation and debris. However, what appeared to be algae growth and two frog egg sacs were observed in PDC C. Substantial sediment has also collected in PDC A. Based on observations of the upper section of the channel (draining into PDC A) it is believed that the collected sediment was the result of the upstream site operator's activities. The open surface channel connecting DP3 and DP4 was	• Contractor has been instructed to immediately clean (and maintain) all of the PDCs and the open surface channels to ensure these systems work efficiently and effectively. The Contractor should liase with the PBR2 Contractor to work out a cleaning and maintenance plan for PDC A.

Date	Key Findings	Action
	also noted to have collected a significant quantity of sediment, resulting in a shallower channel depth.	
	• The drain pump was removed from the oil and grease interceptor drum. The collected water was observed to be draining into a hole on the bottom of the drum. It is not clear where the water ultimately drains to.	• Contractor should replace this oil and grease interceptor immediately and ensure that all collected wastewater is pumped into the adjacent treatment tank prior to discharge into DP4.
	• A number of large pot holes filled with rainwater were observed in Portion I.	• Contractor was reminded to either fill in these pot holes or apply insecticide to prevent the breeding of mosquitoes.
	• C&D material was noted along the concrete walkway of the Barge Handling Area (BHA) even though in one section, there were no vessels moored against the sea wall.	• Contractor was reminded to clean the concrete walkway of all C&D material so as to prevent fall/wash out of the material into the waters of the TKO Basin. They should also remind the barge operators to drop their loads further inland.
	• A significant quantity of chemical waste remained stored in the Chemical Waste Storage Shed at the Maintenance Workshop Area. Sand used to soak up oil spills around the Maintenance Workshop Area were seen in piles around two work areas. These should be collected and disposed of as chemical waste as well.	• Contractor was reminded to arrange for the collection and disposal of the stored chemical waste by a licensed waste collector immediately.
	• A number of oil drums were again observed to be placed directly on the ground at the Maintenance Workshop Area. Waste lubricating oil was also observed pooled on the ground beneath a crane (under repair).	• Contractor should provide adequate drip trays and ensure they are used, particularly in the Maintenance Workshop Area. The pool of waste lubricating oil should also be cleaned up immediately.
22 July 2005	• The misting fan and spray system at the site entrance were not in operation at the time of the site inspection, although weather conditions had already turned sunny and hot (as compared to light showers earlier in the day).	• The Contractor's Representative was reminded to switch on the misting & spray systems when the weather was fine/sunny or when the site entrance was beginning to dry up after rain shower activity.
	• One vehicle (license plate no. KY6979) was observed to have by-passed both wheel wash bays before leaving the site.	• The Contractor should remind all vehicle drivers to pass through both wheel wash bays prior to leaving the site.
	• Debris and vegetation noted to have been caught in front of the trash screens of PDC B and C. There was no access to PDC A due to poor road conditions. However as advised by the Contractor's Representative, PDC A was still filled with mud. The	• Contractor is reminded to regularly clean all drainage channels and the PDCs to ensure the entire drainage system around the Fill Bank is working efficiently and effectively, particularly when rain showers are anticipated. The Contractor is

Date	Key Findings	Action
	PBR2 Contractor had previously agreed to clean up the desilting chamber but no action had been taken to date.	requested follow up with the PBR2 Contractor on the clean up schedule of the PDC A.
	• A new pump was observed to have been installed in the oil and grease collection tank to pump any collected waters into the adjacent treatment tank. However, the pump was not operating (suspected to be damaged) at the time of the site inspection.	• The Contractor was requested to immediately address this issue.
	• Debris, including Styrofoam boxes and plastic bottles, were observed to be floating on the water surface inside the BHA basin.	• While the debris was not believed to have been due to the Works, the Contractor is reminded of their responsibility to collect and remove any floating objectionable matter in the waters of the basin and prevent any from floating out into the open waters of Tathong Channel.
	• The potholes near the water filling station were observed to have been filled in with C&D material.	• For those potholes still observed by PDCs B and C, and by the old weigh bridge at the Maintenance Workshop Area, the Contractor is advised to either fill them in with C&D material or apply insecticide to prevent the breeding of mosquitoes.
	• A number of vehicle tyres were noted at the water filling station and (a few) near Portion H.	• All unused tyres should be properly stored so as to prevent the collection and storage of rainwater, which could form potential breeding grounds for mosquitoes.
	• Quite a number of containers filled the Chemical Waste Storage Shed, with some containers stored in a haphazard manner.	• The Contractor is reminded to dispose of their chemical wastes regularly to avoid the over accumulation of this type of waste on site.
	• The hydroseeded slopes in Portions A, B, G, H and I appeared to have healthy vegetation growth.	• -
	• Two drums containing what appeared to be asphalt had been dumped on the platform of Portion D. It is likely that it was disposed of with other C&D material.	• Contractor was requested to remove the drums from the working platform.
29 July 2005	• The main trapezoidal channel along the eastern boundary of the site has been cleaned of dried vegetation. However, dried vegetation was still observed to have been caught in front of the trash screen at PDC C. According to the Contractor's Representative, mud was still settled inside PDC A.	• All surface drainage channels and PDCs should be cleared of debris on a regular basis to ensure that they are working in an efficient and effective manner at all times, in particular in the event of rain. In regards to PDC A, the Contractor was advised to liaise with the PBR2 Contractor to discuss the cleaning and maintenance of PDC

Date	Key Findings	Action
		A and the upstream section of its connecting surface channel.
	• Significant vegetation growth seen along the bottom and the side banks of the surface drainage channel upstream of DP4 (connected to surface drainage channel from SENT Landfill).	• The vegetation overgrowth in the surface drainage channel should be regularly cut / removed.
	• The drainage outlet on the side of the generator drip tray (located at the temporary water filling station) was noted to be dripping.	• Contractor's Representative requested to repair the outlet to prevent further dripping.
	• A pile of soil used to soak up lubricant oil spills in the Maintenance Workshop Area was noted beneath a crane (under repair).	• Contractor's Representative was reminded to remove the contaminated soil for disposal as chemical waste.
	• A drip tray (beside the Chemical Waste Storage Shed) containing what is believed to be an empty drum was noted to be filled with rainwater.	• Contractor's Representative was reminded to clean out the drip tray and to return the empty drum to its proper storage area.
	• C&D material was still noted along the concrete walkway of the BHA even when there were no barges moored along the seawall.	• Contractor's Representative indicated that they would clear the BHA at the end of the working day and that boulders would be placed on the walkway to prevent the barge operators from unloading C&D material on the walkway. Contractor's Representative has been requested to provide a photograph record of the measures taken.
	• A hand pump was improperly stored inside the main concrete bund next to the main reception / trip ticket office. Back flow of liquid was noted to be dripping onto the ground outside of the concrete bund.	• Contractor's Representative immediately rectified the problem by properly storing the hand pump and connecting hose completely in a drip tray inside the concrete bund.
	• The section of DP4 immediately under the haul road ramp was noted to be covered in mud.	• Contractor's Representative advised that they would clean out the indicated area within the next few days.

1.1.4 Following from the previous reporting period (June 2005), there were again no air quality exceedances recorded during this reporting period. Based on observations recorded during site inspections and site supervision events, the Contractor was observed to have implemented most of their dust prevention measures during the reporting period, although on several occasions, it was noted that the misting fan and sprays near the site entrance had not been switched on. The unloading activities (of C&D material) from SENT Landfill trucks at EPD's pier were observed to be acceptable (few fugitive dust plumes observed) which in the past may have impacted the local air quality. It is believed that the C&D material loads have been properly dampened at source and thus not only improved the unloading conditions but also improved the general roadside conditions. Nevertheless, the CV/2005/05 Contractor was reminded to ensure that all dust mitigation measures, particularly those near the site entrance, were operated according to their design merits to ensure that fugitive dust impacts to neighbouring land users was minimized.

1.1.5 Rain shower activity dominated the latter part of the reporting period. Under such conditions, the Contractor reduced the frequency of road / platform watering. In general conditions were considered to be acceptable.

1.1.6 However, with the regular rainshower activity, rainwater was observed to have collected in oil-stained drip trays at the Maintenance Workshop Area. Tarpaulin covers had not been placed to completely cover the drip trays resulting in the collection of rainwater in them.

1.1.7 Spillage of waste lubricating oil was noted at the Maintenance Workshop Area during the site inspections. Although the Contractor immediately commenced cleaning of the area, they were nevertheless reminded to ensure that they maintain better housekeeping and operating practices to prevent the recurrence of a similar event.

1.1.8 While debris was noted to have washed into the bay (of the BHA) from DP3 and upstream land users, there did not appear to be any debris or C&D material being washed into the bay by the Contractor's unloading /transfer activities. Nevertheless, the Contractor was reminded on several occasions to ensure that any material left on the concrete shoulder of the BHA should be removed as soon as the barge departs.

1.1.9 As noted in Table 3.2 above, debris (primarily dead vegetation) and fine sediment continued to be observed in front of trash screens, baffle systems and inside the sedimentation chambers throughout the reporting period. The buildup was due to the combined effect of regular surface runoff (bringing with it debris) resulting from heavy rain shower activities.

1.1.10 An inspection of the PDC B and the connecting trapezoidal channel revealed that the installation of a brick wall, as recommended by the IEC previously, had been effective in diverting surface runoff to the upstream section of the channel, prior to flowing into the PDC B.

1.1.11 Further to a site observation made at the end of the previous reporting period regarding a damaged silt curtain, this was observed to have been replaced by 11 July 2005. The Contractor was reminded to ensure that the silt curtains are properly maintained at all times.

BMT ASIA PACIFIC LTD

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Date of Site Audit:	11.07.05	Time of Site Audit:	4.30pm
Site Auditor:	Lyn Ip	Phase of Works:	Operational
Checked by:	Ben Ridley		

Checklist	Yes	No	Remarks
Operational Phase			
Fugitive Dust Emission			
Have dust control/mitigation measures been implemented to ensure full	x		
Are all installed air pollution control systems and measures operated and/or implemented in accordance with their design merits?	x		
A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading/unloading and similar activities should be allowed.	x		
Truck speed limit shall be limited to within 10km per hour.	x		
Is the designated site main haul route (paved)?	x		
Are water lorries and/or road sweepers used in dust suppression? Frequency of watering at least four times per day (as per PS Clause 1.76)? The frequency shall be increased when the weather is dry, when the truckloads are high, and for haul roads located within 100m from the northern boundary of the site.	x		Observed at site entrance and along main haul route.
All dusty fill material shall be sprayed with water or a dust suppression chemical prior to loading, unloading or transfer so as to maintain the fill material wet, except for situations where the moisture content of the dusty material is a matter of concern.	x		
Frequent watering (at least three times per day) of the worksites with active			See observation 1.
Vehicle washing facilities including high pressure water jet installed at the existing exit shall be maintained and operated by designated staff to ensure that these dust control measures are being used.	x		
Before leaving the fill bank, every vehicle shall be washed to remove any dusty materials from its body and wheels.	x		
Trucks carrying dusty load entered to the site shall be sprayed with water once the impervious sheeting covering the load is removed.	x		
Have the temporary slope surfaces, especially those facing to the north of the site, been covered (tarpaulin sheeting or other impermeable sheeting), or sprayed (with water or a dust suppression chemical) or protected by other methods approved by CED?			See observation 2.
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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabiliser approved by CED.			See observation 2.
When belt conveyor systems are in use for transfer of fill material, the conveyors shall be enclosed on top and 2 sides. Every transfer point between any two conveyors shall be enclosed.			N/A
Is the belt scraper installed at the head pulley of every belt conveyor effective in dislodging fine particles that may adhere to the belt surface, and to reduce carrying back of fine particles on the return belt?			N/A
The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the materials landing point is maintained at no more than 1m.			N/A
Note: Public fill at the stockpiling area should be handled to avoid segregation, deterioration, erosion or instability of the material, especially for the stockpiling surface facing to the north of the site.			
Fixed Noise Impact			
Have the approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) been adopted?	x		
Note: The noise standards specified in the Technical Memorandum for the Assessment of Noise From Places Other Than Domestic Premises, Public Places or Construction Sites shall be met.			

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	NO	Remarks
Water Quality			
The existing/realigned intercepting channels and the sand/silt removal facilities should be used and maintained.			See observation 3.
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bag barriers shall be used to assist the diversion of polluted stormwater to the silt removal facilities.	x		
Has a buffer distance of at least 100m been maintained between the boundary of the public fill stockpiling area and the sea front?	x		
A buffer distance of at least 20m should be maintained between the boundary of the C&DMSF and the seafront.			N/A
Is the stormwater interception system in the C&DMSF effective?			N/A
Are materials properly covered when there is any chance for the materials to be washed away?	x		
Temporary slope surfaces shall be covered as far as practicable with tarpaulin sheets or other impermeable sheeting or protected by other methods approved by CED especially when a rainstorm is imminent or forecast.			See observation 2.
Final slope surfaces shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bituman, or other suitable surface stabilizer approved by CED to prevent the washing away of stockpiled material.			See observation 2.
Existing and newly constructed catchpits, sand and silt removal facilities and intercepting channels should be maintained, and the deposited silt and grit should 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.			See observation 3.
A wheel washing bay should be provided at the site exit and wash-water should have sand and silt settled out or removed before being discharged into storm drains.	x		
Is the section of construction road between the wheel washing bay the public road paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains?	x		
Sewage from toilets should be discharged into a foul sewer, or chemical toilets should be provided.	x		
Should the use of chemical toilets be necessary, these should be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	x		
Are the grease traps in the canteen kitchens put into use and effective ?			N/A
If no communal sewer can be provided, has the sewage generated from the workforce at the site offices been diverted to septic tanks and regularly removed by using vacuum tankers.	x		
The drainage system provided at car parking areas should be installed with oil interceptors in addition to sand/silt removal facilities. Has regular cleaning of the system been carried out?			See observation 4.
Has disturbance to seabed sediments and undue turbidity from vessel movement or propeller wash been minimized?	x		
Barges should not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents should be properly collected and treated before disposal.	x		
Is foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging point? Are these due to work activities?		x	
Have silt curtains been provided at the outward side of the basin near the barging point throughout the operational phase when there is public fill intake by barges (after Dec 2003)?	x		
Has a waste collection vessel been deployed to remove floating debris on the sea near the fill bank for proper disposal?			Contractor should regularly deploy waste collection vessel. Contractor to advise the IEC on collection schedule.
Note:Effluent discharged from the site shall meet the relevant discharge limits specified in the Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.			

Operational Phase

BMT ASIA PACIFIC LTD

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	No	Remarks
Landfill Gas Hazard			
Are gas detection equipment and appropriate breathing apparatus available and used when workers entering confined spaces or trenches deeper than 2 metres?			
A Safety Officer/Supervisor should be present on site throughout the operational stage.			
Has the Safety Officer/Supervisor been provided with intrinsically safe portable instrument(s), appropriately calibrated and capable of measuring the gases in the ranges as recommended in the EIA Report?			Contractor is to follow up and advise the ER and IEC on the status of the arrangements for landfill gas monitoring and hazard prevention.
Has a LFG monitoring programme been formulated by the Safety Officer/Supervisor or by a qualified person?			
Has periodic/routine monitoring been conducted during ground-works, in all excavations, and works in confined spaces, if any?			
Landscape and Visual			
Does the design of the fill bank and platform heights adopted allow the fill bank to fit into the general topography of the surrounding land? Straight edged slopes should be avoided.	x		
The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	x		
Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green/brown) once completed.			See observation 2.
The barging point and the C&DMSF at the fill bank shall not be in operation from 7:00pm to 8:00am daily to avoid potential visual impact from glare.	x		Operation time extended to 11 pm as per latest EP.
Other Environmental Factors			
C&D waste sorted from mixed C&D material at the C&DMSF shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	x		
Environmental Monitoring and Audit			
Is a log book maintained by the ET?	x		
At the time of site audit, was any monitoring underway?	x		
If yes, what parameters are being monitored and were the correct procedures adopted?			24 - Hr TSP
Have any mitigation measures been implemented as a result of exceedance of Action-Limit Levels? If so, do they appear to be effective?		x	

Observations Issue	Action
1 While water bowsers were observed to be watering the road surfaces at the site entrance area and parts of the main haul road inside the site, working platforms in Portion, D and I were noted to be dry. Dump trucks travelling across the platforms generated fugitive dust.	Contractor is reminded to ensure that all work platforms are also wetted to prevent fugitive dust generation.
2 The hydroseeded slopes in Portions A,B, G & H were observed to have healthy vegetation growth. The vegetation growth in the hydroseeded areas at Portion I appeared to be "yellowing".	Contractor is reminded to ensure that the hydroseeded slopes are regularly watered.
3 The permanent desilting chambers (PDC) B&C have been cleared of vegetation and debris. However, what appeared to be algae growth and two frog egg sacs were observed in PDC C. Substantial sediment has also collected in PDC A. Based on observations of the upper section of the channel (draining into PDC A) it is believed that the collected sediment was the result of the upstream site operator's activities. The open surface channel connecting DP3 and DP4 was also noted to have collected a significant quantity of sediment, resulting in a shallower channel depth.	Contractor has been to instructed to immediately clean (and maintain) all of the PDCs and the open surface channels to ensure these systems works efficiently and effectively. The Contractor should liase with the FBR2 Contractor to work out a cleaning and maintenance plan for PDC A.
4 The drain pump was removed from the oil and grease interceptor drum. The collected water was observed to be draining into a hole on the bottom of the drum. It is not clear where the water ultimately drains to.	Contractor should replace this oil and grease interceptor immediately and ensure that all collected wastewater is pumped into the adjacent treatment tank prior to discharge into DP4.
Other Observations	
i) A number of large pot holes filled with rainwater were observed in Portion I.	Contractor was reminded to either fill in these pot holes or apply insecticide to prevent the breeding of mosquitoes.
ii) C&D material was noted along the concrete walkway of the BHA even though in one section, there were no vessels moored against the sea wall.	Contractor was reminded to clean the concrete walkway of all C&D material so as to prevent fall/wash out of the material into the waters of the TKO Basin. They should also remind the barge operators to drop their loads further inland.
iii) A significant quantity of chemical waste remained stored in the Chemical Waste Storage Shed at the Maintenance Workshop Area. Sand used to absorb oil spills around the Maintenance Workshop Area were seen in piles around two work areas. These should be collected and disposed of as chemical waste as well.	Contractor was reminded to arrange for the collection and disposal of the stored chemical waste by a licenced waste collector immediately.
iv) A number of oil drums were again observed to be placed directly on the ground at the Maintenance Workshop Area. Waste lubricating oil was also observed pooled on the ground beneath a crane (under repair).	Contractor should provide adequate drip trays and ensure they are used, particularly in the Maintenance Workshop Area. The pool of waste lubricating oil should also be cleaned up immediately.

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Date of Site Audit:	22.07.05	Time of Site Audit:	3:00 PM
Site Auditor:	Lyn Ip	Phase of Works:	Operational
Checked by:	Ben Ridley		

Checklist	Yes	No	Remarks
Operational Phase			
Fugitive Dust Emission			
Have dust control/mitigation measures been implemented to ensure full protection of the nearby ASRs?	x		
Are all installed air pollution control systems and measures operated and/or implemented in accordance with their design merits?		x	See observation 1.
A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading/unloading and similar activities should be allowed.	x		
Truck speed limit shall be limited to within 10km per hour.	x		
Is the designated site main haul route (paved)?	x		
Are water lorries and/or road sweepers used in dust suppression? Frequency of watering at least four times per day (as per PS Clause 1.76)? The frequency shall be increased when the weather is dry, when the truckloads are high, and for haul roads located within 100m from the northern boundary of the site.	x		
All dusty fill material shall be sprayed with water or a dust suppression chemical prior to loading, unloading or transfer so as to maintain the fill material wet, except for situations where the moisture content of the dusty material is a matter of concern.	x		
Frequent watering (at least three times per day) of the worksites with active dusty operations. The frequency shall be increased when the weather is dry.	x		
Vehicle washing facilities including high pressure water jet installed at the existing exit shall be maintained and operated by designated staff to ensure that these dust control measures are being used.	x		
Before leaving the fill bank, every vehicle shall be washed to remove any dusty materials from its body and wheels.		x	See observation 2.
Trucks carrying dusty load entered to the site shall be sprayed with water once the impervious sheeting covering the load is removed.	x		
Have the temporary slope surfaces, especially those facing to the north of the site, been covered (tarpaulin sheeting or other impermeable sheeting), or sprayed (with water or a dust suppression chemical) or protected by other methods approved by CED?			Finished slopes in Portions A,B,G,H and I have been hydroseeded.
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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabiliser approved by CED.			Finished slopes in Portions A,B,G,H and I have been hydroseeded.
When belt conveyor systems are in use for transfer of fill material, the conveyors shall be enclosed on top and 2 sides. Every transfer point between any two conveyors shall be enclosed.			N/A
Is the belt scraper installed at the head pulley of every belt conveyor effective in dislodging fine particles that may adhere to the belt surface, and to reduce carrying back of fine particles on the return belt?			N/A
The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the materials landing point is maintained at no more than 1m.			N/A
Note: Public fill at the stockpiling area should be handled to avoid segregation, deterioration, erosion or instability of the material, especially for the stockpiling surface facing to the north of the site.			
Fixed Noise Impact			
Have the approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) been adopted?	x		
Note: The noise standards specified in the Technical Memorandum for the Assessment of Noise From Places Other Than Domestic Premises, Public Places or Construction Sites shall be met.			

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	No	Remarks
Water Quality			
The existing/realigned intercepting channels and the sand/silt removal facilities should be used and maintained.			See observation 3.
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bag barriers shall be used to assist the diversion of polluted stormwater to the silt removal facilities.	x		
Has a buffer distance of at least 100m been maintained between the boundary of the public fill stockpiling area and the sea front?	x		
A buffer distance of at least 20m should be maintained between the boundary of the C&DMSF and the seafront.			N/A
Is the stormwater interception system in the C&DMSF effective?			N/A
Are materials properly covered when there is any chance for the materials to be washed away?	x		
Temporary slope surfaces shall be covered as far as practicable with tarpaulin sheets or other impermeable sheeting or protected by other methods approved by CED especially when a rainstorm is imminent or forecast.			Finished slopes in Portions A,B,G,H and I have been hydroseeded.
Final slope surfaces shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabiliser approved by CED to prevent the washing away of stockpiled material.			Finished slopes in Portions A,B,G,H and I have been hydroseeded.
Existing and newly constructed catchpits, sand and silt removal facilities and intercepting channels should be maintained, and the deposited silt and grit should 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.			See observation 3.
A wheel washing bay should be provided at the site exit and wash-water should have sand and silt settled out or removed before being discharged into storm drains.	x		
Is the section of construction road between the wheel washing bay the public road paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains?	x		
Sewage from toilets should be discharged into a foul sewer, or chemical toilets should be provided.	x		
Should the use of chemical toilets be necessary, these should be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	x		
Are the grease traps in the canteen kitchens put into use and effective ?			N/A
If no communal sewer can be provided, has the sewage generated from the workforce at the site offices been diverted to septic tanks and regularly removed by using vacuum tankers.	x		Drained to DP4 as per discharge licence.
The drainage system provided at car parking areas should be installed with oil interceptors in addition to sand/silt removal facilities. Has regular cleaning of the system been carried out?			See observation 4.
Has disturbance to seabed sediments and undue turbidity from vessel movement or propeller wash been minimized?	x		
Barges should not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents should be properly collected and treated before disposal.	x		
Is foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging point? Are these due to work activities?	x		See observation 5.
Have silt curtains been provided at the outward side of the basin near the barging point throughout the operational phase when there is public fill intake by barges (after Dec 2003)?	x		
Has a waste collection vessel been deployed to remove floating debris on the sea near the fill bank for proper disposal?			Contractor advised vessel to be deployed every Tuesday and Friday. The scheduled vessel (for 22/7) was cancelled due to poor weather conditions earlier in the day. See observation 5.

Note:Effluent discharged from the site shall meet the relevant discharge limits specified in the Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	No	Remarks
Landfill Gas Hazard			
Are gas detection equipment and appropriate breathing apparatus available and used when workers entering confined spaces or trenches deeper than 2 metres?			TBC by Contractor.
A Safety Officer/Supervisor should be present on site throughout the operational stage.	x		
Has the Safety Officer/Supervisor been provided with intrinsically safe portable instrument(s), appropriately calibrated and capable of measuring the gases in the ranges as recommended in the EIA Report?			TBC by Contractor.
Has a LFG monitoring programme been formulated by the Safety Officer/Supervisor or by a qualified person?			TBC by Contractor.
Has periodic/routine monitoring been conducted during ground-works, in all excavations, and works in confined spaces, if any?			TBC by Contractor.
Landscape and Visual			
Does the design of the fill bank and platform heights adopted allow the fill bank to fit into the general topography of the surrounding land? Straight edged slopes should be avoided.	x		
The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	x		As advised by Contractor.
Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green/brown) once completed.	x		
The barging point and the C&DMSF at the fill bank shall not be in operation from 7:00pm to 8:00am daily to avoid potential visual impact from glare.			Operation time extended to 11 pm as per latest EP.
Other Environmental Factors			
C&D waste sorted from mixed C&D material at the C&DMSF shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	x		
Environmental Monitoring and Audit			
Is a log book maintained by the ET?			Not observed on site.
At the time of site audit, was any monitoring underway?		x	
If yes, what parameters are being monitored and were the correct procedures adopted?			N/A
Have any mitigation measures been implemented as a result of exceedance of Action-Limit Levels? If so, do they appear to be effective?		x	

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Observations

Issue		Action
1	The misting fan and spray system at the site entrance were not in operation at the time of the site inspection, although weather conditions had already turned sunny and hot (as compared to light showers earlier in the day).	The Contractor's Representative was reminded to switch on the misting & spray systems when the weather was fine/sunny or when the site entrance was beginning to dry up after rain shower activity.
2	One vehicle (licence plate no. KY6979) was observed to have by-passed both wheel wash bays before leaving the site.	The Contractor should remind all vehicle drivers to pass through both wheel wash bays prior to leaving the site.
3	Debris and vegetation noted to have been caught in front of the trash screens of Permanent Desilting Chambers (PDC) B and C. There was no access to PDC A due to poor road conditions. However as advised by the Contractor's Representative, PDC A was still filled with mud. The PBR2 Contractor had previously agreed to clean up the desilting chamber but no action had been taken to date.	Contractor is reminded to regularly clean all drainage channels and the PDCs to ensure the entire drainage system around the Fill Bank is working efficiently and effectively, particularly when rain showers are anticipated. The Contractor is requested follow up with the PBR2 Contractor on the clean up schedule of the PDC A.
4	A new pump was observed to have been installed in the oil and grease collection tank to pump any collected waters into the adjacent treatment tank. However, the pump was not operating (suspected to be damaged) at the time of the site inspection.	The Contractor was requested to immediately address this issue.
5	Debris, including Styrofoam boxes and plastic bottles, were observed to be floating on the water surface inside the Barge Handling Area (BHA) basin.	While the debris was not believed to have been due to the Works, the Contractor is reminded of their responsibility to collect and remove any floating objectionable matter in the waters of the basin and prevent any from floating out into the open waters of Tathong Channel.
Other Observations		
i)	The potholes near the water filling station were observed to have been filled in with C&D material.	For those potholes still observed by PDCs B and C, and by the old weigh bridge at the Maintenance Workshop Area, the Contractor is advised to either fill them in with C&D material or apply insecticide to prevent the breeding of mosquitoes.
ii)	A number of vehicle tyres were noted at the water filling station and (a few) near Potion H.	All unused tyres should be properly stored so as to prevent the collection and storage of rain water which could form potential breeding grounds for mosquitoes.
iii)	Quite a number of containers filled the Chemical Waste Storage Shed, with some containers stored in a haphazard manner.	The Contractor is reminded to dispose of their chemical wastes regularly to avoid the over accumulation of this type of waste on site.

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Observations	
Issue	**Action**
iv) The hydroseeded slopes in Portions A,B,G,H and I appeared to have healthy vegetation growth.	-
v) Two drums containing what appeared to be asphalt had been dumped on the platform of Portion D. It is likely that it was disposed of with other C&D material.	Contractor was requested to remove the drums from the working platform.

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Date of Site Audit:	29/7/2005	Time of Site Audit:	1:30pm
Site Auditor:	Lyn Ip	Phase of Works:	Operational
Checked by:	Ben Ridley		

Checklist	Yes	No	Remarks
Operational Phase			
Fugitive Dust Emission			
Have dust control/mitigation measures been implemented to ensure full protection of the nearby ASRs?	x		
Are all installed air pollution control systems and measures operated and/or implemented in accordance with their design merits?	x		
A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading/unloading and similar activities should be allowed.	x		
Truck speed limit shall be limited to within 10km per hour.	x		
Is the designated site main haul route (paved)?	x		
Are water lorries and/or road sweepers used in dust suppression? Frequency of watering at least four times per day (as per PS Clause 1.76)? The frequency shall be increased when the weather is dry, when the truckloads are high, and for haul roads located within 100m from the northern boundary of the site.	x		Due to wet weather conditions, frequency was reduced today.
All dusty fill material shall be sprayed with water or a dust suppression chemical prior to loading, unloading or transfer so as to maintain the fill material wet, except for situations where the moisture content of the dusty material is a matter of concern.	x		
Frequent watering (at least three times per day) of the worksites with active dusty operations. The frequency shall be increased when the weather is dry.	x		
Vehicle washing facilities including high pressure water jet installed at the existing exit shall be maintained and operated by designated staff to ensure that these dust control measures are being used.	x		One of the two wheel wash bays was noted to be temporarily closed for repair / maintenance.
Before leaving the fill bank, every vehicle shall be washed to remove any dusty materials from its body and wheels.	x		
Trucks carrying dusty load entered to the site shall be sprayed with water once the impervious sheeting covering the load is removed.	x		
Have the temporary slope surfaces, especially those facing to the north of the site, been covered (tarpaulin sheeting or other impermeable sheeting), or sprayed (with water or a dust suppression chemical) or protected by other methods approved by CED?			Slopes in Portions A, B, G, H & I have been hydroseeded.
Final slope surfaces, especially those facing to the north of the site, shall be treated by compaction, followed by hydroseeding, vegetation plating or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabiliser approved by CED.			Slopes in Portions A, B, G, H & I have been hydroseeded. Vegetation growth noted on the last hydroseeded panels (June 2005).
When belt conveyor systems are in use for transfer of fill material, the conveyors shall be enclosed on top and 2 sides. Every transfer point between any two conveyors shall be enclosed.			N/A
Is the belt scraper installed at the head pulley of every belt conveyor effective in dislodging fine particles that may adhere to the belt surface, and to reduce carrying back of fine particles on the return belt?			N/A
The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the materials landing point is maintained at no more than 1m.			N/A
Note: Public fill at the stockpiling area should be handled to avoid segregation, deterioration, erosion or instability of the material, especially for the stockpiling surface facing to the north of the site.			
Fixed Noise Impact			
Have the approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) been adopted?	x		
Note; The noise standards specified in the Technical Memorandum for the Assessment of Noise From Places Other Than Domestic Premises, Public Places or Construction Sites shall be met.			

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	No	Remarks
Water Quality			
The existing/realigned intercepting channels and the sand/silt removal facilities should be used and maintained.		x	See observations 1 & 2
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bag barriers shall be used to assist the diversion of polluted stormwater to the silt removal facilities.	x		
Has a buffer distance of at least 100m been maintained between the boundary of the public fill stockpiling area and the sea front?	x		
A buffer distance of at least 20m should be maintained between the boundary of the C&DMSF and the seafront.			N/A
Is the stormwater interception system in the C&DMSF effective?			N/A
Are materials properly covered when there is any chance for the materials to be washed away?	x		
Temporary slope surfaces shall be covered as far as practicable with tarpaulin sheets or other impermeable sheeting or protected by other methods approved by CED especially when a rainstorm is imminent or forecast.			Slopes in Portions A, B, G, H & I have been hydroseeded.
Final slope surfaces shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabiliser approved by CED to prevent the washing away of stockpiled material.			Slopes in Portions A, B, G, H & I have been hydroseeded. Vegetation growth noted on the last hydroseeded panels (June 2005).
Existing and newly constructed catchpits, sand and silt removal facilities and intercepting channels should be maintained, and the deposited silt and grit should 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.		x	See observations 1 & 2
A wheel washing bay should be provided at the site exit and wash-water should have sand and silt settled out or removed before being discharged into storm drains.	x		One of the two wheel wash bays was noted to be temporarily closed for repair / maintenance. Cleaning conducted twice per week as indicated by Contractor's Representative.
Is the section of construction road between the wheel washing bay the public road paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains?	x		
Sewage from toilets should be discharged into a foul sewer, or chemical toilets should be provided.	x		
Should the use of chemical toilets be necessary, these should be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	x		
Are the grease traps in the canteen kitchens put into use and effective ?			N/A
If no communal sewer can be provided, has the sewage generated from the workforce at the site offices been diverted to septic tanks and regularly removed by using vacuum tankers.	x		Discharged to DP4 as per licence.
The drainage system provided at car parking areas should be installed with oil interceptors in addition to sand/silt removal facilities. Has regular cleaning of the system been carried out?	x		A new pump was observed to have been installed and was in operation at the time of the site inspection.
Has disturbance to seabed sediments and undue turbidity from vessel movement or propeller wash been minimized?	x		
Barges should not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents should be properly collected and treated before disposal.	x		
Is foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging point? Are these due to work activities?		x	

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Checklist	Yes	No	Remarks
Have silt curtains been provided at the outward side of the basin near the barging point throughout the operational phase when there is public fill intake by barges (after Dec 2003)?	x		
Has a waste collection vessel been deployed to remove floating debris on the sea near the fill bank for proper disposal?	x		Twice a week
Note:Effluent discharged from the site shall meet the relevant discharge limits specified in the Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.			
Landfill Gas Hazard			
Are gas detection equipment and appropriate breathing apparatus available and used when workers entering confined spaces or trenches deeper than 2 metres?	x		As advised by the Contractor and the Site Safety Officer
A Safety Officer/Supervisor should be present on site throughout the operational stage.	x		
Has the Safety Officer/Supervisor been provided with intrinsically safe portable instrument(s), appropriately calibrated and capable of measuring the gases in the ranges as recommended in the EIA Report?			Information to be provided by the Contractor / Site Safety Officer.
Has a LFG monitoring programme been formulated by the Safety Officer/Supervisor or by a qualified person?			Details of their monitoring programme to be provided by the Contractor / Site Safety Officer.
Has periodic/routine monitoring been conducted during ground-works, in all excavations, and works in confined spaces, if any?	x		As advised by the Contractor and the Site Safety Officer
Landscape and Visual			
Does the design of the fill bank and platform heights adopted allow the fill bank to fit into the general topography of the surrounding land? Straight edged slopes should be avoided.	x		
The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	x		As advised by the Contractor and the Site Safety Officer
Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green/brown) once completed.	x		Slopes in Portions A, B, G, H & I have been hydroseeded. Vegetation growth noted on the last hydroseeded panels (June 2005).
The barging point and the C&DMSF at the fill bank shall not be in operation from 7:00pm to 8:00am daily to avoid potential visual impact from glare.	x		Operation period extended to 11pm as per EP
Other Environmental Factors			
C&D waste sorted from mixed C&D material at the C&DMSF shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	x		
Environmental Monitoring and Audit			
Is a log book maintained by the ET?	x		To be placed on site.
At the time of site audit, was any monitoring underway?	x		
If yes, what parameters are being monitored and were the correct procedures adopted?			Water quality
Have any mitigation measures been implemented as a result of exceedance of Action-Limit Levels? If so, do they appear to be effective?		x	

Agreement No. 42/2002 Fill Bank at Tseung Kwan O Area 137 - Investigation

Observations

Issue	Action
1. The main trapezoidal channel along the eastern boundary of the site has been cleaned of dried vegetation. However, dried vegetation was still observed to have been caught in front of the trash screen at Permanent Desilting Chamber (PDC) C. According to the Contractor's Representative, mud was still settled inside PDC A.	All surface drainage channels and PDCs should be cleared of debris on a regular basis to ensure that they are working in an efficient and effective manner at all times, in particular in the event of rain. In regards to PDC A, the Contractor is advised to liaise with the PBR2 Contractor to discuss the cleaning and maintenance of PDC A and the upstream section of its connecting surface
2. Significant vegetation growth seen along the bottom and the side banks of the surface drainage channel upstream of DP4 (connected to surface drainage channel from SENT Landfill).	The vegetation overgrowth in the surface drainage channel should be regularly cut / removed
Other Observations i. The drainage outlet on the side of the generator drip tray (located at the temporary water filling station) was noted to be dripping.	Contractor's Representative requested to repair the outlet to prevent further dripping.
ii. A pile of soil used to soak up lubricant oil spills in the Maintenance Workshop Area was noted beneath a crane (under repair).	Contractor's Representative was reminded to remove the contaminated soil for disposal as chemical waste.
iii. A drip tray (beside the Chemical Waste Storage Shed) containing what is believed to be an empty drum was noted to be filled with rainwater.	Contractor's Representative was reminded to clean out the drip tray and to return the empty drum to its proper storage area.
iv. C&D material was still noted along the concrete walkway of the Barge Handling Area even when there were no barges moored along the seawall.	Contractor's Representative indicated that they would clear the BHA at the end of the working day and that boulders would be placed on the walkway to prevent the barge operators from unloading C&D material on the walkway. Contractor's Representative has been requested to provide a photograph record of the
v. A hand pump was improperly stored inside the main concrete bund next to the main reception / trip ticket office. Back flow of liquid was noted to be dripping onto the ground outside of the concrete bund.	Contractor's Representative immediately rectified the problem by properly storing the hand pump and connecting hose completely in a drip tray inside the concrete bund.
vi. The section of DP4 immediately under the haul road ramp was noted to be covered in mud.	Contractor's Representative advised that they would clean out the indicated area within the next few days.

Appendix I

Weekly ET's Site Inspection Record

Inspection Date : 22 July 2005
Time : 15:00

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

Temperature : 32
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.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ 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.	√			
▪ The designated site main haul rout shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ 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.		√		Refer to item 11
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ 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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
Noise Impact				
▪ 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.	√			

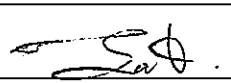
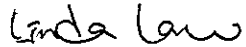
Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.		√		Refer to item 10
▪ Temporary intercepting drains should be used at the stockpiling area to divert 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.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ 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, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ 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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.		√		Refer to item 10
▪ 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 darins.	√			
▪ 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.	√			
▪ Wastewater collected from canteen kitchen, including that from basins, sinks and floor drains, shall be discharged into foul sewers via grease traps.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ The barges shall be in right size such that adequate clearance in 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.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ 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.	√			
▪ 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.		√		Refer to item 9
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straigth edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material at eh C&DMSF shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.		√		Refer to Item 4
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.		√		Refer to item 6 and 8

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Location	Photo Ref.
1	Standing water was observed at Portion A. The Contractor was reminded to provide insecticide to the drainage system regularly in order to prevent mosquito breeding.	Portion A	050722_001
2	Accumulation of dried vegetation was observed at the slope of drainage channel at Portion A. The Contractor was reminded to clean the dried vegetation and maintain the drainage system regularly especially rainy reason.	Portion A	050722_002
3	Oily water was found leak from the drip tray at the East of the Work Shop at Portion I. The Contractor was reminded to replace the value and maintain the drip tray regularly.	Portion I	050722_003
4	Rubbish and other construction waste were observed at the East of Work Shop at Portion I. The Contractor was reminded to clean up the rubbish and other construction waste.	Portion I	050722_004
5	Standing water was found accumulated on site at Portion B. The Contractor was reminded to drain the water and back fill the area.	Portion B	050722_005
6	Sign of oil spillage was observed inside the Work Shop at Portion I. The Contractor should clean the area immediately.	Portion I	050722_006
7	Tarpaulin sheet used to cover the chemical container was found dirty and damage. The Contractor was reminded to replace the new one. Beside, the Contractor was also reminded to keep the Chemical Storage area tidy.	Portion B	050722_007
8	Oil leakage was observed during the maintenance of the site machine. The Contractor was reminded to clean up the area immediately.	Portion I	050722_008
9	Silty water was found leak from the sea wall at Portion I. The Contractor was reminded to take appropriate measures to prevent the leakage of silty water.	Portion I	050722_009
10	Silty water was observed at the sand trap of the manhole at DB4. The Contractor was reminded to clean the drainage system more frequently.	DB4	050722_010
11	A truck was observed leaving the site without using the wheel washing facilities. The Contractor was reminded to provide Notice Board at the site entrance to remind the truck driver to use wheel-washing facilities before leaving the site.	Site Entrance	---

Remark

	Name	Signature	Date
Inspected by	H. T. Chow		23 July 2005
Checked by	Linda Law		23 July 2005

Photos

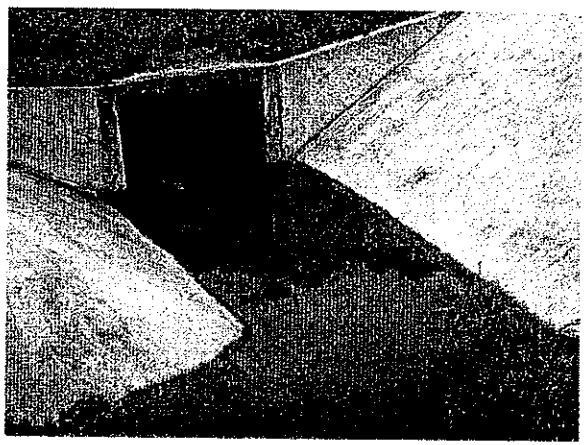


Photo 050722_001

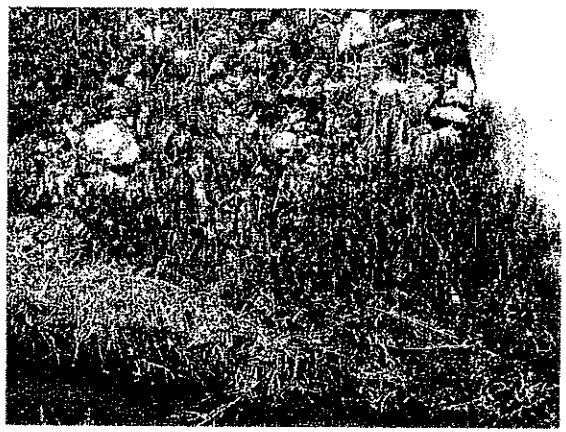


Photo 050722_002

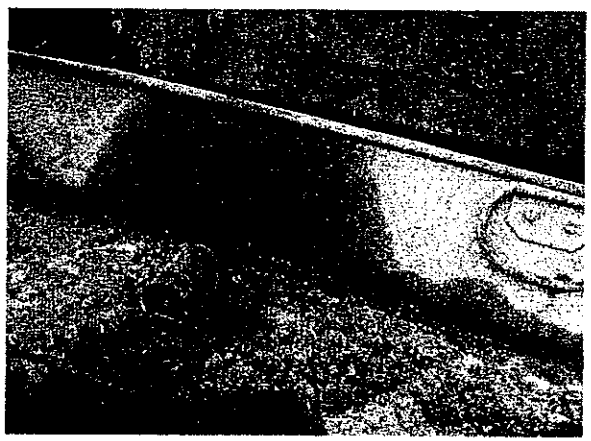


Photo 050722_003

Photo 050722_004

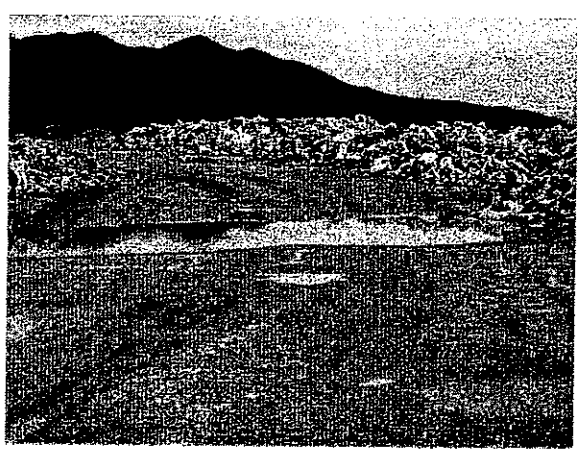


Photo 050722_005

Photo 050722_006

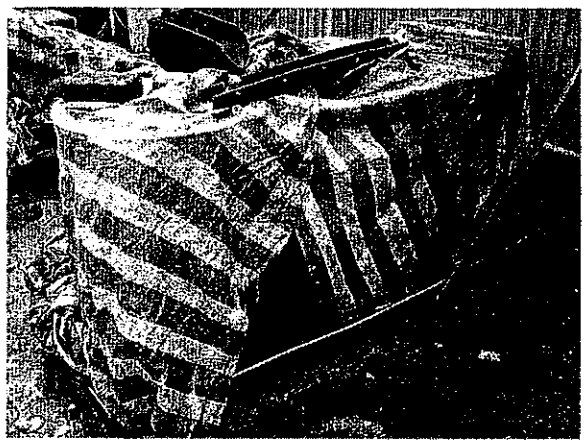


Photo 050722_007

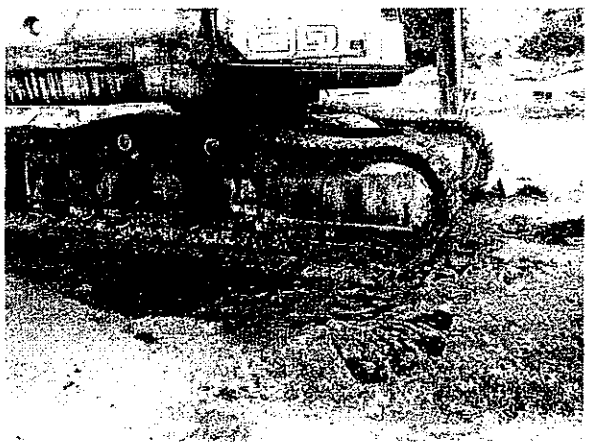


Photo 050722_008

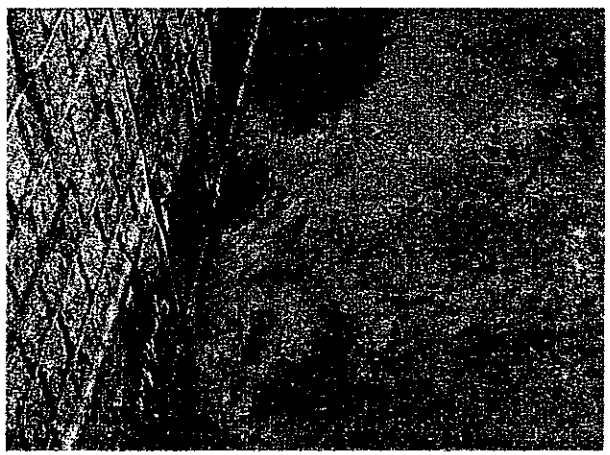


Photo 050722_009

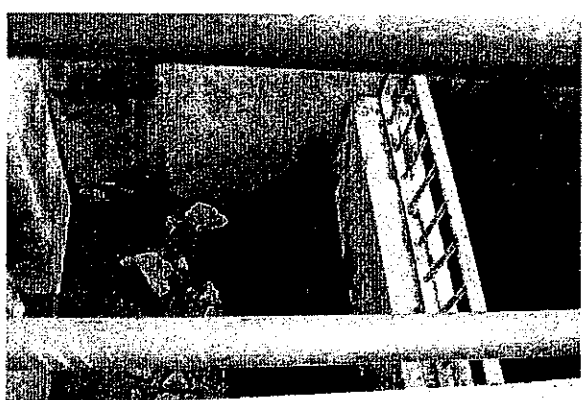


Photo 050722_010

Follow-up Action of the Weekly Site Inspection

Inspection Date : 22 July 2005
Time : 15:00

Inspected by Name : Ms. Lyn IP (IEC)
: Wing Tung FONG (Contractor)
H. T. CHOW (ET)

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

Temperature : 32
Humidity : ~~High~~ / Moderate / ~~Low~~

Item	Details of defective works or observations	Location	Response	Date of Action taken
1	Standing water was observed at Portion A. The Contractor was reminded to provide insecticide to the drainage system regularly in order to prevent mosquito breeding.	Portion A	Larvicide granule was applied to the drainage system at Portion A.	25 July 2005
2	Accumulation of dried vegetation was observed at the slope of drainage channel at Portion A. The Contractor was reminded to clean the dried vegetation and maintain the drainage system regularly especially rainy reason.	Portion A	This item was still outstanding at the moment, it was because the proposed verification works were hindered by adverse weather	---
3	Oily water was found leak from the drip tray at the East of the Work Shop at Portion I. The Contractor was reminded to replace the value and maintain the drip tray regularly.	Portion I	The value had been repaired and the drip tray had been well cleaned.	28 July 2005
4	Rubbish and other construction waste were observed at the East of Work Shop at Portion I. The Contractor was reminded to clean up the rubbish and other construction waste.	Portion I	The rubbish hand other construction waste had been clean up.	25 July 2005
5	Standing water was found accumulated on site at Portion B. The Contractor was reminded to drain the water and back fill the area.	Portion B	Standing water was drained off.	25 July 2005
6	Sign of oil spillage was observed inside the Work Shop at Portion I. The Contractor should clean the area immediately.	Portion I	The oil spillage was cleared up already.	25 July 2005
7	Tarpaulin sheet used to cover the chemical container was found dirty and damage. The Contractor was reminded to replace the new one. Beside, the Contractor was also reminded to keep the Chemical Storage area tidy.	Portion B	Tarpaulin sheet was under procurement.	---
8	Oil leakage was observed during the maintenance of the site machine. The Contractor was reminded to clean up the area immediately.	Portion I	The oil Spillage was cleaned up already.	25 July 2005
9	Silty water was found leak from the sea wall at Portion I. The Contractor was reminded to take appropriate measures to prevent the leakage of silty water.	Portion I	The muddy water was drained off and leakage of silty water from the seawall was not observed.	25 July 2005
10	Silty water was observed at the sand trap of the manhole at DB4. The Contractor was reminded to clean the drainage system more frequently.	DB4	This item was still outstanding at he moment, it was because the proposed works was hindered by adverse weather.	---
11	A truck was observed leaving the site without using the wheel washing facilities. The Contractor was reminded to provide Notice Board at the site entrance to remind the truck driver to use wheel-washing facilities before leaving the site.	Site Entrance	Notice board was erected to remind all truck drivers to use wheel-washing facilities before leaving the site.	25 July 2005

Inspection Date : 26 July 2005
Time : 10:30

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

Temperature : 32
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.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ 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.	√			
▪ The designated site main haul rout shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ 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, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ 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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
Noise Impact				
▪ 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.	√			

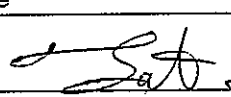
Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
Water Quality					
▪	The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained.		√		Refer to item 10
▪	Temporary intercepting drains should be used at the stockpiling area to 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.	√			
▪	A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪	A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪	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, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪	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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪	Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.		√		Refer to item 10
▪	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 darins.	√			
▪	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.	√			
▪	Wastewater collected from canteen kitchen, including that from basins, sinks and floor drains, shall be discharged into foul sewers via grease traps.	√			
▪	Oil Intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪	The barges shall be in right size such that adequate clearance in 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.	√			
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪	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.	√			
▪	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.		√		Refer to item 9
▪	Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪	A waste collection vessel shall be deployed to remove floating debris.	√			

Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straigth edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material at eh C&DMSF shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			

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 comment item #1 (22/07/05), insecticide had been applied to standing water accumulated at Portion A to prevent mosquito breeding.	050726_001	No
2	Follow up action to previous comment item #2 (22/07/05), dried vegetation was still observed at the slope of drainage channel at Portion A. The Contractor was reminded to clean the dried vegetation and maintain the drainage system regularly especially rainy reason.	050726_002	Yes
3	Follow up action to previous comment item #3 (22/07/05), the valve had been repaired and the drip tray was cleaned.	050726_003	No
4	Follow up action to previous comment item #4, (22/07/05), rubbish and other construction waste were cleaned up.	050726_004	No
5	Follow up action to previous comment item #5, no standing water was found on site at Portion B.	050726_005	No
6	Follow up action to previous comment item #6, the oil contaminated area had been cleaned up.	---	No
7	Follow up action to previous comment item #7, the findings were stilled observed. The Contractor was reminded to replace the new tarpaulin sheet and also to keep the Chemical Storage area tidy.	050726_006	Yes
8	Follow up action to previous comment item #8, the contaminated area had been cleaned up and no oil leakage was observed.	050726_007	No
9	Follow up action to previous comment item #9, no silty water was found leak from the sea wall at Portion I.	050726_008	Yes
10	Follow up action to previous comment item #10, silty water was still observed at the sand trap of the manhole at DB4. The Contractor was reminded to clean the drainage system more frequently.	050726_009	Yes
11	Follow up action to previous comment item #11, site truck was observed leaving the site with using the wheel washing facilities.	---	No
12	Rain water was accumulated in drip tray near Work Shop at Portion I. The Contractor was reminded to drain the rain water immediately.	050726_010	Yes
13	Rain water was accumulated in drainage channel near Gammon Site Office at Portion I. The Contractor was reminded to provide insecticide to the drainage system regularly in order to prevent mosquito breeding.	050726_011	Yes

Remark

	Name	Signature	Date
Inspected by	H. T. Chow		27 July 2005
Checked by	Linda Law		27 July 2005

Photos

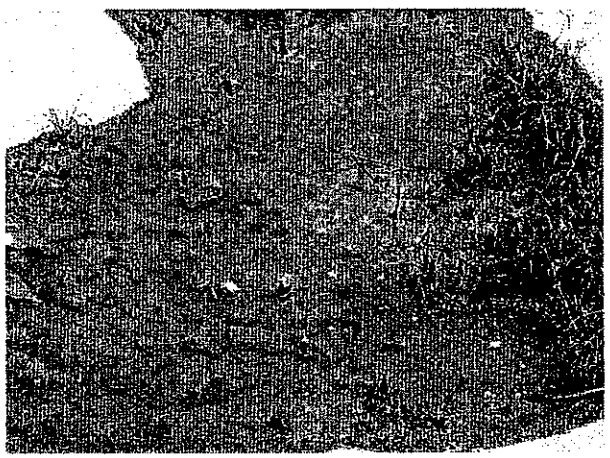


Photo 050726_001

Photo 050726_002

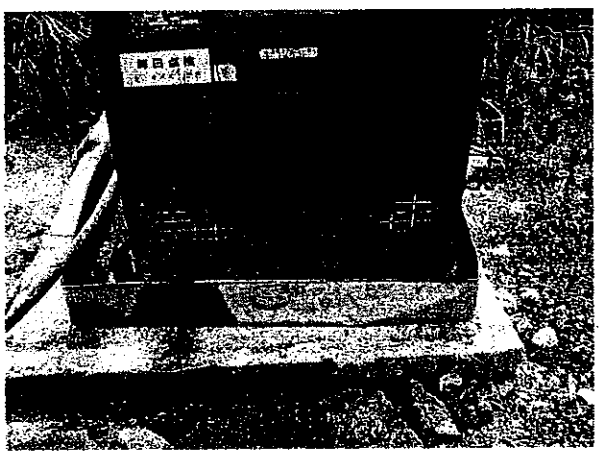
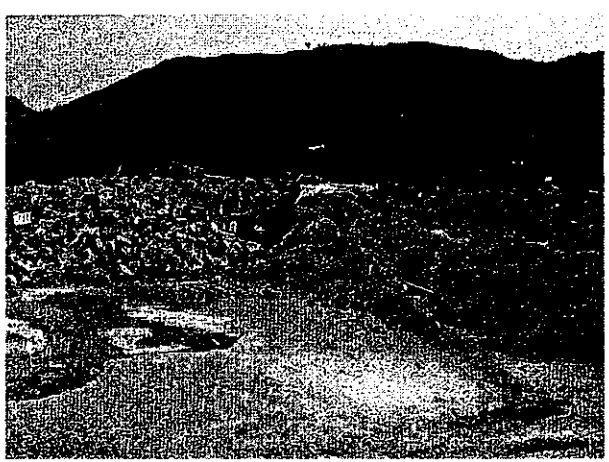


Photo 050726_003



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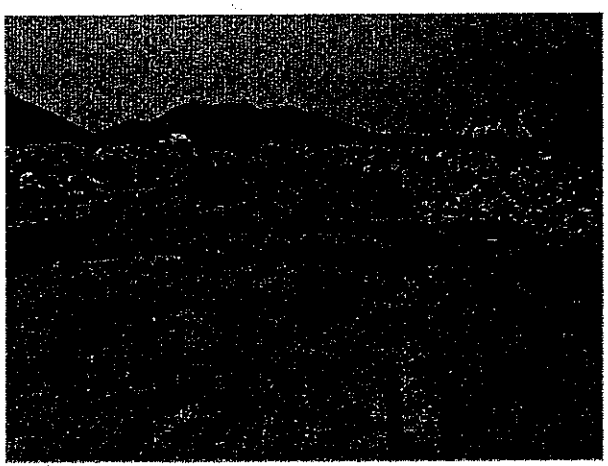


Photo 050726_005

Photo 050726_006

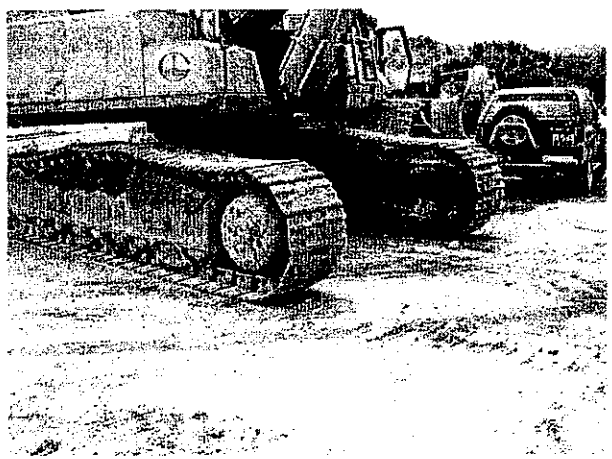


Photo 050726_007

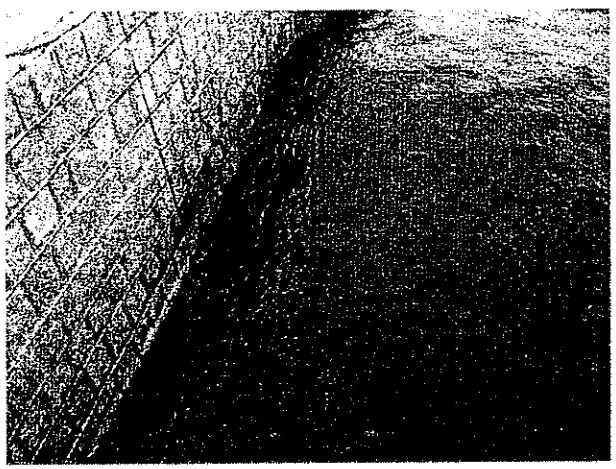


Photo 050726_008

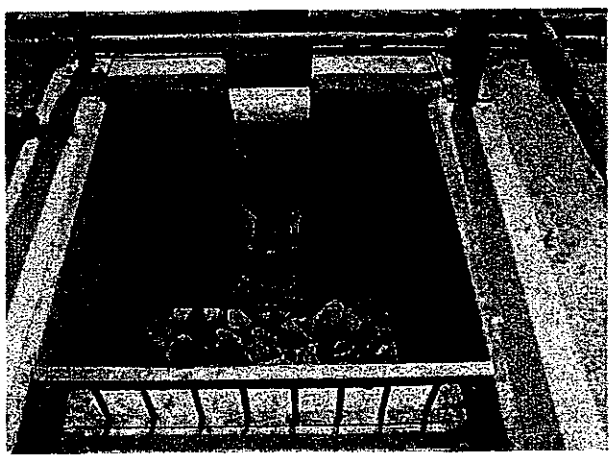


Photo 050726_009

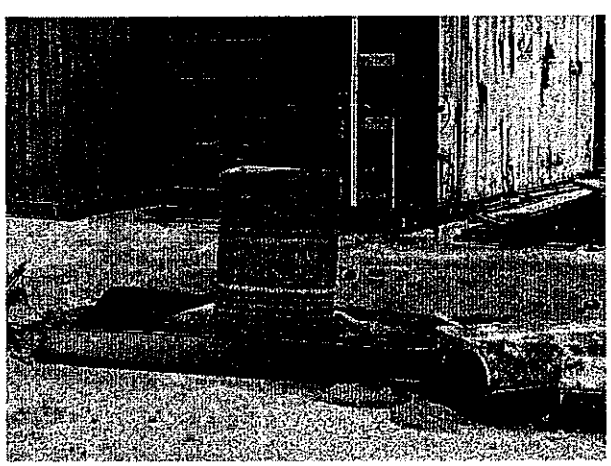


Photo 050726_010

Photo 050726_011

Follow-up Action of the Weekly Site Inspection

Inspection Date	:	26 July 2005	Inspected by	Name	: C. K. Wong	(Contractor)
Time	:	10:30			: H. T. CHOW	(ET)

Weather	:	Sunny / ~~Fine / Overcast / Drizzle / Rain / Storm / Hazy~~	Temperature	:	32
Wind	:	~~Calm~~ / Light / ~~Breeze / Strong~~	Humidity	:	High / ~~Moderate~~ / ~~Low~~

Item	Details of defective works or observations	Response	Date of Action taken
1	Follow up action to previous comment item #2 (22/07/05), dried vegetation was still observed at the slope of drainage channel at Portion A. The Contractor was reminded to clean the dried vegetation and maintain the drainage system regularly especially rainy reason.	The dried vegetation was clean up already.	27 July 2005
2	Follow up action to previous comment item #7, the findings were stilled observed. The Contractor was reminded to replace the new tarpaulin sheet and also to keep the Chemical Storage area tidy.	New tarpaulin sheets were properly place already.	27 July 2005
3	Follow up action to previous comment item #10, silty water was still observed at the sand trap of the manhole at DP4. The Contractor was reminded to clean the drainage system more frequently.	Manhole at DP4 was cleaned up already. (Photo No.: PICT0854)	27 July 2005
4	Rain water was accumulated in drip tray near Work Shop at Portion I. The Contractor was reminded to drain the rain water immediately.	The stagnant water was cleared.	27 July 2005
5	Rain water was accumulated in drainage channel near Gammon Site Office at Portion K. The Contractor was reminded to provide insecticide to the drainage system regularly in order to prevent mosquito breeding.	Larvicide granule was applied to the drainage channel near Gammon Site Office at Portion K.	27 July 2005

Photo of Follow-up Action

Photo No.: PICT0854

Appendix J

Implementation Schedule of Mitigation Measures

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	Northern Site Boundary	√			
▪ Water sprays shall be provided and used to dampen materials.	All areas	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	All areas	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	All areas	√			
▪ 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.	Site Egress	√			
▪ The designated site main haul rout shall be paved or regular watering.	All haul roads	√			
▪ Frequent watering of work site shall be at least three times per day.	All areas	√			
▪ Wheel washing facilities including high pressure water jet shall be provided at the entrance of work site.	Site Egress	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	Site Egress	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	All areas	√			
▪ 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 shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	All areas	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	C&DMSF				√
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	C&DMFS				√
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	C&DMFS				√
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality					
▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained regularly.	All areas		√		
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	Along the seafront	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	C&DMFS				√
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	All areas		√		
▪ The material shall be properly covered to prevent washed away especially before rainstorm.	All areas	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	Temporary Slopes	√			
▪ 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.	Wheel Washing facility	√			
▪ Obtain Discharge License	Site Office	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	Barge Handling Area (BHA)	√			
▪ 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.	Barge Handling Area (BHA)	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	Barge Handling Area (BHA)	√			
Landscape and Visual					
• Construction of lighting to avoid spillage and glare	All areas	√			
• Hydroseeding	Completed slopes	√			
• Hoarding erection	Site boundary	√			
• Damage to surrounding area avoided	All areas	√			
Other Environmental Factors					
• C&D waste sorted from mixed C&D material shall be transfer to SENT landfill for disposal.	All areas	√			
• Plan and stock construction materials carefully to minimise generation of waste.	All areas	√			
• Any unused materials or those with remaining functional capacity should be recycled.	All areas	√			
• All generators, fuel and oil storage are within bundle areas.	All areas	√			
• Oil leakage from machinery, vehicle and plant is prevented.	All areas		√		
• Bund chemical storage area to 110% capacity.	All areas	√			
• Prevent disposal of hazardous materials to air, soil and water body	All areas	√			
• Provide rubbish skips at all work areas	All areas	√			

Appendix K

Interim Notification of Environmental Quality Limits Exceedance

Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo
Fill Bank at Tseung Kwan O Area 137

Interim Notification of Exceedances of Action / Limit Levels

Part 1 – Turbidity

Date	Monitoring Location	Tide Mode	Measured Value (NTU)	Action Level* (NTU)	Limit Level* (NTU)	Possible Reason(S) for the Exceedance	Action taken to be taken	Remarks
29/07/05	M4	Mid-ebb	2.00	4.28 or 120% of upstream control station C1 (1.60x1.2=1.92)	4.58 or 130% of upstream control station C1 (1.60x1.3=2.08)	As there was no sediment plume observed from the Fill Bank during the monitoring event. Therefore, the exceedance was considered not due to the Fill Bank operation. It might be due to natural fluctuation of turbidity in the water body around the area and local discharge from the nearby residents at Tung Lung Chau.	Nil	Nil

* Traceable to Method Statement (Marine Water Quality Monitoring and Audit Manual) of Contract No.CV/2002/08, Rev. 2, Section 3.1 – 3.21

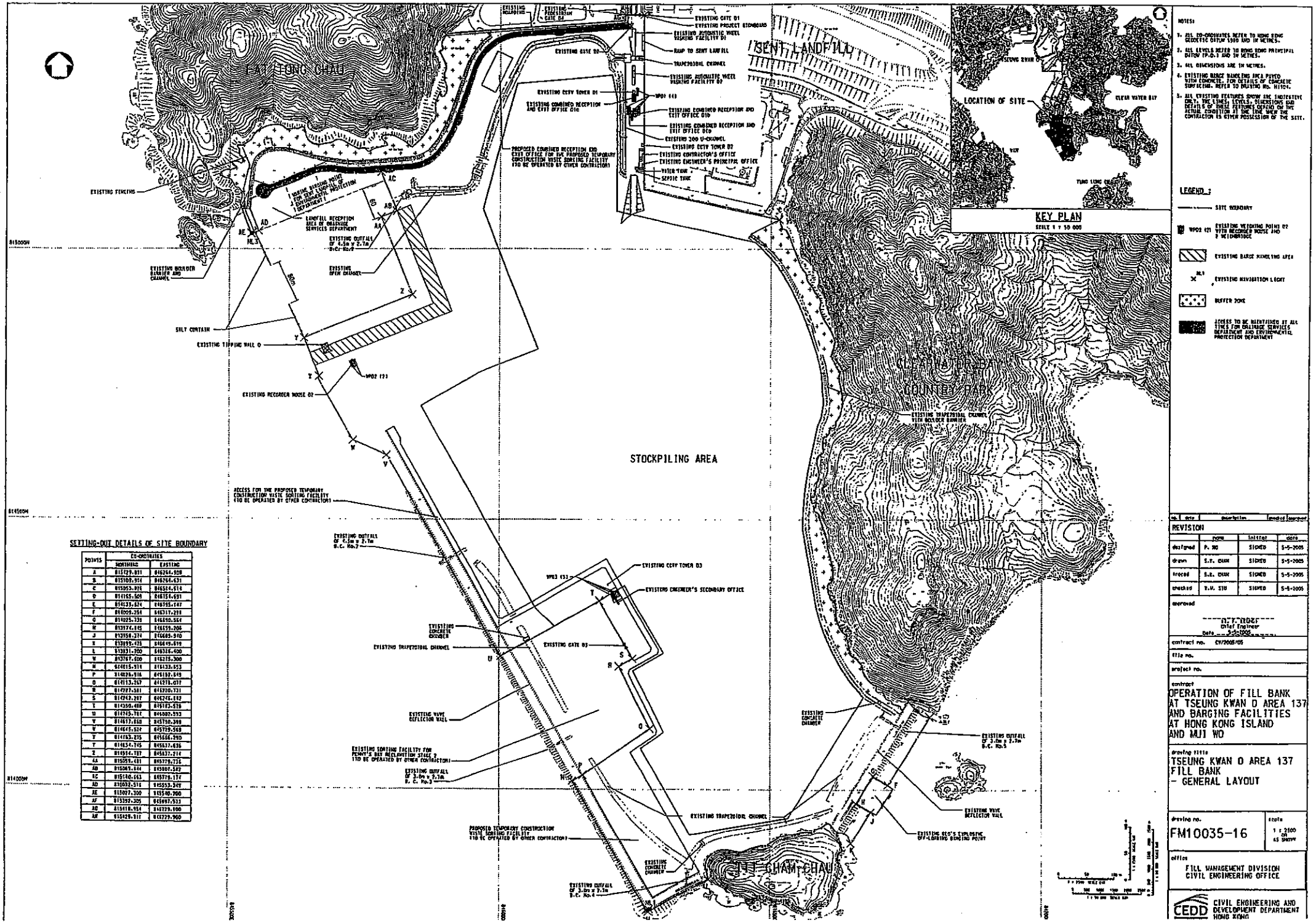
Part 2 – Suspended Solids

Date	Monitoring Location	Tide Mode	Measured Value (mg/L)	Action Level* (mg/L)	Limit Level* (mg/L)	Possible Reason(S) for the Exceedance	Action taken to be taken	Remarks
04/07/05	M4	Mid-ebb	7.3	6.74 or 120% of upstream control station C1 (5.3x1.2=6.36)	7.67 or 130% of upstream control station C1 (5.3x1.3=6.89)	As there was no sediment plume observed from the Fill Bank during the monitoring event. Therefore, the exceedance was considered not due to the Fill Bank operation. It might be due to natural fluctuation of SS in the water body around the area and local discharge from the nearby residents at Tung Lung Chau.	Nil	Nil
06/07/05	M4	Mid-ebb	10.7	6.74 or 120% of upstream control station C1 (7.7x1.2=9.24)	7.67 or 130% of upstream control station C1 (7.7x1.3=10.0)	As there was no sediment plume observed from the Fill Bank during the monitoring event. Therefore, the exceedance was considered not due to the Fill Bank operation. It might be due to natural fluctuation of SS in the water body around the area and local discharge from the nearby residents at Tung Lung Chau.	Nil	Nil
06/07/05	M4	Mid-flood	10.7	6.74	7.67	Exceedance was not due to the operation of the Fill Bank as the receiver was located upstream to the works area.	Nil	Nil

* Traceable to Method Statement (Marine Water Quality Monitoring and Audit Manual) of Contract No.CV/2002/08, Rev. 2, Section 3.1 – 3.21

Appendix L

Site General Layout plan



	NAME	INITIAL	DATE
designed	P. HO	SIGNED	5-5-2005
drawn	S.F. CHAN	SIGNED	5-5-2005
traced	S.F. CHAN	SIGNED	5-5-2005
checked	Y.W. SIU	SIGNED	5-5-2005

approved

(C.F. LEUNG)
Chief Engineer
Date

contract no. CV/2005/05

title no.

project no.

contract
OPERATION OF FILL BANK AT TSEUNG KWAN O AREA 137 AND BARGING FACILITIES AT HONG KONG ISLAND AND MUI WO

drawing title
TSEUNG KWAN O AREA 137 FILL BANK
- GENERAL LAYOUT

drawing no. FM10035-16

scale 1 : 2000 OR AS SHOWN

office
FILL MANAGEMENT DIVISION
CIVIL ENGINEERING OFFICE

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT HONG KONG

Appendix M

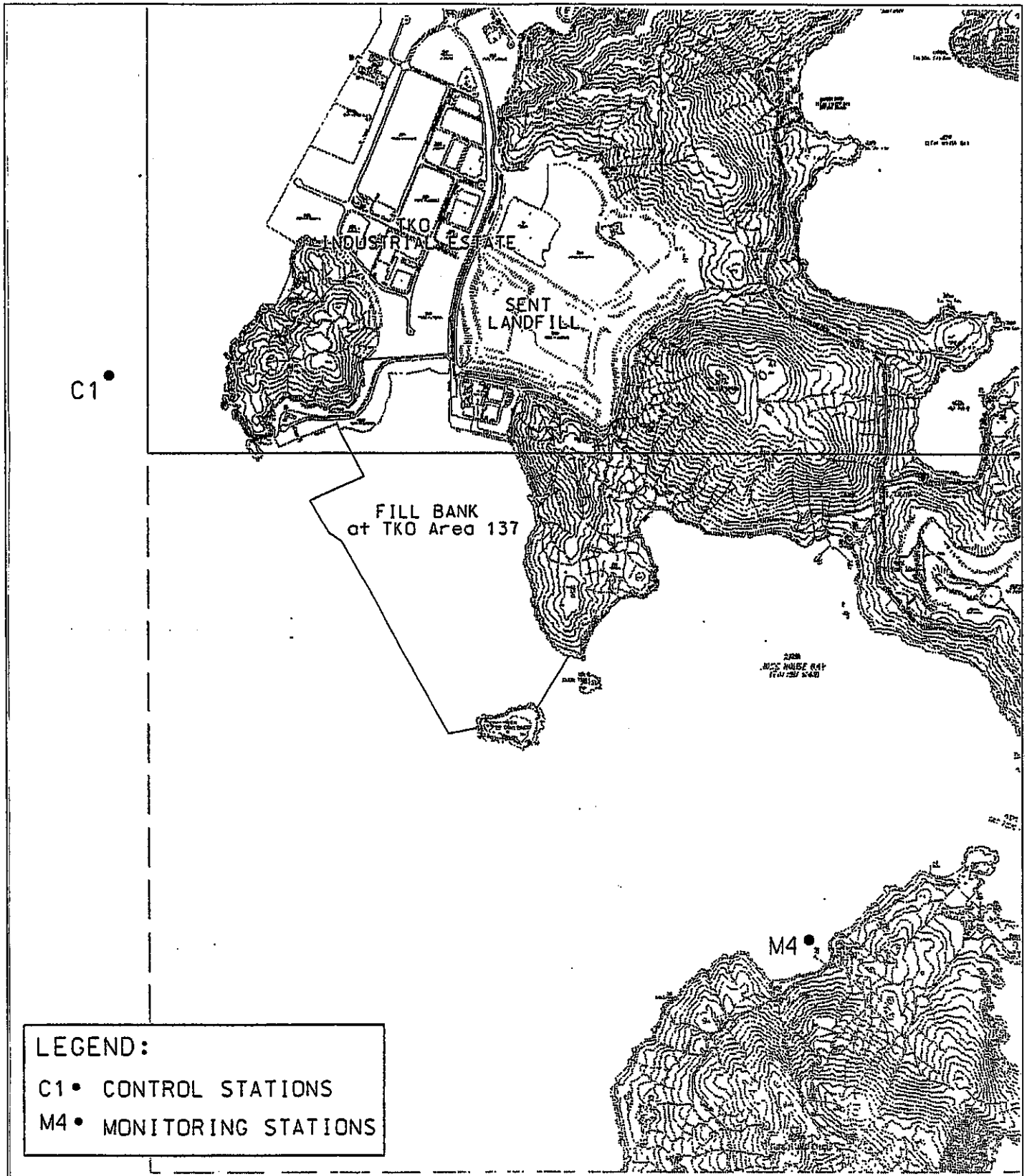
Monitoring Schedule for the Coming Month

Time Schedule for Water Quality Impact Monitoring (WQM), Impact Day-time Noise Monitoring (NM) and Impact Air Monitoring (1-hr TSP & 24-hr TSP)

August 2005

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 WQM Mid-ebb (09:00-11:00) Mid-flood (18:30-20:30) 1-hr TSP, 24-hr TSP Weekly SI	2	3 WQM Mid-ebb (10:30-12:30) Mid-flood (17:30-19:30)	4	5 WQM Mid-ebb (11:30-13:30) Mid-flood (18:00-20:00) 1-hr TSP, 24-hr TSP NM	6
7	8 WQM Mid-flood (07:00-09:00) Mid-ebb (13:00-15:00)	9	10 WQM Mid-flood (08:00-10:00) Mid-ebb (14:30-16:30)	11 1-hr TSP, 24-hr TSP Weekly SI	12 WQM Mid-flood (09:30-11:30) Mid-ebb (15:30-17:30)	13
14	15 WQM Mid-ebb (08:00-10:00) Mid-flood (17:00-19:00)	16	17 WQM Mid-ebb (09:00-11:00) Mid-flood (17:00-19:00) 1-hr TSP, 24-hr TSP Weekly SI	18	19 WQM Mid-ebb (11:00-13:00) Mid-flood (17:00-19:00)	20
21	22 WQM Mid-flood (07:30-09:30) Mid-ebb (13:00-15:00)	23 1-hr TSP, 24-hr TSP Weekly SI	24 WQM Mid-flood (08:30-10:30) Mid-ebb (14:30-16:30)	25	26 WQM Mid-flood (10:30-12:30) Mid-ebb (14:30-1630)	27
28	29 WQM Mid-ebb (08:00-10:00) Mid-flood (16:00-18:00) 1-hr TSP, 24-hr TSP Weekly SI	30	31 WQM Mid-ebb (09:30-11:30) Mid-flood (16:30-18:30)			

Figures



Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo

Figure 1
Locations of Water Quality Monitoring Stations –
Fill Bank at Tseung Kwan O Area 137

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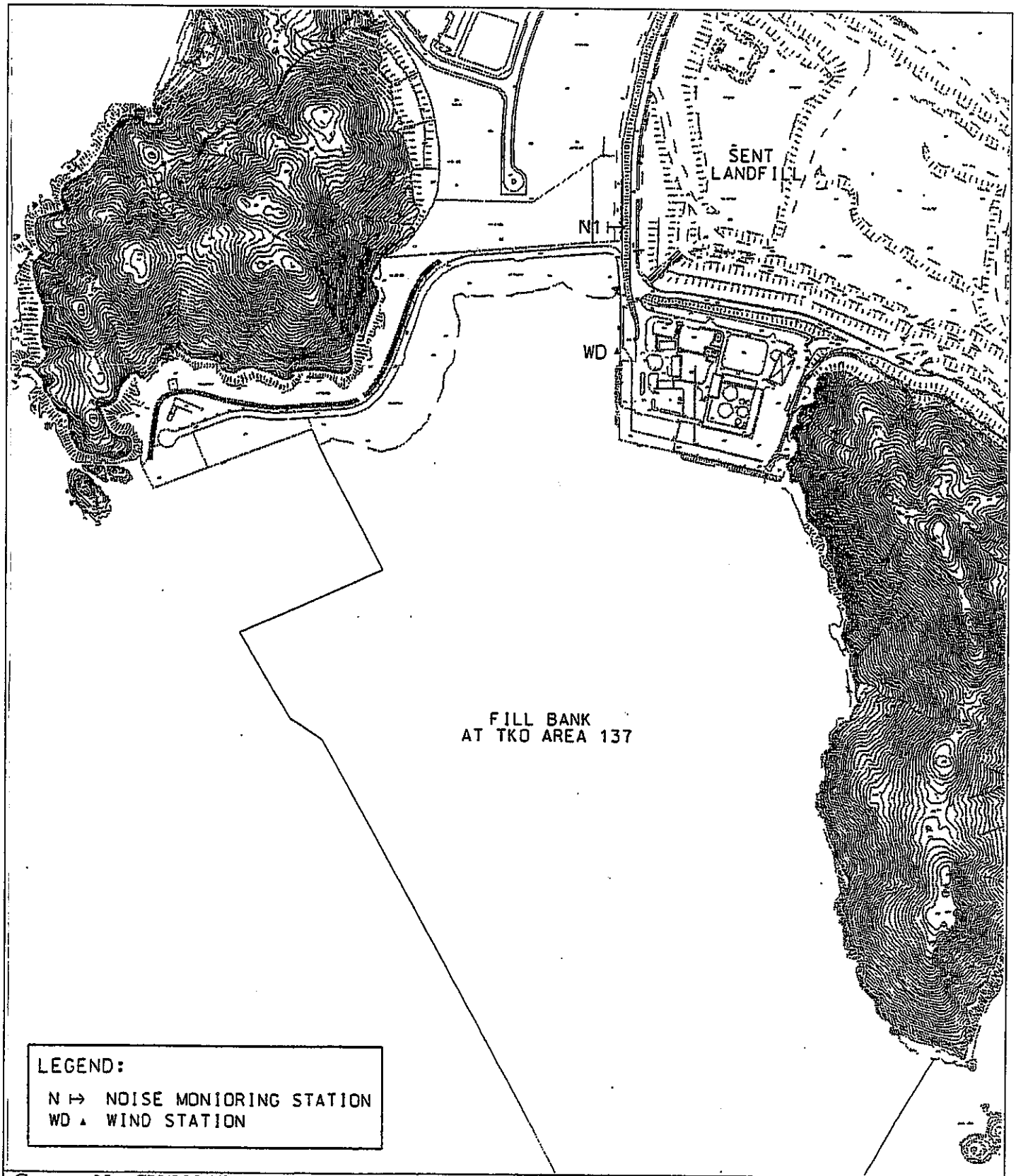
ETS-TESTCONSULT LIMITED



Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo

Figure 2

Locations of Noise Monitoring Station –
Fill Bank at Tseung Kwan O Area 137

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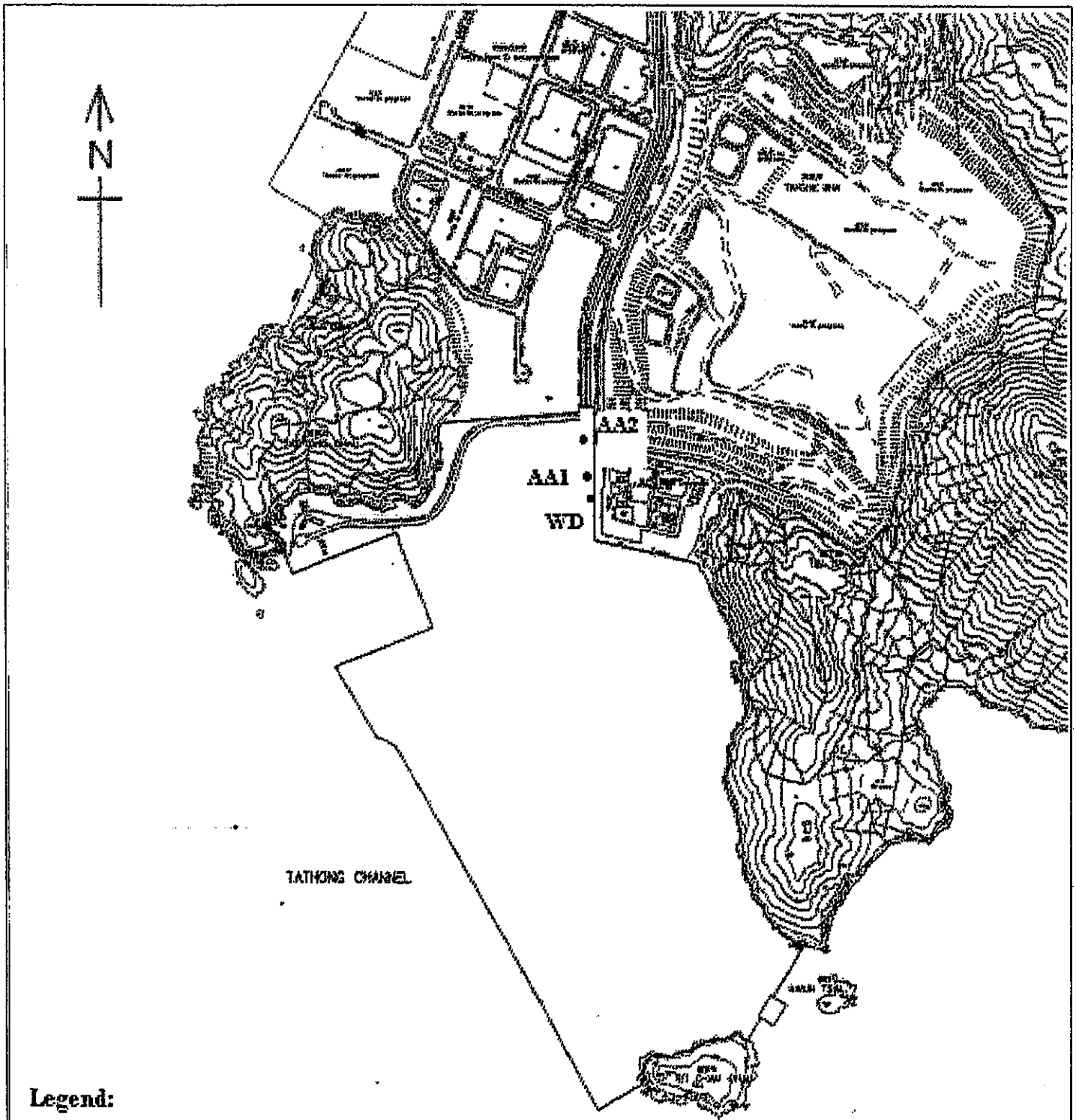
ETS-TESTCONSULT LIMITED



Legend:

AA ✱ Air Monitoring Stations

WD■ Wind Station

Contract No. CV/2005/05
Operation of Fill Bank at Tseung Kwan O Area 137 and Barging Facilities at Hong Kong Island and Mui Woo

Figure 3
Locations of Air Quality Monitoring Stations –
Fill Bank at Tseung Kwan O Area 137

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