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**TEST REPORT**

**LEADER - WAI KEE (C&T) JOINT VENTURE**

REMAINING ENGINEERING  
INFRASTRUCTURE WORKS FOR  
PAK SHEK KOK DEVELOPMENT  
PACKAGE 2A  
(CONTRACT NO.: TP 37/03)  
MONTHLY EM&A REPORT  
(AUGUST 2005)

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### **EXECUTIVE SUMMARY**

This monthly EM&A report (No.4) has been prepared to document the impact monitoring works conducted for the Contract of the Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No: TP 37/03) during the reporting period from 01 to 31 August 2005.

#### **Construction Progress**

The major construction works in this reporting month were as below:

- Drainage works (Excavation, pipe lying and breaking) at Section 5, 6,7 & 8
- Construction of vertical seawall at Landscape Node P2
- Piling works at Voided Abutment of Ma Liu Shui Bridge
- Waterworks at Section 5 & 6
- Construction of Kerb planter Wall and Feature Wall at Section 7 & 8

#### **Environmental Monitoring Progress**

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

- Noise Monitoring (Day-time): 5 Occasion at 4 designated locations
- 24-hour TSP Monitoring: 6 Occasions at 3 designated locations
- 1-hour TSP Monitoring: 13 Occasions at 3 designated locations
- Weekly-site inspection: 4 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.

#### **Wastewater Monitoring**

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring had been carried out at 25 May 2005 by ET. The next wastewater monitoring should be at August 2005.

#### **Site Inspection**

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

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
Weekly site inspection (ET)	04, 13, 18, 25
Monthly site inspection (IEC/LWKJV/RE)	26

The observations were raised during this reporting month. The site inspection findings are presented as follows:

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Site Practice	No drip tray was provided for the generator at Node 2 during the weekly site inspections (13/08/05, 18/08/05 and 25/08/05).	The Construction team replied to provide drip tray for the generator immediately.	Since the finding was still observed during the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.
2	Water	The silt curtain was found partly enclosed the marine working areas at Node 2 during the weekly site inspection (18/08/05).	The Construction team replied to enclose the marine working areas completely by using silt curtain and maintain the silt curtain properly.	During the subsequent site inspection (25/08/05), it was found that the silt curtain was fully enclosed the marine working area. Hence, the finding was completed and no further actions were required.
3	Water	Site runoff was found directly discharged into the sea at SA14 during weekly site inspections (18/08/05).	The Construction team replied to treat the site runoff, such as passing sedimentation tank before discharge.	During the subsequent site inspection (25/08/05), it was found that no site runoff was directly discharged to the sea. Hence, the finding was completed and no further actions were required.
4	Site Practice	Rain water was accumulated in the Chemical Waste Storage Area at the Contractor's Site Office during the weekly site inspection (25/08/05).	The Construction team replied to drain the rain water immediately to avoid mosquito breeding..	Since the finding was recorded at the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.



### **Waste Management**

According to weekly site inspection, ET found that the Contractor followed the recommended procedures stipulated in the Waste Management Plan (WMP) on handling and disposal of wastes. 8030m<sup>3</sup> inert C&D materials, 4kg metals, 52kg Paper/Cardboard Packaging and 2000 kg general refuse were generated. All inert C&D materials were reused in the Contract and other wastes were handling under the instruction and procedure stated in the WMP in this reporting month.

### **Environmental Complaints**

No environmental complaints were received in this monitoring month.

### **Notification of summons and successful prosecutions**

No notification of summons and prosecutions with respect to environmental issues were registered 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;
- Cleanup the access road regularly;
- Watering, hydro-seeding or covering all stockpiles with tarpaulin to avoid wind and water erosion;
- Diverting the silty runoff to sedimentation trap or sedimentation tanks;
- Use and maintenance of silt curtain properly during marine works;
- Maintain good site practice and waste management to minimize environmental impacts at the site;
- Follow-up improvements on waste management issues.



## 1.0 INTRODUCTION

Leader – Wai Kee (C&T) Joint Venture (LWKJV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03).

In accordance with the Section 10 of Environmental Permit to Construct and Operate a Designate Project (EP-108/2001/AEP-108/2001), EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A manual, environmental monitoring of air quality and noise is required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study report;
- Environmental requirements in contract documents.

This monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 01 to 31 August 2005.

## 2.0 PROJECT INFORMATION

### 2.1 Background

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03) was planned and designed by the Civil Engineering and Development Department (CEDD).

As the main Contractor of the captioned project: contracted by, LWKJV will follow the environmental monitoring recommendation stated at the EM&A Manual that was prepared with reference to the EIA Study for Feasibility Study on the Pak Shek Kok Development Area (PSKDA) Environmental Monitoring and Audit Manual under Agreement No. CE 90/96.

### 2.2 Site Description

Generally, the construction site is located at Pak Shek Kok development area. Surrounding the construction site, there are two air sensitive receivers: HKIB Staff Accommodation and Cheung Shue Tan Village and three noise sensitive receivers: HKIB Staff Accommodation, CUHK Residence No.10 and Cheung Shue Tan Village.

Figure 1 and 2 show the noise and air monitoring locations of this project.

### 2.3 Construction Programme

Details of construction programme are shown in Appendix F.

### 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, and construction programme are shown in table 2.1.



Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel. No.	Fax No.
CEDD	Mr. M. S. Lam	Employer	2158 5630	2693 2918
Hyder	Mr. Herman Fong	Engineer	2603 6638	2603 7883
LWJV	Mr. T. T. Wong	Project Manager	2442 1123	2442 9733
Hyder	Ir. Coleman Ng	Independent Environmental Checker	2911 2233	2805 5028
ETL	Mr. C.L. Lau	Environmental Team Leader	2946 7791	2695 3944

### 3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

The site area of this project is shown in Appendix G.

A summary of the major construction activities undertaken in this monitoring month is shown in Table 3.1. The implementation of corresponding mitigation measures is summarized in Table 3.2.

Table 3.1 Major Construction Activities in this reporting month

Major Construction Activity	Location
Drainage Works (Excavation, pipe laying and breaking)	Section 5, 6, 7, 8
Construction of vertical seawall	Landscape Node P2
Piling Works	Voided Abutment of Ma Liu Shui Bridge
Construction of Kerb Plaster Wall and Feature Wall	Section 7 & 8
Waterworks	Section 5 & 6

Table 3.2 Implementation of Environmental Mitigation Measures

General construction works	<ul style="list-style-type: none"> <li>• Effective water sprays used on the site at potential dust emission sources such as haul roads and unpaved areas;</li> <li>• The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading;</li> <li>• Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off;</li> <li>• Water, hydro-seed or cover the open stockpile and exposed loose soil areas by using clean tarpaulin sheets;</li> <li>• Provide proper and efficient drainage facilities (e.g. wheel washing facilities) and sedimentation system to ensure that site runoff should be treated before discharged to drains;</li> <li>• Remove the sand/rubbish accumulated in the drain/channel regularly;</li> <li>• Use and maintenance of silt curtain properly during marine works;</li> <li>• Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;</li> <li>• Remove the construction waste accumulated inside or outside the site regularly.</li> </ul>
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### 4.0 AIR QUALITY MONITORING

#### 4.1 Monitoring Requirement

1-hour and 24-hour TSP monitoring were required to conducted to monitor the air quality, at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east);
- Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring;
- Cheung Shue Tan Village (in front of Man Kee Store) for 24-hr TSP monitoring;
- Near Wen Chih Tang at the CUHK.



#### 4.2 Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. One portable dust meter was used to carry out the 1-hour TSP monitoring. 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
1-hour TSP Dust Meter	TSI Model 8520 Dust Trak™ Aerosol Monitor

#### 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, frequencies of impact air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr (0000-2400)	Once every six days
1-hr TSP	1 hr (0700-1900)	Three times 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 stations	Locations
AM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east) for 1-hr TSP monitoring
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring
AM5	Near Wen Chih Tang at the CUHK

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			
AM1	HKIB Staff Accommodation					02/08/05	08:30	09:30
						04/08/05	09:30	10:30
						06/08/05	08:30	09:30
						09/08/05	10:45	11:45
						11/08/05	08:00	09:00
						13/08/05	09:15	10:15
						16/08/05	10:00	11:00
						18/08/05	09:20	10:20
						20/08/05	17:15	18:15
						23/08/05	14:20	15:20
						25/08/05	09:00	10:00
						27/08/05	08:50	09:50
				30/08/05	08:30	09:30		





Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
		Date	Time	Date	Time			
AM3	Cheung Shue Tan Village (Near the outer building, temple)					02/08/05	13:30	14:30
						04/08/05	14:00	15:00
						06/08/05	14:30	15:30
						09/08/05	13:02	14:02
						11/08/05	13:00	14:00
						13/08/05	13:30	14:30
					---	16/08/05	13:00	14:00
						18/08/05	13:00	14:00
						20/08/05	10:45	11:45
						23/08/05	13:00	14:00
						25/08/05	15:00	16:00
						27/08/05	15:00	16:00
						30/08/05	13:00	14:00
AM5	Near Wen Chih Tang at the CUHK					02/08/05	09:40	10:40
						04/08/05	15:20	16:20
						06/08/05	09:40	10:40
						09/08/05	17:10	18:10
						11/08/05	14:20	15:20
						13/08/05	14:45	15:45
					---	16/08/05	14:15	15:15
						18/08/05	14:20	15:20
						20/08/05	09:30	10:30
						23/08/05	10:00	11:00
						25/08/05	17:30	18:30
						27/08/05	16:20	17:20
						30/08/05	14:15	15:15
AM1	HKIB Staff Accommodation	02/08/05	09:04	03/08/05	09:06			
		08/08/05	14:00	09/08/05	14:00			
		13/08/05	09:10	14/08/05	09:12			
		19/08/05	08:55	20/08/05	08:26			---
		25/08/05	09:02	26/08/05	09:02			
		31/08/05	09:10	01/09/05	09:01			
AM3A	Cheung Shue Tan (in front of Man Kee Store)	02/08/05	13:34	03/08/05	13:53			
		08/08/05	14:15	09/08/05	14:44			
		13/08/05	13:35	14/08/05	13:58			
		19/08/05	08:30	20/08/05	08:25			---
		25/08/05	14:55	26/08/05	15:15			
		31/08/05	08:45	01/09/05	09:11			
AM5	Near Wen Chih Tang at the CUHK	02/08/05	09:44	03/08/05	09:54			
		08/08/05	14:30	09/08/05	14:49			
		13/08/05	14:50	14/08/05	15:16			
		19/08/05	08:45	20/08/05	08:09			---
		25/08/05	17:32	26/08/05	17:42			
		31/08/05	09:00	01/09/05	09:05			

#### 4.5 Monitoring Methodology

##### 4.5.1 24-hour TSP Monitoring

###### Instrumentation

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

###### Installation

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



#### Operation/Analytical Procedures

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

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

- 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 recorded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.

#### Maintenance & Calibration

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

### **4.5.2 1-hour TSP Monitoring**

#### Measuring Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Set POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Calibrate the dust meter by zero check;
- Set the TIME CONSTANT of the dust meter;
- Press SAMPLE to start the TSP monitoring;
- Record the maximum, minimum and average reading directly from the dust meter by press STATISTICS when monitoring complete.

#### Maintenance & Calibration

- 1-hr dust meter should be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of impact air quality monitoring.

### **4.5.3 Wind Data Monitoring**

Wind data (wind speed and wind direction) were directly extracted from Sha Tin Station (located at Sha Tin Race Course) of Hong Kong Observatory. All wind data during this reporting month are shown in Appendix D.



#### 4.6 Action and Limit Levels

Action and Limit levels for 24-hr TSP and 1-hr TSP derived as illustrated in Table 4.5.

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

Monitoring Location	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
AM1	164 *	260 *	325 *	500 *
AM3	---	---	306 **	500 **
AM3A	183 **	260 **	---	---
AM5	174	260	329	500

\* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Advance Engineering Infrastructure Works for Pak Shek Kok Development – Southern Access Road and Sewage Pumping Station No.3.

\*\* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 – Contract No. TP 35/02.

#### 4.7 Event-Action Plans

Please refer to Appendix E for details.

#### 4.8 Results

##### 4.8.1 24-hour TSP Monitoring

All monitoring data of 24-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 24-hour TSP monitoring results for the reporting month is shown in Appendix B3.

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

##### 4.8.2 1-hour TSP Monitoring

1-hour TSP monitoring was carried out at monitoring stations, AM1 and AM3 in the reporting month. All monitoring data of 1-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 1-hour TSP monitoring results for the reporting month is shown in Appendix B3.

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

#### 5.0 Noise Monitoring

##### 5.1 Monitoring Requirements

As the requirement in EM&A Manual, noise monitoring was conducted at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east);
- Cheung Shue Tan Village (near the outer building, temple);
- CUHK Residence No.10;
- Near Wen Chih Tang at the CUHK.

##### 5.2 Monitoring Equipment

Integrating Sound Level Meters were used for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). They comply 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 summarized noise monitoring equipment model being used. A copy of the calibration certificates for noise meters 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 NL-73 Sound Level Calibrator
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter

### 5.3 Monitoring Parameters, duration and Frequency

Noise monitoring for the A-weighted levels  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. The following guide on the regular monitoring frequency for each monitoring station on a per week basis when noise generating activities are underway:

- One set of measurements between 0700-1900 hours on normal weekdays (6 consecutive  $L_{eq(5-min)}$ );
- One set of measurements between 1900-2300 hours (3 consecutive  $L_{eq(5-min)}$ )\*;
- One set of measurements between 2300-0700 hours of next day (3 consecutive  $L_{eq(5-min)}$ )\*;
- One set of measurements between 0700-1900 hours on holidays (3 consecutive  $L_{eq(5-min)}$ )\*.

(\*): Noise monitoring to be conducted only when there is construction work.

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 week
Evening-time: 1900-2300 hrs	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week
Night-time: 2300-0700 hrs of next day	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week
Holiday: 0700-1900 hrs	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week

### 5.4 Monitoring Locations and Period

In this reporting month, there were four noise monitoring locations: HKIB Staff Accommodation, Cheung Shue Tan Village, CUHK Residence No.10 and Near Wen Chih Tang at the CUHK. The location of the monitoring stations are described in Table 5.3 and depicted in Figure 1.

Table 5.3 Noise Monitoring Locations

Noise Monitoring station	Location
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, a temple)
NM8	Near Wen Chih Tang at the CUHK

The noise-monitoring programme of monitoring locations (Day-time, Evening-time, Holiday and Night-time) is summarized in Table 5.4.

Table 5.4 Monitoring Periods for noise monitoring stations

Monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM1	02/08/05	08:32	---	---	---	---	---	---
	09/08/05	10:48	---	---	---	---	---	---
	16/08/05	10:02	---	---	---	---	---	---
	23/08/05	14:25	---	---	---	---	---	---
	30/08/05	08:32	---	---	---	---	---	---
NM2	02/08/05	14:45	---	---	---	---	---	---
	09/08/05	11:30	---	---	---	---	---	---
	16/08/05	10:42	---	---	---	---	---	---
	23/08/05	10:46	---	---	---	---	---	---
	30/08/05	14:30	---	---	---	---	---	---



Monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM3	02/08/05	13:32	---	---	---	---	---	---
	09/08/05	13:00	---	---	---	---	---	---
	16/08/05	13:02	---	---	---	---	---	---
	23/08/05	13:05	---	---	---	---	---	---
	30/08/05	13:02	---	---	---	---	---	---
NM8	02/08/05	09:42	---	---	---	---	---	---
	09/08/05	17:12	---	---	---	---	---	---
	16/08/05	14:17	---	---	---	---	---	---
	23/08/05	10:05	---	---	---	---	---	---
	30/08/05	14:17	---	---	---	---	---	---

## 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 is cleaned with soft cloth at quarterly intervals.
- The meter is sent to be supplier or HOKLAS laboratory to check and calibrated at 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) *
Holiday	0700-1900 hrs on holidays		70 dB(A) **
Evening-time	1900-2300 hrs on all other days		55 dB(A) **
Night-time	2300-0700 hrs of next day		55 dB(A) **

\* = Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

\*\* = Area Sensitivity Rating (ASR) C is selected from the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling".

## 5.7 Event-Action Plans

Please refer to the Appendix E for details.



## 5.8 Results

Only Day-time noise monitoring were carried out at monitoring stations in this reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during the night-time period. All noise levels are provided in Appendix C2. Graphical presentation of the monitoring results for the reporting month is shown in Appendix C3.

No Day-time noise monitoring results at all monitoring stations 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 results from Day-time noise monitoring.

## 6.0 WASTEWATER MONITORING

Effluent Discharge License of this Project is valid from 06 December 2004 (Discharge Licence No.: 3246-Part A and Part B).

Wastewater quality monitoring was carried out at 30 August 2005. One wastewater sample was collected from the discharge point at the construction site. Since the testing of wastewater sample did not completed at the end of this reporting month, the testing results will be submitted and reported in the coming month.

Since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly, the next wastewater monitoring should be at November 2005.

## 7.0 ENVIRONMENTAL NON-CONFORMANCE

### 7.1 Summary of environmental monitoring

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. No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

Wastewater quality monitoring was carried out at 30 August 2005. One wastewater sample was collected from the discharge point at the construction site. Since the testing of wastewater sample did not completed at the end of this reporting month, the testing results will be submitted and reported in the coming month.

### 7.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

### 7.3 Summary of Notification of Summons and Prosecution

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

## 8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET in this reporting month (04, 13, 18 and 25 August 2005). Monthly joint site inspection at 26 August 2005 was carried out by Engineer's Representative, IEC and LWKJV. The implementation status of the mitigation measures on site inspections in this reporting month is presented in Appendix H.



### 8.1 Summary of the site inspection findings and Action(s) taken by LWKJV and ET

Summaries of the site inspection findings in this reporting month are shown in Table 8.1.

Table 8.1 The summary of the site inspection findings and Action(s) taken by LWKJV and ET

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Site Practice	No drip tray was provided for the generator at Node 2 during the weekly site inspections (13/08/05, 18/08/05 and 25/08/05).	The Construction team replied to provide drip tray for the generator immediately.	Since the finding was still observed during the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.
2	Water	The silt curtain was found partly enclosed the marine working areas at Node 2 during the weekly site inspection (18/08/05).	The Construction team replied to enclose the marine working areas completely by using silt curtain and maintain the silt curtain properly.	During the subsequent site inspection (25/08/05), it was found that the silt curtain was fully enclosed the marine working area. Hence, the finding was completed and no further actions were required.
3	Water	Site runoff was found directly discharged into the sea at SA14 during weekly site inspections (18/08/05).	The Construction team replied to treat the site runoff, such as passing sedimentation tank before discharge.	During the subsequent site inspection (25/08/05), it was found that no site runoff was directly discharged to the sea. Hence, the finding was completed and no further actions were required.
4	Site Practice	Rain water was accumulated in the Chemical Waste Storage Area at the Contractor's Site Office during the weekly site inspection (25/08/05).	The Construction team replied to drain the rain water immediately to avoid mosquito breeding..	Since the finding was recorded at the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.

### 8.2 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 8.2.

Table 8.2 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Construction Noise Permit	GW-RN0266-05	01/07/05	31/12/05	<u>Group A</u> One Poker, vibrator, hand-held (CNP170) One Concrete pump, lorry mounted (CNP047) One Concrete lorry mixer (CNP044) <u>Group B</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081)
Chemical Waste Producer	5113-729-LL1113-01	24/09/04	---	Spent lubricating oil, spent battery parts containing heavy metals
Wastewater Discharge License	3246 – Part A	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank to Coastal water or communal drain for the carriage of surface drainage water.
Wastewater Discharge License	3246 – Part B	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and on-site aerobic waste water treatment system to soak-away pit.

### 8.3 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- All stockpiles should be covered with clean tarpaulin sheets, spraying with water or hydro-seeding to avoid wind and water erosion;
- The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading;
- Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off;
- Checking and maintaining all the site machines to prevent dust emission;



- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Use and maintenance of silt curtain properly during marine works;
- Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;
- Maintain good waste management at the site.

## 9.0 WASTE MANAGEMENT

### 9.1 Waste Management Audit

Waste management audit was carried out by the ET on a weekly basis. The implementation status of the mitigation measures on waste management in this reporting month is presented in Appendix H.

### 9.2 Records of Waste Quantities

All type of wastes arising from the construction work are classified into the following:

- General refuses;
- Chemical waste;
- Construction & demolition (C&D) material.

The quantities of waste for disposal in this month are summarized in Table 9.1.

Table 9.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (m <sup>3</sup> )	8030	Reused in the Contract	54975
	Broken Concrete (m <sup>3</sup> )	30	N/A	545
	Reused in the Contract (m <sup>3</sup> )	8000	N/A	54500
	Reused in other Projects (m <sup>3</sup> )	0	N/A	0
	Disposal as Public Fill (m <sup>3</sup> )	0	N/A	0
C&D Waste	Metals (1000kg)	0.004	N/A	37.375
	Paper/Cardboard Packaging (1000kg)	0.052	N/A	0.062
	Plastics (1000kg)	0	N/A	0.014
	Chemical Waste (1000kg)	0	N/A	1
	Other, e.g. General Refuse (1000kg)	2	SENT	65.29

## 10.0 IMPLEMENTATION STATUS

### 10.1 Implementation Status of Environmental Mitigation Measures

LWKJV has been implementing the required environmental mitigation measures according to the Mitigation Protection Measures stated in Implementation Schedule of the EM&A Manual. The implementation status of the environmental mitigation measures in this reporting month is presented in Appendix H.

#### Air Quality

The Contractor was reminded to water or cover all the stockpiles by using clean tarpaulin sheets. The Contractor was also reminded to cleanup the access road regularly to avoid dust emission and provide effective wheel washing facilities.

#### Noise

All mitigation measures stated in Appendix H were implemented properly in this reporting month.





Water Quality

The Contractor was reminded to provide more effort to implement mitigation measures, such as diverting site runoff to suitable treatment processes before discharge, sedimentation system and drainage facilities.

Waste Management

LWKJV has been implementing most mitigation measures on waste management.

**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. No further mitigation measures were required.

**10.3 Implementation Status of Environmental Complaint Handling**

No complaints had been received during this monitoring month.

**11.0 CONCLUSION**

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 and noise monitoring results, no exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month. Besides, No Day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during these periods.

Wastewater quality monitoring was carried out at 30 August 2005. One wastewater sample was collected from the discharge point at the construction site. Since the testing of wastewater sample did not completed at the end of this reporting month, the testing results will be submitted and reported in the coming month.

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

**12.0 FUTURE KEY ISSUES**

**12.1 Upcoming EM&A Schedule in coming two months**

The Proposed EM&A program in coming two months are presented as following table:

Table 12.1 – Upcoming EM&A Schedule in coming two months

Type of Monitoring	September	October
Noise Monitoring (Day-time)	06, 13, 20, 27	04, 13, 18, 20
1-hour TSP	01, 03, 06, 08, 10, 13, 15, 17, 20, 22, 24, 27, 29	01, 04, 06, 08, 11, 13, 15, 18, 20, 22, 25, 27, 29
24-hour TSP	06, 12, 17, 23, 29	05, 10, 15, 21, 27
Site Inspection	01, 08, 15, 22, 29	06, 13, 20, 27

**12.2 Upcoming construction works schedule in the coming month**

The major construction works planned to be carried out in next two months and their possible impact is tabulated (Table 12.2) for reference.



Table 12.2 – Construction Plan in the coming month

<i>Month</i>	<i>Works Planned to be Carried Out</i>
<i>Between September and October 2005</i>	<ul style="list-style-type: none"><li>▪ <i>Drainage Works (excavation, pipe lying and breaking) at Section 5, 6, 7 and 8;</i></li><li>▪ <i>Construction of vertical seawall at Landscape Node P2 &amp; P3;</i></li><li>▪ <i>Construction of precast outfall</i></li><li>▪ <i>Piling works at SA3;</i></li><li>▪ <i>Construction of parapet wall, kerb planter wall and feature wall at PSK waterfront promenade;</i></li><li>▪ <i>Waterworks at Section 5, 6 &amp; 7.</i></li></ul>

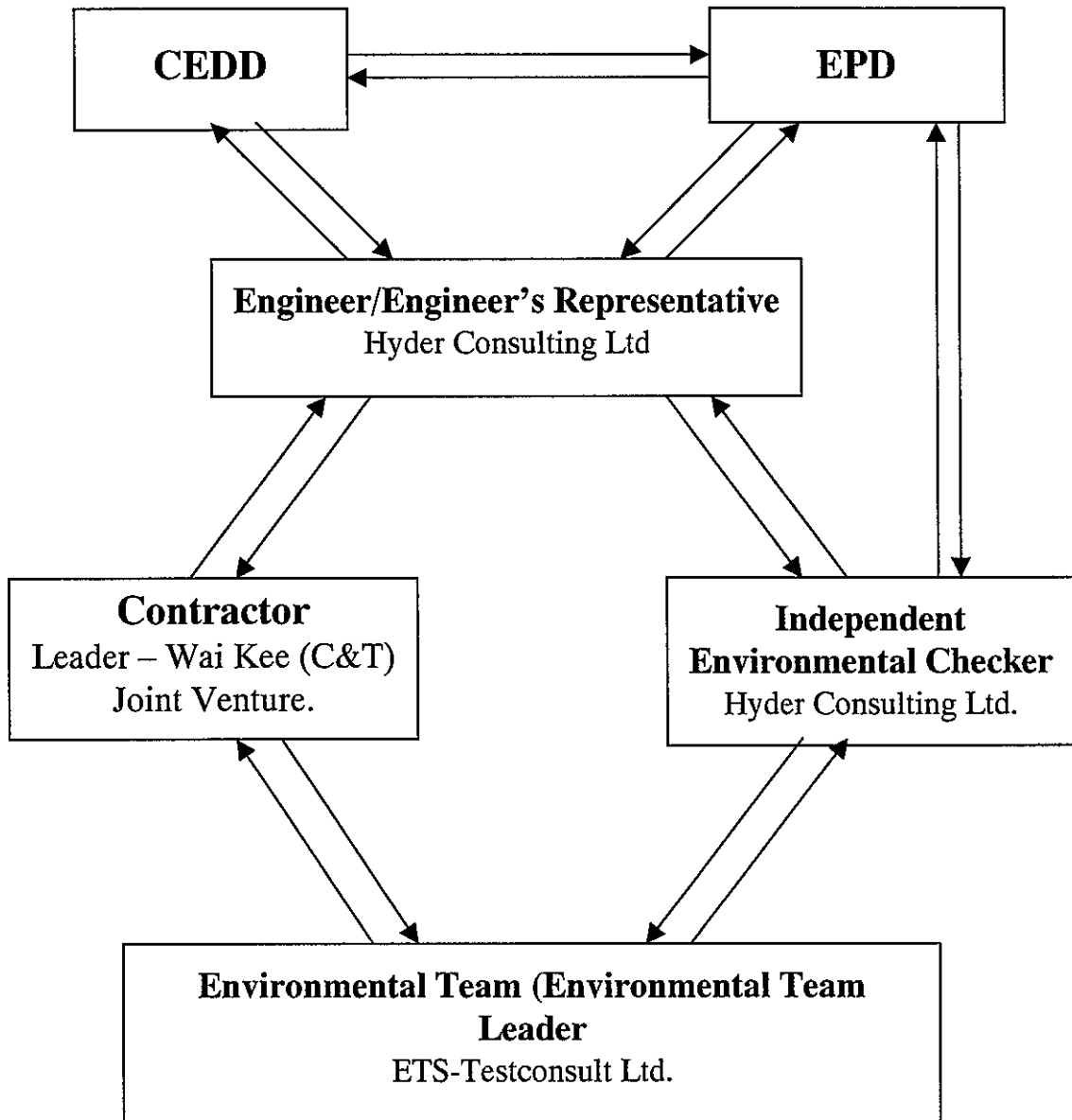


## **Appendix A**

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



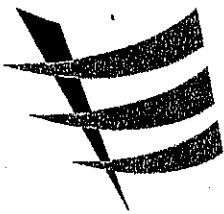
# Lines of Communication





## **Appendix B1**

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



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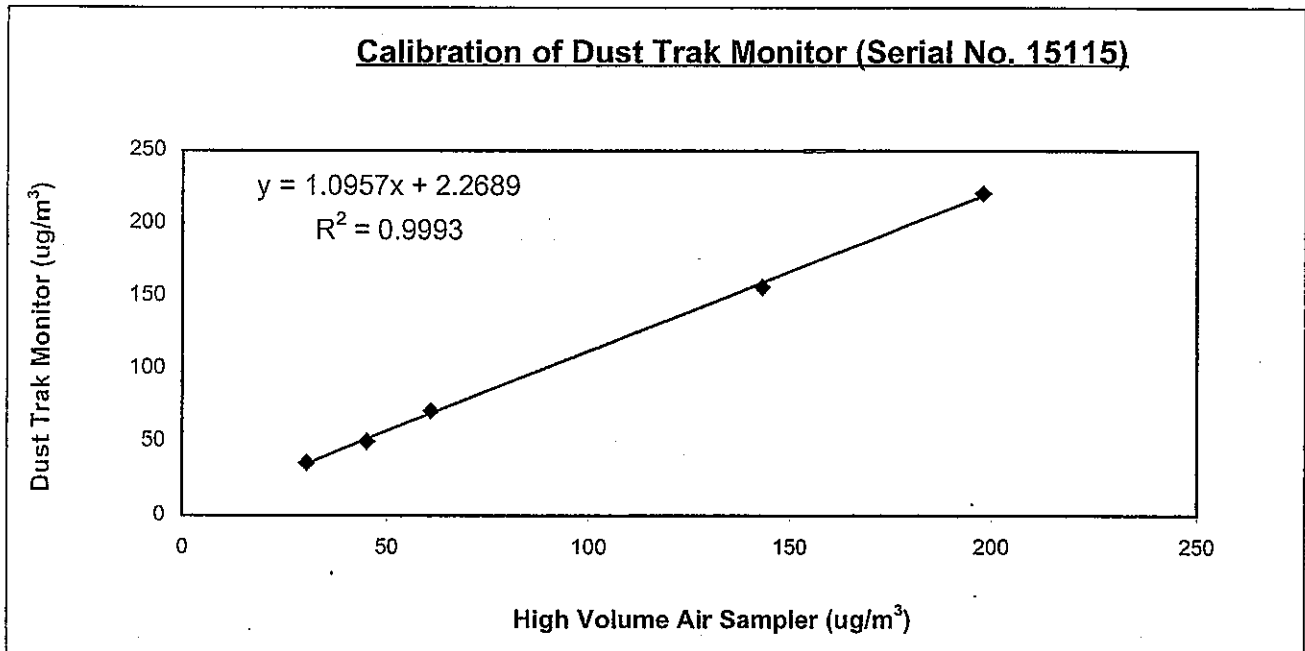
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong-Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

**Internal Calibration Report**  
of  
**Dust Trak Monitor**


Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 18 March 2005  
Serial No. : 15115 (EA/001/02) Calibration Due Date : 17 September 2005  
Method : Place two Dust Trak Monitor together at same environment condition for parallel measurement with five point calibration


Results	Dust Trak Monitor (ug/m <sup>3</sup> )	36	50	71	156	221
	High Volume Air Sampler (ug/m <sup>3</sup> )	30	45	61	143	198
	High Volume Air Sampler Serial No.: 1178	Calibration Date: 15 / 03 / 2005				



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

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
Felix Tin  
(Technician)

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



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**TEST REPORT**

Calibration Report

of

High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 13 July 2005

Serial No. : 1172 ( ET / EA / 003 / 11 ) Calibration Due Date : 12 September 2005

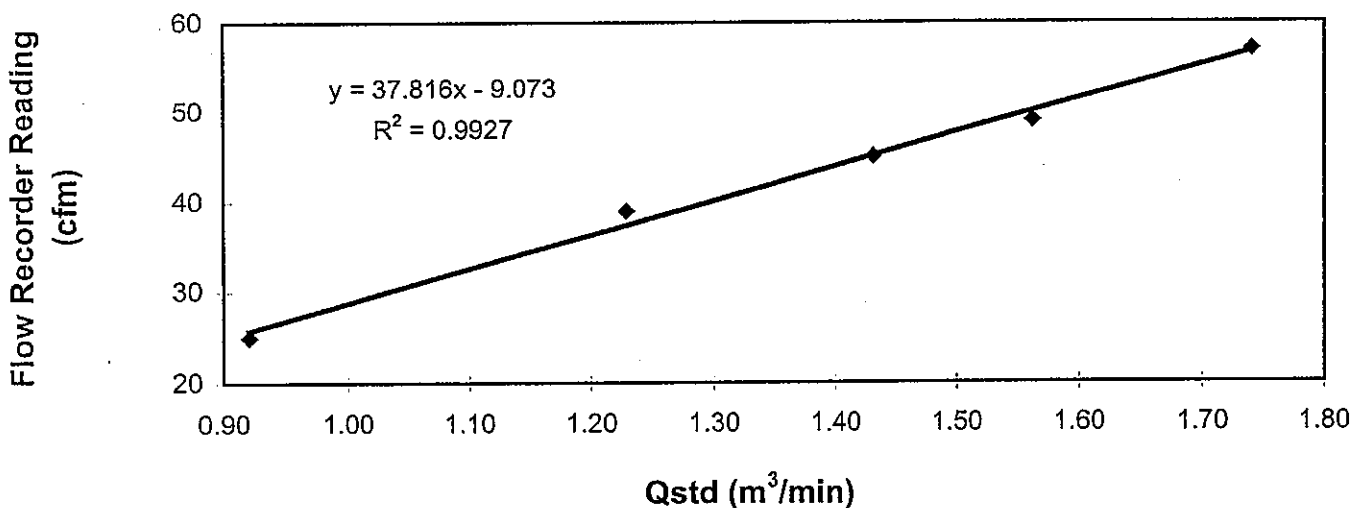
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results	Flow recorder reading (cfm)	57	49	45	39	25
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.74	1.56	1.43	1.23	0.92
	Pressure :	758.31 mm Hg			Temp. :	303 K

**Sampler 1172 Calibration Curve**

**Site: Pak Shek Kok (AM5)**

**Date of Calibration: 13 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 : Peter Leung  
(Technician)

Approved by : Linda Law  
Linda Law  
(Environmental Officer)





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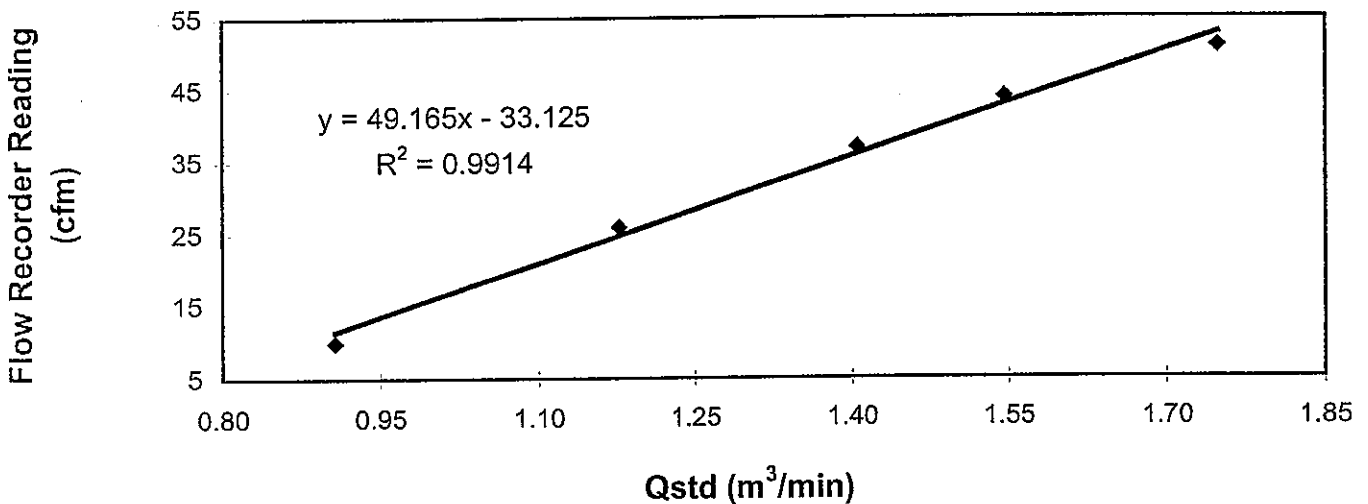
**TEST REPORT**

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

Manufacturer : Greaseby GMW Date of Calibration : 13 July 2005  
Serial No. : 7179 (ET / EA / 003 / 16) Calibration Due Date : 12 September 2005  
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results	Flow recorder reading (cfm)	51	44	37	26	10
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.75	1.55	1.41	1.18	0.91
	Pressure :	758.31 mm Hg		Temp. :	303 K	

**Sampler 7179 Calibration Curve**  
**Site: Pak Shek Kok (AM3A)**  
**Date of Calibration: 13 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 :   
Peter Leung  
(Technician)

Approved by :   
Linda Law  
(Environmental Officer)



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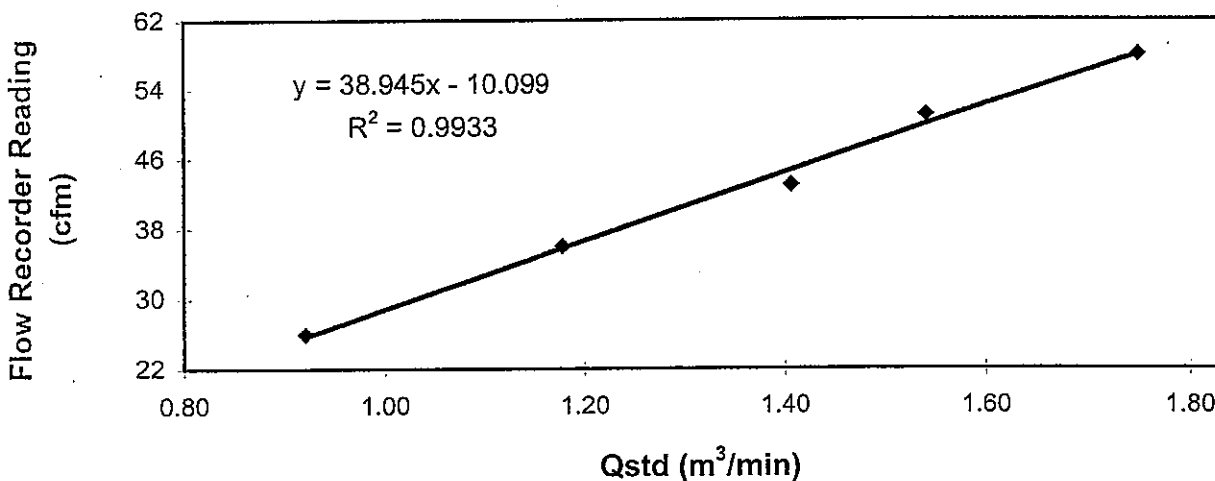
**TEST REPORT**

Calibration Report  
of  
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 13 July 2005  
Serial No. : 1178 (ET / EA / 003 / 01) Calibration Due Date : 12 September 2005  
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A


Results :	Flow recorder reading (cfm)	58	51	43	36	26
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.75	1.54	1.41	1.18	0.92
	Pressure : 758.31 mm Hg	Temp. : 303 K				


**Sampler1178 Calibration Curve**  
Site: Pak Shek Kok Monitoring Station AM1 (24hr.)  
Date of Calibration: 13 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 :   
Peter Leung  
(Technician)

Approved by :   
Linda Law  
(Environmental Officer)



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ETS-TESTCONSULT LIMITED

## **Appendix B2**

### **Air Quality Monitoring Results**

### Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1  
Location : HKIB Staff Accommodation

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/08/05	09:04	03/08/05	09:06	8859.15	8883.18	24.03	1.26	1.26	1.26	2.9313	2.9911	33	Sunny
08/08/05	14:00	09/08/05	14:00	8883.18	8907.18	24.00	1.26	1.26	1.26	2.9094	2.9783	38	Sunny
13/08/05	09:10	14/08/05	09:12	8907.18	8931.22	24.04	1.26	1.26	1.26	2.8947	2.9492	30	Rainy
19/08/05	08:55	20/08/05	08:26	8931.22	8954.74	23.52	1.24	1.24	1.24	2.9006	2.9744	42	Rainy
25/08/05	09:02	26/08/05	09:02	8954.74	8978.74	24.00	1.24	1.24	1.24	2.9206	2.9904	39	Cloudy
31/08/05	09:10	01/09/05	09:01	8978.74	9002.59	23.85	1.24	1.24	1.24	2.8499	3.0870	134	Cloudy

Monitoring Station : AM3A  
Location : Cheung Shue Tan (in front of Man Kee Store)

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/08/05	13:34	03/08/05	13:53	14202.13	14226.45	24.32	1.43	1.43	1.43	2.9193	2.9639	21	Sunny
08/08/05	14:15	09/08/05	14:44	14226.45	14250.94	24.49	1.39	1.39	1.39	2.8964	2.9469	25	Sunny
13/08/05	13:35	14/08/05	13:58	14250.94	14275.32	24.38	1.39	1.39	1.39	2.8573	2.8980	20	Rainy
19/08/05	08:30	20/08/05	08:25	14275.32	14299.23	23.91	1.45	1.45	1.45	2.8988	2.9409	20	Rainy
25/08/05	14:55	26/08/05	15:15	14299.23	14323.56	24.33	1.45	1.45	1.45	2.9881	3.0589	33	Cloudy
31/08/05	08:45	01/09/05	09:11	14323.56	14347.99	24.43	1.45	1.45	1.45	2.8541	3.0481	91	Cloudy

Monitoring Station : AM5  
Location : Near Wen Chin Tung at the CUHK

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/08/05	09:44	03/08/05	09:54	4238.31	4262.48	24.17	1.20	1.20	1.20	2.9320	2.9729	24	Sunny
08/08/05	14:30	09/08/05	14:49	4262.48	4286.79	24.31	1.22	1.22	1.22	2.8755	2.9148	22	Sunny
13/08/05	14:50	14/08/05	15:16	4286.79	4311.23	24.44	1.22	1.22	1.22	2.8865	2.9205	19	Rainy
19/08/05	08:45	20/08/05	08:09	4311.23	4334.63	23.40	1.27	1.27	1.27	2.9108	2.9576	26	Rainy
25/08/05	17:32	26/08/05	17:42	4334.63	4358.79	24.16	1.27	1.27	1.27	2.9118	2.9893	42	Cloudy
31/08/05	09:00	01/09/05	09:05	4358.79	4382.88	24.09	1.27	1.27	1.27	2.8908	3.0776	102	Cloudy

### Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/08/05	08:30	09:30	86	397	170	Sunny
04/08/05	09:30	10:30	96	496	131	Sunny
06/08/05	08:30	09:30	108	409	190	Cloudy
09/08/05	10:45	11:45	98	447	128	Cloudy
11/08/05	08:00	09:00	96	392	122	Cloudy
13/08/05	09:15	10:15	40	475	164	Rainy
16/08/05	10:00	11:00	87	389	148	Cloudy
18/08/05	09:20	10:20	68	331	97	Rainy
20/08/05	17:15	18:15	74	311	95	Rainy
23/08/05	14:20	15:20	80	397	105	Sunny
25/08/05	09:00	10:00	108	412	190	Cloudy
27/08/05	08:50	09:50	80	311	109	Cloudy
30/08/05	08:30	09:30	95	398	161	Cloudy

Monitoring Station : AM3 – Cheung Shue Tan Village (near the outer building, a temple)

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/08/05	13:30	14:30	69	343	128	Sunny
04/08/05	14:00	15:00	76	339	95	Sunny
06/08/05	14:30	15:30	97	368	157	Cloudy
09/08/05	13:02	14:02	82	367	95	Cloudy
11/08/05	13:00	14:00	88	302	91	Cloudy
13/08/05	13:30	14:30	34	398	126	Rainy
16/08/05	13:00	14:00	69	339	128	Cloudy
18/08/05	13:00	14:00	48	301	67	Rainy
20/08/05	10:45	11:45	58	292	70	Rainy
23/08/05	13:00	14:00	62	302	81	Sunny
25/08/05	15:00	16:00	87	367	142	Cloudy
27/08/05	15:00	16:00	68	269	82	Cloudy
30/08/05	13:00	14:00	73	330	138	Cloudy

**Summary of 1-hr TSP Monitoring Results**

Monitoring Station : AM5 – Near Wen Chih Tang at the CUHK

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/08/05	09:40	10:40	62	327	111	Sunny
04/08/05	15:20	16:20	88	395	107	Sunny
06/08/05	09:40	10:40	90	359	152	Cloudy
09/08/05	17:10	18:10	93	412	117	Cloudy
11/08/05	14:20	15:20	93	371	116	Cloudy
13/08/05	14:45	15:45	39	426	139	Rainy
16/08/05	14:15	15:15	72	356	141	Cloudy
18/08/05	14:20	15:20	59	322	85	Rainy
20/08/05	09:30	10:30	62	307	78	Rainy
23/08/05	10:00	11:00	70	314	96	Sunny
25/08/05	17:30	18:30	79	352	126	Cloudy
27/08/05	16:20	17:20	72	306	92	Cloudy
30/08/05	14:15	15:15	68	327	126	Cloudy

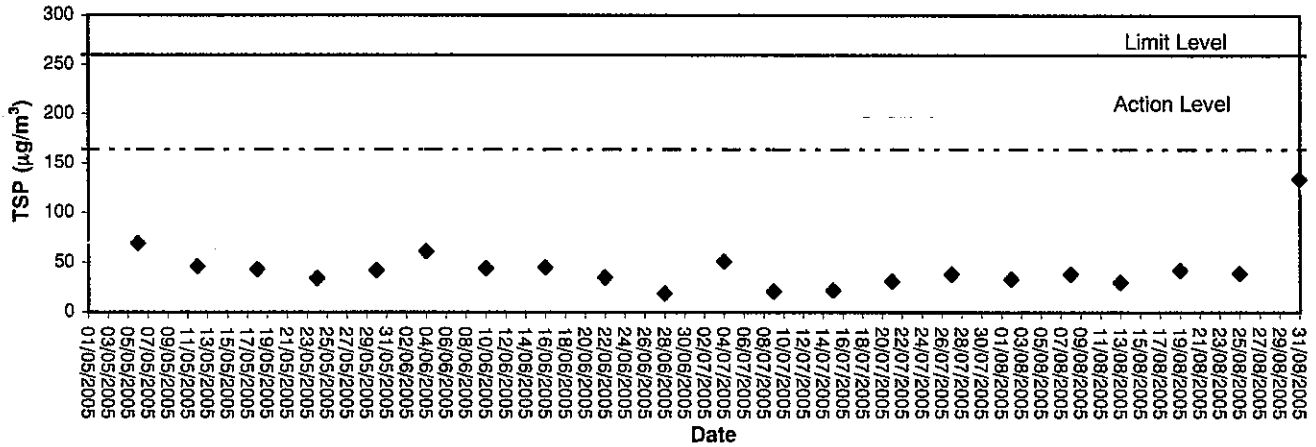


## **Appendix B3**

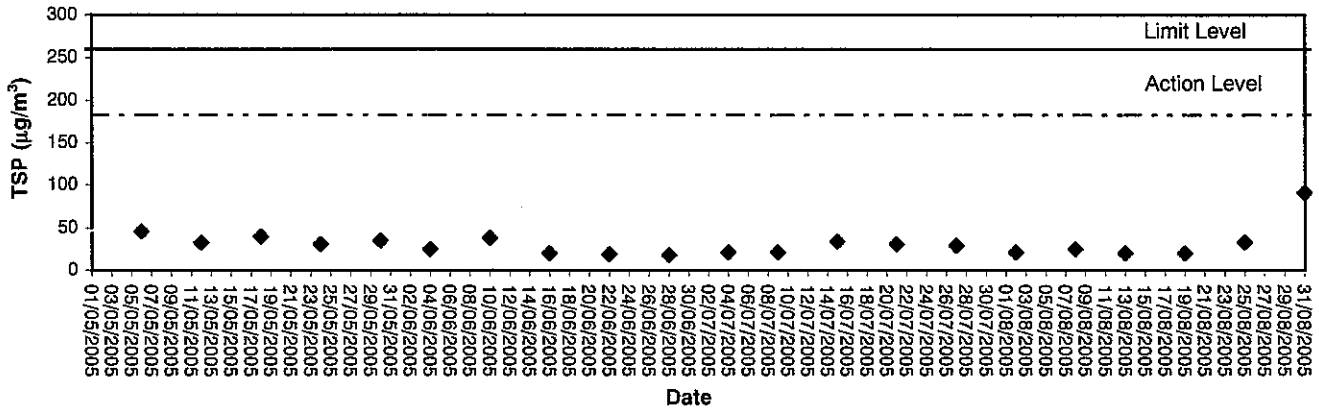
### **Graphical Plots of Air Quality Monitoring Data**



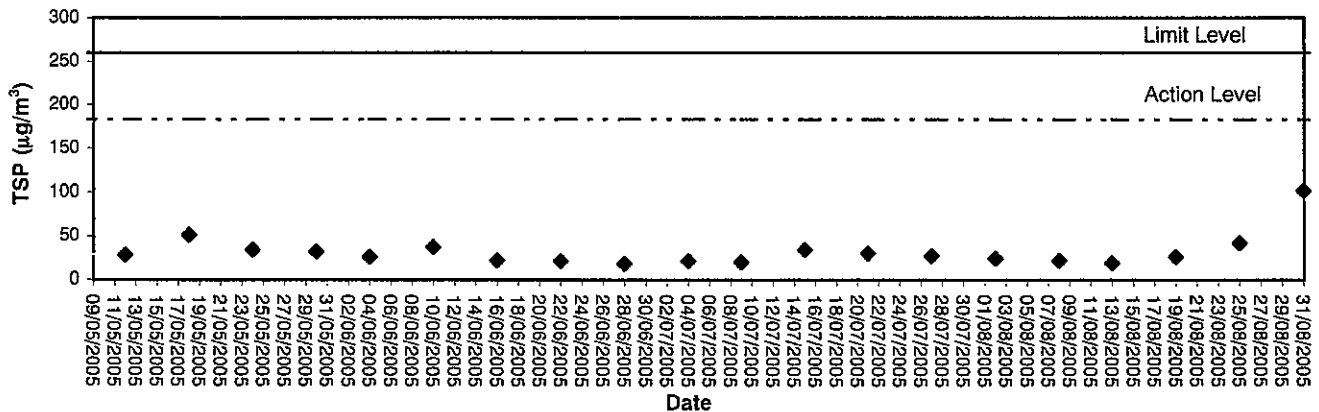
**24-hour TSP level at AM1 (HKIB Staff Accommodation)**



**24-hour TSP level at AM3A  
(Cheung Shue Tan in front of Man Kee Store)**



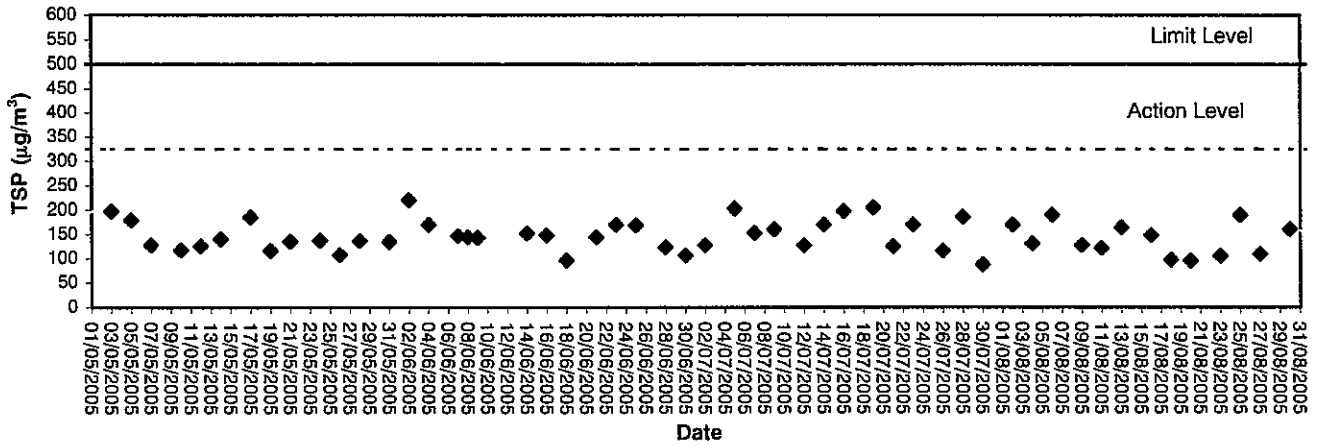
**24-hour TSP level at AM5  
(Wen Chih Tang at the CUHK)**



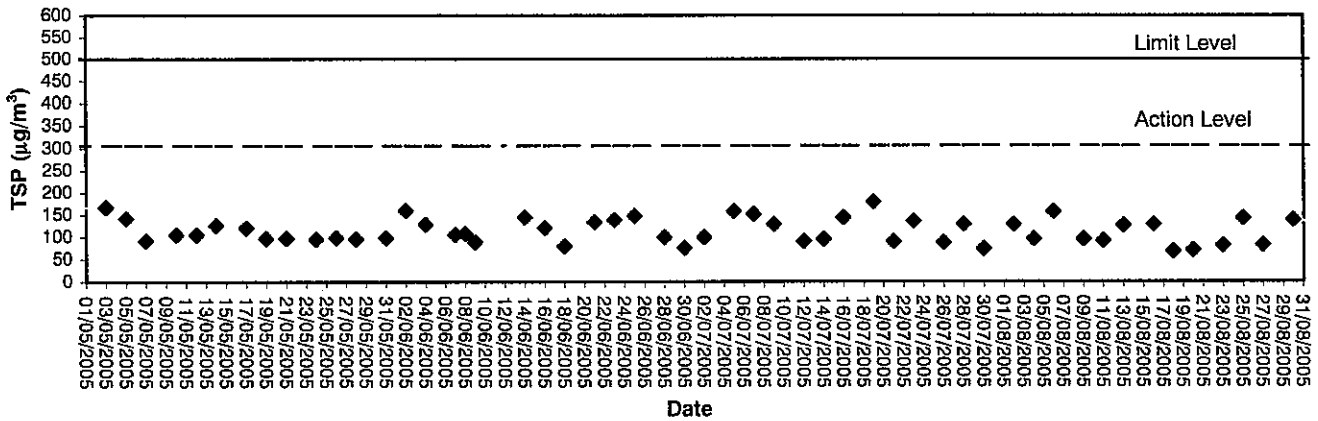




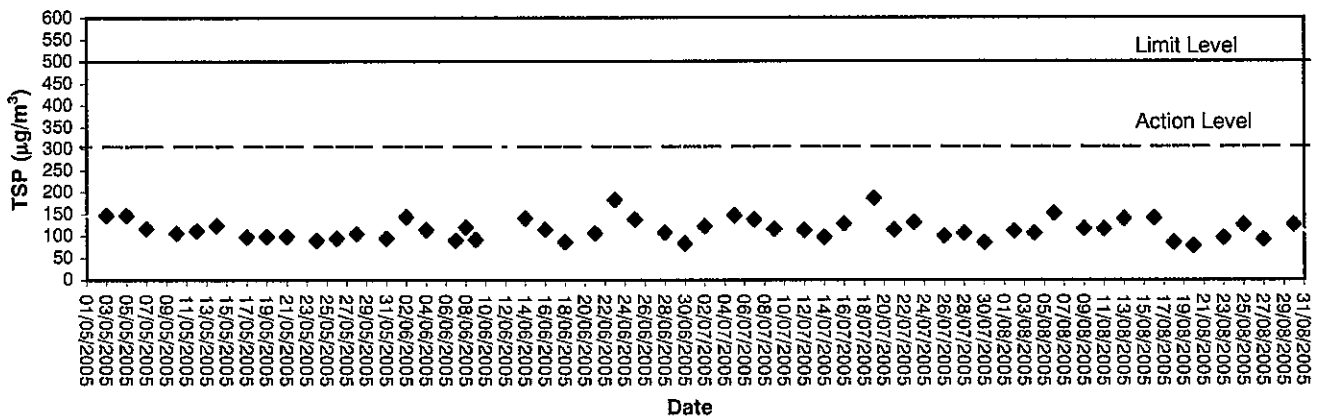
**1-hour TSP level at AM1, HKIB Staff Accommodation**



**1-hour TSP level at AM3, Cheung Shue Tan Village  
(near the outer building, a temple)**



**1-hour TSP level at AM5  
Wen Chih Tang at the CUHK**





## **Appendix C1**

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



Hong Kong Calibration Ltd.

香港校正有限公司

# Calibration Certificate

Certificate No. **51472**

Page **1** of **3** Pages

**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 :**  $(22.5 \pm 2.5)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 20) \%$

## 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:


<u>Equipment No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
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

This Certificate is issued by:

Hong Kong Calibration Ltd.

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

Tel: 2425 8801 Fax: 2425 8646

**Date:** 20-Apr-05



# Calibration Certificate

Certificate No. 51472

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			UUT Reading (dB)	Correction (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L <sub>C</sub>	Fast		0.0
	L <sub>p</sub>	Fast		0.0
30 - 120	L <sub>A</sub>	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L <sub>C</sub>	Fast		+ 0.1
	L <sub>p</sub>	Fast		+ 0.1
30 - 120	L <sub>A</sub>	Fast	114.0	+ 0.1
		Slow		+ 0.1
	L <sub>C</sub>	Fast		0.0
	L <sub>p</sub>	Fast		0.0

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

Uncertainty :  $\pm 0.2$  dB

## 2. Level Stability : 0.0 dB

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

Uncertainty :  $\pm 0.01$  dB



# Calibration Certificate

Certificate No. 51472

Page 3 of 3 Pages

### 3. Frequency Weighting

A weighting

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

Uncertainty :  $\pm 0.1$  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	$\pm 0.5$ dB
1/10 <sup>2</sup>	39.9	+ 0.1	
1/10 <sup>3</sup>	39.9	+ 0.1	$\pm 1.0$ dB
1/10 <sup>4</sup>	39.8	+ 0.2	

Uncertainty :  $\pm 0.1$  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 -----



# Calibration Certificate

Certificate No. **51473**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q50535

**Date of receipt :** 7-Apr-05

## Item Tested

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

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 20-Apr-05.

**Supply Voltage :** --

**Ambient Temperature :**  $(22.5 \pm 2.5)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 20) \%$

## 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:

<u>Equipment No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
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

This Certificate is issued by:

Hong Kong Calibration Ltd.

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

Tel: 2425 8801 Fax: 2425 8646

Date: 20-Apr-05



# Calibration Certificate

Certificate No. 51473

Page 2 of 2 Pages

Results :

**1. Level Accuracy (at 1 kHz)**

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.1 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.2$  dB

**2. Frequency Accuracy**

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.991 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

**3. Level Stability : 0.0 dB**

Uncertainty :  $\pm 0.01$  dB

**4. Total Harmonic Distortion :  $< 0.3$  %**

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 000 hPa

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

----- END -----



## **Appendix C2**

### **Noise Monitoring Results**





## Day-time Noise Monitoring

### Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
02/08/05	08:32	59.1	61.1	54.8	0.9	Sunny
09/08/05	10:48	59.3	60.7	54.9	1.20	Cloudy
16/08/05	10:02	59.0	61.1	56.2	1.1	Cloudy
23/08/05	14:25	57.5	59.7	55.6	1.4	Sunny
30/08/05	08:32	58.4	60.5	55.9	0.8	Cloudy

### Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
02/08/05	14:45	56.0	58.2	53.0	0.8	Sunny
09/08/05	11:30	57.8	59.4	54.6	1.2	Cloudy
16/08/05	10:42	55.1	57.2	52.5	0.9	Cloudy
23/08/05	10:46	59.6	61.4	53.4	1.4	Sunny
30/08/05	14:30	54.8	57.2	53.3	0.6	Cloudy

### Mon Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
02/08/05	13:32	54.0	56.3	50.5	0.6	Sunny
09/08/05	13:00	54.6	56.2	51.2	1.0	Cloudy
16/08/05	13:02	54.1	56.2	49.8	0.7	Cloudy
23/08/05	13:05	60.2	61.4	55.4	1.0	Sunny
30/08/05	13:02	53.3	55.8	49.7	0.6	Cloudy

### Monitoring Location: NM8 (Near Wen Chih Tang at the CUHK)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
02/08/05	09:42	53.5	55.7	49.5	0.6	Sunny
09/08/05	17:12	61.2	62.8	56.3	1.4	Cloudy
16/08/05	14:17	55.6	57.6	52.1	0.9	Cloudy
23/08/05	10:05	60.6	62.3	54.8	1.6	Sunny
30/08/05	14:17	55.9	58.1	52.9	0.7	Cloudy

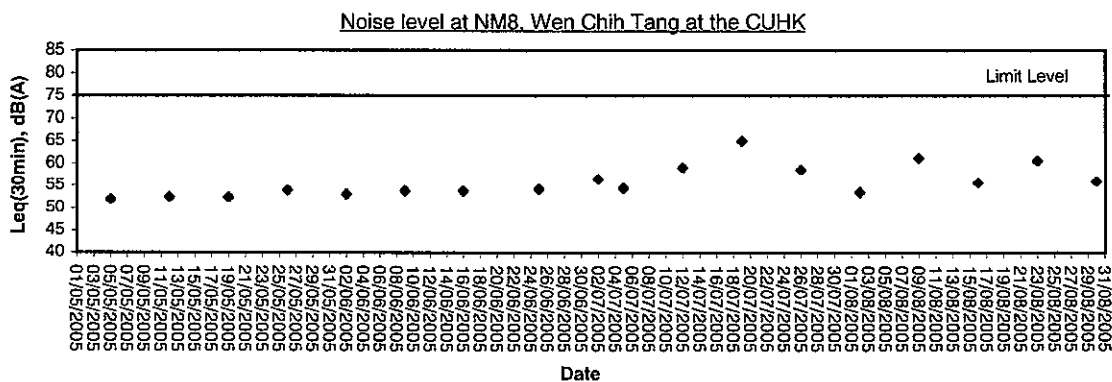
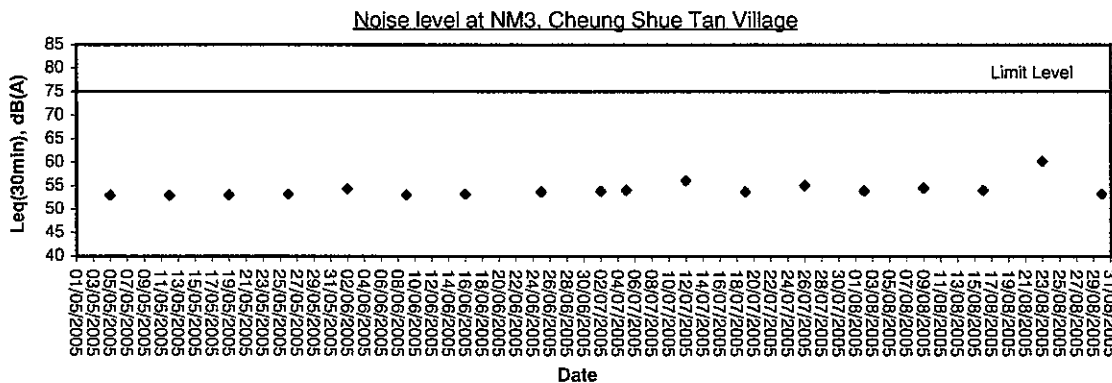
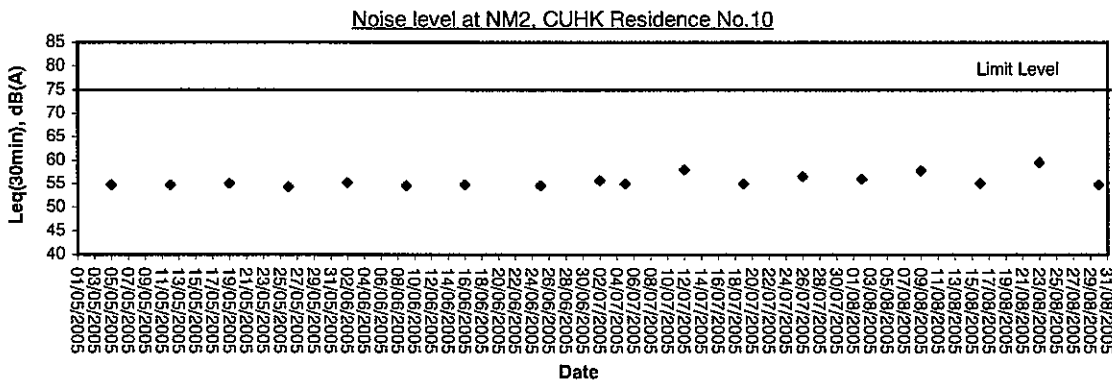
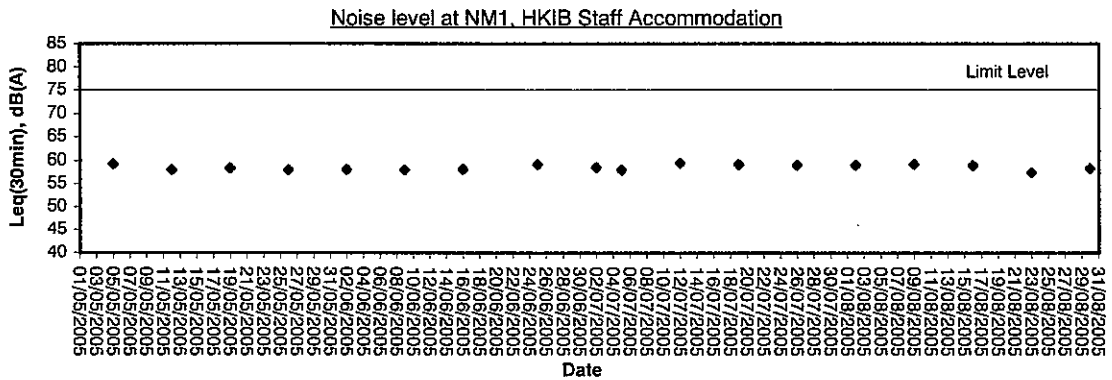


## **Appendix C3**

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



## Noise Monitoring (Day-time)





## **Appendix D**

### **Weather Condition**



## Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/08/05	15.9	30.3	25.8	89	NE	<5
02/08/05	-	31.8	27.2	78	SW	<5
03/08/05	-	32.3	27.4	77	SW	<5
04/08/05	-	32.6	28.1	79	SW	<5
05/08/05	-	32.5	28.1	78	W	<5
06/08/05	Trace	33.5	28.4	78	SW	<5
07/08/05	Trace	32.9	29.0	78	SW	<5
08/08/05	Trace	32.3	28.6	82	E	<5
09/08/05	48.5	30.7	26.1	88	NE	<5
10/08/05	26.4	29.3	26.4	90	SE	<5
11/08/05	12.6	30.6	25.9	86	E	<5
12/08/05	9.4	32.6	27.1	75	NW	<5
13/08/05	83.9	29.5	23.9	90	SW	<5
14/08/05	2.5	30.9	24.6	81	SW	<5
15/08/05	14.9	29.1	26.1	88	S	<5
16/08/05	49.0	27.6	25.4	94	SE	<5
17/08/05	51.6	26.6	24.8	96	E	<5
18/08/05	39.7	28.1	25.0	92	SW	<5
19/08/05	242.9	26.9	24.5	92	SW	<5
20/08/05	303.3	26.5	23.9	93	SW	<5
21/08/05	17.8	27.8	25.9	90	SW	<5
22/08/05	-	30.5	27.0	82	SW	<5
23/08/05	Trace	31.6	27.1	80	SW	<5
24/08/05	16.6	30.1	25.9	85	W	<5
25/08/05	-	29.6	26.3	80	N	<5
26/08/05	2.8	28.4	26.4	88	E	<5
27/08/05	0.3	28.0	26.4	89	E	<5
28/08/05	2.5	29.8	26.8	86	E	<5
29/08/05	9.1	30.2	26.4	89	E	<5
30/08/05	21.3	30.9	25.4	85	E	<5
31/08/05	0.3	32.3	26.8	76	W	<5

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



## **Appendix E**

### **Event-Action Plans**

## Event / Action Plan for Air Quality

EVENT	ACTION			CNTRACTOR
	ET Leader	IC(E)	ER	
<p>Action Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two more consecutive samples</p>	<p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Discuss with IC(E) and Contractor on remedial actions required</p> <p>6. If exceedance continuous, arrange meeting with IC(E) and ER</p> <p>7. If exceedance stops, cease additional monitoring</p>	<p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>1. Checking monitoring data submitted by ET</p> <p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposed remedial measures</p> <p>5. Supervisor implementation of remedial measures</p>	<p>1. Notify Contractor</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p>	<p>1. Rectify any unacceptable practice</p> <p>2. Amend working methods if possible</p> <p>1. Submit proposals for remedial action to IC(E) within 3 working days of notification</p> <p>2. Implement the agreed proposals</p> <p>3. Amend proposal if possible</p>
<p>Limit Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two or more consecutive samples</p>	<p>1. Identify source</p> <p>2. Inform ER and EPD</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</p> <p>1. Notify IC(E), ER, Contractor and EPD</p> <p>2. Identify source</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</p> <p>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER to discuss the remedial action to taken</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposal remedial measures</p> <p>5. Supervisor implementation of remedial measures</p> <p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposal remedial measures</p> <p>5. Supervisor implementation of remedial measures</p>	<p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. In consultation with the IC(E), agreed measures to be implemented</p> <p>4. Ensure remedial measures properly implemented</p> <p>5. If exceedance continues, consider what portion of this work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposal for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Amend proposal if appropriate</p> <p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Resubmit proposals if possible still not under control</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance if abated.</p>

### Event / Action Plan for Construction Noise

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





## **Appendix F**

### **Construction Programme**





ACT ID	Description	Early Start	Early Finish	Percent Complete	Start	Finish	Milestones
SUAS0100	Treatment Work Before Discharge of Effluent	10JUN04	24JUN04	100	10JUN04	24JUN04	10JUN04 A 24JUN04 A
SUAS0200	Engineer Approval of Treatment Work	10JUN04	27NOV04	100	25JUN04	27NOV04	25JUN04 A 27NOV04 A
SUAS0300	Drainage Works	17JUL04	06AUG04	100	17JUL04	06AUG04	17JUL04 A 06AUG04 A
SUAS0400	Engineer Approval of Drainage Works	07AUG04	31AUG04	100	07AUG04	31AUG04	07AUG04 A 31AUG04 A
SUAS0500	Tree Transplant	02JUL04	30JUL04	100	02JUL04	30JUL04	02JUL04 A 30JUL04 A
SUAS0600	Engineer Approval of Tree Transplant	31JUL04	19AUG04	100	31JUL04	19AUG04	31JUL04 A 19AUG04 A
SUAS0700	Pre-drilling	10JUL04	30JUL04	100	10JUL04	30JUL04	10JUL04 A 30JUL04 A
SUAS0800	Engineer Approval of Pre-drilling	31JUL04	25AUG04	100	31JUL04	25AUG04	31JUL04 A 25AUG04 A
SUAS0900	MLS Bridge Piling Works	18AUG04	20SEP04	100	18AUG04	20SEP04	18AUG04 A 20SEP04 A
SUAS1000	Engineer Approval of MLS Bridge Piling Works	21SEP04	28FEB05	100	21SEP04	28FEB05	21SEP04 A 28FEB05 A
SUAS1100	MLS Bridge Construction	19NOV04	28NOV04	100	19NOV04	28NOV04	19NOV04 A 28NOV04 A
SUAS1200	Engineer Approval of MLS Bridge Construction	28JUL05	26NOV04	90	28NOV04	21JAN05	28NOV04 A 21JAN05 A
SUAS1300	Construction of Public Toilet No.2	02JUL05	07JUL05	100	02JUL05	07JUL05	02JUL05 A 07JUL05 A
SUAS1400	Engineer Approval of Public Toilet No.2	08JUL05	03AUG05	50	08JUL05	11NOV05	08JUL05 A 11NOV05 A
SUAS1500	Construction of Ma Liu Shui Subway	10JUL05	05JUL05	100	10JUL05	05JUL05	10JUL05 A 05JUL05 A
SUAS1600	Engineer Approval of MLS Subway	06JUL05	14SEP05	50	06JUL05	14SEP05	06JUL05 A 14SEP05 A
SUAS1700	Retaining Wall No. 1	02AUG05	15AUG05	60	21JUL05	21NOV05	21JUL05 A 21NOV05 A
SUAS1800	Engineer Approval for Retaining Wall No. 1	10JUN04	12JUL04	100	10JUN04	12JUL04	10JUN04 A 12JUL04 A
SUAS1900	Construction of Public Landing Step	13JUL04	30JUL04	100	13JUL04	30JUL04	13JUL04 A 30JUL04 A
SUAS2000	Engineer Approval of Public Landing Step	05AUG04	19AUG04	100	05AUG04	19AUG04	05AUG04 A 19AUG04 A
SUAS2100	Construction of Landscapes Node P1, P2 & P3	20AUG04	24AUG04	100	20AUG04	24AUG04	20AUG04 A 24AUG04 A
SUAS2200	Engineer Approval of Construction for P1-3						

ACT ID	Description	Early Start	Early Finish	Percent Complete	Start	Finish	Milestones
SUASMB0100	Submit & Approve Preliminary Design	18AUG04	28SEP04	100	18AUG04	28SEP04	18AUG04 A 28SEP04 A
SUASMB0200	Submit Preliminary Design to ACABAS	04OCT04	04OCT04	100	04OCT04	04OCT04	04OCT04 A 04OCT04 A
SUASMB0300	ACABAS Approval	19OCT04	19OCT04	100	19OCT04	19OCT04	19OCT04 A 19OCT04 A
SUASMB0400	Detail Design	20OCT04	20JAN05	100	20OCT04	20JAN05	20OCT04 A 20JAN05 A
SUASMB0500	Check by ICE	22DEC04	28JUN05	100	22DEC04	28JUN05	22DEC04 A 28JUN05 A
SUASMB0600	Submit Detail Design to the Engineer	23DEC04	23DEC04	100	23DEC04	23DEC04	23DEC04 A 23DEC04 A
SUASMB0700	Engineer Approval of Details Design	30JUL05	30JUL05	90	23DEC04	08SEP05	30JUL05 A 08SEP05 A
SUASMB0800	Comment / Agreement from HyD Structure	18JUL05	31DEC04	100	31DEC04	16JUL05	18JUL05 A 16JUL05 A
SUASMB0900	Comment / Agreement from HyD Maintenance	10JUL05	25JAN05	100	31DEC04	25JAN05	10JUL05 A 25JAN05 A
SUASMB1000	Comment / Agreement from GEO	18JUL05	31DEC04	100	31DEC04	18JUL05	18JUL05 A 31DEC04 A
SUASMB1100	Comment / Agreement from DLO, DSD, TD	10JUL05	31DEC04	100	31DEC04	31DEC04	10JUL05 A 31DEC04 A
SUASMB1200	Engineer Approval of A.D. Founding Level	21APR05	26APR05	100	21APR05	26APR05	21APR05 A 26APR05 A
SUASMB1300	CEED Approval of A.D.	30JUL05	31DEC04	90	31DEC04	09SEP05	30JUL05 A 31DEC04 A 09SEP05 A

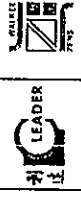
ACT ID	Description	Early Start	Early Finish	Percent Complete	Start	Finish	Milestones
SUASMB1400	Submit & Approve Preliminary Design	18AUG04	28SEP04	100	18AUG04	28SEP04	18AUG04 A 28SEP04 A
SUASMB1500	Submit Preliminary Design to ACABAS	04OCT04	04OCT04	100	04OCT04	04OCT04	04OCT04 A 04OCT04 A
SUASMB1600	ACABAS Approval	19OCT04	19OCT04	100	19OCT04	19OCT04	19OCT04 A 19OCT04 A
SUASMB1700	Aesthetic Review	20OCT04	12JAN05	100	20OCT04	12JAN05	20OCT04 A 12JAN05 A
SUASMB1800	ACABAS Submission (Landscape)	23MAY05	23MAY05	100	23MAY05	23MAY05	23MAY05 A 23MAY05 A
SUASMB1900	Detail Design	18MAY05	26MAY05	100	18MAY05	26MAY05	18MAY05 A 26MAY05 A
SUASMB2000	Submit Detail Design to the Engineer	27MAY05	27MAY05	100	27MAY05	27MAY05	27MAY05 A 27MAY05 A
SUASMB2100	Engineer Approval	29JUL05	29JUL05	90	28MAY05	03SEP05	29JUL05 A 03SEP05 A
SUASMB2200	CEED Approval of A.D.	30JUL05	28JUL05	90	28JUL05	03SEP05	30JUL05 A 28JUL05 A 03SEP05 A

**Leader - Wal Kee (C&T) Joint Venture**  
**TP3703 - Revised Works Programme - RP03**

Start date: 10JUN04  
 Finish date: 08OCT07  
 Date of issue: 28JUL05  
 Run date: 04AUG05  
 Page number: 3A

Legend:  
 Start milestone point  
 Finish milestone point

Contractor's Site Accommodation:  
 PRCSD100 Mobilization



Act. ID	Description	Orig. Est. Amt.	Total Est. Amt.	% Comp.	Start	Finish	Start	Finish	Start	Finish	Start	Finish
PRCS0200	Erect Contractor Site Office	20		100	12JUL04	31JUL04	12JUL04	31JUL04				
PRPR0300	Arrange ULG Meeting	60		100	29JUN04	19JUL04	29JUN04	19JUL04				
PRPR0400	Arrange TMLG Meeting	48		100	29JUN04	23JUL04	29JUN04	23JUL04				
PRPR0500	Tree Survey	6		100	29JUN04	06AUG04	29JUN04	06AUG04				
PRPR0600	Engineer Approval of Tree Survey	12		100	07AUG04	30AUG04	07AUG04	30AUG04				
PRPR0900	Tree Transplant	24		100	31AUG04	31AUG04	31AUG04	31AUG04				
PRPR1000	Tree Felling	12		100	30AUG04	30AUG04	30AUG04	30AUG04				
PRPR1100	Procure Third Party Insurance	12		100	10JUN04	10JUN04	10JUN04	23JUN04				
PRPR1300	Erect Project Sign Board	18		100	20AUG04	12MAY05	20AUG04	12MAY05				
PRPR1400	1st Site Safety/Environmental Committee Meeting	24		100	29JUN04	20JUL04	29JUN04	20JUL04				
PRPR1500	1st SSEMC Meeting	24		100	29JUN04	27JUL04	29JUN04	27JUL04				
PRPR1800	Propose Location of Temporary Landing Facilities	24		100	10JUN04	10JUN04	10JUN04	26JUL04				
PRPR1700	Engineer Approval the Temp Landing Location	12		100	27JUL04	17AUG04	27JUL04	17AUG04				
PRPR1800	Provide Temp Landing Facilities	15		100	19AUG04	19AUG04	19AUG04	19AUG04				
PRPR1810	Engineer Review Dredging Plan to EPD	1		100	08SEP04	09FEB05	08SEP04	09FEB05				
PRPR1900	Apply Dumping Permit	18		100	10JUN04	10JUN04	10JUN04	08JUL04				
PRPR2000	Approval of Dumping Permit	42		100	09AUG04	15MAY05	09JUL04	15MAY05				
PRPR2100	Propose Accurate Position Control at Disposal	8		100	28AUG04	25OCT04	28AUG04	25OCT04				
PRPR2200	Engineer Approval of Proposal	12		100	28OCT04	28DEC04	28OCT04	28DEC04				
PRPR2300	Provide Water Quality Monitoring Equipment	21		100	10JUN04	11OCT04	10JUN04	11OCT04				
PRPR2400	Initial Sounding Plan	12		100	13SEP04	18SEP04	13SEP04	18SEP04				
PRPR2500	Ordering of Precast Concrete Pipes	700		100	10JUL04	10JUL04	10JUL04	10JUL04				
PRPR2600	Ordering DI Pipes and Fittings	1		100	05FEB05	05FEB05	05FEB05	05FEB05				
PRPR2700	Concrete Trial Mix	6		100	13JUL04	22JUL04	13JUL04	22JUL04				
PRPR2800	Manufacture & Delivery of Seawall Blocks	220	-450	70	13DEC04	15OCT05	13DEC04	20AUG05				

**Milestone**

MS50100	Complete Laying of Utilities	0	-1040	0	12NOV05	31JUL05
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Section 7

MS570100	Complete Connection for ArchSD's Works	0	-1650	0	13JAN06	31JUL05
MS570200	Commence Toilet & Pavilion by ASD's Contractor	0	0	100	28DEC04	28DEC04
MS570300	Complete Toilet & Pavilion by ASD's Contractor	0	10	0	04NOV05	08NOV05

Section 8

MS580100	Complete Connection of Utilities	0	200	0	31MAY06	20AUG06
MS580200	Commence ASD's Works	0	-60	0	28JUL05	22JUL05
MS580300	Complete ASD's Works	0	-60	0	28JUL06	22JUL05

**Variation Order / Instruction**

VO0010	Issue VO047A (Section 5)	0	0	100	22MAR05	22MAR05
VO0020	Issue VO051 (Section 5)	0	0	100	12APR05	12APR05
VO0030	Issue VO068 (Section 7)	0	0	100	03JUN05	03JUN05
VO0040	Issue VO055A (Section 7 & 11)	0	0	100	07JUN05	07JUN05
VO0050	Issue VO065 (Section 8 & 12)	0	0	100	07JUN05	07JUN05
VO0060	Issue VO073 (Section 7)	0	0	100	23JUN05	23JUN05
VO0070	Issue VO057 (Section 7 & 8)	0	0	100	27JUN05	27JUN05
VO0080	Issue VO053B (Section 2)	0	0	100	27JUN05	27JUN05
VO0090	Issue VO070 (Section 7)	0	0	100	05JUL05	05JUL05

Start date	Finish date	Issue	Entity bar
10JUN04	05OCT07	VO0010	Entity bar
28JUL05	28JUL05	VO0020	Progress bar
04AUG05	04AUG05	VO0030	Critical bar
4A	4A	VO0040	Summary bar
		VO0050	Start milestone point
		VO0060	Finish milestone point

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Act C ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A2MBPR1600	Preloading at North Abutment & Up Ramp	106	286	25	27JUN05	02NOV05	27JUN05	05DEC05
<b>Piling Works</b>								
A2MBPW0100	Mobilization of Piling Plants	6	35d	0	01AUG05	06AUG05	10SEP05	16SEP05
A2MBPW0200	Construct Pile AV1-AV3, AV12-AV17	36	35d	0	08AUG05	17SEP05	17SEP05	01NOV05
A2MBPW1000	Construct Pile AV4-AV11	32	35d	0	20SEP05	28OCT05	02NOV05	08DEC05
A2MBPW1300	Construct Pier Pile P1-P12	36	31d	0	20SEP05	28OCT05	02NOV05	08DEC05
A2MBPW1500	Construct N-Abutment Pile AN1-AN8	24	31d	0	03NOV05	30NOV05	09DEC05	07JAN06
A2MBPW1510	Load Test at Volded Abutment & Pier (Optional)	24	31d	0	03NOV05	30NOV05	09DEC05	07JAN06
A2MBPW1600	Load Test at North Abutment (Optional)	24	31d	0	01DEC05	30DEC05	09JAN06	07FEB06
<b>Voided Abutment</b>								
A2MBVA0100	Construct Ground Beams (Stage 1)	12	43d	0	01DEC05	14DEC05	23JAN06	07FEB06
A2MBVA0200	Construct Ground Beams (Stage 2)	12	43d	0	15DEC05	30DEC05	08FEB06	21FEB06
A2MBVA0300	Construct Ground Beams (Stage 3)	12	31d	0	01DEC05	14DEC05	09JAN06	21JAN06
A2MBVA0400	Construct Ground Beams (Stage 4)	12	31d	0	15DEC05	30DEC05	23JAN06	07FEB06
A2MBVA0500	Construct Ground Beams (Stage 5)	12	51d	0	31DEC05	13JAN06	03MAR06	16MAR06
A2MBVA0600	Construct Wall (Stage 1)	18	43d	0	31DEC05	20JAN06	22FEB06	14MAR06
A2MBVA0700	Construct Wall (Stage 2)	18	43d	0	21JAN06	13FEB06	15MAR06	05APR06
A2MBVA0800	Construct Wall (Stage 3)	16	31d	0	31DEC05	19JAN06	09FEB06	25FEB06
A2MBVA0900	Construct Wall (Stage 4)	16	31d	0	19JAN06	09FEB06	27FEB06	16MAR06
A2MBVA1000	Construct Wall (Stage 5)	16	31d	0	09FEB06	27FEB06	17MAR06	05APR06
A2MBVA1100	Construct Slab	36	97d	0	28FEB06	11APR06	24JUN06	05AUG06
<b>Pier</b>								
A2MBPA0100	Construct Pier Cap	12	70d	0	01DEC05	14DEC05	28FEB06	10MAR06
A2MBPA0200	Construct Columns	21	70d	0	15DEC05	10JAN06	11MAR06	05APR06
<b>North Abutment</b>								
A2MBNA0100	Construct RE Wall to Formation of Abutment	18	31d	0	31DEC05	20JAN06	08FEB06	28FEB06
A2MBNA0200	Construct RE Wall to Formation of RC Wall Type A	36	40d	0	21JAN06	06MAR06	11MAR06	22APR06
A2MBNA0300	Fix RE Wall to Face of Abutment & RC Wall	36	34d	0	05APR06	17MAY06	16MAY06	27JUN06
A2MBNA1100	Construct Pier Cap	18	31d	0	21JAN06	13FEB06	01MAR06	21MAR06
A2MBNA1200	Construct Abutment Walls	24	31d	0	14FEB06	13MAR06	22MAR06	19APR06
A2MBNA1300	Construct RC Wall Type A	36	34d	0	14MAR06	25APR06	24APR06	06JUN06
A2MBNA1400	Construct RC Wall Type B	36	40d	0	21JAN06	09MAR06	11MAR06	22APR06
A2MBNA1500	Construct RC Wall Type C	18	40d	0	07MAR06	27MAR06	24APR06	15MAY06
<b>Bridge Deck - Voided Abutment to Pier</b>								
A2MBDA0100	Erect Scaffolding	18	31d	0	28FEB06	20MAR06	06APR06	28APR06
A2MBDA0200	Erect Formwork (Bottom Slab)	12	31d	0	21MAR06	03APR06	27APR06	11MAY06
A2MBDA0300	Steel Fixing	8	43d	0	05APR06	13APR06	26MAY06	05JUN06
A2MBDA0400	Erect Formwork (Kicker)	8	43d	0	14APR06	22APR06	06JUN06	14JUN06
A2MBDA0500	Concreting	1	43d	0	24APR06	24APR06	15JUN06	15JUN06
A2MBDA0600	Erect Formwork (Diaphragm & Top Slab)	10	43d	0	25APR06	06MAY06	16JUN06	27JUN06
A2MBDA0700	Steel Fixing	8	43d	0	08MAY06	16MAY06	28JUN06	07JUL06
A2MBDA0800	Concreting	1	43d	0	17MAY06	17MAY06	09JUL06	09JUL06
A2MBDA0900	Install, Stress Tendons & Grouting	24	31d	0	02JUN06	29JUN06	10JUL06	05AUG06
A2MBDA1000	Remove Formwork & Scaffolding	8	75d	0	08JUL06	17JUL06	04OCT06	13OCT06
A2MBDA1100	Construct Parapet	70	31d	0	30JUN06	20SEP06	07AUG06	27OCT06
A2MBDA1200	Construct Centre Barrier	36	31d	0	17AUG06	27SEP06	22SEP06	04NOV06
<b>Bridge Deck - Pier to North Abutment</b>								
A2MBDC0100	Erect Scaffolding	18	31d	0	14MAR06	03APR06	20APR06	11MAY06
A2MBDC0200	Erect Formwork (Bottom Slab)	12	31d	0	05APR06	18APR06	12MAY06	25MAY06
A2MBDC0300	Steel Fixing	8	31d	0	19APR06	27APR06	26MAY06	05JUN06
A2MBDC0400	Erect Formwork (Kicker)	8	31d	0	28APR06	08MAY06	06JUN06	14JUN06

Start date 10JUN04  
 Finish date 06OCT07  
 Date data 28JUL05  
 Run date 24AUG05  
 Page Number 7A

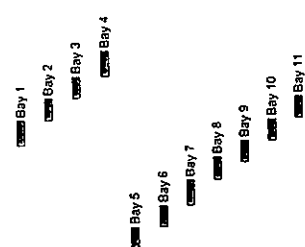
Early bar  
 Progress bar  
 Critical bar  
 Summary bar  
 Start milestone point  
 Finish milestone point

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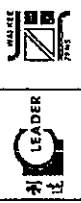
Act ID	Disc	Total	Percent	Early	Early	Start	Finish	Start	Finish
Disc	Disc	Disc	Disc	Start	Start	Start	Start	Start	Start
A2MBDC0600	Concreting	1	31d	0	09MAY06	09MAY06	15JUN06	15JUN06	15JUN06
A2MBDC0600	Erect Formwork (Diaphragm & Top Slab)	10	31d	0	10MAY06	20MAY06	16JUN06	27JUN06	27JUN06
A2MBDC0700	Steel Fixing	8	31d	0	22MAY06	30MAY06	28JUN06	07JUL06	07JUL06
A2MBDC0800	Concreting	1	31d	0	01JUN06	01JUN06	08JUL06	08JUL06	08JUL06
A2MBDC0900	Install, Stress Tendons & Grouting	24	31d	0	02JUN06	29JUN06	10JUL06	05AUG06	05AUG06
A2MBDC1000	Remove Formwork & Scaffolding	8	69d	0	15JUL06	24JUL06	04OCT06	13OCT06	13OCT06
A2MBDC1100	Construct Parapet	70	31d	0	30JUN06	20SEP06	07AUG06	27OCT06	27OCT06
A2MBDC1200	Construct Centre Barrier	36	31d	0	17AUG06	27SEP06	22SEP06	04NOV06	04NOV06
<b>Miscellaneous Works</b>									
A2MBMW0100	Install Drainage System	18	37d	0	31AUG06	20SEP06	14OCT06	04NOV06	04NOV06
A2MBMW0200	Install Aluminium Rail	18	37d	0	31AUG06	20SEP06	14OCT06	04NOV06	04NOV06
A2MBMW0300	Install Public Lighting Post	12	43d	0	21SEP06	04OCT06	13NOV06	25NOV06	25NOV06
A2MBMW0400	Soak Lighting	6	75d	0	30JUN06	07JUL06	27SEP06	03OCT06	03OCT06
<b>Roads and Pavement</b>									
A2MBRP0100	North Abutment - Backfill to Formation	40	106d	0	28MAR06	15MAY06	03AUG06	18SEP06	18SEP06
A2MBRP0200	North Abutment - Lay Subbase	8	106d	0	22JUN06	30JUN06	28OCT06	04NOV06	04NOV06
A2MBRP0300	Road Pavement	18	31d	0	28SEP06	19OCT06	06NOV06	25NOV06	25NOV06
<b>Road Marking, Traffic Signs and Fencing</b>									
A2MBRM0100	Apply Road Marking	6	31d	0	20OCT06	28OCT06	27NOV06	02DEC06	02DEC06
A2MBRM0200	Erect Signage	12	31d	0	05OCT06	19OCT06	13NOV06	25NOV06	25NOV06

Act ID	Disc	Total	Percent	Early	Early	Start	Finish	Start	Finish
Disc	Disc	Disc	Disc	Start	Start	Start	Start	Start	Start
A2REWA0100	Bay 1	18	28d	0	03NOV05	21NOV05	16DEC05	23DEC05	23DEC05
A2REWA0200	Bay 2	14	28d	0	22NOV05	07DEC05	24DEC05	11JAN06	11JAN06
A2REWA0300	Bay 3	14	28d	0	06DEC05	23DEC05	12JAN06	27JAN06	27JAN06
A2REWA0400	Bay 4	14	28d	0	24DEC05	11JAN06	28JAN06	15FEB06	15FEB06
A2REWA0500	Bay 5	14	85d	0	16AUG05	31AUG05	08DEC05	23DEC05	23DEC05
A2REWA0600	Bay 6	14	95d	0	10SEP05	16SEP05	24DEC05	11JAN06	11JAN06
A2REWA0700	Bay 7	14	95d	0	17SEP05	05OCT05	12JAN06	27JAN06	27JAN06
A2REWA0800	Bay 8	14	95d	0	06OCT05	22OCT05	28JAN06	15FEB06	15FEB06
A2REWA0900	Bay 9	14	57d	0	19OCT05	03NOV05	24DEC05	11JAN06	11JAN06
A2REWA1000	Bay 10	14	57d	0	04NOV05	19NOV05	12JAN06	27JAN06	27JAN06
A2REWA1100	Bay 11	14	57d	0	21NOV05	08DEC05	28JAN06	15FEB06	15FEB06
A2REWA1200	Filling to Road Formation Levels	20	28d	0	31DEC05	23JAN06	04FEB06	27FEB06	27FEB06
<b>Drainage Works</b>									
A2RDWA0100	Decide Exact Location of Manholes & Catchpits	1	132d	0	13AUG05	13AUG05	20JAN06	20JAN06	20JAN06
A2RDWA0200	S615 - S705	36	32d	0	02DEC05	14JAN06	11JAN06	23FEB06	23FEB06
A2RDWA0300	S626 - S628	31	106d	0	16MAY06	21JUN06	19SEP06	25OCT06	25OCT06
A2RDWA0350	S616 - S629	24	114d	0	24JAN06	22FEB06	12JUN06	10JUL06	10JUL06
A2RDWA0400	S688 - S710	27	65d	0	09NOV05	05DEC05	21JAN06	23FEB06	23FEB06
A2RDWA0500	S610A - S610 (TTA No. 01)	20	77d	0	03DEC05	28DEC05	08MAR06	30MAR06	30MAR06
A2RDWA0600	S610 - S710 (TTA No. 04)	22	48d	0	03MAY06	27MAY06	30JUN06	26JUL06	26JUL06
A2RDWA0700	Replace 600 Pipe by 900 Pipe (TTA No. 04)	20	43d	0	03MAY06	25MAY06	23JUN06	17JUL06	17JUL06
A2RDWA0800	Reconstruct Exd MH w/ 1800 Chamber (TTA No. 08)	22	54d	0	26JUL06	19AUG06	27SEP06	23OCT06	23OCT06
A2RDWA0900	Construct Gullies to Existing Pipe (TTA No. 08)	18	28d	0	16AUG06	05SEP06	18SEP06	09OCT06	09OCT06
<b>Utility Works</b>									
A2RDU0300	NWT & HGC - Laying Cable Duct	17	32d	0	16JAN06	08FEB06	24FEB06	15MAR06	15MAR06
A2RDU0310	NWT & HGC Cable Connection	27	63d	0	18FEB06	18MAR06	03MAY06	03JUN06	03JUN06
A2RDU0400	WT&T - Laying Cable Duct	17	32d	0	07FEB06	25FEB06	19MAR06	05APR06	05APR06
A2RDU0410	WT&T - Cable Connection	26	46d	0	09MAR06	06APR06	10MAY06	03JUN06	03JUN06
A2RDU0500	PCCW - Laying Cable Duct	40	32d	0	07FEB06	24MAR06	19MAR06	03MAY06	03MAY06




Decide Exact Location of Manholes & Catchpits  
 S615 - S705  
 S626 - S628  
 S616 - S629  
 S698 - S710  
 S610A - S610 (TTA No. 01)  
 S610 - S710 (TTA No. 04)  
 Replace 600 Pipe by 900 Pipe (TTA No. 04)  
 Reconstruct Exd MH w/ 1800 Chamber  
 Construct Gullies to Existing Pipe

NWT & HGC - Laying Cable Duct  
 NWT & HGC Cable Connection  
 WT&T - Laying Cable Duct  
 WT&T - Cable Connection  
 PCCW - Laying Cable Duct



Start date	10JUN04	Early bar
Finish date	30OCT07	Progress bar
Gate date	30JUN05	Critical bar
Gate date	04AUG05	Summary bar
Page number	8A	Start milestone point
		Finish milestone point

Act ID	Description	Orig Dur	Total Cost	Percent Complete	Early Start	Early Finish	Early Start	Early Finish	LAG	Finish
A2RDUT0510	PCDW - Cable Connection	26	284	0	30MAR06	29APR06	04MAY06	03JUN06		
A2RDUT0600	Watermain - Laying FW Main Crossing	12	320	0	16JAN06	26JAN06	24FEB06	09MAR06		
A2RDUT0700	Watermain - Laying FW Main Crossing (TTA No. 04)	8	430	0	25MAY06	05JUN06	18JUL06	26JUL06		
A2RDUT0800	Watermain - Replaces Fresh Main (TTA No. 01)	18	774	0	29DEC05	18JAN06	31MAR06	21APR06		
A2RDUT0900	Watermain - Replaces Fresh Main (TTA No. 08)	18	283	0	26JUL06	15AUG06	28AUG06	16SEP06		
A2RDUT1000	Install Public Lighting Post (TTA No. 04)	8	490	0	20JUN06	28JUN06	17AUG06	25AUG06		
A2RDUT1100	Install Public Lighting Post (TTA No. 08)	8	528	0	20SEP06	28SEP06	22NOV06	30NOV06		
<b>Public Lighting, Duct and Cable</b>										
A2RDPK0100	Lay Kerb	14	844	0	17APR06	03MAY06	27JUL06	11AUG06		
A2RDPK0200	Lay Kerb (TTA No. 04)	6	430	0	13JUN06	19JUN06	03AUG06	09AUG06		
A2RDPK0300	Lay Kerb (TTA No. 08)	6	283	0	13SEP06	19SEP06	17OCT06	23OCT06		
A2RDPK0400	Construct Central Divider	24	880	0	25MAR06	22APR06	11JUL06	07AUG06		
A2RDPK0500	Construct Central Divider (TTA No. 09)	12	286	0	02NOV06	19NOV06	08DEC06	18DEC06		
A2RDPK0600	Construct CPB	24	680	0	25MAR06	22APR06	11JUL06	07AUG06		
A2RDPK0700	Lighting Drawpit & Cable Duct	18	940	0	25MAR06	15APR06	06JUL06	28JUL06		
A2RDPK0800	Lighting Drawpit & Cable Duct (TTA No. 04)	6	430	0	06JUN06	12JUN06	27JUL06	02AUG06		
A2RDPK0900	Lighting Drawpit & Cable Duct (TTA No. 08)	6	284	0	06SEP06	12SEP06	10OCT06	16OCT06		
<b>Roads and Pavement</b>										
A2RRFP0100	Trim Formation & Lay Subbase	20	844	0	17APR06	10MAY06	22JUL06	18AUG06		
A2RRFP0200	Trim Formation & Lay Subbase (TTA No. 01)	10	774	0	19JAN06	01FEB06	22APR06	04MAY06		
A2RRFP0300	Trim Formation & Lay Subbase (TTA No. 02)	6	1534	0	19FEB06	21FEB06	17AUG06	23AUG06		
A2RRFP0400	Trim Formation & Lay Subbase (TTA No. 04)	6	430	0	15JUN06	21JUN06	08AUG06	11AUG06		
A2RRFP0500	Trim Formation & Lay Subbase (TTA No. 08)	12	284	0	20SEP06	03OCT06	24OCT06	07NOV06		
A2RRFP0700	Road Pavement - W/C	6	844	0	11MAY06	17MAY06	19AUG06	25AUG06		
A2RRFP0800	Road Pavement - W/C (TTA No. 01)	10	774	0	02FEB06	13FEB06	08MAY06	18MAY06		
A2RRFP0900	Road Pavement - B/C (TTA No. 02)	2	1530	0	22FEB06	23FEB06	24AUG06	25AUG06		
A2RRFP1000	Road Pavement - W/C (TTA No. 04)	12	434	0	22JUN06	06JUL06	12AUG06	25AUG06		
A2RRFP1100	Road Pavement - W/C (TTA No. 08)	22	283	0	04OCT06	31OCT06	08NOV06	07DEC06		
A2RRFP1200	Road Pavement - W/C (TTA No. 09)	6	284	0	18NOV06	22NOV06	19DEC06	20DEC06		
A2RRFP1300	Construct Footpath between C/T & O1	38	1100	0	07JUL06	17AUG06	15NOV06	28DEC06		
<b>Roads Markings, Traffic Signs and Fencing</b>										
A2RRM0100	Apply Road Marking (TTA No. 04)	4	430	0	03JUL06	06JUL06	22AUG06	25AUG06		
A2RRM0200	Apply Road Marking (TTA No. 08)	2	280	0	28OCT06	31OCT06	01DEC06	07DEC06		
A2RRM0400	Erect Signage	8	474	0	23JUN06	30JUN06	17AUG06	25AUG06		
A2RRM0500	Erect Signage (TTA No. 09)	6	420	0	04OCT06	11OCT06	24NOV06	30NOV06		
A2RRM0600	Install Railing, Fencing & etc	8	474	0	22JUN06	30JUN06	17AUG06	25AUG06		
A2RRM0700	Install Railing, Fencing & etc (TTA No. 08)	6	420	0	04OCT06	11OCT06	24NOV06	30NOV06		
<b>Road S/L3</b>										
A2RSEA0100	Excavate to +4.5 mPD	12	900	0	13AUG05	26AUG05	30NOV05	13DEC05		
A2RSEA0200	Fill to Road Formation	24	900	0	27AUG05	24SEP05	14DEC05	12JAN06		
<b>Drainage Works</b>										
A2RSDW0100	Decide Exact Location of Manholes & Catchpits	1	1250	0	13AUG05	13AUG05	12JAN06	12JAN06		
A2RSDW0200	S647 - Existing Box Culvert	29	900	0	28SEP05	31OCT05	13JAN06	17FEB06		
A2RSDW0300	S633 - Existing Box Culvert	29	900	0	08NOV05	10DEC05	25FEB06	30MAR06		
A2RSDW0400	F301 - F302	18	750	0	31DEC05	20JAN06	31MAR06	21APR06		
A2RSDW0500	S633 - S629	35	588	0	24JAN06	08MAR06	05APR06	17MAY06		
A2RSDW0600	S695 - S635	21	750	0	21JAN06	16FEB06	22APR06	17MAY06		
<b>Utility Works</b>										
A2RSUT0200	NWT & HGC - Laying Cable Duct	18	283	0	24JAN06	15FEB06	20FEB06	20MAR06		
A2RSUT0210	NWT & HGC - Cable Connection	27	940	0	18FEB06	18MAR06	09JUN06	11JUL06		



**Leader - Wai Kee (C&T) Joint Venture**  
**TP37/03 - Revised Works Programme - RP03**

Start date 10JUN04  
 Finish date 06OCT07  
 Data date 28JUL05  
 Run date 09AUG05  
 Page number 9A

Early bar  
 Progress bar  
 Critical bar  
 Summary bar  
 Start milestone point  
 Finish milestone point

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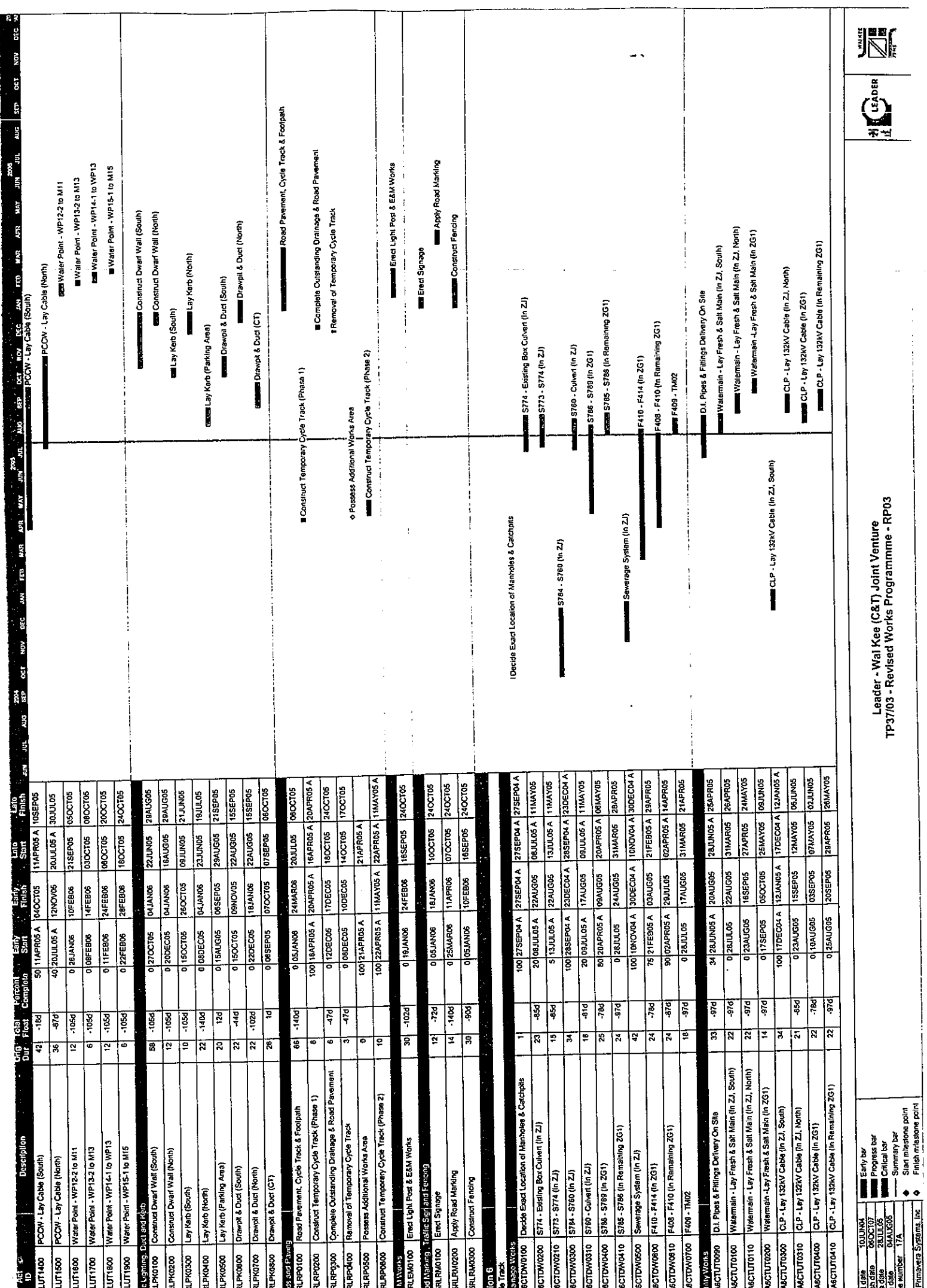




Item ID	Description	Qty	Total Cost	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASRLDW3300	Connection Point - SL4-020a - S413	18		100	31JAN05	19MAR05	31JAN05	19MAR05
ASRLDW3400	S407A - Upstream	20		100	05MAY05	19JUL05	05MAY05	19JUL05
ASRLDW3500	SL4-025a - SL4-023a & gullies	16		100	07MAR05	17MAY05	07MAR05	17MAY05
ASRLDW4100	Connection Point to F435	18		100	16DEC04	06APR05	16DEC04	06APR05
ASRLDW4200	SL4-022a - SL4-020a & gullies	16		100	08MAR05	28APR05	08MAR05	28APR05
ASRLDW4300	F427 - F428	15	-870	80	10SEP04	30AUG05	10SEP04	18APR05
ASRLDW4400	F414b - F414	6	-100	50	11APR05	10JUL05	11APR05	19JUL05
ASRLDW4500	Connection Point - S404 - S408	18	-440	80	09MAR05	30JUL05	09MAR05	07JUN05
ASRLDW4600	CP#4 & CP#3 - SL4-009a	10	120	50	02JUL05	02AUG05	02JUL05	16AUG05
ASRLDW5100	F424 - F422	12		100	06JUL05	28JUL05	06JUL05	28JUL05
ASRLDW5110	F422 - F421	8		100	06APR05	28JUL05	06APR05	28JUL05
ASRLDW5200	SL4-001b - S407 & gullies	36	-580	51	27JUL05	05SEP05	27JUL05	28JUN05
ASRLDW5300	CP#7 & CP#8 - S408	10	-580	0	10AUG05	29AUG05	01JUN05	13JUN05
ASRLDW5400	S406 - SL4-008a	10	-470	0	28JUL05	08AUG05	01JUN05	13JUN05
ASRLDW5500	F428 - Downstream	15	-870	0	30JUL05	18AUG05	15APR05	03MAY05
ASRLDW5600	Connection Point - S410 - S407 (1800)	18		100	06APR05	28MAY05	06APR05	28MAY05
ASRLDW6100	SL4-010a - S406 & gullies	18	-870	0	17AUG05	06SEP05	06MAY05	25MAY05
ASRLDW6200	SL4-011a - S410 & gullies	18	-180	0	28JUL05	17AUG05	07JUL05	27JUL05
ASRLDW6300	CP#11 - SL4-011b	10	230	0	18AUG05	29AUG05	14SEP05	26SEP05
ASRLDW6400	CP#1 - SL4-015a	10	-620	0	28JUL05	08AUG05	13MAY05	25MAY05
ASRLDW6500	SL4-007c - S406 & gullies	18	-560	0	22AUG05	10SEP05	14JUN05	05JUL05
ASRLDW6600	SL4-017a - SL4-028a & gullies	18	-370	0	28JUL05	17AUG05	14JUN05	08JUL05
ASRLDW6700	SL4-015b - SL4-015a & gullies	10	-620	0	28JUL05	08AUG05	13MAY05	25MAY05
ASRLDW6800	SL4-028a - SL4-028a	10	-420	0	28JUL05	08AUG05	13MAY05	25MAY05
ASRLDW7100	UC - CP#1 & CP#2	22	150	0	09AUG05	02SEP05	26AUG05	21SEP05
ASRLDW7200	UC - CP#3	10	120	0	03AUG05	13AUG05	17AUG05	27AUG05
ASRLDW7300	UC - CP#4	10	120	0	03AUG05	13AUG05	17AUG05	27AUG05
ASRLDW7400	UC - CP#5, CP#6, CP#7 & CP#8	25	270	0	22AUG05	20SEP05	23SEP05	24OCT05
ASRLDW7500	UC - CP#9	10	420	0	22AUG05	01SEP05	13OCT05	24OCT05
ASRLDW7600	UC - CP#11	10	230	0	30AUG05	08SEP05	27SEP05	08OCT05
ASRLDW7700	Additional Sub-soil Drain (South) (VO047A)	12	-1050	0	29SEP05	14OCT05	26MAY05	08JUN05
ASRLDW7800	Additional UC at Footpath (South) (VO047A)	18	-1040	0	05JAN06	25JAN06	31AUG05	21SEP05
ASRLDW7900	Additional UC at Cycle Track (North) (VO051)	18	-610	0	14NOV05	03DEC05	31AUG05	21SEP05
ASRLDW8000	Demolish Existing 525, 825 & 1050 Drainpipe	30	430	0	28JUL05	31AUG05	16SEP05	24OCT05

**Legend:**  
 ■ Early bar  
 ■ Progress bar  
 ■ Critical bar  
 ■ Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point

**Notes:**  
 ■ S407A - Upstream  
 ■ SL4-025a - SL4-023a & gullies  
 ■ Connection Point to F435  
 ■ SL4-022a - SL4-020a & gullies  
 ■ F427 - F428  
 ■ F414b - F414  
 ■ Connection Point - S404 - S408  
 ■ CP#4 & CP#3 - SL4-009a  
 ■ F424 - F422  
 ■ F422 - F421  
 ■ SL4-001b - S407 & gullies  
 ■ CP#7 & CP#8 - S408  
 ■ S406 - SL4-008a  
 ■ F428 - Downstream  
 ■ Connection Point - S410 - S407 (1800)  
 ■ SL4-010a - S406 & gullies  
 ■ SL4-011a - S410 & gullies  
 ■ CP#11 - SL4-011b  
 ■ CP#1 - SL4-015a  
 ■ SL4-007c - S406 & gullies  
 ■ SL4-017a - SL4-028a & gullies  
 ■ SL4-015b - SL4-015a & gullies  
 ■ SL4-028a - SL4-028a  
 ■ UC - CP#1 & CP#2  
 ■ UC - CP#3  
 ■ UC - CP#4  
 ■ UC - CP#5, CP#6, CP#7 & CP#8  
 ■ UC - CP#9  
 ■ UC - CP#11  
 ■ Additional Sub-soil Drain (South) (VO047A)  
 ■ Additional UC at Footpath (South) (VO047A)  
 ■ Additional UC at Cycle Track (North) (VO051)  
 ■ Demolish Existing 525, 825 & 1050 Drainpipe  
 ■ D.I. Pipes & Fittings Delivery On Site  
 ■ Watermain - Lay Fresh Main (In Zone ZC)  
 ■ Watermain - Lay Salt Main (In Zone ZC)  
 ■ Watermain - Lay Fresh Main (In Zone ZP)  
 ■ Watermain - Lay Salt Main (In Zone ZP)  
 ■ CLP - Lay 11kV Cable (South)  
 ■ CLP - Lay 11kV Cable (North)  
 ■ HGC - Lay Cable (South)  
 ■ HGC - Lay Cable (North)  
 ■ NWT - Lay Cross Road Duct (South)  
 ■ NWT - Lay Cross Road Duct (North)  
 ■ CATV - Lay Cable (South)  
 ■ HKCG - Lay 110 Main (Roundabout - Interchange)  
 ■ HKCG - Gas Governor Kiosk



ACT ID	ACT Desc	Start	Finish	Early Start	Early Finish	Finish	Early Start	Early Finish
ASRLUT1400	PCOV - Lay Cable (North)	04OCT05	11APR05 A	04OCT05	11APR05 A	10SEP05		
ASRLUT1500	PCOV - Lay Cable (North)	20JUL05 A	30JUL05	20JUL05 A	30JUL05	30JUL05		
ASRLUT1600	Water Point - WP12-2 to M11	12NOV05	10FEB06	12NOV05	10FEB06	03OCT05		
ASRLUT1700	Water Point - WP13-2 to M13	10FEB06	03OCT05	10FEB06	03OCT05	08OCT05		
ASRLUT1800	Water Point - WP14-1 to WP13	14FEB06	24FEB06	14FEB06	24FEB06	20OCT05		
ASRLUT1900	Water Point - WP15-1 to M15	24FEB06	28FEB06	24FEB06	28FEB06	18OCT05		



Start date	End date	Run date	Page number
10JUN04	06OCT07	28JUL05	17A

- Start milestone point
- Finish milestone point
- Summary bar
- Critical bar
- Progress bar
- Early bar







ACT ID	Description	Orig. Dur.	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ABLANS0420	Taking Up of Existing Armour Below +2.5	6		100	13DEC04	22JAN05	13DEC04	22JAN05
ABLANS0440	Taking Up of Existing Underlayer Below +2.5	3		100	17DEC04	08APR05	17DEC04	08APR05
ABLANS0500	Taking Up of Existing Rubble Below +2.5	23		100	14JAN05	22APR05	14JAN05	22APR05
ABLANS0540	Placing Leveling Stone	25		100	23APR05	18MAY05	23APR05	18MAY05
ABLANS0600	Block Wall Construction	51		100	18MAY05	12JUN05	18MAY05	12JUN05
ABLANS0700	Backfill Rubble Behind	14	-104d	59	15JUN05	01AUG05	02JUL05	19APR05
ABLANS0800	Reinstate 5 Cells Box Culvert Units	18	-104d	27	02JUL05	14AUG05	02JUL05	02MAY05
ABLANS0900	Fabrication of 5 Cells Outfall Units	70	64d	10	02JUL05	20SEP05	02JUL05	01DEC05
ABLANS1000	Install 5 Cells Outfall Units	12	64d	0	20SEP05	10OCT05	02OCT05	19DEC05
ABLANS1100	Install Remaining Blocks for Both Side Outfall	4	78d	0	11OCT05	14OCT05	28DEC05	31DEC05
ABLANS1200	Reinstate Armour & Underlayer	10	78d	0	15OCT05	24OCT05	01JAN06	10JAN06
<b>Landscaping Works</b>								
ABLANS0200	Drilling (Two Drilling)	16		100	27SEP04	18OCT04	27SEP04	18OCT04
ABLANS0220	Taking Up of Existing Armour to +2.5	3		100	08NOV04	08NOV04	08NOV04	08NOV04
ABLANS0210	Taking Up of Existing Underlayer to +2.5	2		100	13NOV04	13NOV04	13NOV04	13NOV04
ABLANS0220	Taking Up of Existing Rubble to +2.5	20		100	14NOV04	11JAN05	14NOV04	11JAN05
ABLANS0300	Demolish Existing Outfall Units	5		100	17NOV04	20NOV04	17NOV04	20NOV04
ABLANS0400	Taking Up Existing 2500 Dia. Concrete Pipe	10		100	12APR05	23JUN05	12APR05	23JUN05
ABLANS0410	Taking Up of Existing Armour Below +2.5	4		100	06DEC04	09DEC04	06DEC04	09DEC04
ABLANS0420	Taking Up of Existing Underlayer Below +2.5	3		100	18DEC04	11JAN05	18DEC04	11JAN05
ABLANS0430	Taking Up of Existing Rubble Below +2.5	20	-86d	77	30DEC04	31JUL05	30DEC04	04MAY05
ABLANS0500	Placing Leveling Stone	40	-56d	0	01AUG05	09SEP05	03JUN06	12JUL05
ABLANS0600	Block Wall Construction (Stage 1)	30	-56d	0	10SEP05	09OCT05	13JUL05	11AUG05
ABLANS0610	Block Wall Construction (Stage 2)	30	27d	0	17OCT05	19NOV05	17NOV05	21DEC05
ABLANS0700	Backfill Rubble Behind (Stage 1)	7	-56d	0	10OCT05	16OCT05	12AUG05	18AUG05
ABLANS0710	Backfill Rubble Behind (Stage 2)	7	27d	0	21NOV05	28NOV05	22DEC05	31DEC05
ABLANS0800	Reinstate 2500 Dia. Pipe Culvert	14	34d	0	02NOV05	12DEC05	02JAN06	15JAN06
ABLANS0900	Fabrication of Box Culvert Outfall	70	34d	0	04OCT05	12DEC05	07NOV05	15JAN06
ABLANS1000	Install Box Culvert Outfall	12	34d	0	13DEC05	24DEC05	16JAN06	27JAN06
ABLANS1100	Install Remaining Blocks for Both Side Outfall	4	36d	0	25DEC05	28DEC05	30JAN06	02FEB06
ABLANS1200	Reinstate Armour & Underlayer	10	36d	0	29DEC05	07JAN06	03FEB06	12FEB06
ABLANS1210	Diversion of Ext. Cycle Track (Phase 2)	1		100	28MAY05	28MAY05	28MAY05	28MAY05
ABLANS1300	Removal of Ext. Cycle Track Pavement (Phase 2)	4		100	30MAY05	11JUN05	30MAY05	11JUN05
ABLANS1400	Take Up / Divert Ext. Utility Services (Phase 2)	12		100	30MAY05	08JUN05	30MAY05	08JUN05
ABLANS1500	Reinstate Ext. Utility Services	24	-17d	0	27OCT05	23NOV05	30AUG05	27SEP05
ABLANS1600	Reinstate Ext. Cycle Track	12	-17d	0	24NOV05	07DEC05	28SEP05	13OCT05
ABLANS1700	Resume Ext. Cycle Track	1	-17d	0	08DEC05	08DEC05	14OCT05	14OCT05
<b>Seawall Adjacent to Landing Slip</b>								
ABLAMA0100	Taking Up of Armour to +2.5 (South Section)	2		100	10NOV04	11NOV04	10NOV04	11NOV04
ABLAMA0110	Taking Up of Underlayer to +2.5 (South Section)	2		100	15NOV04	16NOV04	15NOV04	18NOV04
ABLAMA0200	Taking Up of Rubble to +2.5 (South Section)	8		100	01DEC04	17JAN05	01DEC04	17JAN05
ABLAMA0210	Taking Up of Armour Below +2.5 (South Section)	3		100	27NOV04	01DEC04	27NOV04	01DEC04
ABLAMA0220	Taking Up Underlayer Below +2.5 (South Section)	3		100	09DEC04	12DEC04	09DEC04	12DEC04
ABLAMA0230	Taking Up of Rubble Below +2.5 (South Section)	12		100	13DEC04	11JUL05	13DEC04	11JUL05
ABLAMA0240	Placing Leveling Stone (South Section)	10		100	12JUL05	30JUL05	12JUL05	30JUL05
ABLAMA0400	Block Wall Construction (South Section)	25	-17d	0	31JUL05	24AUG05	14JUL05	07AUG05
ABLAMA0500	Backfill the Rubble Behind (South Section)	6	-17d	0	25AUG05	30AUG05	08AUG05	13AUG05
ABLAMA0600	Backfill G200 Rockfill Behind (South Section)	5	-17d	0	31AUG05	04SEP05	14AUG05	18AUG05



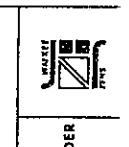




AS ID	C	Description	Orig Dur	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
49	SMA0630	Taking Up of Existing Rubble Below +2.5	5		100	13DEC04 A	18DEC04 A	13DEC04 A	18DEC04 A
AGLSMA0640		Taking Up of rubble at Seawall Foundation	13		100	16FEB05 A	11MAR05	18FEB05 A	11MAR05
AGLSMA0700		Dredging of Marine Mud	20		100	18MAR05 A	24MAR05	18MAR05	24MAR05
AGLSMA0800		Placing of Rubble Foundation	15		100	28MAR05 A	19APR05 A	28MAR05	19APR05 A
AGLSMA0830		Placing Leveling Stone	23		100	20APR05 A	28JUL05	20APR05 A	28JUL05
AGLSMA0850		Block Wall Construction 2 Layers from Bottom (N)	5	-174	100	04MAY05 A	31MAY05 A	04MAY05 A	31MAY05 A
AGLSMA0900		Block Wall Construction 2 Layers from Bottom (S)	5	-174	90	17JUL05 A	30JUL05	17JUL05 A	13JUL05
AGLSMA0910		Block Wall Construction to Top Level	5	2356	85	28APR05 A	16AUG05	28APR05 A	08APR06
AGLSMA0920		Placing of Bermentones	3	2356	0	17AUG05	09APR06	11APR06	11APR06
AGLSMA1000		Backfill the Rubble Behind	14	2356	0	17AUG05	30AUG05	09APR06	22APR06
AGLSMA1100		Backfill the G200 Rockfill Behind	4	2356	0	31AUG05	03SEP05	23APR06	26APR06
Land Works									
ARSLW0100		Submit Shop Drawings & Calculation of Roof Cover	30	94	0	05AUG05	08SEP05	16AUG05	20SEP05
ARSLW0200		Engineer Approval of Shop Drawings & Calculation	30	96	0	09SEP05	17OCT05	21SEP05	27OCT05
ARSLW0400		Procurement of Pyramid Skylight	120	814	0	18OCT05	10MAR06	23JAN06	18JUN06
ARSLW0500		Procurement of Structural Steel	120	90	0	18OCT05	10MAR06	28OCT05	21MAR06
ARSLW0600		Delivery of Pyramid Skylight	30	814	0	11MAR06	15APR06	17JUN06	22JUL06
ARSLW0700		Delivery of Structural Steel	30	94	0	11MAR06	15APR06	22MAR06	26APR06
ARSLW0800		Inspection & Testing	30	94	0	17APR06	22MAY06	27APR06	02JUN06
ARSLW0900		Fabrication & Painting of Steel Works	48	514	0	23MAY06	19JUL06	24JUL06	18SEP06
ARSLW1000		Concrete Coping with 10 tonne Boliers & Handrail	24	94	0	17APR06	22MAY06	27APR06	02JUN06
ARSLW1100		Construct Shelter Footing	30	450	0	23MAY06	20JUN06	03JUN06	30JUN06
ARSLW1200		Construct Shelter Column	30	450	0	21JUN06	26JUL06	14AUG06	18SEP06
ARSLW1300		Construct Shelter Roof	24	450	0	27JUL06	23AUG06	18SEP06	16OCT06
ARSLW1400		Public Lighting	8	450	0	24AUG06	01SEP06	17OCT06	25OCT06
ARSLW1500		Rubber, Step & Land Step	18	450	0	02SEP06	22SEP06	26OCT06	16NOV06
ARSLW1600		Surface Mounted Seats	18	450	0	23SEP06	14OCT06	17NOV06	07DEC06
ARSLW1700		Construct Insitu Concrete Paving	18	450	0	18OCT06	06NOV06	08DEC06	26DEC06
Section 10									
Remainder Works									
Illegal Contractors Works									
BORWMM0100		EI to Demolish HY9802 CRE Office	1	1076	0	03MAR06	03MAR06	11JUL06	11JUL06
BORWMM0200		Demolish HY9802 CRE Office (PI)	30	1076	0	25MAR06	29APR06	10AUG06	06SEP06
BORWMM0300		EI to Demolish HY9802 Contractor's Office	1	1076	100	22NOV04 A	22NOV04 A	22NOV04 A	22NOV04 A
BORWMM0400		Demolish HY9802 Contractor's Office (PI)	30	1076	100	21MAY05 A	27MAY05 A	21MAY05 A	27MAY05 A
BORWMM0500		EI to Remove Run-in & Reinstate FP/CT	1	1290	0	02MAY06	02MAY06	02OCT06	02OCT06
BORWMM0600		Remove Run-in & Reinstate FP/CT (PI)	18	1116	0	15JUN06	06JUL06	28OCT06	15NOV06
BORWMM0700		EI to Demolish Existing Paving	1	1076	0	02MAY06	02MAY06	06SEP06	06SEP06
BORWMM0800		Demolish Existing Paving (PI)	18	1076	0	24MAY06	14JUN06	28SEP06	19OCT06
BORWMM0900		EI to Fencing Around LO Site	1	1116	0	07JUL06	07JUL06	16NOV06	16NOV06
BORWMM1000		Fencing Around LO Site (PI)	18	1116	0	29JUL06	18AUG06	08DEC06	26DEC06
Section 11									
Area S40, S41B & S41A									
Landscaping Softworks									
B1AASL0100		Soil Mix (Section 5)	24	-1054	0	05JAN08	03FEB06	30AUG05	27SEP05
B1AASL0200		Soil Mix (in ZS, South End - 100m)	10	-164	0	04OCT05	19OCT05	13SEP05	24SEP05
B1AASL0300		Soil Mix (in ZS, 100 - 200m)	10	-460	0	09NOV05	19NOV05	13SEP05	24SEP05
B1AASL0400		Soil Mix (in ZS, 200 - 300m)	10	-60	0	09NOV05	19NOV05	02NOV05	12NOV05
B1AASL0500		Soil Mix (in ZS, 300 - 400m)	10	-210	0	26NOV05	07DEC05	02NOV05	12NOV05
B1AASL0600		Soil Mix (in ZS, 400 - North End)	10	-1294	0	13MAY06	24MAY06	07DEC05	17DEC05
B1AASL0700		Soil Mix (in ZL, 300m)	30	-260	0	23NOV05	29DEC05	24OCT05	26NOV05
<p>Legend:</p> <p>■ Start date</p> <p>■ Finish date</p> <p>■ Milestone point</p> <p>■ Summary bar</p> <p>■ Progress bar</p> <p>■ Critical bar</p> <p>■ Non-critical bar</p> <p>■ Page number</p> <p>2/4</p>									

Act ID	Description	Orig Dwp	Total Dwp	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
B2AASL0800	Planting Works	90	-1260	0	02MAR06	17JUN06	26SEP05	12JAN06											
B1AASL0900	Groundcovers Works	50	-1260	0	25MAY06	24JUL06	18DEC05	18FEB06											
B1AASL1000	Root Barrier (ZS, 100m - 200m) (VO055A)	12	-280	0	04OCT05	18OCT05	30AUG05	12SEP05											
B1AASL1100	Root Barrier (ZS, 200m - 300m) (VO055A)	12	-34	0	22OCT05	04NOV05	19OCT05	01NOV05											
B1AASL1200	Root Barrier (ZS, 300m - 400m) (VO055A)	12	-34	0	22OCT05	04NOV05	19OCT05	01NOV05											
B1AASL1300	Root Barrier (ZS, 400m - N. End) (VO055A)	2	-1160	0	25APR06	26APR06	05DEC05	06DEC05											
<b>Section 12</b>																			
Area SA7, SA10, SA11A, SA12 & SA13																			
Landscape Softworks																			
B2ABSL0100	Soil Mix (In ZR, 385m)	47	216	0	19APR06	14JUN06	15MAY06	10JUL06											
B2ABSL0200	Soil Mix (In ZK, 180m)	24	280	0	19APR06	17MAY06	23MAY06	20JUN06											
B2ABSL0300	Soil Mix (In ZL6, 85m)	12	376	0	24MAR06	07APR06	09MAY06	22MAY06											
B2ABSL0400	Soil Mix (In ZL5, 50m)	7	376	0	16MAR06	23MAR06	26APR06	08MAY06											
B2ABSL0500	Soil Mix (ZJ - Landscape Node 1 South, 260m)	30	548	0	11FEB06	17MAR06	17APR06	22MAY06											
B2ABSL0600	Soil Mix (ZM, ZL1, ZJ)	71	490	0	29DEC05	23MAR06	27FEB06	22MAY06											
B2ABSL0700	Planting Works	50	216	0	27APR06	12AUG06	23MAY06	06SEP06											
B2ABSL0800	Groundcovers Works	50	216	0	14AUG06	11OCT06	07SEP06	06NOV06											
B2ABSL0900	Root Barrier (In ZM) (VO065)	12	550	0	06DEC05	19DEC05	13FEB06	25FEB06											
B2ABSL1000	Root Barrier (In ZR) (VO065)	2	376	0	26MAR06	29MAR06	12MAY06	13MAY06											
<b>Section 13</b>																			
Area SA1, SA2, SA3, SA4 & SA5																			
Landscape Softworks																			
B3ACSL0100	Soil Mix (Area SA1 - South Section)	30	1640	0	08FEB06	14MAR06	23AUG06	26SEP06											
B3ACSL0200	Soil Mix (Area SA1 - North Section)	30	1360	0	13MAR06	17APR06	23AUG06	26SEP06											
B3ACSL0300	Soil Mix (Car Park, Loading & Unloading Area)	6	1080	0	26JUN06	03JUL06	03NOV06	09NOV06											
B3ACSL0400	Soil Mix (Area Adjacent Road SL3)	30	810	0	18MAY06	22JUN06	23AUG06	26SEP06											
B3ACSL0500	Planting Works	80	810	0	23JUN06	01SEP06	27SEP06	07DEC06											
B3ACSL0600	Planting Works (Car Park, Loading/Unloading Area)	5	1430	0	04JUL06	10JUL06	20DEC06	26DEC06											
Area SA8, SA9, SA15, SA16, SA17 & SA18																			
Landscape Softworks																			
B3ADSL0100	Planting Works	45	1070	0	24MAY06	17JUL06	26SEP06	21NOV06											
B3ADSL0200	Groundcovers Works	30	1070	0	16JUL06	21AUG06	22NOV06	26DEC06											
<b>Section 14</b>																			
Area SA6, SA11B & SA14																			
Establishment Works																			
B4AAEW0100	Establishment Works	300	-1240	0	25JUL06	18JUL07	25FEB08	17FEB07											
<b>Section 15</b>																			
Area SA7, SA10, SA11A, SA12 & SA13																			
Establishment Works																			
B5ABEW0100	Establishment Works	300	250	0	12OCT06	06OCT07	11NOV06	05NOV07											
<b>Section 16</b>																			
Area SA1, SA2, SA3, SA4 & SA5																			
Establishment Works																			
B6ACV0200	Establishment Works	320	810	0	02SEP06	16SEP07	06DEC06	26DEC07											
Area SA9, SA9, SA15, SA16, SA17 & SA18																			
Establishment Works																			
B6ADV0100	Establishment Works	300	1110	0	22AUG06	15AUG07	02JAN07	26DEC07											

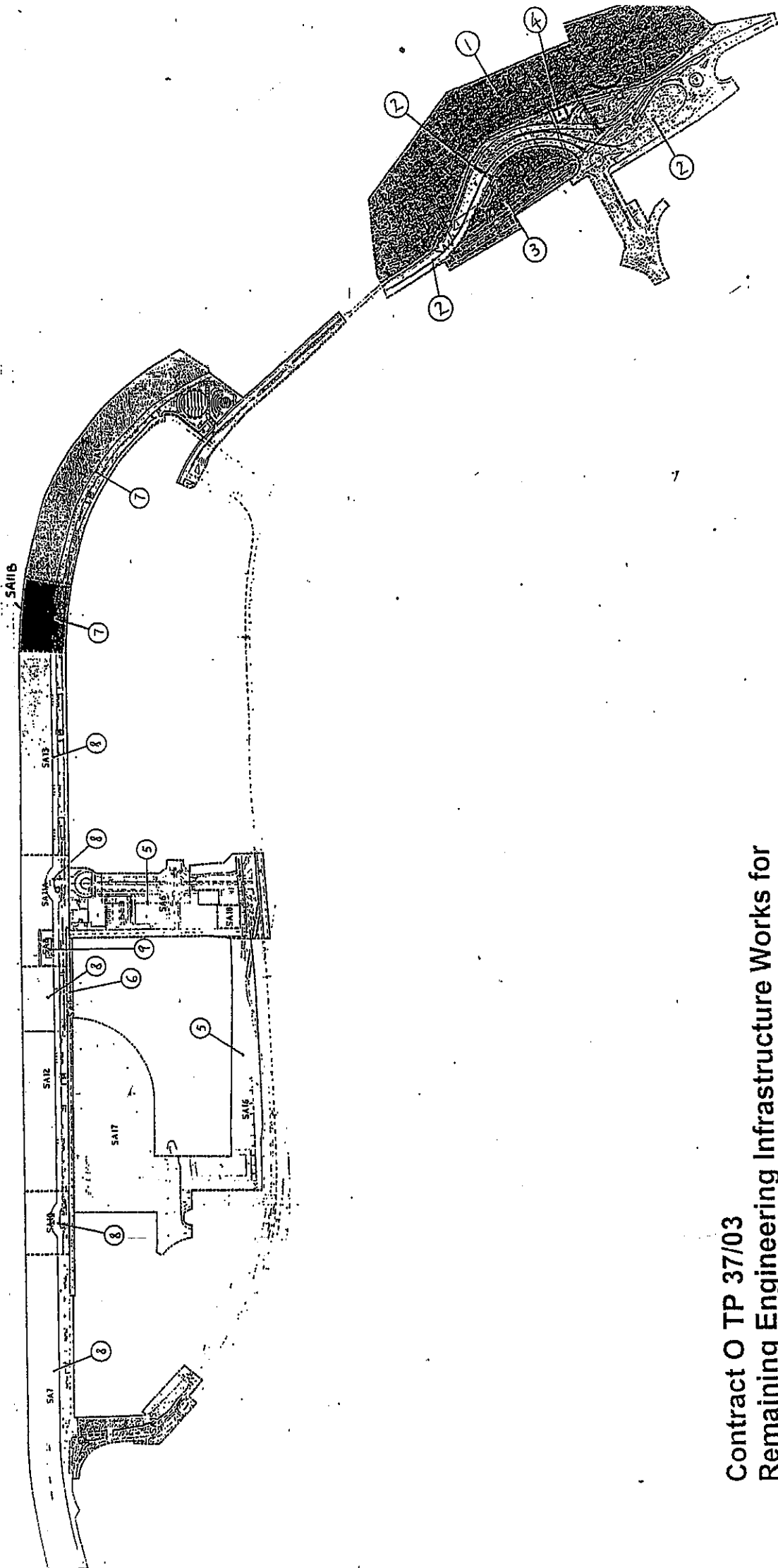
Entry bar  
 Progress bar  
 Critical bar  
 Summary bar  
 Start milestone point  
 Finish milestone point





## **Appendix G**

### **Construction Site Area**



Contract O TP 37/03  
 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

Location and Key Plan





**Appendix H**

**The Implementation Status**  
**of**  
**Mitigation Measures and Follow-up Actions during Weekly**  
**Site Inspections**

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 4 August 2005      Inspected by : (RSS) Sunny Jeung (LWKM)      (ET)    
 Time : 14:00      Signature :       H.T. Chow   
 Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy      Temperature : 31°C   
 Wind : Calm / Light / Breeze / Strong      Humidity : High / Moderate / Low

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Air Quality</b>				
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓			
▪ During transportation by truck, material should be loaded to a level lower than the side and tall boards, and should be dampened or covered before transport.	✓			
▪ All stockpiles of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓			
▪ The haul road should be either paved or regular watering.	✓			
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓			
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle speed should be limited to 20 km/hr.	✓			
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓			
▪ The enclosures should be around the main dust-generating activities.	✓			
▪ Dusty materials should be sprayed prior to loading.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ Open burning should be prohibited.	✓			
<b>Noise</b>				
▪ The constructions works should be scheduled to minimize noise nuisance.	✓			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Plant known to emit noise strongly in one direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.			✓	
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.				
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Construction Noise Permits should be available for inspection.	✓			



**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	/			
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	/			
▪ All traps shall incorporate oil and grease removal facilities.	/			
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	/			
▪ All drainage facilities should be adequate for controlled release of storm flows.	/			
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	/			
▪ Open stockpiles of more than 50m <sup>3</sup> should be covered.	/			
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	/			
▪ Manholes should be covered and sealed.	/			
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	/			
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	/			
▪ Vehicle washing facilities should be provided at every site exit.	/			
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	/			
▪ Washing area and road exiting from washing facility should be paved.	/			
▪ Access road should have sufficient back fall toward washing facility.	/			
<b>Dredging Activities</b>				
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	/			
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	/			
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	/			
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	/			
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	/			
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	/			
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	/			
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	/			



## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Filling Activities</b>				
▪ Use of silt screen around the filling face to reduce the losses to the surrounding.	/			
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	/			
▪ The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	/			
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	/			
▪ Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.	/			
<b>Waste Management</b>				
<b>Marine Dredged Sediment</b>				
▪ Relevant licence / permits for disposal of marine dredged sediment are available for inspection.				
▪ Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.				
▪ Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.				
▪ Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.				
▪ Inspection of the barge loading to ensure that loss of material does not take place during transportation.				
<b>Construction and Demolition (C&amp;D) Waste</b>				
▪ Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	/			
▪ Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	/			
▪ Proper protective measures, such as fences and tarpaulin, are provided, in order to protective the temporary stockpiled materials for later reuse / recycle.	/			
▪ Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	/			
▪ In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	/			
▪ All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	/			
▪ Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	/			
▪ Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	/			
▪ Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	/			
▪ Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	/			





**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
• Proper storage will minimize the damage and thus the wastage of the materials	/		
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	/		
• Chemical Waste			
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	/		
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.		/	
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	/		
• Containers used for the storage of chemical wastes			
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	/		
• Have a capacity of less than 450L unless the specification have been approved by the EPD	/		
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	/		
• Labelling	/		
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	/		
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	/		
• Storage Area			
• Be clearly labeled and used solely for the storage of chemical waste	/		
• Be enclosed on at least 3 sides	/		
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	/		
• Have adequate ventilation	/		
• Be covered to prevent rainfall entering	/		
• Be arranged so that incompatible materials are adequately separated	/		
• Be clean and maintain regularly	/		
• Disposal			
• Be via a licensed waste collector			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre			
• Be a reuser of the waste, under approval from the EPD			

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
• Spillage			
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			
• Commencing at the source of the spill, establish all current and potential impacted areas			
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary			
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials			
• Dispose of materials as chemical wastes			
• General Refuse			
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.			
• Site Practice			
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.			
• The Environmental Permit should be displaced conspicuously on site			
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.			
• Any unused chemicals or those with remaining functional capacity should be recycled.			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.			
• All generators, fuel and oil storage are within bundle areas.			
• Oil leakage from machinery, vehicle and plant is prevented.			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.			

Contract No.: TP 3703 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**Table for follow-up Action:**

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
	All site conditions were satisfactory in this site inspection, there are no non- compliance and remark were made.	N/A	N/A	N/A

Signature:	RSS	LWKJV	ET
Name:	Shun Yung	Ben-ye	H.T. Chow
Date:	4/8/2005	4/8/05	4-8-2005

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 13 August 2008 Inspected by Name : (RSS) Eric Leung (LWKJN) *Eric Leung* (ET) H. T. Chong *H. T. Chong*  
 Time : 10:30 Signature : *[Signature]*

Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong  
 Temperature : 28°C  
 Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓		
▪ The haul road should be either paved or regular watering.	✓		
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓		
▪ The public road around the site entrance should be kept clean and free from dust.	✓		
▪ Vehicle speed should be limited to 20 km/hr.	✓		
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓		
▪ The enclosures should be around the main dust-generating activities.	✓		
▪ Dusty materials should be sprayed prior to loading.	✓		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓		
▪ Vehicle and equipment should be switched off while not in use.	✓		
▪ Open burning should be prohibited.	✓		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	✓		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓		
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓		
▪ Air compressors and hand held breakers should have noise labels.	✓		
▪ Compressors and generators should operate with door closed.	✓		
▪ Construction Noise Permits should be available for inspection.	✓		

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
<ul style="list-style-type: none"> <li>▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.</li> <li>▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.</li> <li>▪ All traps shall incorporate oil and grease removal facilities.</li> <li>▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.</li> <li>▪ All drainage facilities should be adequate for controlled release of storm flows.</li> <li>▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.</li> <li>▪ Open stockpiles of more than 50m<sup>2</sup> should be covered.</li> <li>▪ Temporary stockpiles of excavated materials should be covered during rainstorms.</li> <li>▪ Manholes should be covered and sealed.</li> <li>▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.</li> <li>▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.</li> <li>▪ Vehicle washing facilities should be provided at every site exit.</li> <li>▪ Vehicle washing facilities should be adequate to settle out the sand and silt.</li> <li>▪ Washing area and road exiting from washing facility should be paved.</li> <li>▪ Access road should have sufficient back fall toward washing facility.</li> </ul>	✓	✓	✓	
<b>Dredging Activities</b>				
<ul style="list-style-type: none"> <li>▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.</li> <li>▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.</li> <li>▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.</li> <li>▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.</li> <li>▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.</li> <li>▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.</li> <li>▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.</li> <li>▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.</li> </ul>	✓	✓	✓	✓

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Filling Activities</b>				
Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.			✓	
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.			✓	
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during transportation.			✓	
<b>Waste Management</b>				
<b>Marine Dredged Sediment</b>				
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.			✓	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.			✓	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.			✓	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.			✓	
Inspection of the barge loading to ensure that loss of material does not take place during transportation.			✓	
<b>Construction and Demolition (C&amp;D) Waste</b>				
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	✓			
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills			✓	
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No	
<b>Mitigation Measures on Waste Management</b>			
• Proper storage will minimize the damage and thus the wastage of the materials	✓		
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓		
• Chemical Waste			
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓		
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.			✓
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓		
• Containers used for the storage of chemical wastes			
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓		
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓		
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓		
• Labelling	✓		
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓		
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓		
• Storage Area			
• Be clearly labeled and used solely for the storage of chemical waste	✓		
• Be enclosed on at least 3 sides	✓		
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓		
• Have adequate ventilation	✓		
• Be covered to prevent rainfall entering	✓		
• Be arranged so that incompatible materials are adequately separated	✓		
• Be clean and maintain regularly	✓		
• Disposal			
• Be via a licensed waste collector			✓
• To a licensed disposal facility, such as Chemical Waste Treatment Centre			✓
• Be a reuser of the waste, under approval from the EPD			✓



**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
• Spillage			
• Establish source of spill or discharge and determine nature of material, where possible halt discharge		✓	
• Commencing at the source of the spill, establish all current and potential impacted areas		✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary		✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials		✓	
• Dispose of materials as chemical wastes		✓	
• General Refuse			
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓		
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓		
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓		
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓		
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓		
• Site Practice			
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓		
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓		
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓		
• The Environmental Permit should be displayed conspicuously on site	✓		
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓		
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓		
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓		
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓		
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓		
• All generators, fuel and oil storage are within bundle areas.	✓		
• Oil leakage from machinery, vehicle and plant is prevented.	✓		
• Chemical storage area, drainage systems, silt traps, surps and oil interceptors are cleaned and maintained regularly.	✓		①



**Table for follow-up Action:**

Item	Details of defective works or observations	Location	Further action to be taken (included persons / party to take action)	Expected Date for Action taken
①	Removal Drip tray was not provided for generator.	Node 2	The Contractor was reminded to provide drip tray for prevent oil leakage.	18-8-05

Signature:	RSS Eric	LWKJV 	ET 
Name:	Eric Leung	Eric Leung	H. T. Chow
Date:	13-08-05	13/8/05	13-8-2005

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 18 August 2008 Inspected by Name : (RSS) Eric Leung (LWKJM) (ET) H. T. Chow  
 Time : 10:15 Signature : *[Signature]*

Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong  
 Temperature : 29°C  
 Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	<input checked="" type="checkbox"/>		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	<input checked="" type="checkbox"/>		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	<input checked="" type="checkbox"/>		
▪ The haul road should be either paved or regular watering.	<input checked="" type="checkbox"/>		
▪ Unpaved areas should be watered regularly to avoid dust generation.	<input checked="" type="checkbox"/>		
▪ The public road around the site entrance should be kept clean and free from dust.	<input checked="" type="checkbox"/>		
▪ Vehicle speed should be limited to 20 km/hr.	<input checked="" type="checkbox"/>		
▪ Wheel washing facilities should be provided at all main entrance of work site.	<input checked="" type="checkbox"/>		
▪ The enclosures should be around the main dust-generating activities.	<input checked="" type="checkbox"/>		
▪ Dusty materials should be sprayed prior to loading.	<input checked="" type="checkbox"/>		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	<input checked="" type="checkbox"/>		
▪ Vehicle and equipment should be switched off while not in use.	<input checked="" type="checkbox"/>		
▪ Open burning should be prohibited.	<input checked="" type="checkbox"/>		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	<input checked="" type="checkbox"/>		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	<input checked="" type="checkbox"/>		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	<input checked="" type="checkbox"/>		
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	<input checked="" type="checkbox"/>		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	<input checked="" type="checkbox"/>		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	<input checked="" type="checkbox"/>		
▪ Air compressors and hand held breakers should have noise labels.	<input checked="" type="checkbox"/>		
▪ Compressors and generators should operate with door closed.	<input checked="" type="checkbox"/>		
▪ Construction Noise Permits should be available for inspection.	<input checked="" type="checkbox"/>		

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Mitigation Measures on Waste Management	Implementation Stages*		Remark
		Yes	No / N/A	
<b>Water Quality</b>				
<b>General Construction Activities</b>				
	Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	/		(2)
	Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	/		
	All traps shall incorporate oil and grease removal facilities.	/		
	Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	/		
	All drainage facilities should be adequate for controlled release of storm flows.	/		
	Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	/		
	Open stockpiles of more than 50m <sup>3</sup> should be covered.	/		
	Temporary stockpiles of excavated materials should be covered during rainstorms.	/		
	Manholes should be covered and sealed.	/		
	All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	/		
	Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	/		
	Vehicle washing facilities should be provided at every site exit.	/		
	Vehicle washing facilities should be adequate to settle out the sand and silt.	/		
	Washing area and road exiting from washing facility should be paved.	/		
	Access road should have sufficient back fall toward washing facility.	/		
<b>Dredging Activities</b>				
	Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	/		
	Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	/		
	All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	/		
	The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	/		
	All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	/		
	Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	/		
	Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	/		
	Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	/		

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Filling Activities</b>			
Use of silt screen around the filling face to reduce the losses to the surrounding.	/		
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	/		(1)
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	/		
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	/		
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.	/		
<b>Waste Management</b>			
<b>Marine Dredged Sediment</b>			
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.	/		
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	/		
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.	/		
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.	/		
Inspection of the barge loading to ensure that loss of material does not take place during transportation.	/		
<b>Construction and Demolition (C&amp;D) Waste</b>			
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	/		
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	/		
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	/		
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	/		
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	/		
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	/		
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	/		
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	/		
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	/		
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	/		



## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Mitigation Measures on Waste Management			Remark
	Implementation Stages*			
	Yes	No	N/A	
• Proper storage will minimize the damage and thus the wastage of the materials	/			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	/			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	/			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.				
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	/			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	/			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	/			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	/			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	/			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	/			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	/			
• Be enclosed on at least 3 sides	/			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	/			
• Have adequate ventilation	/			
• Be covered to prevent rainfall entering	/			
• Be arranged so that incompatible materials are adequately separated	/			
• Be clean and maintain regularly	/			
• Disposal				
• Be via a licensed waste collector	/			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	/			
• Be a reuser of the waste, under approval from the EPD	/			

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge				
• Commencing at the source of the spill, establish all current and potential impacted areas				
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary				
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials				
• Dispose of materials as chemical wastes				
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste				
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.				
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts				
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.				
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.				
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment.				
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.				
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.				
• The Environmental Permit should be displaced conspicuously on site				
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.				
• Any unused chemicals or those with remaining functional capacity should be recycled.				
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.				
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.				
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.				
• All generators, fuel and oil storage are within bundle areas.				
• Oil leakage from machinery, vehicle and plant is prevented.				
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.				

**Table for follow-up Action:**

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up the site inspection on 13 August 2005, drip tray was still not provided for generator.	Nade 2	The Contractor was reminded to provide drip tray for prevent oil leakage.	25-8-05
	Remark: The curtain was not fully enclosed the marine working area.	Nade 2	The Contractor should be keep the curtain fully enclosed.	25-8-05
	Remark: site runoff direct discharge into the sea was observed.	SA14	The Contractor should be adopted and effective treatment process before discharge.	25-8-05

Signature:	RSS	LWKJY	ET
Name:	Eric Leung		
Date:	18-8-2005	18/8/05	18-8-2005

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 25 August 2005 Inspected by Name : (RSS) Sunny Ba-tyg (LWKW) (ET) H.T. Chow  
 Time : 09:45 Signature : [Signature] [Signature] [Signature]  
 Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong Temperature : 29 Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓		
▪ The haul road should be either paved or regular watering.	✓		
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓		
▪ The public road around the site entrance should be kept clean and free from dust.	✓		
▪ Vehicle speed should be limited to 20 km/hr.	✓		
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓		
▪ The enclosures should be around the main dust-generating activities.	✓		
▪ Dusty materials should be sprayed prior to loading.	✓		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓		
▪ Vehicle and equipment should be switched off while not in use.	✓		
▪ Open burning should be prohibited.	✓		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	✓		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓		
▪ Plant known to emit noise strongly in an direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓		
▪ Air compressors and hand held breakers should have noise labels.	✓		
▪ Compressors and generators should operate with door closed.	✓		
▪ Construction Noise Permits should be available for inspection.	✓		





**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Mitigation Measures on Waste Management	Implementation Stages*		Remark
		Yes	No / N/A	
<b>Water Quality</b>				
<b>General Construction Activities</b>				
▪	Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓		
▪	Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓		
▪	All traps shall incorporate oil and grease removal facilities.	✓		
▪	Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓		
▪	All drainage facilities should be adequate for controlled release of storm flows.	✓		
▪	Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓		
▪	Open stockpiles of more than 50m <sup>3</sup> should be covered.	✓		
▪	Temporary stockpiles of excavated materials should be covered during rainstorms.	✓		
▪	Manholes should be covered and sealed.	✓		
▪	All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓		
▪	Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓		
▪	Vehicle washing facilities should be provided at every site exit.	✓		
▪	Vehicle washing facilities should be adequate to settle out the sand and silt.	✓		
▪	Washing area and road exiting from washing facility should be paved.	✓		
▪	Access road should have sufficient back fall toward washing facility.	✓		
<b>Dredging Activities</b>				
▪	Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	✓		
▪	Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	✓		
▪	All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	✓		
▪	The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	✓		
▪	All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	✓		
▪	Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	✓		
▪	Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	✓		
▪	Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	✓		



**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Filling Activities</b>			
• Use of silt screen around the filling face to reduce the losses to the surrounding.	✓		
• All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	✓		
• The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓		
• All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	✓		
• Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.	✓		
<b>Waste Management</b>			
<b>Marine Dredged Sediment</b>			
• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.	✓		
• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	✓		
• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.	✓		
• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.	✓		
• Inspection of the barge loading to ensure that loss of material does not take place during transportation.	✓		
<b>Construction and Demolition (C&amp;D) Waste</b>			
• Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓		
• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓		
• Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓		
• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓		
• In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	✓		
• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓		
• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓		
• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓		
• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓		
• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓		

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No	
<b>Mitigation Measures on Waste Management</b>			
• Proper storage will minimize the damage and thus the wastage of the materials	✓		
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓		
• Chemical Waste			
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓		
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓		
• Containers used for the storage of chemical wastes			
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓		
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓		
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓		
• Labelling			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓		
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓		
• Storage Area			
• Be clearly labeled and used solely for the storage of chemical waste	✓		
• Be enclosed on at least 3 sides	✓		
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓		
• Have adequate ventilation	✓		
• Be covered to prevent rainfall entering	✓		
• Be arranged so that incompatible materials are adequately separated	✓		
• Be clean and maintain regularly	✓		
• Disposal	✓		
• Be via a licensed waste collector			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre			
• Be a reuser of the waste, under approval from the EPD			

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge				
• Commencing at the source of the spill, establish all current and potential impacted areas				
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary				
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials				
• Dispose of materials as chemical wastes				
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste				
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.				
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts				
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.				
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.				
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment.				
• Construction sites should be cleaned on a regular basis.				
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.				
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.				
• The Environmental Permit should be displaced conspicuously on site				
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.				
• Any unused chemicals or those with remaining functional capacity should be recycled.				
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.				
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.				
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.				
• All generators, fuel and oil storage are within bundle areas.				
• Oil leakage from machinery, vehicle and plant is prevented.				
• Chemical storage area, drainage systems, silt traps, surps and oil interceptors are cleaned and maintained regularly.				
				#

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up the site inspection on 13, 18 August 2005, drip tray was still not provided for generator.	Node 2	The Contractor was reminded to provide drip tray for prevent oil leakage.	1-9-05
#2	The curtain was fully enclosed on marine working area	Node 2	N/A	N/A
#3	No run-off direct discharge into the sea was observed	SA 14	N/A	N/A
①	Rework Rain water was accumulated in chemical waste storage	Contractors site office	The Contractor was reminded release rain water from chemical waste storage to prevent mosquito breeding.	1-9-05

Signature:	RSS	LWKJY	ET
Name:	Sunny Young	Be Yip	Sab.
Date:	25-8-2005	25/8/05	25-8-2005



## **Appendix I**

### **IEC and RE Comments on Monthly EM&A Report**

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**July 2005**

**IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – July 2005**

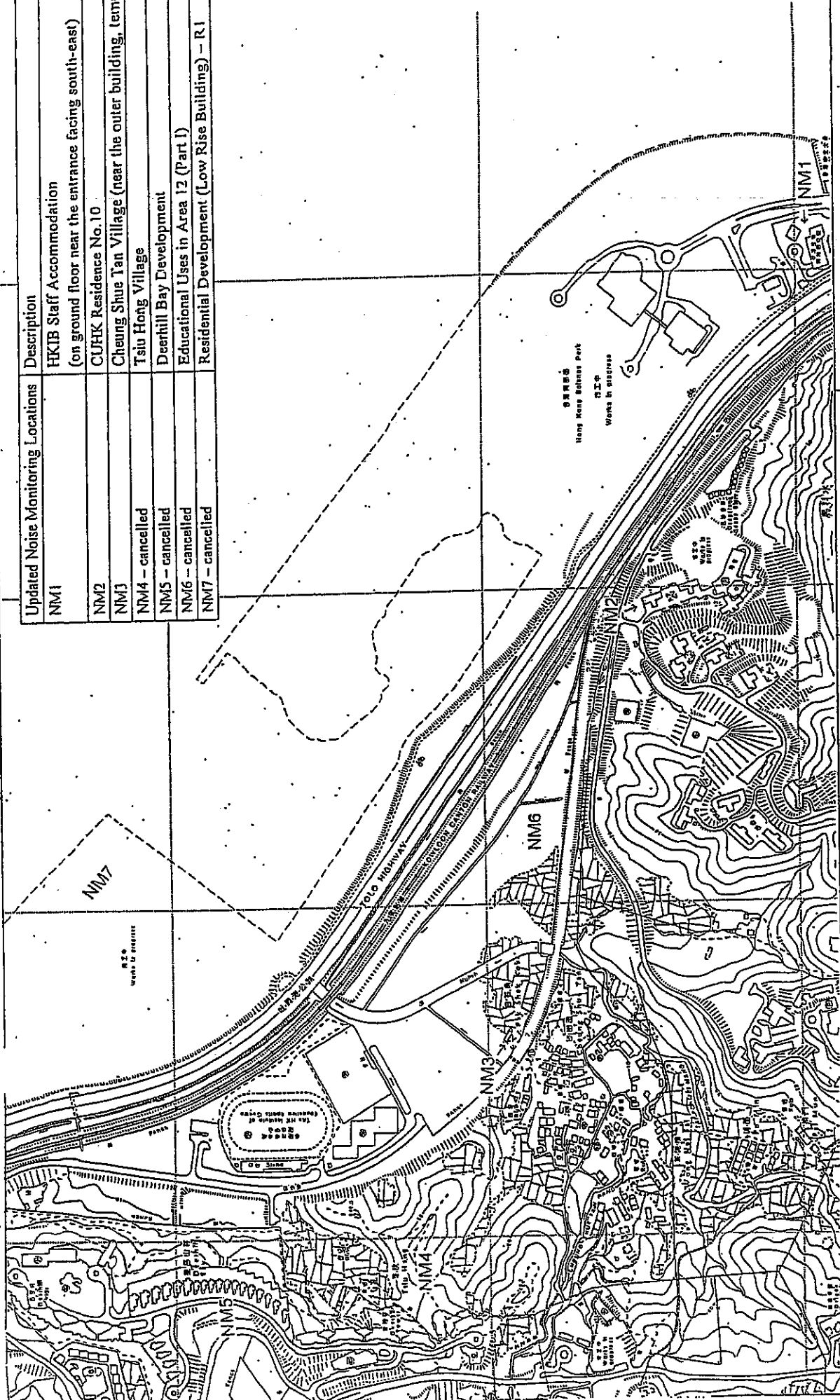
Item No.	Document Reference	Comment	ET Response
1	Appendix B2	The name of AM5 is not correct. Please amend.	Typo error. The monitoring stations of 24-hr TSP should be "AM5 - Near Wen Chih Tang at the CUHK" instead of "AM3". (Appendix B2)
2	Appendix B2	The spelling of the name of AM8 is not correct. Please amend.	Typo error. The monitoring stations of 1-hr TSP should be "AM5" instead of "AM8". (Appendix B2)



## Figures



Updated Noise Monitoring Locations	Description
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, temple)
NM4 - cancelled	Tsui Hong Village
NM5 - cancelled	Deerhill Bay Development
NM6 - cancelled	Educational Uses in Area 12 (Part I)
NM7 - cancelled	Residential Development (Low Rise Buildings) - R1



Scale : ----

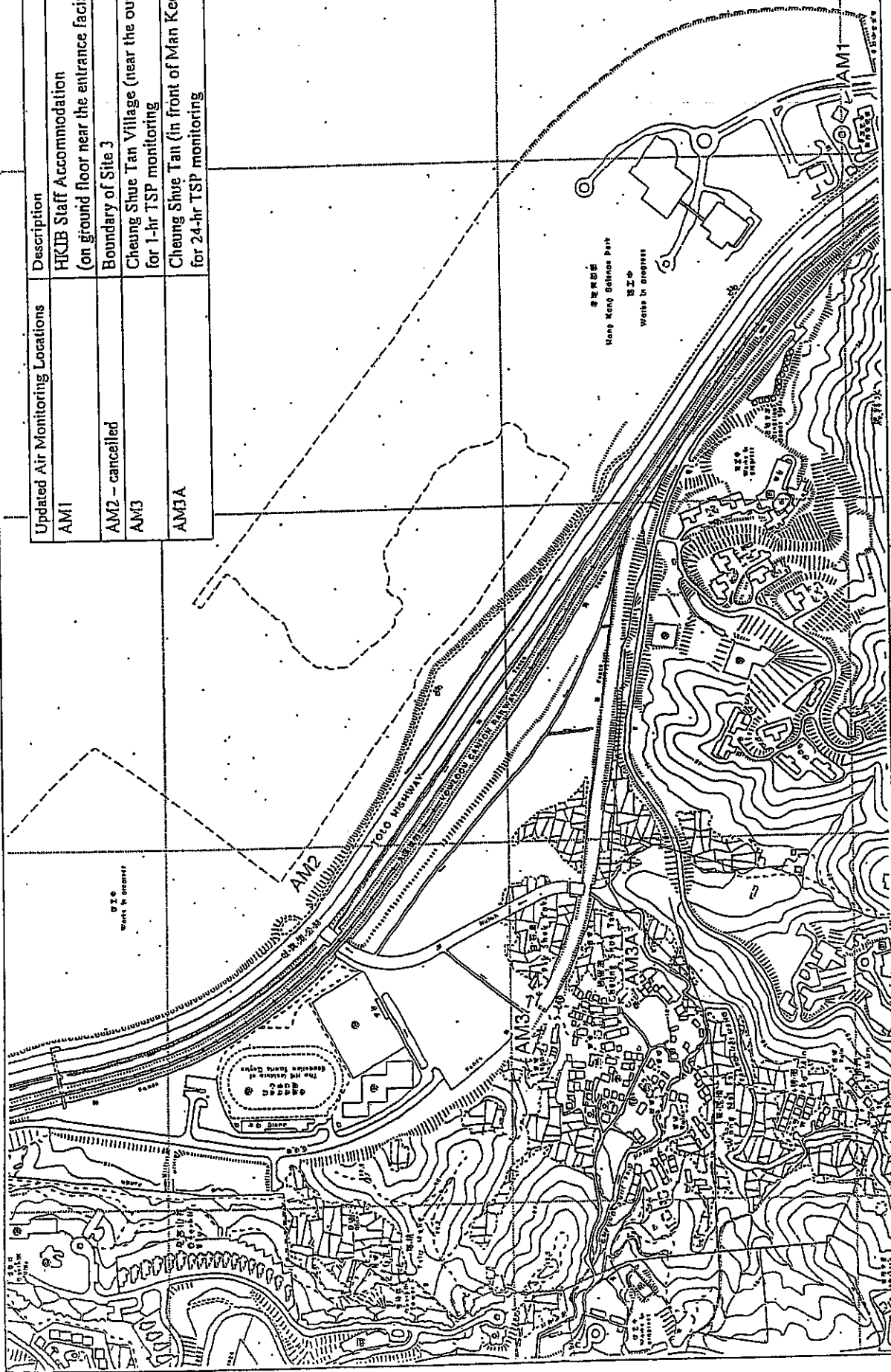
Revised Date: ...  
June 2004

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英業德勤測試顧問有限公司



Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2 A  
Contract No. TP 37/03  
Figure 1 Location of Noise Monitoring Stations

Updated Air Monitoring Locations	Description
AM1	HKJB Staff Accommodation (on ground floor near the entrance facing south-east)
AM2 - cancelled	Boundary of Site 3
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring



Scale : ---

Revised Date:

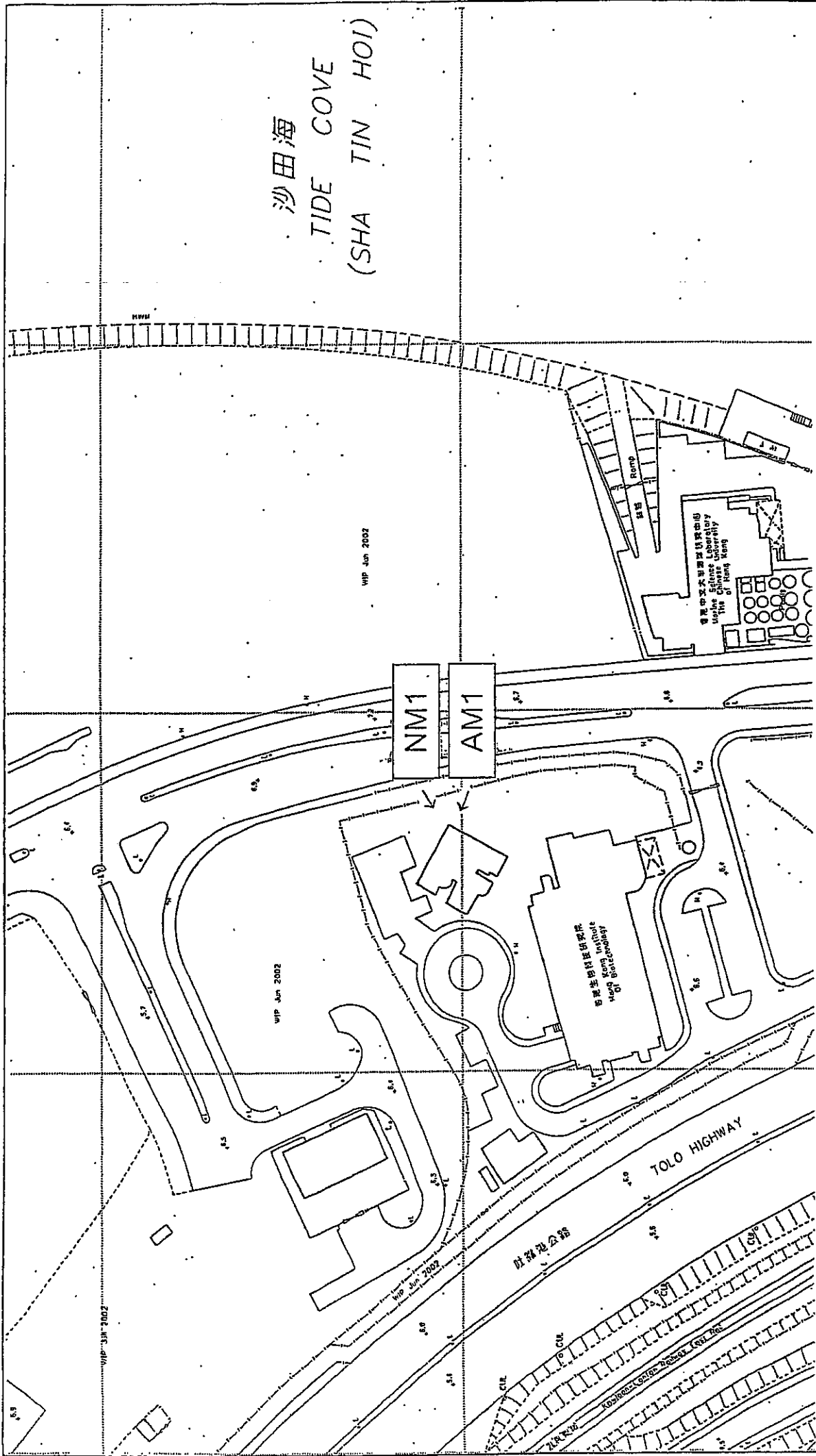
June 2004

Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2 A  
Contract No. TP 37/03

Figure 2 Location of Air Monitoring Stations



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Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A  
 Contract No. TP 37/03  
 Figure 3 Location of Air and Noise Monitoring Stations  
 at HKIB Staff Accommodation

Scale : ---

Revised Date:  
 June 2004

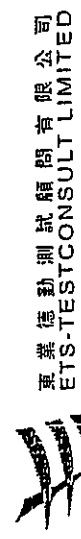


業德勘測試驗有限公司  
 ETS-TESTCONSULT LIMITED



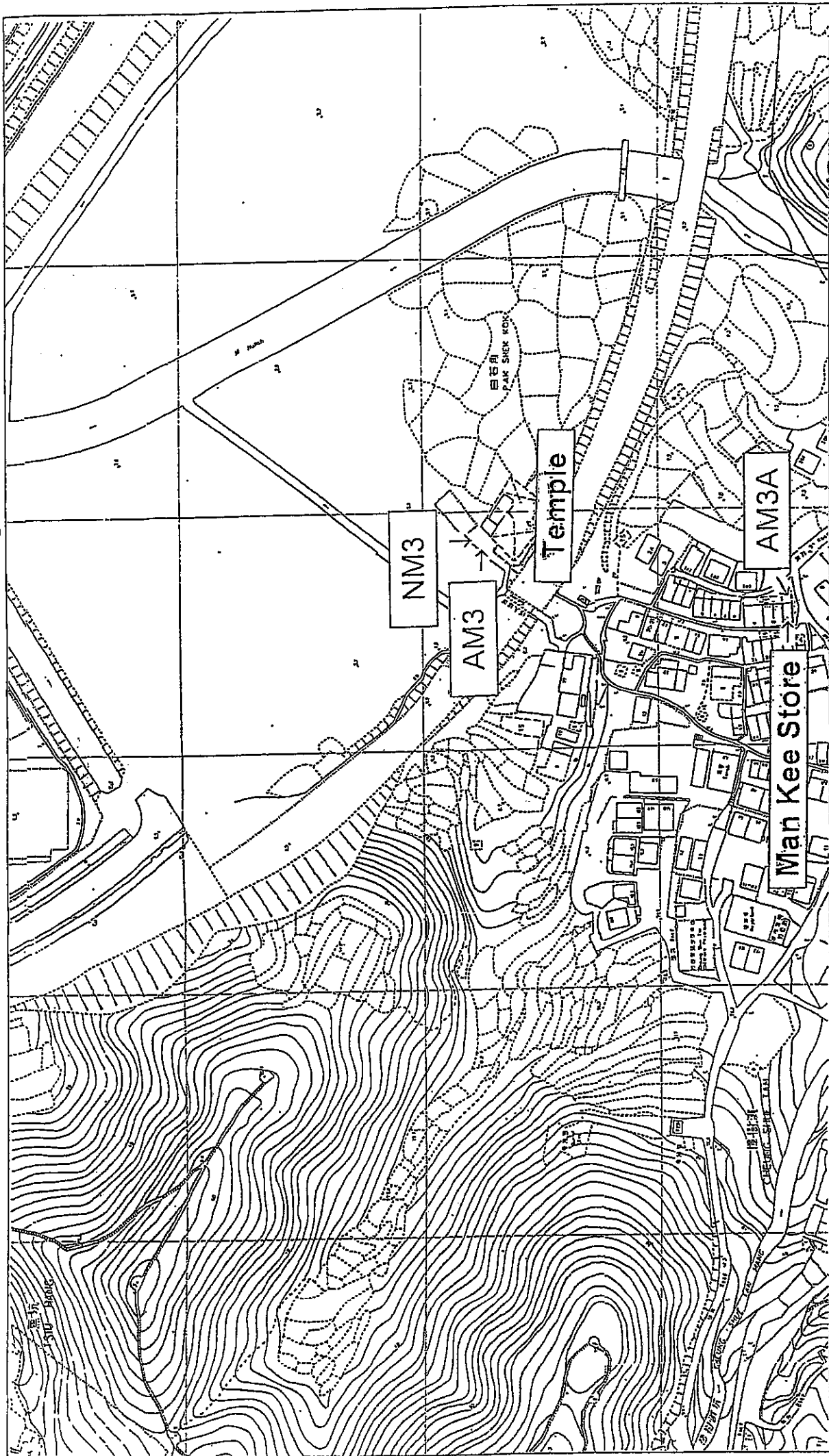
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Revised Date: June 2004



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Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A  
Contract No. TP 37/03  
Figure 4 Location of Noise Monitoring Station at CUHK Residence No.10



Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2 A  
 Contract No. TP 37/03  
 Figure 5 Location of Air and Noise Monitoring Stations  
 at Cheung Shue Tan Village

Scale : ---

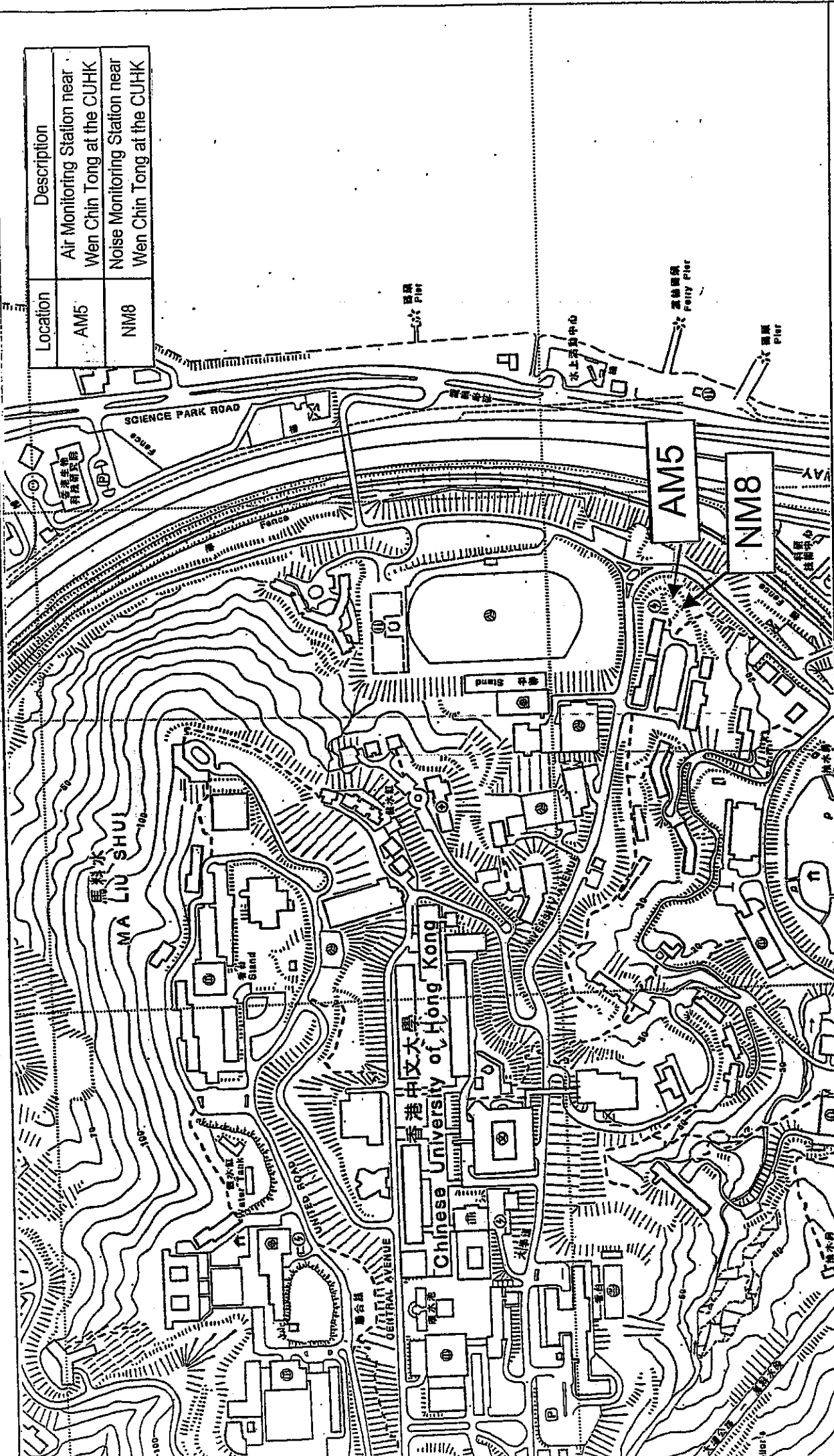
Revised Date:

June 2004



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Location	Description
AM5	Air Monitoring Station near Wen Chin Tong at the CUHK
NM8	Noise Monitoring Station near Wen Chin Tong at the CUHK



Remaining Engineering Infrastructure Works for Pak Shek Kok Development

Package 2A Contract No. TP 37/03

Figure 7 Additional Locations of Air and Noise Monitoring Stations at the Chinese University of Hong Kong

Scale : ---

Revised Date :  
October 2004



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