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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

(JANUARY 2007)

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Issue date: 12 February 2007

Report No.: ENA70086



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EXECUTIVE SUMMARY

This monthly EM&A report (No.21) 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 January 2007.

Construction Progress

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

- Installation of public light footings and ducts and irrigations system along the proposed Promenade, construction of hard landscape structures and CCTV inspection of the completed drainage pipes;
- Hard and soft landscaping works, bituminous roadworks and paving, construction of landscape structures at Section 7 of the Works;
- Construction of Pump House No.1;
- Installation of precast concrete planter and parapet wall units along the proposed Promenade at Section 8 of the Works;
- Construction of mass concrete coping and parapet walls at the proposed Landscape Nodes P1, P2 and P3;
- Shelter fabrication for the proposed Public Landing Steps;
- Compaction of surcharge mound formed under VO/146; and
- Filling of soil mix at planter wall.

Environmental Monitoring Progress

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

- Noise Monitoring (Day-time): 5 Occasions 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 to carry out wastewater monitoring at effluent discharge point quarterly and the monitoring was carried out on 30 November 2006. The next wastewater monitoring should be at February 2007

Site Inspection

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

Concerned Parties	Dates of Audit / Inspection in January 2007
Weekly site inspection (ET)	06, 12, 20, 25
Monthly site inspection (IEC/LWKJV/RE)	25



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	Air	Tarpaulin sheets at SA1 near the Pier access road was found damaged during the weekly site inspection on 06/01/07.	LWKJV replied to replace the damaged sheets by new one.	During the subsequent site inspection on 12/01/07, the broken tarpaulin sheets were replaced and hence no more further actions were required.
2	Air	Stockpile at Node 1 was found without covered by tarpaulin sheet during weekly site inspections on 12/01/07, 20/01/07 and 25/01/07.	LWKJV replied to provide water spraying or cover the stockpile by using tarpaulin sheets.	Since the finding was still observed at the last site inspection, it will be verified in the next month.
3	Air	Black smoke was emitted from an excavator (No.032) was observed during site inspection on 12/01/07.	LWKJV replied to repair the defective excavator to avoid black smoke emission.	During the subsequent site inspection on 20/01/07, the defective excavator was found repaired and no back smoke was emitted during operation.
4	Water	Manhole of drainage channel was found without cover during weekly site inspection on 06/01/07.	LWKJV replied to seal the manhole immediately.	During the subsequent site inspection on 12/01/07, the manhole was found to be sealed.
5	Water	Stagnant water was observed at SA3 next to the wheel washing bay during weekly site inspection on 20/01/07.	LWKJV replied to drain the stagnant water.	During the subsequent site inspection on 25/01/07, no stagnant water was noted at SA3.
6	Water	The sedimentation tank at SA3 was found overflow during weekly site inspection on 20/01/07.	LWKJV replied to reduce the flow rate to avoid overflowing.	During the subsequent site inspection on 25/01/07, no overflow was observed from the sedimentation tank.
7	Chemical	Follow up action to previous site inspection finding on 28/12/06, the drain outlet of the drip trays at Workshop and SA-3 were found closed during site inspection on 06/01/07..	No further action was required to be taken by LWKJV since the finding was completed.	No further verification was required to be taken by LEKJV since the finding was completed, no further actions were required.
8	Chemical	Some oil containers were found placed on the ground at SA3 during site inspections on 06/01/07 and 12/01/07.	LWKJV replied to relocate the oil containers to appropriate storage area.	During the site inspection on 20/01/07, the oil containers were removed.
9	Chemical	Oil leakage from a generator at SA3 was observed during site inspection on 12/01/07.	LWKJV replied to repair the defective generator and clean up the contaminated soil as chemical waste.	During the site inspection on 20/01/07, no oil was observed leaked from the generator and the contaminated soil had been cleaned up.
10	Site Practice	Valid CNP was found not to be post at the site entrance at Ma Liu Shui during weekly site inspections on 12/01/07 and 20/01/07.	LWKJV replied to post the valid CNP at the site entrance immediately.	During the last site inspection on 25/01/07, the valid CNP was post at site entrance.
11	Site Practice	Rubbish was found accumulated on the ground at SA3 during the weekly site inspection on 20/01/07.	LWKJV replied to clean up and dispose of the rubbish regularly.	During the subsequent site inspection on 25/01/07, no rubbish were noted on the ground and hence no further actions were required.
12	Site Practice	Construction material was found accumulated at SA3 next to the sedimentation tank during weekly site inspection on 20/01/07.	LWKJV replied to relocate them to an appropriate storage area.	Since the finding was still observed at the last site inspection, it will be verified in the next 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. No inert C&D materials and 78540 kg general refuse were generated in this reporting month. 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 January 2007.

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. Bernard Tse	Project Manager	2442 1123	2442 9733
Hyder	Mr. Alexi Bhanja	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

Item	Construction Activities
1	Installation of public light footings and dusts and irrigations system along the proposed Promenade, construction of hard landscape structures and CCTV inspection of the completed drainage pipes;
2	Hard and soft landscaping works, bituminous roadworks and paving, construction of landscape structures at Section 7 of the Works;
3	Construction of Pump House No.1;
4	Installation of precast concrete planter and parapet wall units along the proposed Promenade at Section 8 of the Works;
5	Construction of mass concrete coping and parapet walls at the proposed Landscape Nodes P1, P2 and P3;
6	Shelter fabrication for the proposed Public Landing Steps;
7	Compaction of surcharge mound formed under VO/146; and
8	Filling of soil mix at planter wall.

Table 3.2 Implementation of Environmental Mitigation Measures

General construction works	<ul style="list-style-type: none"> • Effective water sprays used on the site at potential dust emission sources such as haul roads and unpaved areas; • 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; • Water, hydro-seed or cover the open stockpile and exposed loose soil areas by using clean tarpaulin sheets; • 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; • Remove the sand/rubbish accumulated in the drain/channel regularly; • 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; • Remove the construction waste accumulated inside or outside the site regularly.
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4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

1-hour and 24-hour TSP monitoring were required to be 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
		Date	Time	Date	Time		Finish
AM1	HKIB Staff Accommodation					02/01/07	08:30
						04/01/07	15:00
						06/01/07	09:58
						09/01/07	09:00
						11/01/07	09:15
						13/01/07	14:50
						16/01/07	08:45
						18/01/07	08:45
						20/01/07	10:50
						23/01/07	09:45
						25/01/07	08:42
						27/01/07	14:00
						30/01/07	09:00
AM3	Cheung Shue Tan Village (Near the outer building, temple)					02/01/07	13:30
						04/01/07	18:00
						06/01/07	14:25
						09/01/07	13:00
						11/01/07	13:50
						13/01/07	09:15
						16/01/07	13:00
						18/01/07	13:06
						20/01/07	14:50
						23/01/07	15:45
						25/01/07	13:02
						27/01/07	16:20
						30/01/07	13:02
AM5	Near Wen Chih Tang at the CUHK					02/01/07	17:20
						04/01/07	16:30
						06/01/07	15:45
						09/01/07	15:00
						11/01/07	15:20
						13/01/07	10:30
						16/01/07	15:30
						18/01/07	14:48
						20/01/07	16:10
						23/01/07	11:00
						25/01/07	14:48
						27/01/07	15:10
						30/01/07	16:00
AM1	HKIB Staff Accommodation	02/01/07	08:32	03/01/07	08:30		
		08/01/07	10:30	09/01/07	11:03		
		13/01/07	11:46	14/01/07	11:51		
		19/01/07	09:42	20/01/07	09:58		
		25/01/07	08:30	26/01/07	08:33		
AM3A	Cheung Shue Tan (in front of Man Kee Store)	31/01/07	09:30	01/02/07	09:43		
		02/01/07	13:25	03/01/07	13:31		
		08/01/07	10:00	09/01/07	10:07		
		13/01/07	10:55	14/01/07	11:17		
		19/01/07	10:16	20/01/07	10:50		
AM5	Near Wen Chih Tang at the CUHK	25/01/07	09:30	26/01/07	10:13		
		31/01/07	09:30	01/02/07	10:04		
		02/01/07	17:22	03/01/07	17:07		
		08/01/07	10:20	09/01/07	10:48		
		13/01/07	11:24	14/01/07	11:44		
		19/01/07	09:55	20/01/07	10:28		
		25/01/07	09:15	26/01/07	09:46		
		31/01/07	09:30	01/02/07	09:50		



4.5 Monitoring Methodology

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 $0.6\text{m}^3/\text{min}$ and $1.7\text{m}^3/\text{min}$.) 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 $25^\circ\text{C} \pm 3^\circ\text{C}$ and the relative humidity (RH) $<50\% \pm 5\%$.

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.

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.

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 five 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	02/01/07	08:34	---	---	---	---	---	---
	09/01/07	09:02	---	---	---	---	---	---
	16/01/07	08:47	---	---	---	---	---	---
	23/01/07	09:47	---	---	---	---	---	---
	30/01/07	09:02	---	---	---	---	---	---
NM2	02/01/07	14:50	---	---	---	---	---	---
	09/01/07	11:20	---	---	---	---	---	---
	16/01/07	11:25	---	---	---	---	---	---
	23/01/07	13:30	---	---	---	---	---	---
	30/01/07	17:15	---	---	---	---	---	---
NM3	02/01/07	13:32	---	---	---	---	---	---
	09/01/07	13:02	---	---	---	---	---	---
	16/01/07	13:02	---	---	---	---	---	---
	23/01/07	15:47	---	---	---	---	---	---
	30/01/07	13:00	---	---	---	---	---	---
NM8	02/01/07	17:24	---	---	---	---	---	---
	09/01/07	15:02	---	---	---	---	---	---
	16/01/07	15:32	---	---	---	---	---	---
	23/01/07	11:02	---	---	---	---	---	---
	30/01/07	16:02	---	---	---	---	---	---

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		
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).

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required to carry out wastewater monitoring at effluent discharge point quarterly and the monitoring was carried out on 30 November 2006. The result of wastewater monitoring carried out on 30 November 2006 was attached in Appendix K.

Next wastewater monitoring will be scheduled in February 2007 for quarterly monitoring as required in EM&A report.

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.

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required to carry out wastewater monitoring at effluent discharge point quarterly and the monitoring was carried out on 30 November 2006. The result of wastewater monitoring carried out on 30 November 2006 was attached in Appendix K. Next wastewater monitoring will be scheduled in February 2007 for quarterly monitoring as required in EM&A report.

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 (04,11,19, 23 November 2006). Monthly joint site inspection at 23 November 2006 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	Air	Tarpaulin sheets at SA1 near the Pier access road was found damaged during the weekly site inspection on 06/01/07.	LWKJV replied to replace the damaged sheets by new one.	During the subsequent site inspection on 12/01/07, the broken tarpaulin sheets were replaced and hence no more further actions were required.
2	Air	Stockpile at Node 1 was found without covered by tarpaulin sheet during weekly site inspections on 12/01/07, 20/01/07 and 25/01/07.	LWKJV replied to provide water spraying or cover the stockpile by using tarpaulin sheets.	Since the finding was still observed at the last site inspection, it will be verified in the next month.
3	Air	Black smoke was emitted from an excavator (No.032) was observed during site inspection on 12/01/07.	LWKJV replied to repair the defective excavator to avoid black smoke emission.	During the subsequent site inspection on 20/01/07, the defective excavator was found repaired and no black smoke was emitted during operation.
4	Water	Manhole of drainage channel was found without cover during weekly site inspection on 06/01/07.	LWKJV replied to seal the manhole immediately.	During the subsequent site inspection on 12/01/07, the manhole was found to be sealed.
5	Water	Stagnant water was observed at SA3 next to the wheel washing bay during weekly site inspection on 20/01/07.	LWKJV replied to drain the stagnant water.	During the subsequent site inspection on 25/01/07, no stagnant water was noted at SA3.
6	Water	The sedimentation tank at SA3 was found overflow during weekly site inspection on 20/01/07.	LWKJV replied to reduce the flow rate to avoid overflowing.	During the subsequent site inspection on 25/01/07, no overflow was observed from the sedimentation tank.
7	Chemical	Follow up action to previous site inspection finding on 28/12/06, the drain outlet of the drip trays at Workshop and SA-3 were found closed during site inspection on 06/01/07..	No further action was required to be taken by LWKJV since the finding was completed.	No further verification was required to be taken by LEKJV since the finding was completed, no further actions were required.



Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
8	Chemical	Some oil containers were found placed on the ground at SA3 during site inspections on 06/01/07 and 12/01/07.	LWKJV replied to relocate the oil containers to appropriate storage area.	During the site inspection on 20/01/07, the oil containers were removed.
9	Chemical	Oil leakage from a generator at SA3 was observed during site inspection on 12/01/07.	LWKJV replied to repair the defective generator and clean up the contaminated soil as chemical waste.	During the site inspection on 20/01/07, no oil was observed leaked from the generator and the contaminated soil had been cleaned up.
10	Site Practice	Valid CNP was found not to be post at the site entrance at Ma Liu Shui during weekly site inspections on 12/01/07 and 20/01/07.	LWKJV replied to post the valid CNP at the site entrance immediately.	During the last site inspection on 25/01/07, the valid CNP was post at site entrance.
11	Site Practice	Rubbish was found accumulated on the ground at SA3 during the weekly site inspection on 20/01/07.	LWKJV replied to clean up and dispose of the rubbish regularly.	During the subsequent site inspection on 25/01/07, no rubbish were noted on the ground and hence no further actions were required.
12	Site Practice	Construction material was found accumulated at SA3 next to the sedimentation tank during weekly site inspection on 20/01/07.	LWKJV replied to relocate them to an appropriate storage area.	Since the finding was still observed at the last site inspection, it will be verified in the next 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 for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po	GW-RN0388-06	27/07/06	26/01/07	<p><u>Group A</u> Two Poker, vibratory, hand-held (CNP170) Two Concrete lorry mixer (CNP044) One Excavator, tracked (CNP081)</p> <p><u>Group B</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081)</p> <p><u>Group C</u> One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067)</p> <p><u>Group D</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane</p>
Construction Noise Permit for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po	GW-RN0643-06	14/01/07	13/07/07	<p><u>Group A</u> Two Poker, vibratory, hand-held (CNP170) Two Concrete lorry mixer (CNP044) One Excavator, tracked (CNP081)</p> <p><u>Group B</u> One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067)</p> <p><u>Group C</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane</p>
Construction Noise Permit for the Construction Site of Remaining Engineering Infrastructure Works for Project at Pak Shek Kok Development Package 2A adjacent to Mau Liu Shui Interchange	GW-RN0638-06	05/01/07	31/01/07	<p>One Crane, mobile (diesel) (CNP 048) One Lorry with crane One welding machine (electric)</p>

Description	Permit No.	Valid Period		Section
		From	To	
Wastewater Discharge License	3246 – Part A	01/11/06	31/12/09	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.
Chemical Waste Producer	5113-729-LL 1113-01	24/09/04	—	Spent lubricating oil, spent battery parts containing heavy metals

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;
- Size of tarpaulin sheet should be larger than surface size of stockpile in order to resume normal function of tarpaulin sheet;
- The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading or provide a canvas with larger surface area;
- 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;
- Bigger sumpit for increasing wastewater input should provide for any necessary;
- 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;
- Regular maintenance of excavator or any diesel cater machines should be provided in order to avoid any possible smoke nuisance;
- 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 ³)	0	Reused in the Contract	123365
	Broken Concrete (m ³)	0	N/A	865
	Reused in the Contract (m ³)	0	N/A	122500
	Reused in other Projects (m ³)	0	N/A	0
	Disposal as Public Fill (m ³)	0	N/A	0
C&D Waste	Metals (1000kg)	0.00	N/A	37.705
	Paper/Cardboard Packaging (1000kg)	0.00	N/A	2.616
	Plastics (1000kg)	0.00	N/A	0.083
	Chemical Waste (1000kg)	0.00	N/A	3.000
	Other, e.g. General Refuse (1000kg)	78.54	SENT	514.7

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.



During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required to carry out wastewater monitoring at effluent discharge point quarterly and the monitoring was carried out on 30 November 2006. Next wastewater monitoring will be scheduled in February 2007 for quarterly monitoring as required in EM&A report.

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	February 2007	March 2007
Noise Monitoring (Day-time)	06, 13, 22, 27	06, 13, 20, 27
1-hour TSP	01, 03, 06, 08, 10, 13, 15, 16, 21, 22, 24, 27	01, 03, 06, 08, 10, 13, 15, 17, 20, 22, 24, 27, 29, 30
24-hour TSP	06, 12, 16, 22, 28	06, 12, 17, 23, 29
Site Inspection	03, 10, 16, 24	03, 10, 17, 24, 31

12.2 Upcoming construction works schedule in the coming months

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

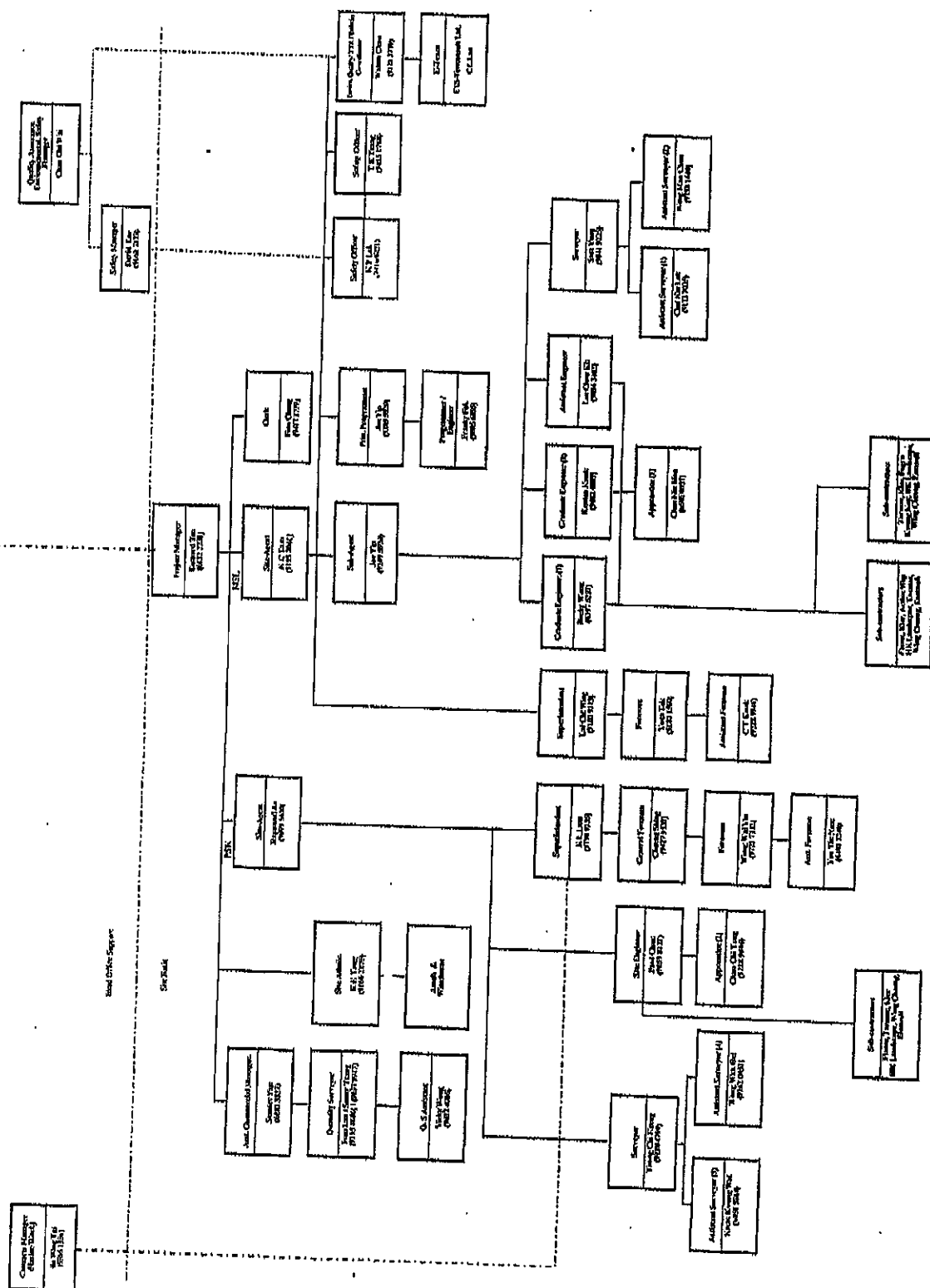
Table 12.2 Construction Plan in the coming months

Month	Works Planned to be Carried Out
Between February and March 2007	<ul style="list-style-type: none">▪ Drainage works at Sections 1 and 2 (Ma Liu Shui), 7 and 8 (Promenade) of the Works. Installation of watermains at Section 1 of the Works▪ Utility works at Sections 1 and 2 (Ma Liu Shui), 7 (Promenade) of the Works. Installation of railing and construction of dwarf wall at Section 1 for the Works.▪ Construction of RE and R.C. Wall and concreting for deck for the Alternative Design of the proposed Ma Liu Shui Bridge.▪ Construction of Retaining Wall No.1▪ Construction of west ramp and barrel of the proposed Ma Liu Shui Subway (Alternative Design)▪ Construction of ramp wall and base slab, installation of sewerage and drainage system, and utility works for Toilet No.2.▪ Paving of footpath, cycle track laying, and planting at the proposed Road L4, and blacktop laying at Road B under Section 5 of the Works.▪ Outstanding works for handling over of Section 6 of the Works

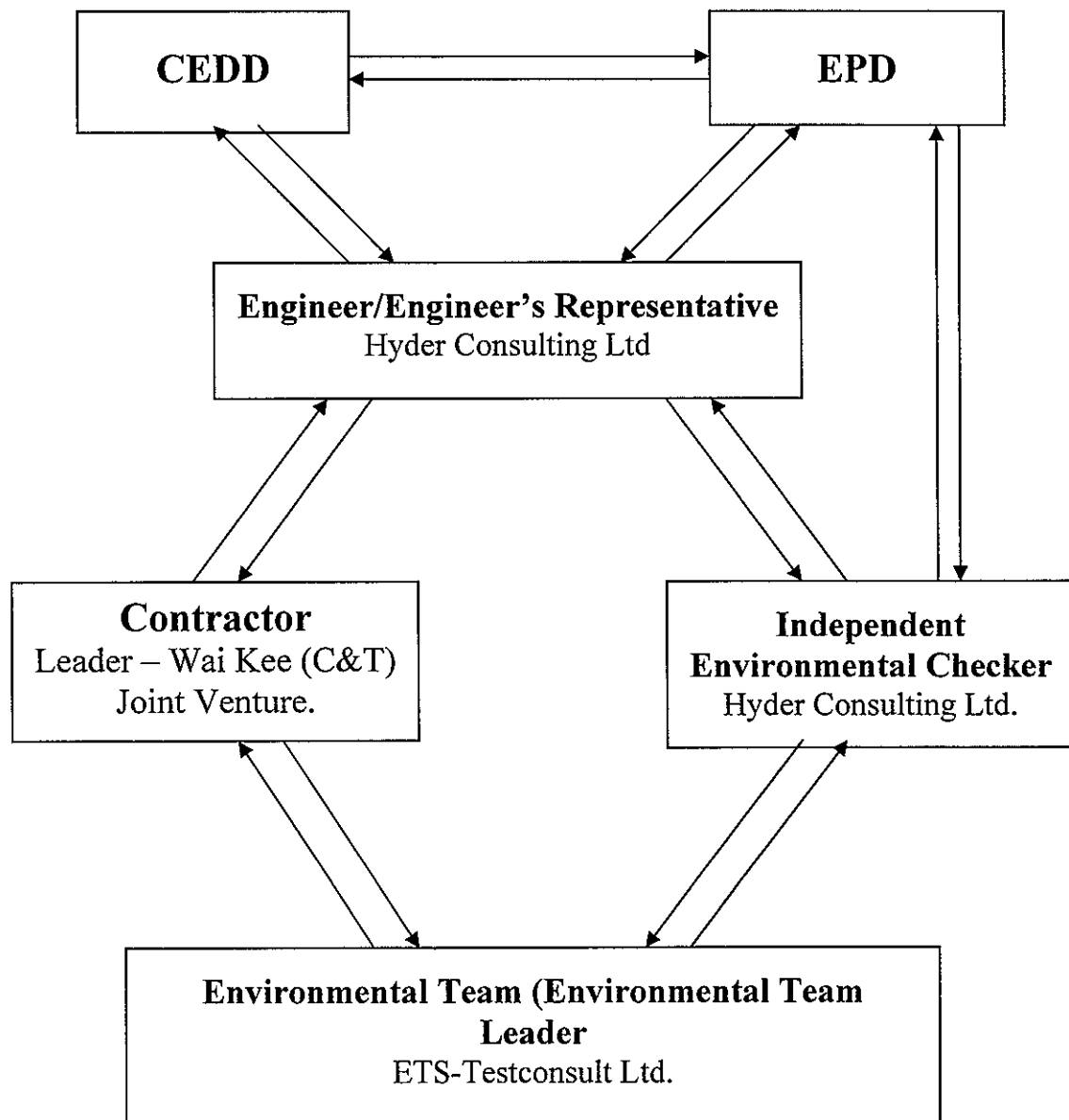


Appendix A

Organization Chart and Lines of Communication



Lines of Communication





Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments



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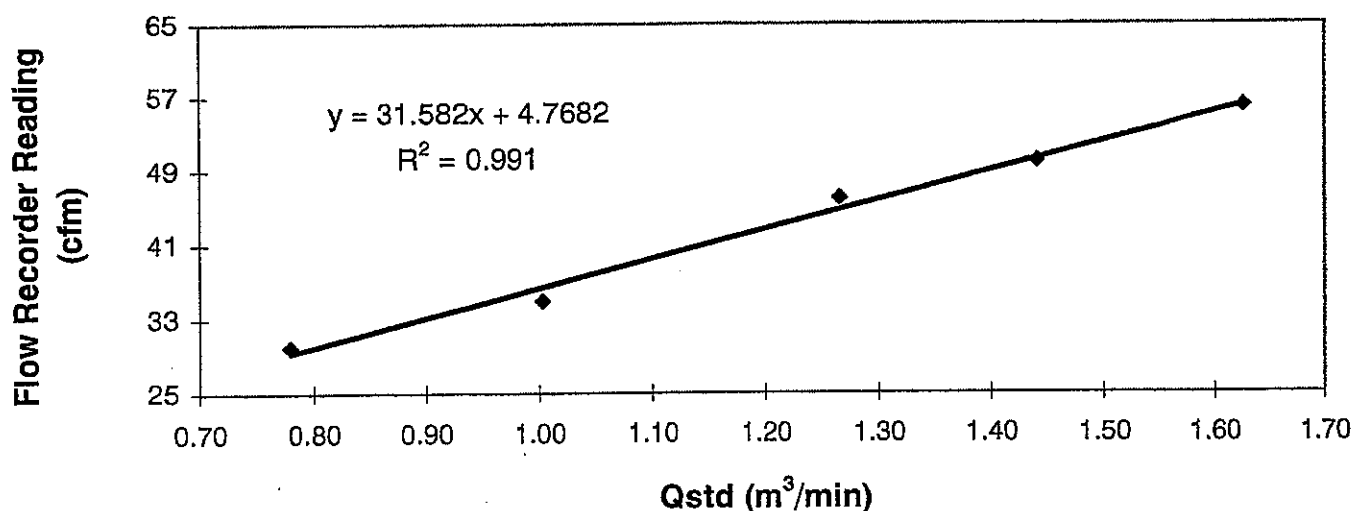
TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW **Date of Calibration** : 14 November 2006
Serial No. : 1178 (ET / EA / 003 / 01) **Calibration Due Date** : 13 January 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	56	50	46	35	30
	Qstd (Actual flow rate, m ³ /min)	1.63	1.44	1.27	1.00	0.78
	Pressure : 759.81 mm Hg	Temp. : 299 K				

Sampler 1178 Calibration Curve
Site: Pak Shek Kok (AM-1)
Date of Calibration: 14 November 2006



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

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

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

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



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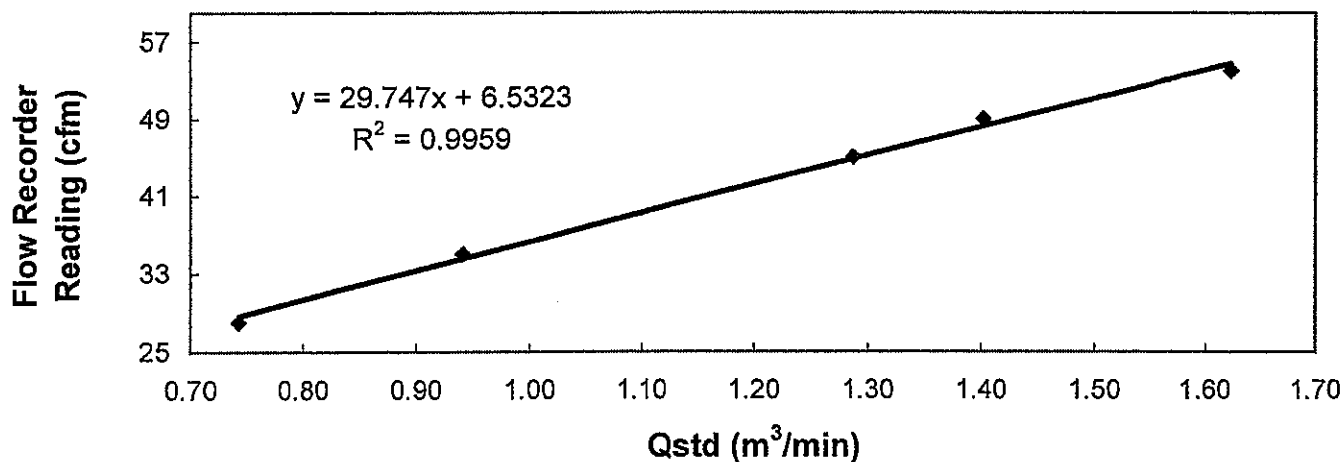
TEST REPORT

**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Graseby GMW **Date of Calibration** : 13 January 2007
Serial No. : 1178 (ET / EA / 003 / 01) **Calibration Due Date** : 12 March 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	54	49	45	35	28
	Qstd (Actual flow rate, m ³ /min)	1.62	1.40	1.29	0.94	0.74
	Pressure : 767.31 mm Hg	Temp. : 293 K				

**Sampler 1178 Calibration Curve
Site: Pak Shek Kok (AM-1)
Date of Calibration: 13 January 2007**



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

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

Calibrated by : H. T. CHOW
(Asst. Environmental Officer)

Approved by : Linda LAW
(Senior Environmental Officer)



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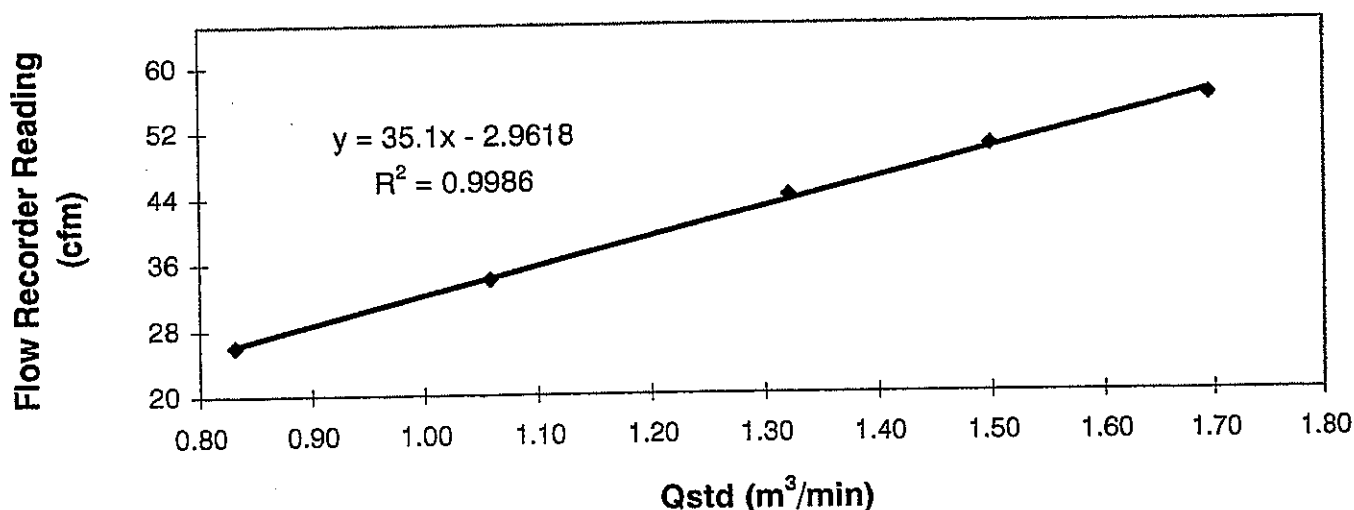
TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW **Date of Calibration** : 14 November 2006
Serial No. : 7179 (ET / EA / 003 / 16) **Calibration Due Date** : 13 January 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	56	50	44	34	26
	Qstd (Actual flow rate, m ³ /min)	1.70	1.50	1.32	1.06	0.83
	Pressure : 760.56 mm Hg	Temp. : 297 K				

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM-3A)
Date of Calibration: 14 November 2006



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

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

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

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



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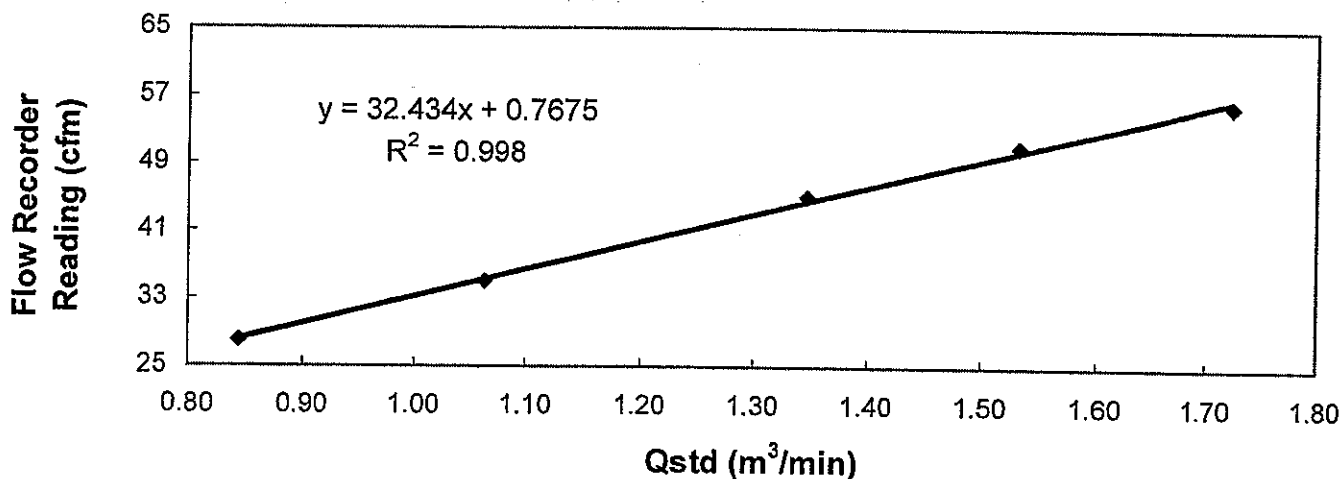
TEST REPORT

**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Graseby GMW **Date of Calibration** : 13 January 2007
Serial No. : 7179 (ET / EA / 003 / 16) **Calibration Due Date** : 12 March 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	56	51	45	35	28
	Qstd (Actual flow rate, m ³ /min)	1.72	1.53	1.35	1.06	0.84
	Pressure : 767.31 mm Hg	Temp. : 290 K				

**Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM-3A)
Date of Calibration: 13 January 2007**



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

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

Calibrated by : H. T. CHOW
(Asst. Environmental Officer)

Approved by : Linda LAW
(Senior Environmental Officer)



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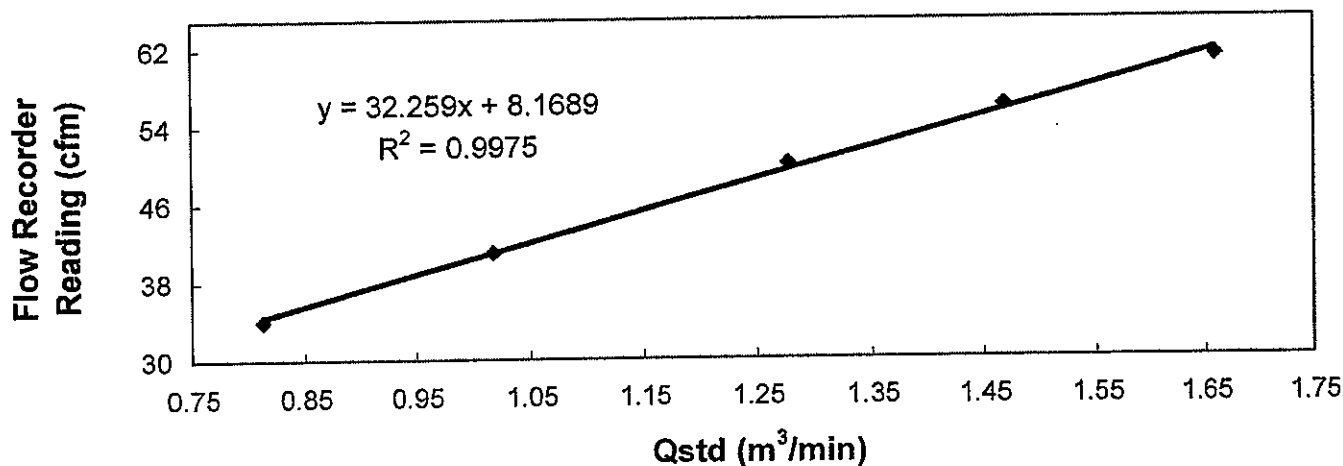
TEST REPORT

**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 14 November 2006
Serial No. : 1172 (ET / EA / 003 / 11) Calibration Due Date : 13 January 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results :	Flow recorder reading (cfm)	61	56	50	41	34
	Qstd (Actual flow rate, m ³ /min)	1.66	1.47	1.28	1.02	0.81
	Pressure : 759.81 mm Hg	Temp. : 299 K				

Sampler 1172 Calibration Curve
Site: Pak Shek Kok (AM-5)
Date of Calibration: 14 November 2006



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

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

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

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



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Tel : 2695 8318

E-mail : etl@ets-testconsult.com

Fax : 2695 3944

Web site : www.ets-testconsult.com

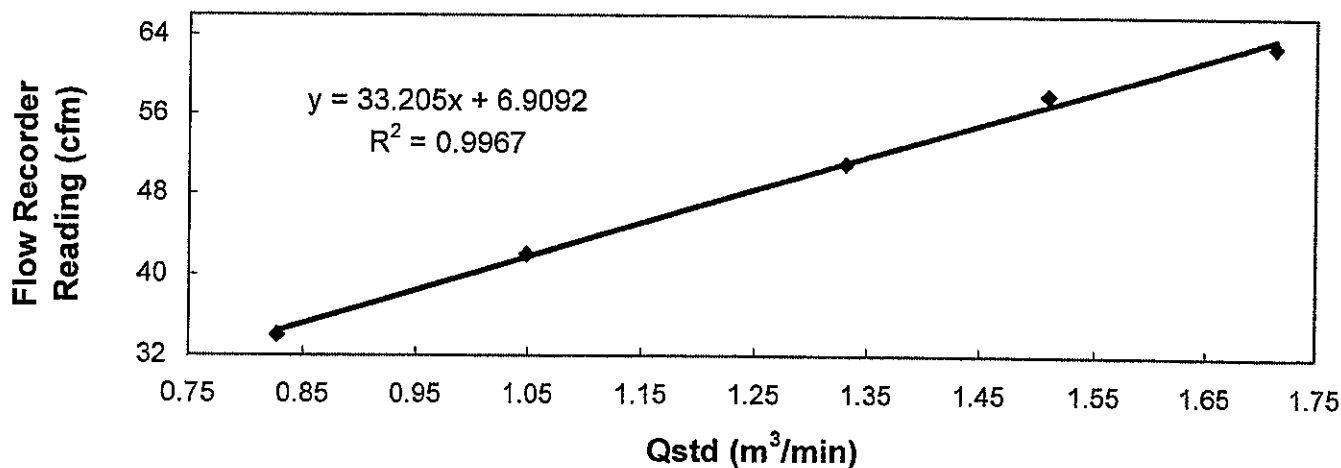
TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW **Date of Calibration** : 13 January 2007
Serial No. : 1172 (ET / EA / 003 / 11) **Calibration Due Date** : 12 March 2007
Method : Based on Operations Manual for in series calibration method by TISCH
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	63	58	51	42	34
	Qstd (Actual flow rate, m ³ /min)	1.71	1.51	1.33	1.05	0.83
	Pressure : 767.31 mm Hg	Temp. : 291 K				

Sampler 1172 Calibration Curve Site: Pak Shek Kok (AM-5) Date of Calibration: 13 January 2007



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

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

Calibrated by :

H. T. CHOW
(Asst. Environmental Officer)

Approved by :

Linda LAW
(Senior Environmental Officer)



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

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

Tel : 2695 8318

E-mail : etl@ets-testconsult.com

Fax : 2695 3944

Web site : www.ets-testconsult.com

TEST REPORT

Internal Calibration Report

of

Dust Trak Monitor

Manufacturer : TSI - 8520 Dust Trak

Date of Calibration : 21 July 2006

Serial No. : 14230 (ET / EA / 001 / 04)

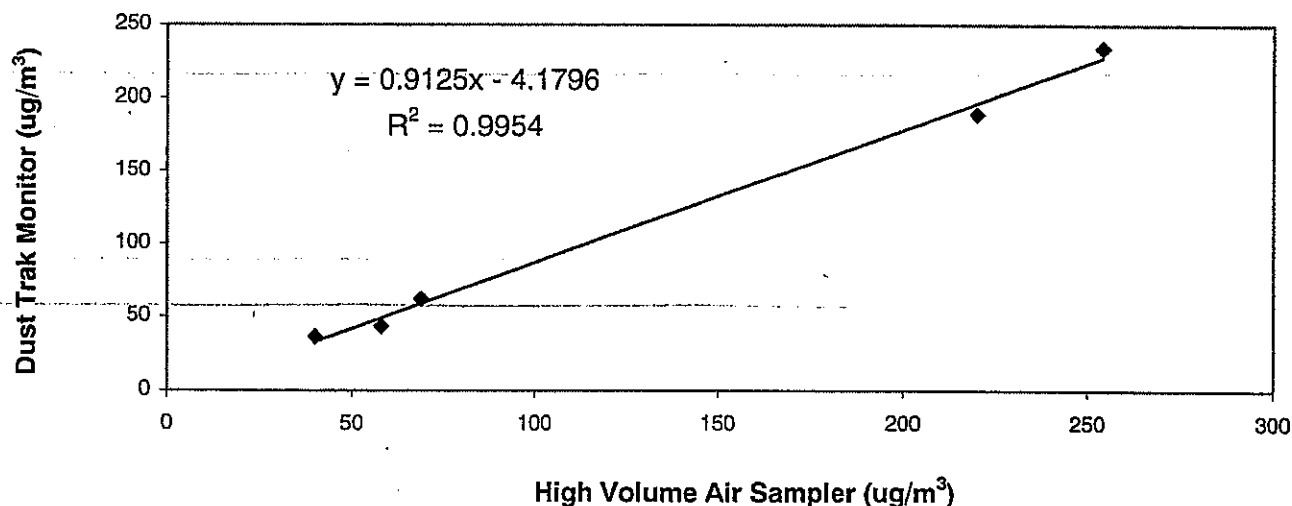
Due Date : 20 January 2007

Method : Conduct parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Sampler together under the same environmental condition

Results :

Dust Trak Monitor (ug/m ³)	40	58	69	220	254
High Volume Air Sampler (ug/m ³)	36	43	62	189	234
High Volume Air Sampler Serial No.: 1178			Calibration Date: 14 / 09 / 2006		

Calibration of Dust Trak Monitor (Serial No. 14230)



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 : MAK Kei Wai
MAK Kei Wai
(Technician)

Approved by : LAW Sau Yee
LAW Sau Yee
(Environmental Officer)



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

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

TEST REPORT

**Internal Calibration Report
of
Dust Trak Monitor**

Manufacturer : TSI - 8520 Dust Trak

Date of Calibration : 20 January 2007

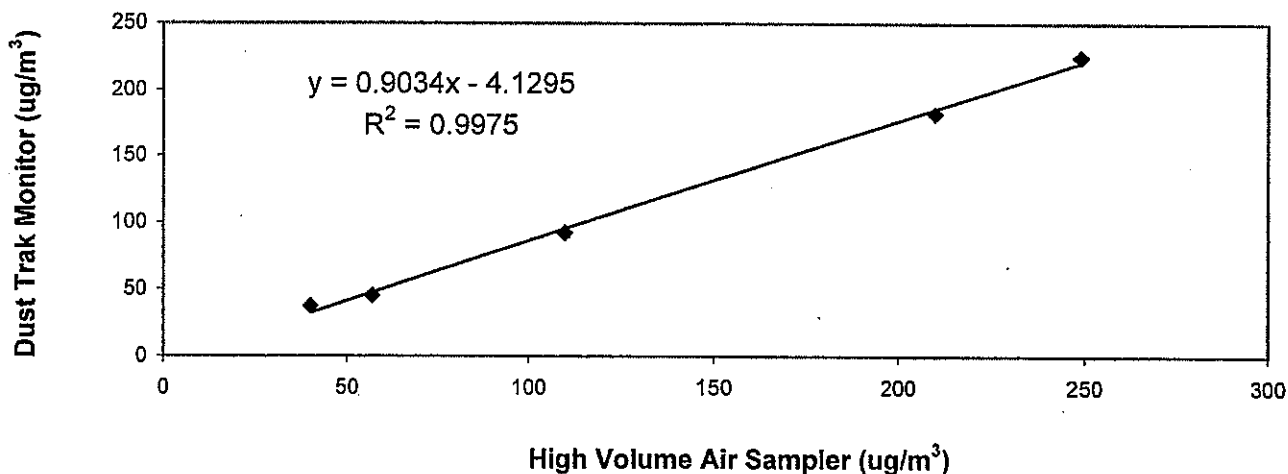
Serial No. : 14230 (ET/EA/001/04)

Due Date : 19 July 2007

Method : Conduct parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Sampler together under the same environmental condition

Results :	Dust Trak Monitor ($\mu\text{g}/\text{m}^3$)	40	57	110	210	249
	High Volume Air Sampler ($\mu\text{g}/\text{m}^3$)	37	45	92	182	225
	High Volume Air Sampler Serial No.: 1178		Calibration Date: 12 / 03 / 2007			

Calibration of Dust Trak Monitor (Serial No. 14230)



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 :

LEUNG, Ka Chun
(Site Technician)

Approved by :

LAW, Sau Yee
(Senior Environmental Officer)



Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1
Location : HKIB Staff Accommodation

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/01/07	08:32	03/01/07	08:30	10955.86	10989.83	23.97	1.1798	1.1798	1.1798	2.7671	2.8506	49	Cloudy
08/01/07	10:30	09/01/07	11:03	10989.83	11014.38	24.55	0.9889	0.9889	0.9889	2.7270	2.9060	123	Sunny
13/01/07	11:46	14/01/07	11:51	11014.58	11038.67	24.09	0.9906	0.9906	0.9906	2.7034	2.8967	135	Sunny
19/01/07	09:42	20/01/07	09:58	11038.82	11063.09	24.27	0.7889	0.7889	0.7889	2.8530	2.8586	92	Cloudy
25/01/07	08:30	26/01/07	08:33	11063.09	11087.14	24.05	0.7889	0.7889	0.7889	2.8507	3.0197	148	Cloudy
31/01/07	09:30	01/02/07	09:43	11087.14	11111.35	24.21	0.7217	0.7217	0.7217	2.8676	3.0316	156	Sunny

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

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/01/07	13:25	03/01/07	13:31	16342.45	16366.55	24.10	1.1100	1.1100	1.1100	2.7817	2.8530	44	Cloudy
08/01/07	10:00	09/01/07	10:07	16366.55	16390.66	24.11	1.6721	1.6721	1.6721	2.7495	2.8993	62	Sunny
13/01/07	10:55	14/01/07	11:17	16396.66	16421.03	24.37	0.9630	0.9630	0.9630	2.6983	2.8208	87	Sunny
19/01/07	10:16	20/01/07	10:50	16421.03	16445.59	24.56	0.7471	0.7471	0.7471	2.8404	2.9258	78	Cloudy
25/01/07	09:30	26/01/07	10:13	16445.66	16470.13	24.47	0.7471	0.7471	0.7471	2.8563	2.9936	125	Cloudy
31/01/07	09:30	01/02/07	10:04	16470.13	16494.70	24.57	0.7471	0.7471	0.7471	2.8476	2.9181	64	Sunny

Monitoring Station : AM5
Location : Wen Chih Tang at the CUHK

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/01/07	17:22	03/01/07	17:07	6329.63	6353.38	23.75	0.8627	0.8627	0.8627	2.7657	2.8424	62	Cloudy
08/01/07	10:20	09/01/07	10:48	6353.38	6377.85	24.47	0.8937	0.8937	0.8937	2.7202	2.8462	96	Sunny
13/01/07	11:24	14/01/07	11:44	6377.85	6402.18	24.33	0.8159	0.8159	0.8159	2.6954	2.8421	123	Sunny
19/01/07	09:55	20/01/07	10:28	6402.18	6426.47	24.29	0.7556	0.7556	0.7556	2.8613	2.9802	108	Cloudy
25/01/07	09:15	26/01/07	09:46	6426.47	6450.74	24.27	0.8761	0.8761	0.8761	2.8458	3.0209	137	Cloudy
31/01/07	09:30	01/02/07	09:50	6450.74	6475.07	24.33	0.8761	0.8761	0.8761	2.8620	3.0222	125	Sunny

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	
02/01/07	08:30	09:30	138	402	207	Cloudy
04/01/07	15:00	16:00	68	306	128	Cloudy
06/01/07	09:58	10:58	105	439	204	Sunny
09/01/07	09:00	10:00	98	374	155	Sunny
11/01/07	09:15	10:15	82	340	156	Cloudy
13/01/07	14:50	15:50	102	248	212	Sunny
16/01/07	08:45	09:45	109	390	225	Cloudy
18/01/07	08:45	09:45	114	382	210	Cloudy
20/01/07	10:50	11:50	89	374	190	Cloudy
23/01/07	09:45	10:45	97	379	170	Cloudy
25/01/07	08:42	09:42	92	365	146	Cloudy
27/01/07	14:00	15:00	89	450	206	Sunny
30/01/07	09:00	10:00	97	372	183	Sunny

Monitoring Station : AM3 – Cheung Shue Tan in front of Man Kee Store

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/01/07	13:30	14:30	72	367	98	Cloudy
04/01/07	18:00	19:00	56	267	112	Cloudy
06/01/07	14:25	15:25	89	299	158	Sunny
09/01/07	13:00	14:00	60	312	105	Sunny
11/01/07	13:50	14:50	60	288	121	Cloudy
13/01/07	09:15	10:15	87	223	173	Sunny
16/01/07	13:00	14:00	63	323	133	Cloudy
18/01/07	13:06	14:06	88	336	137	Cloudy
20/01/07	14:50	15:50	65	320	103	Cloudy
23/01/07	15:45	16:45	62	310	123	Cloudy
25/01/07	13:02	14:02	71	306	113	Cloudy
27/01/07	16:20	17:20	67	322	153	Sunny
30/01/07	13:02	14:02	60	319	125	Sunny

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	
02/01/07	17:20	18:20	84	389	149	Cloudy
04/01/07	16:30	17:30	74	318	137	Cloudy
06/01/07	15:45	16:45	97	376	176	Sunny
09/01/07	15:00	16:00	74	339	117	Sunny
11/01/07	15:20	16:20	66	316	134	Cloudy
13/01/07	10:30	11:30	116	319	228	Sunny
16/01/07	15:30	16:30	75	369	155	Cloudy
18/01/07	14:48	15:48	76	313	145	Cloudy
20/01/07	16:10	17:10	74	352	117	Cloudy
23/01/07	11:00	12:00	79	354	141	Cloudy
25/01/07	14:48	15:48	84	316	126	Cloudy
27/01/07	15:10	16:10	74	386	187	Sunny
30/01/07	16:00	17:00	76	354	129	Sunny

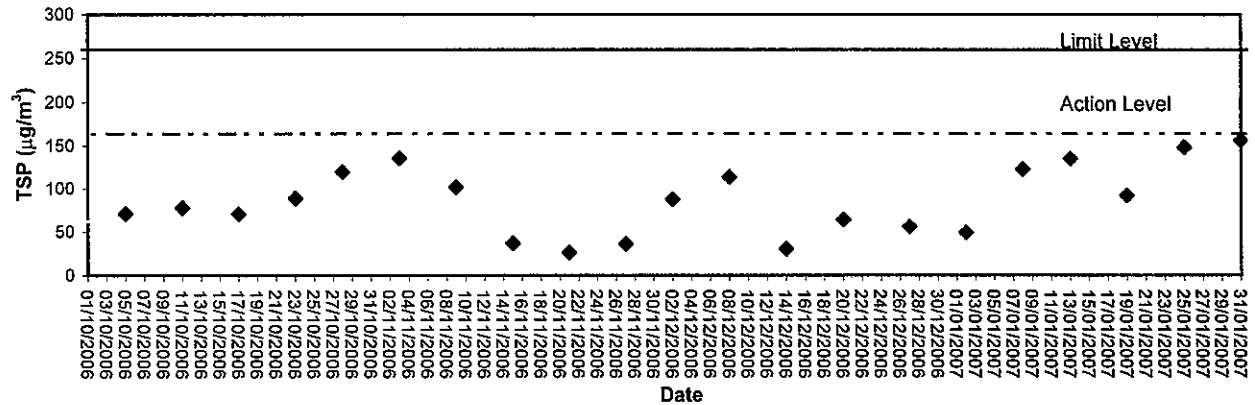


Appendix B3

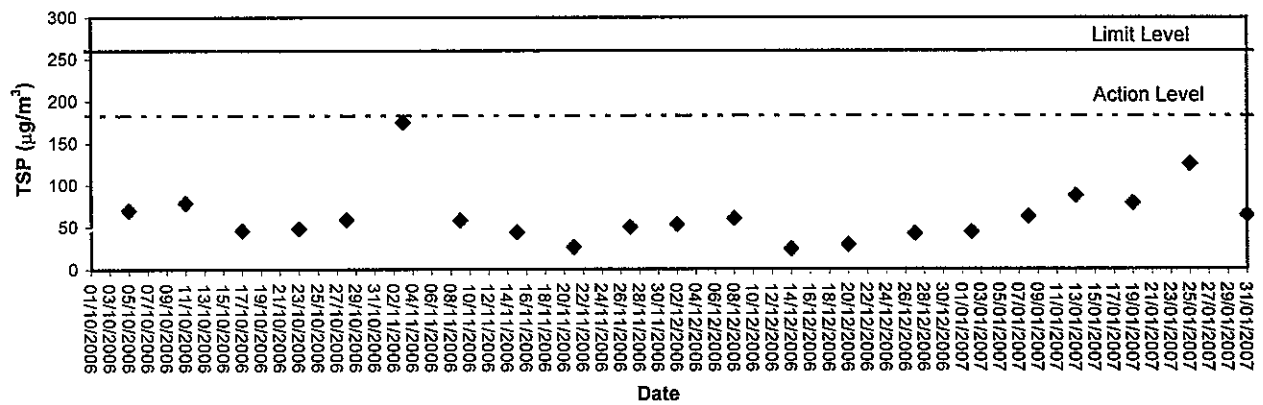
Graphical Plots of Air Quality Monitoring Data



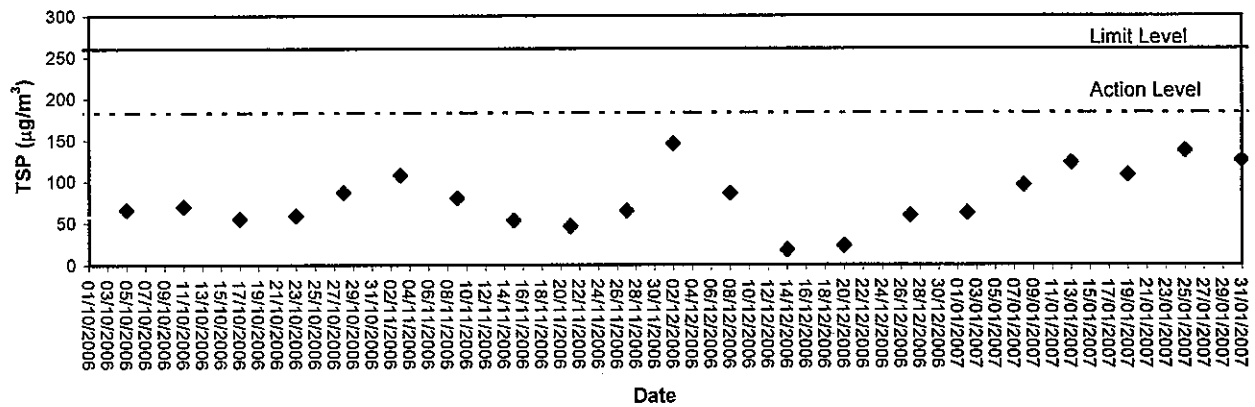
24-hour TSP level at AM1 (HKIB Staff Accommodation)



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

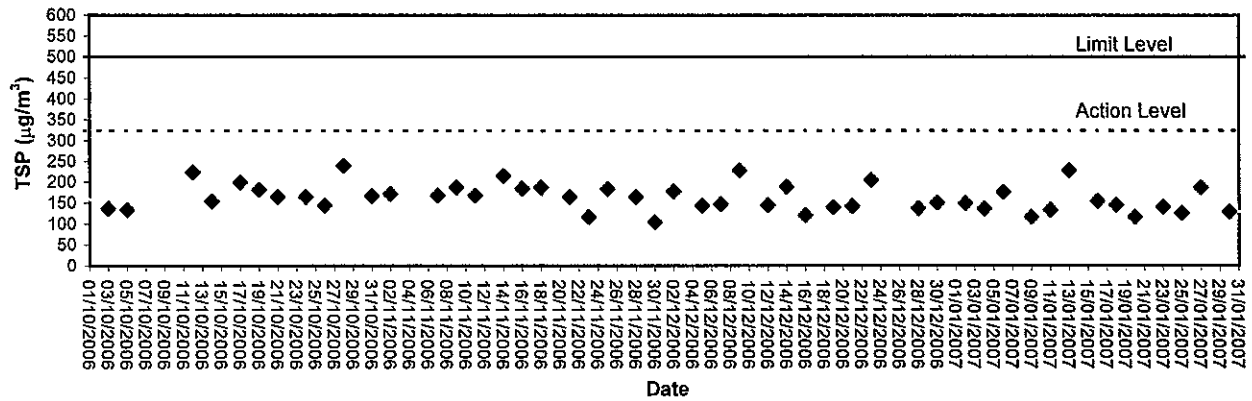


24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)

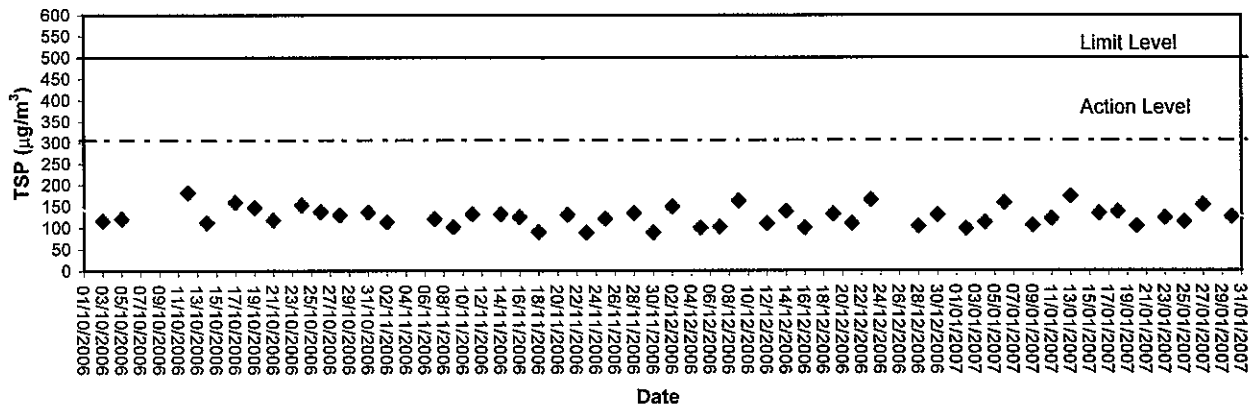




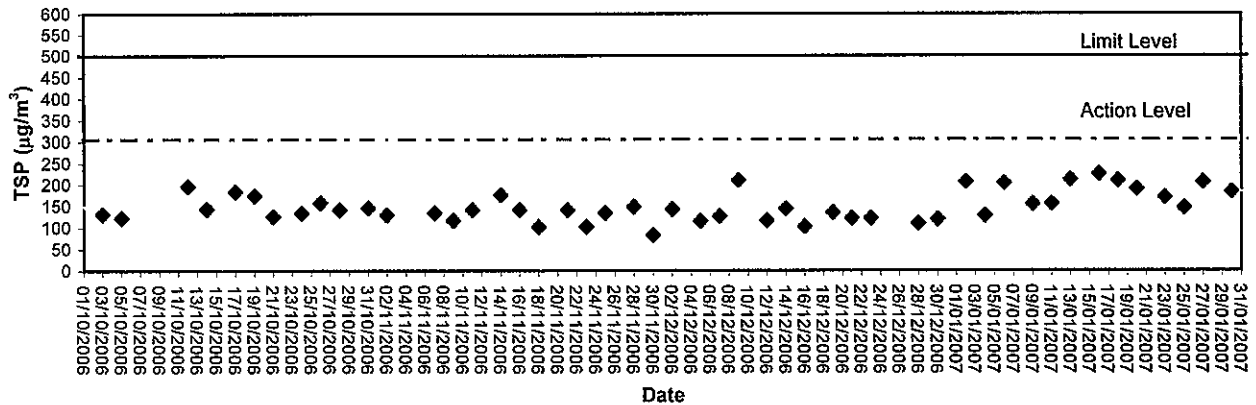
1-hour TSP level at AM1, HKIB Staff Accommodation



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



Calibration Certificate

Certificate No. 61398

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. : Q60555

Date of receipt : 29-Mar-06

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31

Serial No. : 00110024

Test Conditions

Date of Test : 4-Apr-06

Supply Voltage : -

Ambient Temperature : $(23 \pm 3)^{\circ}\text{C}$

Relative Humidity : $(50 \pm 25) \%$

Test Specifications

Calibration check.

Calibration procedure : Z01.

Test Results

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

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

Test equipment used:

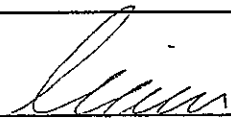
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Function Generator	C051022	21-Mar-07	HKGSCS
S024	Calibrator	S41431	22-May-06	PRC-NIM

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 :


P.F. Wong

Approved by :


Dorothy Cheuk

Date: 4-Apr-06

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

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Calibration Certificate

Certificate No. 61398

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L _A	Fast	94.0	93.8
		Slow		93.8
	L _C L _p	Fast		93.8
		Fast		93.8
30 – 120	L _A	Fast	94.0	93.8
		Slow		93.7
	L _C L _p	Fast		93.8
		Fast		93.8
30 – 120	L _A	Fast	113.9	113.8
		Slow		113.7
	L _C L _p	Fast		113.8
		Fast		113.8

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB



Calibration Certificate

Certificate No. 61398

Page 3 of 3 Pages

3. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.5	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.2	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.8	- 8.6 dB, ± 1 dB
500 Hz	- 3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.2	+ 1.2 dB, ± 1 dB
4 kHz	+ 1.1	+ 1.0 dB, ± 1 dB
8 kHz	- 1.2	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

4. Time Averaging

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

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 000 hPa.

----- END -----



Calibration Certificate

Certificate No. 61399

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. : Q60555

Date of receipt : 29-Mar-06

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion

Model : NC-73

Serial No. : 10644871

Test Conditions

Date of Test : 4-Apr-06

Supply Voltage : --

Ambient Temperature : $(23 \pm 3)^{\circ}\text{C}$

Relative Humidity : $(50 \pm 25) \%$

Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

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

Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	53024	7-Jul-06	PRC-NIM
S024	Calibrator	S41431	22-May-06	PRC-NIM
S041	Universal Counter	53972	26-Aug-06	HKGSCS

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 :

P.F. Wong

Approved by :

Dorothy Cheuk

Date: 4-Apr-06

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

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Calibration Certificate

Certificate No. 61399

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value		Mfr's Spec.
	Before Adjust.	After Adjust.	
94 dB	94.7	94.2	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.984 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

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

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

4. Atmospheric Pressure : 1 000 hPa

----- 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 _{eq} (30min)	L10	L90		
02/01/07	08:34	59.3	61.3	57.8	0.82	Cloudy
09/01/07	09:02	59.1	61.6	56.7	0.64	Sunny
16/01/07	08:47	58.0	60.9	55.5	0.72	Cloudy
23/01/07	09:47	58.2	60.3	55.4	0.52	Cloudy
30/01/07	09:02	58.9	61.2	55.5	0.87	Sunny

Monitoring Location: NM2 (CUHK Residence No.10)

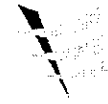
Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq} (30min)	L10	L90		
02/01/07	14:50	56.1	58.7	54.1	1.07	Cloudy
09/01/07	11:20	56.2	58.9	54.7	0.86	Sunny
16/01/07	11:25	56.8	59.0	53.4	0.71	Cloudy
23/01/07	13:30	56.3	59.2	54.5	0.69	Cloudy
30/01/07	17:15	55.8	58.2	53.0	1.04	Sunny

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 _{eq} (30min)	L10	L90		
02/01/07	13:32	51.8	53.5	49.4	0.94	Cloudy
09/01/07	13:02	51.5	53.3	49.4	0.75	Sunny
16/01/07	13:02	53.7	56.0	49.7	0.88	Cloudy
23/01/07	15:47	53.0	55.2	49.8	0.73	Cloudy
30/01/07	13:00	53.5	56.0	49.6	0.95	Sunny

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 _{eq} (30min)	L10	L90		
02/01/07	17:24	56.9	59.3	55.1	1.18	Cloudy
09/01/07	15:02	57.9	60.2	55.4	0.92	Sunny
16/01/07	15:32	57.3	60.3	55.2	0.96	Cloudy
23/01/07	11:02	57.2	60.1	55.2	0.88	Cloudy
30/01/07	16:02	57.5	60.3	54.7	1.39	Sunny

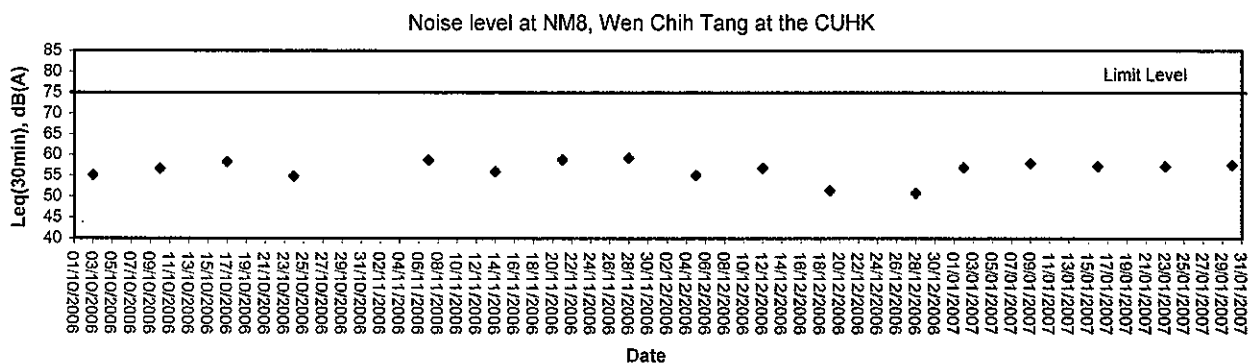
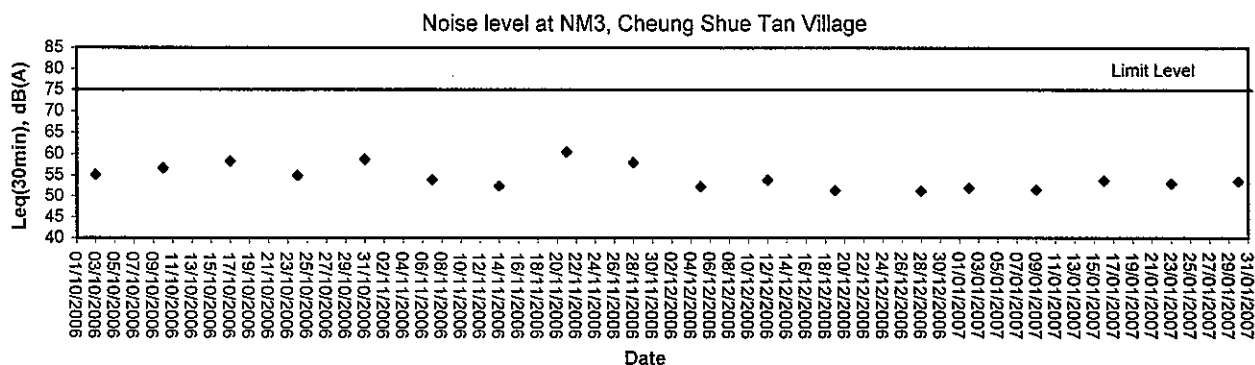
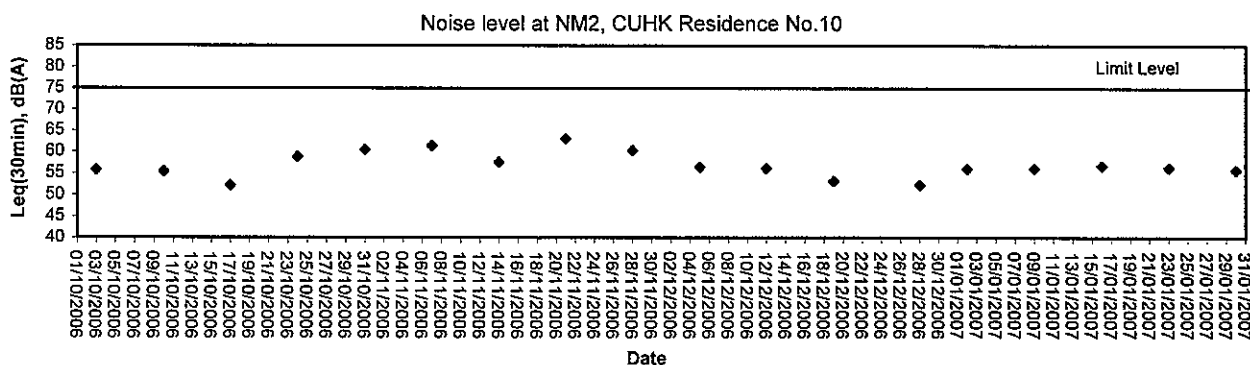
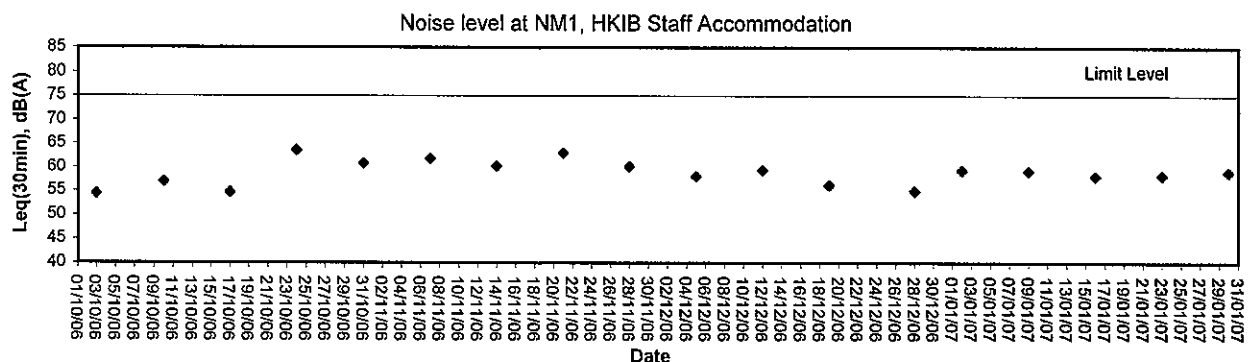


Appendix C3

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)
01/01/07	-	21.1	16.7	80	NE	<5
02/01/07	Trace	20.5	17.7	82	E	<5
03/01/07	-8.5	19.4	17.7	92	NEE	<5
04/01/07	-	19.4	16.2	77	N	<5
05/01/07	-	18.9	13.4	69	N	<5
06/01/07	-	16.9	12.3	58	N	<5
07/01/07	-	16.3	11.2	55	N	<5
08/01/07	-	16.1	10.9	52	N	<5
09/01/07	-	16.8	11.3	52	N	<5
10/01/07	Trace	18.1	14.4	61	E	<5
11/01/07	-	17.9	16.2	77	E	<5
12/01/07	-	19.4	16.9	81	E	<5
13/01/07	-	20.1	15.3	77	N	<5
14/01/07	-	19.5	15.6	79	NEN	<5
15/01/07	Trace	21.3	16.4	78	NEN	<5
16/01/07	0.4	23.7	17.9	76	NEN	<5
17/01/07	20.0	20.4	14.2	95	N	<5
18/01/07	0.2	18.3	14.0	80	N	<5
19/01/07	Trace	19.3	15.6	78	NEN	<5
20/01/07	0.5	18.0	15.5	86	NE	<5
21/01/07	-	17.4	15.4	87	NEN	<5
22/01/07	Trace	17.8	15.9	85	NE	<5
23/01/07	-	18.6	13.9	80	N	<5
24/01/07	-	16.5	11.8	70	NEN	<5
25/01/07	-	16.9	13.9	71	NEN	<5
26/01/07	-	18.7	12.0	66	N	<5
27/01/07	-	18.9	11.1	61	N	<5
28/01/07	-	18.1	12.9	41	N	<5
29/01/07	-	17.5	11.2	51	NEN	<5
30/01/07	-	20.3	12.7	65	NE	<5
31/01/07	-	20.0	14.2	56	NE	<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		
Action Level					
1. Exceedance of one sample	<ol style="list-style-type: none"> Identify source Inform IC(E) and ER Repeat measurement to confirm finding Increase monitoring frequency to daily 	<ol style="list-style-type: none"> Check monitoring data submitted by ET Check Contractor's working method. 	<ol style="list-style-type: none"> Notify Contractor 	<ol style="list-style-type: none"> Rectify any unacceptable practice Amend working methods if possible 	
2. Exceedance for two more consecutive samples	<ol style="list-style-type: none"> Identify source Inform IC(E) and ER Repeat measurement to confirm findings Increase monitoring frequency to daily Discuss with IC(E) and Contractor on remedial actions required If exceedance continuous, arrange meeting with IC(E) and ER If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> Checking monitoring data submitted by ET Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise the ER on the effectiveness of the proposed remedial measures Supervisor implementation of remedial measures 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor Ensure remedial measures properly implemented 	<ol style="list-style-type: none"> Submit proposals for remedial action to IC(E) within 3 working days of notification Implement the agreed proposals Amend proposal if possible 	
Limit Level					
1. Exceedance of one sample	<ol style="list-style-type: none"> Identify source Inform ER and EPD Repeat measurement to confirm finding Increase monitoring frequency to daily Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results 	<ol style="list-style-type: none"> Check monitoring data submitted by ET Check Contractor's working method. Discuss with ET and Contractor on possible remedial measures Advise the ER on the effectiveness of the proposal remedial measures Supervisor implementation of remedial measures 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor Ensure remedial measures properly implemented 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance Submit proposal for remedial actions to IC(E) within 3 working days of notification Implement the agreed proposals Amend proposal if appropriate 	
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Notify IC(E), ER, Contractor and EPD Identify source Repeat measurement to confirm findings Increase monitoring frequency to daily Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER to discuss the remedial action to be taken If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> Discuss amongst ER, ET, and Contractor on potential remedial actions Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor In consultation with the IC(E), agreed with the Contractor on the remedial measures to be implemented Ensure remedial measures properly implemented 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. 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance Submit proposals for remedial actions to IC(E) within 3 working days of notification Implement the agreed proposals Resubmit proposals if possible still not under control Stop the relevant portion of works as determined by the ER until the exceedance is abated. 	

Event / Action Plan for Construction Noise

EVENT	ET Leader	ACTION		CNOTRACTOR
		IC(E)	ER	
Action Level	<ol style="list-style-type: none">1. Notify IC(E) and Contractor2. Carry out investigation3. Report the results of investigation to the IC(E) and Contractor4. Discuss with the Contractor and formulate remedial measures5. Increase monitoring frequency to check mitigation effectiveness	<ol style="list-style-type: none">1. Review the analyzed results submitted by the ET2. Review the proposed remedial measures by the Contractor and advise the ER accordingly3. Supervise the implementation of remedial measures	<ol style="list-style-type: none">1. Confirm receipt of notification of failure in writing2. Notify Contractor3. Require Contractor to propose remedial measures for the analyzed noise problem4. Ensure remedial measures are properly implemented	<ol style="list-style-type: none">1. Submit noise mitigation proposal to IC(E)2. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none">1. Notify IC(E), ER, and Contractor2. Identify source3. Repeat measurement to confirm findings4. Increase monitoring frequency5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented6. Inform IC(E), ER and EPD the causes & action taken for the exceedances7. Assess effectiveness of Contractor's remedial action and keep IC(E), EPD and ER informed to the results8. If exceedance stops, cease additional monitoring	<ol style="list-style-type: none">1. Discuss amongst ER, ET and Contractor on the potential remedial actions2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advice the ER accordingly3. Supervise the implementation of remedial measures	<ol style="list-style-type: none">1. Confirm receipt of notification of failure in writing2. Notify Contractor3. Require Contractor to propose remedial measures for the analysed noise problem4. Ensure remedial measures are properly implemented5. 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	<ol style="list-style-type: none">1. Take immediate action to avoid further exceedance2. Submit proposals for remedial actions to IC(E) within 3 working days of notification3. Implement the agreed proposals4. Resubmit proposals if problem still not under control5. Stop the relevant portion of works as determined by the ER until the exceedance is abated



Appendix F

Construction Programme

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	300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2006 DEC										2007 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC												2008 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC											
Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish																									
A1AMRP0100	Road base & Paving Block (South Section)	20	50	34d	16JAN07 A	31JAN07	16JAN07 A	15MAR07																									
A1AMRP0150	Trim Formation and lay subbase (North Section)	10	85	34d	27NOV06 A	26JAN07	27NOV06 A	10MAR07																									
A1AMRP0200	Road base & Paving Block (North Section)	40	90	34d	04DEC06 A	31JAN07	04DEC06 A	15MAR07																									
A1AMRP0207	Step Structure (Construct after Ped. Diversion)	7	0	15d	10FEB07	21FEB07	03MAR07	10MAR07																									
A1AMRP0208	Trim Formation & lay subbase (Existing Landing)	7	0	15d	20JAN07	27JAN07	07FEB07	14FEB07																									
A1AMRP0210	Paving Block (Existing Landing)	14	20	15d	15JAN07 A	09FEB07	15JAN07 A	02MAR07																									
Cycle Track																																	
Drainage Works																																	
A1CTDW0600	CCTV Inspection	12	0	14d	10FEB07	27FEB07	02MAR07	19MAR07																									
A1CTDW0610	225 CUC & catchpit adjacent to subway	28	40	21d	21DEC06 A	08FEB07	21DEC06 A	06MAR07																									
Utility Works																																	
A1CTUT0300	CLP - 11kV Cable (South Section)	36	70	0	01SEP06 A	01FEB07	01SEP06 A	01FEB07																									
A1CTUT0400	CLP - 11kV Cable (North Section)	28	40	0	08DEC06 A	08FEB07	08DEC06 A	08FEB07																									
A1CTUT1010	CATV - Cable connection to existing	14	0	5d	26JAN07	10FEB07	01FEB07	18FEB07																									
A1CTUT1300	Watermain - Testing and Connection of 300 Dia	16	50	4d	15JAN07 A	26JAN07	15JAN07 A	02FEB07																									
A1CTUT1400	Watermain - Testing and Connection of 250 Dia	16	50	9d	15JAN07 A	26JAN07	15JAN07 A	08FEB07																									
A1CTUT1500	Install Public Lighting Post (by HYD)	10	0	34d	20JAN07	31JAN07	05MAR07	15MAR07																									
Public Lighting, Duct and Kerb																																	
A1CTPK0100	Construct Dwarf Wall (South Section)	18	80	0	11DEC06 A	22JAN07	11DEC06 A	22JAN07																									
A1CTPK0200	Construct Dwarf Wall & Toe Wall (North Section)	18	70	1d	28NOV06 A	25JAN07	28NOV06 A	28JAN07																									
A1CTPK0300	Lay Kerb (South Section)	14	50	0	03JAN07 A	02FEB07	03JAN07 A	02FEB07																									
A1CTPK0400	Lay Kerb (North Section)	11	0	12d	25JAN07 A	07FEB07	25JAN07 A	24FEB07																									
A1CTPK0500	Lighting Drawpit & Cable Duct (South Section)	18	20	10d	08JAN07 A	08FEB07	08JAN07 A	18FEB07																									
A1CTPK0600	Lighting Drawpit & Cable Duct (North Section)	18	5	2d	15JAN07 A	08FEB07	15JAN07 A	10FEB07																									
Roads and Paving																																	
A1CTRP0100	Trim Formation & Lay Subbase (South Section)	12	50	0	08JAN07 A	08FEB07	08JAN07 A	08FEB07																									
A1CTRP0150	Trim Formation & Lay Subbase (Toilet No.2 Ramp)	8	0	16d	08FEB07	14FEB07	28FEB07	08MAR07																									
A1CTRP0200	Trim Formation & Lay Subbase (North Section)	18	70	0	15JAN07 A	14FEB07	15JAN07 A	14FEB07																									
A1CTRP0250	Paving works at bicycle parking area (3 nos)	21	20	2d	15JAN07 A	09FEB07	15JAN07 A	12FEB07																									
A1CTRP0260	Paving works at cycle track crossing (3 nos)	14	0	0	28FEB07	15MAR07	28FEB07	15MAR07																									
A1CTRP0500	Lay Cycle Track Pavement (South Section)	8	70	0	08JAN07 A	12FEB07	08JAN07 A	12FEB07																									
A1CTRP0550	Lay Cycle Track Pavement (Toilet No.2 Ramp)	6	0	16d	15FEB07	24FEB07	09MAR07	15MAR07																									
A1CTRP0600	Lay Cycle Track Pavement (North Section)	10	0	0	13FEB07	27FEB07	13FEB07	27FEB07																									
Road Marking, Traffic Sign and Fencing																																	
A1CTRM0100	Apply Road Marking	3	0	13d	28FEB07	28FEB07	13MAR07	15MAR07																									
A1CTRM0200	Erect Signage	4	0	15d	22FEB07	26FEB07	12MAR07	15MAR07																									
A1CTRM0300	Install Railing, Fencing & etc	6	40	15d	15JAN07 A	28FEB07	15JAN07 A	15MAR07																									
Section 2																																	
Temporary Traffic Management Scheme																																	
TTA Implementation																																	
A2TTM1020	ITTA No 81-95 Existing M.L.S Bridge Roundabout	1	0	28d	08FEB07	08FEB07	16MAR07	16MAR07																									
A2TTM1030	ITTA No 89 Existing Cycle Track Diversion	1	0	14d	01MAR07	01MAR07	17MAR07	17MAR07																									
ITTA No 81-95 Existing M.L.S Bridge Roundabout																																	
ITTA No 89 Existing Cycle Track Diversion																																	

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish
A2MRM0200	Erect Signage	12	0	24d	08JUL07	22JUN07	08JUL07	21JUL07
Retaining Wall								
A2REWA1210	Upstand Wall for Retaining Wall No. 1	35	20	18d	10DEC06 A	24FEB07	10DEC06 A	15MAR07
Road D1								
Drainage Works								
A2RDDW0200	S615 - Existing Manhole	36	5	53d	21DEC06 A	10MAR07	21DEC06 A	14MAY07
A2RDDW0210	F304 - F308 (VO128)	42	0	53d	20JAN07	13MAR07	27MAR07	16MAY07
A2RDDW0300	S626 - S628	31	0	40d	27MAR07	03MAY07	15MAY07	20JUN07
A2RDDW0350	S616 - S629	24	0	92d	20JAN07	16FEB07	14MAY07	08JUN07
A2RDDW0410	Alignment confirmation and UU diversion (VO169)	40	0	0	20JAN07	10MAR07	20JAN07	10MAR07
A2RDDW0500	F310-Existing MH, S610A - S610 (TTA No. 74, 75)	20	0	0	12MAR07	03APR07	12MAR07	09APR07
A2RDDW0600	F309-F310, S610 - S608 (TTA No. 88)	20	0	0	04APR07	27APR07	04APR07	27APR07
A2RDDW0700	Replace 600 Pipe by 900 Pipe (TTA No. 91)	20	0	4d	31MAY07	23JUN07	05JUN07	28JUN07
A2RDDW0800	Reconstruct Ext MH w 1800 Chamber (TTA No. 91)	22	0	4d	31MAY07	26JUN07	05JUN07	30JUN07
A2RDDW0900	Construct Gullies to Existing Pipe (TTA No. 91)	18	0	0	08JUN07	30JUN07	08JUN07	30JUN07
Utility Works								
A2RDUT0300	NW1T & HGC - Laying Cable Duct	21	0	26d	20JAN07	13FEB07	23FEB07	19MAR07
A2RDUT0310	NW1T & HGC Cable Connection	14	0	53d	14FEB07	05MAR07	21APR07	08MAY07
A2RDUT0400	WT&T - Laying Cable Duct	21	0	26d	12FEB07	10MAR07	17MAR07	11APR07
A2RDUT0410	WT&T - Cable Connection	14	0	32d	14MAR07	29MAR07	21APR07	08MAY07
A2RDUT0500	PCCW - Laying Cable Duct	21	0	32d	12FEB07	10MAR07	24MAR07	18APR07
A2RDUT0510	PCCW - Cable Connection	14	0	35d	14MAR07	29MAR07	25APR07	11MAY07
A2RDUT0600	Watermain - Laying FW Main Crossing	12	0	101d	27JAN07	09FEB07	31MAY07	13JUN07
A2RDUT0700	Watermain - FW Main T to Existing (TTA No. 91)	8	0	0	31MAY07	08JUN07	31MAY07	08JUN07
A2RDUT1000	Install Public Lighting Post (TTA No. 88)	8	0	56d	14MAY07	22MAY07	20JUL07	28JUL07
A2RDUT1100	Install Public Lighting Post (TTA No. 91)	8	0	8d	07JUL07	18JUL07	18JUL07	28JUL07
Public Lighting, Duct and Kerb								
A2RDPK0100	Lay Kerb	14	0	72d	02APR07	18APR07	28JUN07	14JUL07
A2RDPK0200	Lay Kerb (TTA No. 88)	6	0	0	07MAY07	12MAY07	07MAY07	12MAY07
A2RDPK0300	Lay Kerb (TTA No. 91)	6	0	0	28JUN07	08JUL07	29JUN07	06JUL07
A2RDPK0400	Construct Central Divider	24	0	76d	12MAR07	08APR07	11JUN07	10JUL07
A2RDPK0500	Construct Central Divider (TTA No. 91)	12	0	22d	28MAY07	08JUN07	23JUN07	07JUL07
A2RDPK0600	Construct CPB	24	0	76d	12MAR07	08APR07	11JUN07	10JUL07
A2RDPK0700	Lighting Drawpit & Cable Duct	18	0	62d	12MAR07	31MAR07	25MAY07	14JUN07
A2RDPK0800	Lighting Drawpit & Cable Duct (TTA No. 88)	6	0	0	28APR07	05MAY07	28APR07	05MAY07
A2RDPK0900	Lighting Drawpit & Cable Duct (TTA No. 91)	6	0	0	28JUN07	06JUL07	28JUN07	06JUL07
Roads and Paving								
A2RRDP0100	Trim Formation & Lay Subbase	20	0	72d	02APR07	25APR07	28JUN07	21JUL07
A2RRDP0200	Trim Formation & Lay Subbase (TTA No. 74, 75)	10	0	68d	14APR07	25APR07	08JUL07	17JUL07
A2RRDP0300	Trim Formation & Lay Subbase (TTA No. 74, 75)	8	0	68d	04APR07	11APR07	28JUN07	03JUL07
A2RRDP0400	Trim Formation & Lay Subbase (TTA No. 88)	6	0	0	09MAY07	15MAY07	09MAY07	15MAY07

Start date 10JUN04		62551 Early bar
Finish date 09MAY08		Progress bar
via date 20JAN07		Critical bar
run date 08FEB07		Summary bar
page number 4A		Start milestone point

TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)											
Leader - Wai Kee (C&T) Joint Venture											
LEADER											
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Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish
Utility Works	Install Public Lighting Post	8	0	28d	14JUN07	23JUN07	19JUL07	27JUL07
A2EBUT0100	Public Lighting, Duct and Kerb							
A2EBPK0100	Lay Kerb (TTA No. 81-85)	21	0	28d	28FEB07	23MAR07	02APR07	26APR07
A2EBPK0200	Cable Duct Laying on Island (TTA No. 81-85)	21	0	35d	27APR07	22MAY07	06JUN07	04JUL07
A2EBPK0300	Cable Duct Laying on Reserve (TTA No. 81-85)	12	0	28d	12MAY07	25MAY07	14JUN07	28JUN07
Roads and Paving								
A2EBRP0100	Demolish Existing Parapet (TTA No. 81-85)	14	0	23d	20APR07	07MAY07	18MAY07	02JUN07
A2EBRP0200	Demolish Island & Paved Area (TTA No. 81-85)	14	10	28d	08JAN07 A	27FEB07	08JAN07 A	31MAR07
A2EBRP0300	Road Pavement (TTA No. 81-85)	14	0	28d	24MAR07	10APR07	27APR07	14MAY07
A2EBRP0400	Construct R/A on V-Abutment (TTA No. 81-85)	21	0	23d	08MAY07	31MAY07	04JUN07	28JUN07
A2EBRP0500	Remove Pave at Proposed Island (TTA No. 81-85)	14	0	28d	11APR07	28APR07	15MAY07	30MAY07
A2EBRP0600	Construct Traffic Island (TTA No. 81-85)	8	0	35d	23MAY07	31MAY07	05JUL07	13JUL07
A2EBRP0700	Construct Remaining Roundabout (TTA No. 81-85)	12	0	23d	01JUN07	14JUN07	26JUN07	13JUL07
A2EBRP0800	Demolish Existing Cent. Reserve (TTA No. 81-85)	12	0	28d	27APR07	11MAY07	31MAY07	13JUN07
A2EBRP0900	Rectification of existing MJ & waterproofing	80	0	38d	28FEB07	10MAY07	16APR07	26JUN07
A2EBRP0900	Construct New Cent. Reserve (TTA No. 81-85)	18	0	28d	24MAY07	13JUN07	27JUN07	18JUL07
Road Marking, Traffic Sign and Fencing								
A2EBRM0100	Apply Road Marking (TTA No. 92-93, 88)	1	0	35d	15JUN07	15JUN07	28JUL07	28JUL07
A2EBRM0200	Apply Road Marking (TTA No. 92-93, 88)	1	0	23d	30JUN07	30JUN07	28JUL07	28JUL07
A2EBRM0300	Erect Signage	12	0	23d	15JUN07	28JUN07	14JUL07	27JUL07
A2EBRM0400	Install Railing, Fencing & etc	12	0	23d	15JUN07	28JUN07	14JUL07	27JUL07
Car Park and Access Road								
Utility Works	Install Public Lighting Post	8	0	70d	26APR07	05MAY07	20JUL07	28JUL07
A2CPUT0500	Public Lighting, Duct and Kerb							
A2CPRP0100	Construct Dwarf Wall	23	0	22d	02MAR07	28MAR07	28MAR07	24APR07
A2CPRP0200	Lay Kerb	8	0	52d	17APR07	25APR07	18JUN07	27JUN07
A2CPRP0300	Public Lighting Controller	10	0	83d	28MAR07	10APR07	09JUL07	18JUL07
A2CPRP0400	Lighting Drawpit & Cable Duct	15	0	52d	28MAR07	16APR07	31MAY07	18JUN07
Roads and Paving								
A2CPRP0100	Trim Formation & Lay Subbase	8	0	60d	26APR07	05MAY07	08JUL07	17JUL07
A2CPRP0200	Road Pavement	8	0	60d	07MAY07	15MAY07	18JUL07	28JUL07
A2CPRP0300	Construct Footpath	18	0	52d	26APR07	17MAY07	28JUN07	18JUL07
Road Marking, Traffic Sign and Fencing								
A2CPRM0100	Apply Road Marking	2	0	52d	25MAY07	28MAY07	27JUL07	28JUL07
A2CPRM0200	Erect Signage	6	0	52d	18MAY07	24MAY07	20JUL07	28JUL07
A2CPRM0300	Install Railing, Fencing & etc	6	0	52d	18MAY07	24MAY07	20JUL07	28JUL07
Amenity Area								
Damage Works								
A2AMDW0100	Construct U-Channels	18	0	83d	26MAR07	19APR07	09JUL07	28JUL07
Utility Works	Water Point WP1-3 to Water Meter No.1	18	0	82d	10APR07	30APR07	23JUN07	14JUL07

Start date	10JUN04	Early bar	Early bar
Finish date	08MAY08	Progress bar	Progress bar
Start date	20JAN07	Critical bar	Critical bar
Un date	09FEB07	Summary bar	Summary bar
Age number	7A	Start milestone point	Start milestone point

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish
A2AMUT0200	Water Point WP2-3 to Water Meter No.2	17	0	83d	30MAR07	19APR07	10JUL07	28JUL07
A2AMUT0300	Water Point WP3-5 to Water Meter No.3	28	0	62d	14APR07	15MAY07	28JUN07	26JUL07
A2AMUT0400	Water Point WP8-2 to Water Meter No.8	12	0	62d	02MAY07	15MAY07	16JUL07	28JUL07
Section 3								
Ma Liu Shui Subway								
Pump House Construction								
A3MSPH0300	Construct Wall up to Top Slab	12	50	10d	08DEC06 A	26JAN07	06DEC06 A	07FEB07
A3MSPH0400	Construct Top Slab	12	0	10d	27JAN07	09FEB07	08FEB07	24FEB07
A3MSPH0500	Install Hoisting Beam	8	0	10d	03FEB07	09FEB07	15FEB07	24FEB07
Subway Barrel Construction								
A3MSSB0900	Construct Subway #4 Wall + Top Slab	16	80	10d	25DEC06 A	09FEB07	25DEC06 A	24FEB07
A3MSSB1000	Backfilling	18	0	10d	03FEB07	27FEB07	15FEB07	10MAR07
Subway West Ramp Construction								
A3MSSW1400	Construct W5 Ramp Walls	7	0	13d	25JAN07	10FEB07	09FEB07	16FEB07
A3MSSW1500	Construct W6 Ramp Walls	10	60	13d	14JAN07 A	24JAN07	14JAN07 A	08FEB07
A3MSSW1600	Backfilling	20	0	13d	02FEB07	28FEB07	21FEB07	15MAR07
A3MSSW1700	Install Roof Posts	18	0	13d	15FEB07	10MAR07	06MAR07	26MAR07
A3MSSW1800	Construct Roof Slab W3	12	0	13d	12MAR07	24MAR07	27MAR07	10APR07
A3MSSW1900	Construct Roof Slab W4	12	0	13d	26MAR07	09APR07	11APR07	24APR07
A3MSSW2000	Construct Roof Slab W2, W5	12	0	13d	26MAR07	09APR07	11APR07	24APR07
A3MSSW2100	Construct Roof Slab W1, W6	12	0	25d	12MAR07	24MAR07	11APR07	24APR07
Pumping and Drainage System								
A3MSPD0100	Pumping System Installation	30	0	31d	10FEB07	20MAR07	22MAR07	26APR07
A3MSPD0200	Drainage System Installation (Barrel)	7	0	25d	28FEB07	07MAR07	28MAR07	08APR07
A3MSPD0210	Drainage System Installation (East Ramp)	7	0	10d	18APR07	23APR07	27APR07	05MAY07
A3MSPD0220	Drainage System Installation (West Ramp)	7	0	13d	10APR07	17APR07	25APR07	03MAY07
Miscellaneous works								
A3MSSMW0100	Miscellaneous Metal Works	24	0	13d	11MAY07	07JUN07	26MAY07	23JUN07
Finishing Works								
A3MSPW0100	Finishing Works at Barrel	24	0	25d	09MAR07	04APR07	07APR07	05MAY07
A3MSPW0200	Finishing Works at East Ramp	24	0	10d	24APR07	22MAY07	07MAY07	02JUN07
A3MSPW0300	Finishing Works at West Ramp	24	0	13d	18APR07	16MAY07	04MAY07	31MAY07
E & M Works								
A3MSEM0100	Electrical Installation at Barrel & Pump House	24	0	25d	28MAR07	26APR07	27APR07	25MAY07
A3MSEM0200	Electrical Installation at East Ramp	24	0	10d	15MAY07	11JUN07	28MAY07	23JUN07

Start date: 10JUN04

Finish date: 09MAY08

Data date: 20JAN07

Run date: 06FEB07

Page number: 8A

Legend: Early bar

Progress bar

Critical bar

Summary bar

Start milestones point

Leader - Wai Kee (C&T) Joint Venture

TP

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish	2025											
									DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
A4PTGF0000	Walls & Columns Formwork	3	0	0	16FEB07	22FEB07	16FEB07	22FEB07	■ Walls & Columns Formwork											
A4PTGF0700	Steel Fixing for Walls & Columns	3	0	0	23FEB07	28FEB07	23FEB07	28FEB07	■ Steel Fixing for Walls & Columns											
A4PTGF0800	Formwork	3	0	0	27FEB07	01MAR07	27FEB07	01MAR07	■ Formwork											
A4PTGF0900	Concreting	1	0	0	02MAR07	02MAR07	02MAR07	02MAR07	! Concreting											
A4PTGF1000	Remove Formwork & Propping	12	0	10d	03MAR07	18MAR07	15MAR07	28MAR07	☐ Remove Formwork & Propping											
Mezzanine Floor Slab Construction																				
A4PTMF0100	Erect Propping & Formwork	6	0	0	03MAR07	09MAR07	03MAR07	09MAR07	■ Erect Propping & Formwork											
A4PTMF0200	Mezzanine Slab Steel Fixing	3	0	0	10MAR07	13MAR07	10MAR07	13MAR07	■ Mezzanine Slab Steel Fixing											
A4PTMF0300	Formwork	2	0	0	14MAR07	15MAR07	14MAR07	15MAR07	! Formwork											
A4PTMF0400	Concreting	1	0	0	16MAR07	16MAR07	16MAR07	16MAR07	! Concreting											
A4PTMF0500	Walls & Columns Formwork	3	0	0	17MAR07	20MAR07	17MAR07	20MAR07	■ Walls & Columns Formwork											
A4PTMF0600	Steel Fixing for Walls & Columns	3	0	0	21MAR07	23MAR07	21MAR07	23MAR07	■ Steel Fixing for Walls & Columns											
A4PTMF0700	Formwork	3	0	0	24MAR07	27MAR07	24MAR07	27MAR07	■ Formwork											
A4PTMF0800	Concreting	1	0	0	28MAR07	28MAR07	28MAR07	28MAR07	! Concreting											
A4PTMF0900	Remove Formwork & Propping	12	0	0	29MAR07	12APR07	29MAR07	12APR07	■ Remove Formwork & Propping											
Upper Mezzanine Floor Slab Construction																				
A4PTUF0100	Erect Propping & Formwork	6	0	0	29MAR07	04APR07	29MAR07	04APR07	■ Erect Propping & Formwork											
A4PTUF0200	Upper Mezzanine Slab Steel Fixing	3	0	0	06APR07	09APR07	06APR07	09APR07	■ Upper Mezzanine Slab Steel Fixing											
A4PTUF0300	Formwork	2	0	0	10APR07	11APR07	10APR07	11APR07	! Formwork											
A4PTUF0400	Concreting	1	0	0	12APR07	12APR07	12APR07	12APR07	! Concreting											
A4PTUF0500	Remove Formwork & Propping	12	0	0	13APR07	28APR07	13APR07	28APR07	■ Remove Formwork & Propping											
Structural Steelworks																				
A4PTSS0400	Delivery of Structural Steel Materials	12	30	0	16JAN07 A	28JAN07	16JAN07 A	28JAN07	■ Delivery of Structural Steel Materials											
A4PTSS0500	Inspection & Testing	18	0	0	30JAN07	22FEB07	30JAN07	22FEB07	■ Inspection & Testing											
A4PTSS0600	Fabrication & Painting of Steelworks	42	0	0	23FEB07	13APR07	23FEB07	13APR07	■ Fabrication & Painting of Steelworks											
A4PTSS0700	Delivery of Prefabricated Steelworks	12	0	0	14APR07	27APR07	14APR07	27APR07	■ Delivery of Prefabricated Steelworks											
A4PTSS0800	Erection of Steelworks	21	0	0	28APR07	23MAY07	28APR07	23MAY07	■ Erection of Steelworks											
A4PTSS0900	Touch Up Painting	12	0	0	18MAY07	29MAY07	18MAY07	29MAY07	■ Touch Up Painting											
Architectural Builders Works and Finishes																				
A4PTAB0100	Solid Concrete Block Work Wall	21	0	0	29MAR07	23APR07	29MAR07	23APR07	■ Solid Concrete Block Work Wall											
A4PTAB0200	Internal Wall Tile	21	0	0	18APR07	10MAY07	18APR07	10MAY07	■ Internal Wall Tile											
A4PTAB0300	External Wall Tile	21	0	0	27APR07	22MAY07	27APR07	22MAY07	■ External Wall Tile											
A4PTAB0400	Toilet Accessories Installation	21	0	15d	17APR07	11MAY07	05MAY07	29MAY07	■ Toilet Accessories Installation											
A4PTAB0500	Floor Tile	21	0	0	05MAY07	29MAY07	05MAY07	29MAY07	■ Floor Tile											
A4PTAB0600	Roof Cladding	21	0	0	05MAY07	29MAY07	05MAY07	29MAY07	■ Roof Cladding											
A4PTAB0700	Metal Works & Ironmongery Installation	21	0	0	05MAY07	29MAY07	05MAY07	29MAY07	■ Metal Works & Ironmongery Installation											
Plumbing Works																				
A4PTPL0100	Plumbing Works (Internal Structure)	21	0	0	05MAY07	29MAY07	05MAY07	29MAY07	■ Plumbing Works (Internal Structure)											
E & M Works																				
A4PTEM0100	Electrical & Mechanical Installations	42	0	0	31MAR07	21MAY07	31MAR07	21MAY07	■ Electrical & Mechanical Installations											
A4PTEM0110	Testing and Commissioning	7	0	0	22MAY07	28MAY07	22MAY07	28MAY07	■ Testing and Commissioning											

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish
Ramp Wall - North								
A4RARN200	Backfilling	6	0	76d	20JAN07	26JAN07	26APR07	03MAY07
A4RARN2300	Construct Granite Facing Stone	12	0	80d	27JAN07	09FEB07	07MAY07	19MAY07
A4RARN2400	Paving	14	0	76d	27JAN07	12FEB07	04MAY07	19MAY07
A4RARN2500	Erect Type 2 Railing	8	0	76d	13FEB07	24FEB07	21MAY07	29MAY07
A4RARN2600	Construct Staircase	12	0	86d	27JAN07	09FEB07	16MAY07	29MAY07
Ramp Wall - Toilet								
A4RART1000	Erect Formwork for Wall	6	1	20d	16JAN07 A	26JAN07	16JAN07 A	22FEB07
A4RART1100	Concreting	1	0	20d	27JAN07	27JAN07	23FEB07	23FEB07
A4RART1200	Remove Formwork	3	0	20d	29JAN07	31JAN07	24FEB07	27FEB07
A4RART1400	Backfilling	12	0	66d	01FEB07	14FEB07	24APR07	09MAY07
A4RART1500	Construct Granite Facing Stone	10	0	66d	15FEB07	01MAR07	11MAY07	22MAY07
A4RART1600	Paving	12	0	66d	15FEB07	03MAR07	09MAY07	22MAY07
A4RART1700	Erect Type 2 Railing	6	0	66d	03MAR07	10MAR07	23MAY07	29MAY07
Ramp Wall - South								
A4RARS1700	Steel Fixing for Side Walls (S2)	6	50	19d	16JAN07 A	23JAN07	16JAN07 A	14FEB07
A4RARS1800	Erect Formwork for Side Walls (S2)	6	0	19d	24JAN07	30JAN07	15FEB07	24FEB07
A4RARS1900	Concreting (S2)	1	0	19d	31JAN07	31JAN07	28FEB07	28FEB07
A4RARS2000	Remove Formwork (S2)	1	0	19d	01FEB07	01FEB07	27FEB07	27FEB07
A4RARS2200	Backfilling	12	0	66d	02FEB07	16FEB07	24APR07	09MAY07
A4RARS2300	Construct Granite Facing Stone	6	0	71d	16FEB07	26FEB07	16MAY07	22MAY07
A4RARS2400	Paving	12	0	65d	16FEB07	05MAR07	09MAY07	22MAY07
A4RARS2500	Erect Type 2 Railing	6	0	65d	06MAR07	12MAR07	23MAY07	29MAY07
Station 7								
Station Promenade								
Utility Works								
A7WPUT0610	PCCW - Lay Cable (Landscape Node P3)	12	0	2d	20JAN07	02FEB07	23JAN07	05FEB07
Public Lighting, Duct and Kerb								
A7WPPK0100	Public Lighting (In ZU)	60	90	24d	03APR06 A	26JAN07	03APR06 A	27FEB07
A7WPPK0200	Public Lighting (In ZS)	60	60	6d	03APR06 A	16FEB07	03APR06 A	27FEB07
Roads and Paving								
A7WPRP0050	Paving works at Foot Message Area	18	50	21d	08JAN07 A	30JAN07	08JAN07 A	27FEB07
A7WPRP0100	Lay asphalt & paving block (In ZU & ZU3)	50	40	21d	12DEC06 A	09MAR07	12DEC06 A	03APR07
A7WPRP0200	Lay asphalt & paving block (In ZS & ZR1)	50	40	0	21OCT06 A	27FEB07	21OCT06 A	27FEB07
A7WPRP0205	TTA approval In TMLG (Section 7 & 8)	14	0	0	02FEB07	21FEB07	02FEB07	21FEB07
A7WPRP0206	RMO notice for crossing TTA (Section 7 & 8)	7	0	0	22FEB07	01MAR07	22FEB07	01MAR07
A7WPRP0210	Additional 2 nos crossing (VO159B) 1st half	14	0	0	02MAR07	17MAR07	03MAR07	17MAR07
A7WPRP0220	Additional 2 nos crossing (VO159B) 2nd half	14	0	0	19MAR07	03APR07	19MAR07	03APR07
A7WPRP0230	Repave verge adjacent to promenade (VO164)	28	0	0	02MAR07	03APR07	02MAR07	03APR07
Finishing Works								
A7WFPW0100	Finishing Works (In ZU) (include pump room)	30	30	38d	06JAN06 A	19FEB07	09JAN06 A	03APR07
A7WFPW0200	Finishing Works (In ZS)	55	90	54d	13APR06 A	26JAN07	13APR06 A	03APR07
E & M Works								
Start date	10JUN04	Early bar						
Finish date	09MAY08	Progress bar						
Start date	20JAN07	Critical bar						
Finish date	08FEB07	Summary bar						
Number	11A	Start milestone point						
		Finish milestone point						

Primavera Systems, Inc.

Leader - Wai Kee (C&T) Joint Venture

TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)

Wai Kee

Leader

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish
A7WPEM0700	E&M Works	30	75	25d	19AUG06 A	08FEB07	19AUG06 A	13MAR07
Testing and Commissioning								
A7WPTC0100	Testing & Commissioning for Section 7	14	0	25d	14FEB07	05MAR07	19MAR07	03APR07
Road Marking, Traffic Sign and Fencing								
A7WPRM0300	Erect Signage	20	0	22d	10FEB07	08MAR07	12MAR07	03APR07
Landscape Hardworks								
A7WPHL1600	Public Toilet & Pavilion by ASD's Contractor	297	99	366d	28DEC04 A	23JAN07	28DEC04 A	05NOV05
A7WPHL1605	Approval of Litter-bin material (Section 7 & 8)	12	0	0	20JAN07	02FEB07	20JAN07	02FEB07
A7WPHL1606	Delivery of Litter-bin material (Section 7 & 8)	63	0	0	03FEB07	21APR07	03FEB07	21APR07
A7WPHL1610	Litter-bin Footing excavation (33 nos) (VO179)	6	0	26d	03FEB07	09FEB07	09MAR07	15MAR07
A7WPHL1620	Litter-bin footing concreting (VO179)	6	0	26d	10FEB07	16FEB07	16MAR07	22MAR07
A7WPHL1630	Litter-bin paving temp reinstatement (VO179)	10	0	26d	21FEB07	03MAR07	23MAR07	03APR07
Section 8								
Waterfront Promenade								
Drainage Works								
A8WPDW0400	S729 - S730	14	75	5d	09AUG06 A	24JAN07	09AUG06 A	30JAN07
A8WPDW0800	225HR & Catchpit/200DI along P.Wall (ZR) N2-N3	48	20	23d	15AUG06 A	08MAR07	15AUG06 A	04APR07
A8WPDW0900	225HR & Catchpit/200DI along P.Wall (ZK) N2-PLS	24	0	18d	13FEB07	15MAR07	09MAR07	08APR07
A8WPDW1000	225HR & Catchpit/200DI along P.Wall (ZJ6) PLS	12	0	36d	08FEB07	22FEB07	23MAR07	06APR07
A8WPDW1100	225HR & Catchpit/200DI along P.Wall (ZJ5) PLSN	8	0	37d	30JAN07	05FEB07	17MAR07	23MAR07
A8WPDW1200	225HR & Catchpit/200DI along P.Wall (ZJ) PLSN-N1	50	90	53d	15AUG06 A	25JAN07	15AUG06 A	31MAR07
A8WPDW1300	225HR & Catchpit/200DI along P.Wall (ZM) N1N-TP	30	5	38d	01JAN07 A	26FEB07	01JAN07 A	13APR07
A8WPDW1900	150 Perforated Drain (In ZR)	19	90	0	13OCT06 A	22JAN07	13OCT06 A	22JAN07
A8WPDW2000	150 Perforated Drain (In ZK)	18	40	2d	17OCT06 A	01FEB07	17OCT06 A	03FEB07
A8WPDW2100	150 Perforated Drain (In ZJ6)	9	60	5d	03JAN07 A	29JAN07	03JAN07 A	03FEB07
A8WPDW2200	150 Perforated Drain (In ZJ5)	5	80	12d	12DEC06 A	20JAN07	12DEC06 A	03FEB07
A8WPDW2300	150 Perforated Drain (ZJ - Node P1 South)	24	95	16d	05NOV06 A	20JAN07	05NOV06 A	08FEB07
Utility Works								
A8WPUT0200	Watermain Connection in existing cycle track	28	0	36d	02MAR07	03APR07	14APR07	17MAY07
A8WPUT0700	PCCW - Lay Cable (In ZR)	48	92	2d	09AUG06 A	24JAN07	09AUG06 A	28JAN07
A8WPUT0800	PCCW - Lay Cable (In ZK)	22	0	9d	13FEB07	13MAR07	27FEB07	23MAR07
A8WPUT0900	PCCW - Lay Cable (In ZJ6)	10	0	2d	01FEB07	12FEB07	03FEB07	14FEB07
A8WPUT1000	PCCW - Lay Cable (In ZJ5)	6	0	2d	25JAN07	31JAN07	27JAN07	02FEB07
A8WPUT1100	PCCW - Lay Cable (In ZJ, ZM, ZL1)	44	95	3d	30SEP06 A	22JAN07	30SEP06 A	25JAN07
Public Lighting, Duct and Kerb								
A8WPPK0300	Public Lighting Ducts & Drawpits Along Promenade	60	40	36d	21OCT06 A	08MAR07	21OCT06 A	18APR07
A8WPPK0400	Install Public Lighting	24	0	36d	03FEB07	06MAR07	21MAR07	18APR07
Roads and Paving								
A8WPPR0100	Lay asphalt & paving block (ZR) (N2 - N3)	35	0	23d	09MAR07	19APR07	06APR07	17MAY07
A8WPPR0200	Lay asphalt & paving block (ZK) (N2 - PLS)	20	0	9d	13APR07	07MAY07	24APR07	17MAY07
A8WPPR0300	Lay asphalt & paving block (ZJ6) (PLS)	14	0	9d	27MAR07	12APR07	07APR07	23APR07
A8WPPR0400	Lay asphalt & paving block (ZJ5) (PLS N)	10	0	9d	14MAR07	24MAR07	24MAR07	04APR07

Leader - Wai Kee (C&T) Joint Venture

TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)

Start date: 10JUN04

Finish date: 09MAY08

Start date: 20JAN07

Finish date: 08FEB07

Page number: 12A

Start milestone point

Finish milestone point

Act ID	Description	Original Duration	Percent Complete	Total Float	Early Start	Early Finish	Late Start	Late Finish	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	300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Appendix G

Construction Site Area

Appendix H

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 6 January 2007 Inspected by Name : (RSS) Eric Leung (LWKJV) WATSON (ET) H.T. Chow
Time : 10:10 Signature : *[Signature]*

Weather : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
Condition : Sunny / Fine
Wind : Calm / Light / Breeze / Strong
Temperature : 14°C
Humidity : High / Moderate / Low

Mitigation Measures on Waste Management		Implementation Stages*			Remark
		Yes	No	N/A	
Air Quality					
▪	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.	✓			
Noise					
▪	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

Mitigation Measures on Waste Management				Implementation Stages*		Remark
				Yes	No	
Water Quality						
General Construction Activities						
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 ³ 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.				✓		Item 2
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.				✓		
Dredging Activities						
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

Mitigation Measures on Waste Management				Implementation Stages*	Remark		
				Yes	No	N/A	
Filling Activities							
▪ 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.						✓	
Waste Management							
Marine Dredged Sediment							
• 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 ³ 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.						✓	
Construction and Demolition (C&D) Waste							
• 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

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• Proper storage will minimize the damage and thus the wastage of the materials	<input checked="" type="checkbox"/>			
• 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.	<input checked="" type="checkbox"/>			
• 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.	<input checked="" type="checkbox"/>			
• 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.	<input checked="" type="checkbox"/>			
• 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.	<input checked="" type="checkbox"/>			
• 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		<input checked="" type="checkbox"/>		Item 3
• 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	<input checked="" type="checkbox"/>			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	<input checked="" type="checkbox"/>			
• 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	<input checked="" type="checkbox"/>			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	<input checked="" type="checkbox"/>			
• Be enclosed on at least 3 sides	<input checked="" type="checkbox"/>			
• 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	<input checked="" type="checkbox"/>			
• Have adequate ventilation	<input checked="" type="checkbox"/>			
• Be covered to prevent rainfall entering	<input checked="" type="checkbox"/>			
• Be arranged so that incompatible materials are adequately separated	<input checked="" type="checkbox"/>			
• Be clean and maintain regularly	<input checked="" type="checkbox"/>			
• Disposal				
• Be via a licensed waste collector	<input checked="" type="checkbox"/>			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	<input checked="" type="checkbox"/>			
• Be a reuser of the waste, under approval from the EPD	<input checked="" type="checkbox"/>			




SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

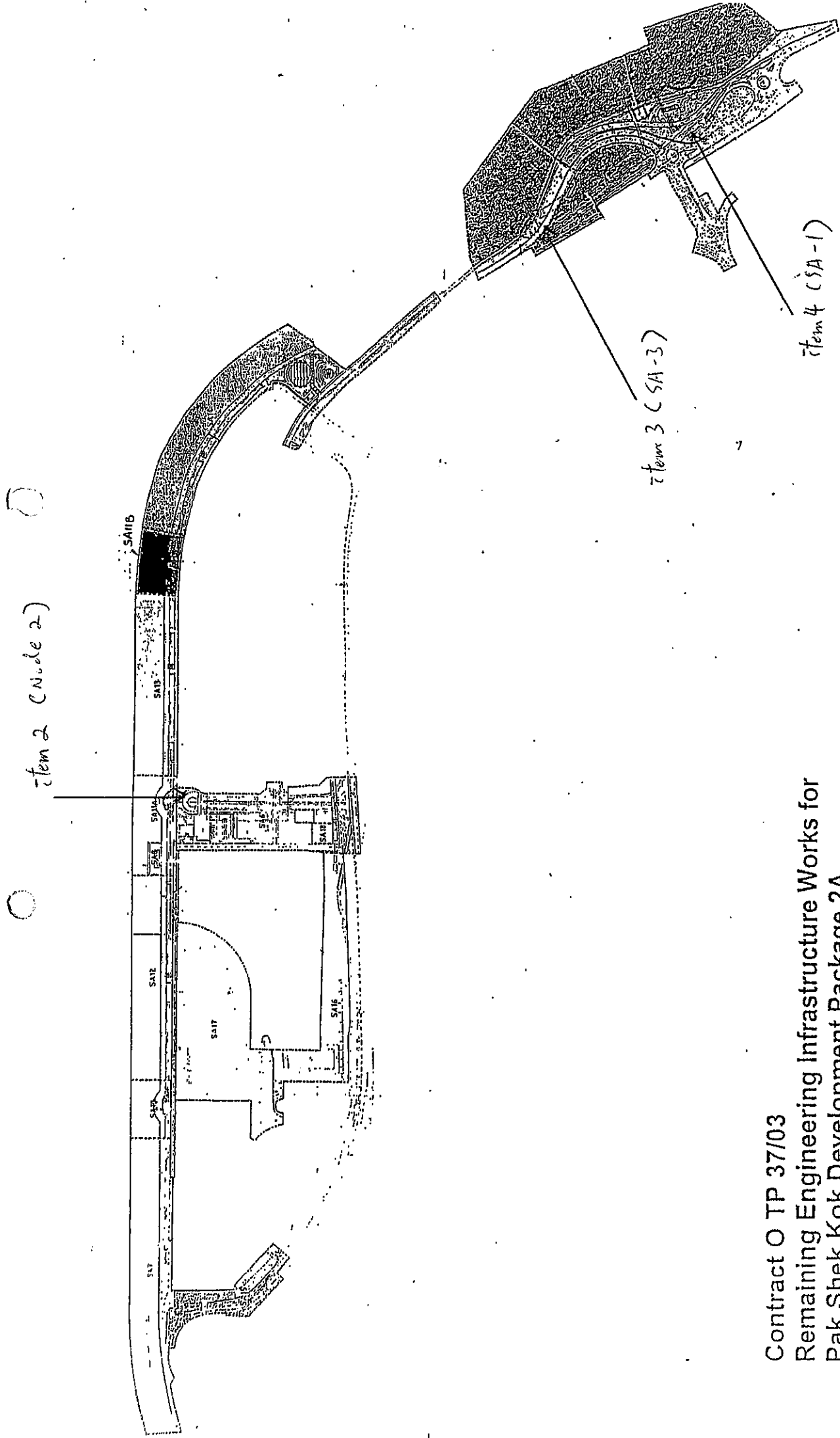
Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			✓	
• Commencing at the source of the spill, establish all current and potential impacted areas			✓	
• 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, sumps and oil interceptors are cleaned and maintained regularly.	✓			

7/10/13

Table for follow-up Action:

[illegible]

	RSS	LWKJV	ET
Signature:			
Name:	Eric Huang	William Cym	H. T. Chou
Date:	06-01-2007	06-01-2007	6-1-2007




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

Location and Key Pan

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 : 12 January 2007 Inspected by Name : (RSS) Eric Leung (LWKW) Watson Chan (ET) H.T. Chow
 Time : 15:35 Signature : 

Weather : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
 Condition : Calm / Light / Breeze / Strong
 Temperature : 20°C
 Humidity : High / Moderate / Low

Mitigation Measures on Waste Management					Implementation Stages*	Remark
Yes	No	N/A				
Air Quality						
						Item 4
						Item 4

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management				Implementation Stages*			Remark
				Yes	No	N/A	
Water Quality							
General Construction Activities							
▪ 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 ² should be covered.				✓			
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.				✓			item 4
▪ 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.				✓			
Dredging Activities							
▪ 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

Mitigation Measures on Waste Management					Remark
Implementation Stages*		Yes	No	N/A	
Filling Activities					
•	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.			✓	
Waste Management					
Marine Dredged Sediment					
•	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 ³ 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.			✓	
Construction and Demolition (C&D) Waste					
•	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	Implementation Stages*			Remark
	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	✓			

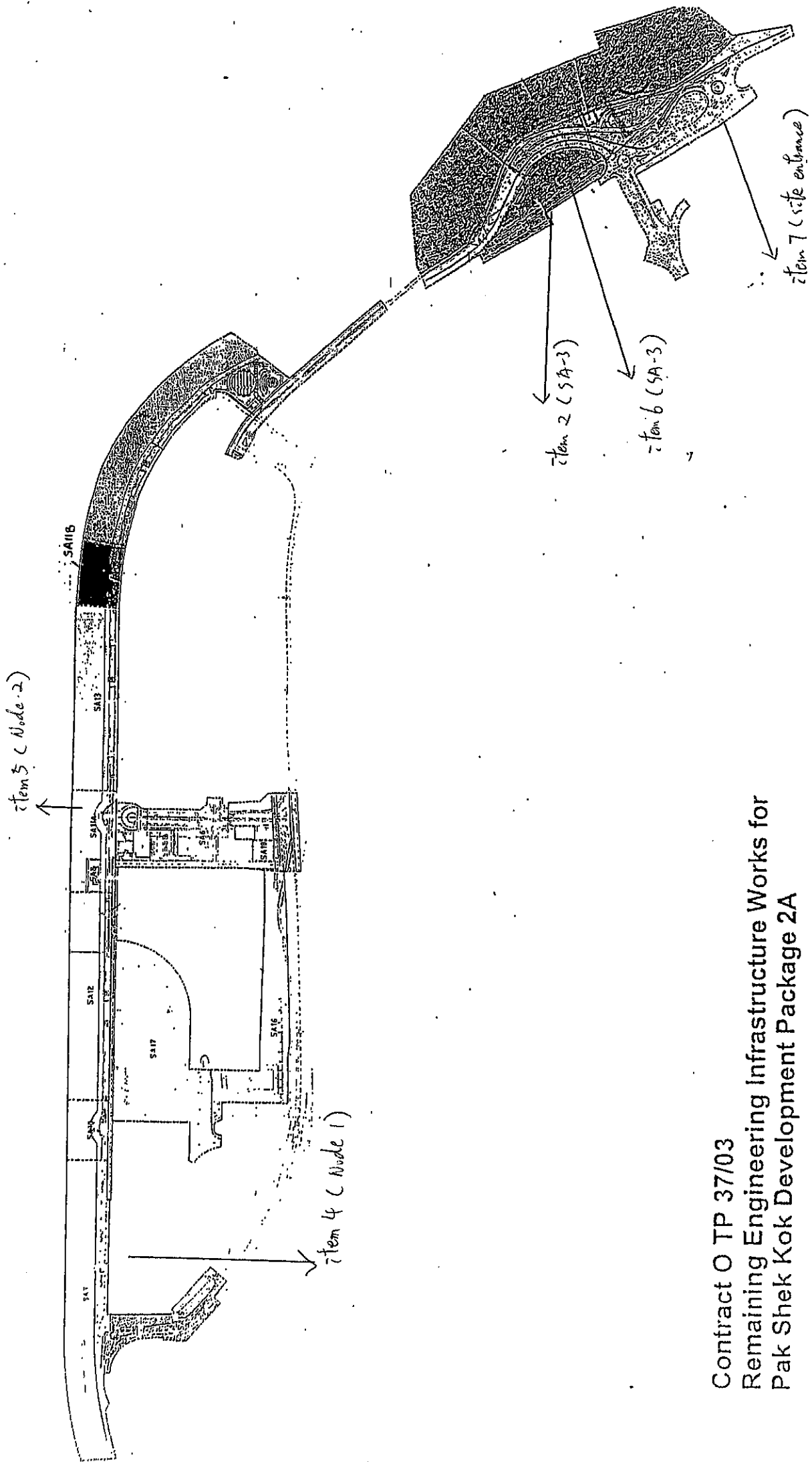


SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management		Implementation Stages*		Remark
		Yes	No / N/A	
• 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.				

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 action to previous site inspection item 2 on 6-1-07, the membrane of leakage channel was sealed.	Node 2	Follow up action was completed, no further action to be taken.	N/A
2.	Follow up action to previous site inspection item 3 on 6-1-07, some oil containers were still observed on the ground at SA-3.	SA-3	The Contractor was reminded to store them in adequate area.	21-1-2007
3.	Follow up action to previous site inspection item 4 on 6-1-07, the damaged tarpaulin sheets was replaced.	SA-1	Follow up action was completed, no further action to be taken.	N/A
4.	Stockpile at Node-1 was found without covered.	Node - 1	The Contractor was reminded to provide tarpaulin sheet for all stockpiles.	21-1-2007
5.	Black smoke emission from excavator (N.032) was observed.	Node - 2	The Contractor should be maintain all machinery in good conditions regularly.	21-1-2007
6.	Oil leakage from generator was found at SA-3	SA-3	The Contractor should clean up the contaminated soil and treat as chemical waste.	21-1-2007
7.	Construction Noise permits were not post on site entrance.	Site Entrance	The Contractor should provide Noise Permits for all site entrance.	21-1-2007
	Other: pH value checking were carried out at Workshop and SA-3 discharge point (pH = 6-9)			
Signature:		RSS	ET	
Name:		Warren Chan	H.T. Chow	
Date:		12-01-2007	12-1-2007	



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

Location and Key Plan

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 : 20 January 2007 Inspected by Name : (RSS) Eric Leung (LWKJ) Wilson Chan (ET) H-T. Chow
Time : 10:00 Signature : *[Signature]*

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

Temperature : 16 °C
Humidity : High / Moderate / Low

Mitigation Measures on Waste Management

	Implementation Stages*			Remark
	Yes	No	N/A	
Air Quality				
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.		✓		Item 10
▪ 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.	✓			Item 2
▪ The haul road should be either paved or regular watering.	✓			
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓			Item 9
▪ 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.	✓			
Noise				
▪ 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.	✓			Item 5

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
General Construction Activities				
▪ 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.		✓		item 11
▪ 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 ³ should be covered.	✓			
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.		✓		item 2
▪ Marholes 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.	✓			item 6
Dredging Activities				
▪ 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

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
Filling Activities				
▪ 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.			✓	
Waste Management				
Marine Dredged Sediment				
▪ 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 ³ 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.			✓	
Construction and Demolition (C&D) Waste				
▪ 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 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	Implementation Stages*			Remark
	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	✓			

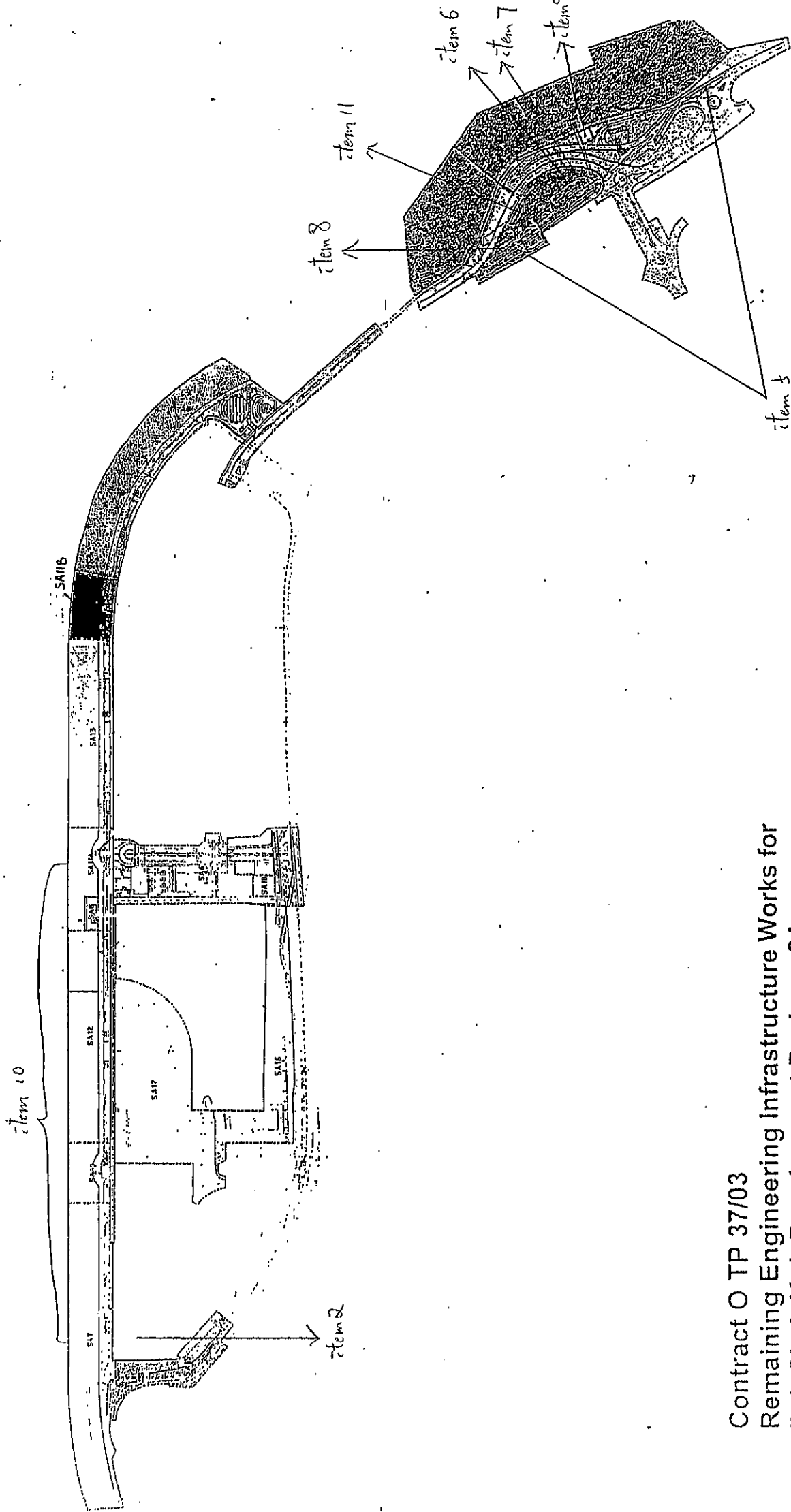
SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• 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.		✓		7/10/17
• 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 action to previous site inspection item 3 (1-1-07) and item 2 (12-1-07), some oil contained on the ground at SA-3 were removed.	SA-3	Follow up action was completed, no further action to be taken.	N/A
2.	Follow up action to previous site inspection item 4 on 12-1-07, stakepile at Node 1 was still found without covered.	Node 1	The Contractor was reminded to provide tarpaulin sheet for all stockpiles.	25-1-07
3.	Follow up action to previous site inspection item 5 on 12-1-07, an excavator (No.032) at Node 2 was repaired.	Node 2	Follow up action was completed, no further action to be taken.	N/A
4.	Follow up action to previous site inspection item 6 on 12-1-07, the contaminated soil at SA-3 was cleaned up.	SA-3	✓	✓
5.	Construction Noise Permits were still not put on site entrance.	Site Entrance	The Contractor should provide Noise Permits for all site entrance.	25-1-07
6.	Stagnant water was observed at SA-3 next to the wheel washing facility.	SA-3	The Contractor was reminded to drain the stagnant water and backfill by using soil.	25-1-07
7.	Rubbish was found accumulated on the ground at SA-3 site entrance.	SA-3	The Contractor was reminded to clean up the rubbish regularly.	25-1-07
8.	Unnecessary materials were disposed at SA-3 next to the sedimentation tank.	SA-3	The Contractor was reminded to make a point of housekeeping on site area.	25-1-07
9.	Mud was observed on the public road at Ma Liu Shan Shui Pier.	Ma Liu Shan	The Contractor was reminded to maintain the public road to be clear in all time.	25-1-07
10.	The heights of fill materials from the planters were found higher than planter wall.	Node 1 & 2	The Contractor was reminded to reduce the height of fill materials.	25-1-07
11.	Overflow was occurred in the sedimentation tank at SA-3.	SA-3	The Contractor should provide extra replace a large volume tank and control the retention flow.	25-1-07

Signature:	RSS	LWK/JV	ET
	<i>Eric</i>	<i>[Signature]</i>	<i>[Signature]</i>
Name:	Eric Leung	Wai Hon Chan	H.T. Chow
Date:	20-01-2007	20 Jan 2007	20-1-2007



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

Location and Key Plan

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 : 25/01/2007
Time : 13:30
Weather Condition : Sunny / (Fine) Overcast / Drizzle / Rain / Storm / Hazy
Wind : Calm / (Light) Breeze / Strong

Name : (RSS) Eric Leung
Signature : *[Signature]*
Inspected by : *[Signature]*
Name : (ET) Linda Lau
Signature : *[Signature]*

Temperature : 16 °C
Humidity : High / Moderate / (Low)

Mitigation Measures on Waste Management				Remark
Implementation Stages*		Implementation Stages*		Remark
		Yes	No	
Air Quality				
▪	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.	✓		75cm
▪	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.	✓		
Noise				
▪	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, should 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					Remark
Implementation Stages*	Implementation Stages*				
	Yes	No	N/A		
Water Quality					
General Construction Activities					

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management					Implementation Stages*	Remark		
					Yes	No	N/A	
Filling Activities								
▪	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.							
Waste Management								
Marine Dredged Sediment								
•	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 ³ 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.							
Construction and Demolition (C&D) Waste								
•	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 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

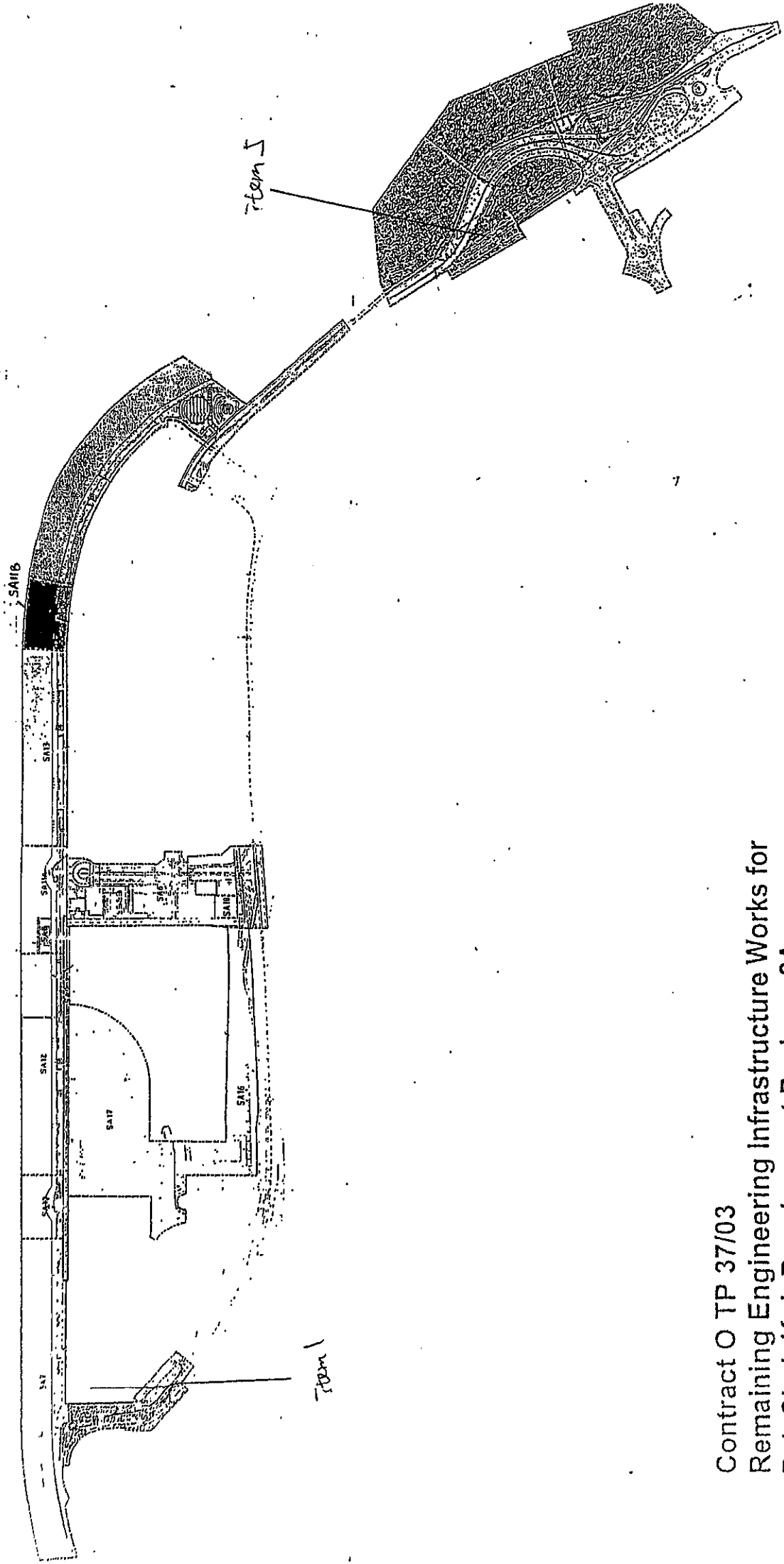
Mitigation Measures on Waste Management		Implementation Stages*			Remark
		Yes	No	N/A	
• Proper storage will minimize the damage and thus the wastage of the materials		<input checked="" type="checkbox"/>			
• Training of site personnel in proper waste management procedures. The workers shall be constantly 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.		<input checked="" type="checkbox"/>			
• 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.		<input checked="" type="checkbox"/>			
• 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.		<input checked="" type="checkbox"/>			
• 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.		<input checked="" type="checkbox"/>			
• 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		<input checked="" type="checkbox"/>			
• Have a capacity of less than 450L unless the specification have been approved by the EPD		<input checked="" type="checkbox"/>			
• 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		<input checked="" type="checkbox"/>			
• Labelling		<input checked="" type="checkbox"/>			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.		<input checked="" type="checkbox"/>			
• 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		<input checked="" type="checkbox"/>			
• Storage Area					
• Be clearly labeled and used solely for the storage of chemical waste		<input checked="" type="checkbox"/>			
• Be enclosed on at least 3 sides		<input checked="" type="checkbox"/>			
• 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		<input checked="" type="checkbox"/>			
• Have adequate ventilation		<input checked="" type="checkbox"/>			
• Be covered to prevent rainfall entering		<input checked="" type="checkbox"/>			
• Be arranged so that incompatible materials are adequately separated		<input checked="" type="checkbox"/>			
• Be clean and maintain regularly		<input checked="" type="checkbox"/>			
• Disposal					
• Be via a licensed waste collector		<input checked="" type="checkbox"/>			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre		<input checked="" type="checkbox"/>			
• Be a reuser of the waste, under approval from the EPD		<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	
• 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, 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 action to previous site inspection item 2 on 20/1/17 and item 4 on 12/1/17, stockpile at Node 1 was still found without covered.	Node 1	The contractor should cover all stockpiles by using tarpaulin sheets.	03/2/07
2	Follow up action to previous site inspection item 5 on 20/1/17, CNP was found post at the site entrance at MLS.	Site entrance at MLS	Since the finding was completed, no further action should be taken.	N/A
3	Follow up action to previous site inspection item 6 on 20/1/17, stagnant water accumulated at SA-3 (next to the wheel washing facilities) was removed/draind.	SA-3	Since the finding was completed, no further action should be taken.	N/A
4	Follow up action to previous site inspection item 7 on 20/1/17, the rubbish accumulated on the ground at SA-3 site entrance was cleared up.	SA-3	Since the finding was completed, no further action should be taken.	N/A
5	Follow up action to previous site inspection item 8 on 20/1/17, the unnecessary materials, accumulated at SA-3 (next to the sediment pit).	SA-3	The Contractor should pay more effort on house-keeping especially storage of site materials.	03/2/07
6	Follow up action to previous site inspection item 9 on 20/1/17, mud observed on the public road at MLS Pier was removed.	Ma Lan Street	Since the finding was completed, no further action should be taken.	N/A
7	Follow up action to previous site inspection item 10 on 20/1/17, the heights of fill materials inside the planters were reduced below the planter walls.	Node 1 & 2	Since the finding was completed, no further action should be taken.	N/A
8	Follow up action to previous site inspection item 11 on 20/1/17, no overflow was observed but the contractor was reminded to avoid overflowing.	SA-3	Since the finding was completed, no further action should be taken.	N/A
Remarks:	Waste water discharged at workshop = 6.5 (within 6-7)			
	Waste water discharged at SA3 = 7.0 (within 6-7)			
Signature:	RSS	LWKJIV	ET	
Name:	Eric Lammy Wickelmaier	with action	(see Lammy Wickelmaier)	
Date:	25-01-2007	25-1-07	25/1/07	



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

Location and Key Plan



Appendix I
IEC and RE Comments on Monthly EM&A Report
—
December 2006

IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – December 2006

Item No.	Document Reference	Comment	ET Response
1	Table 2.1	Please change the contact person for IEC from Coleman Ng (29112233) to Alexi Bhanja (29112916) starting from the reporting month of January 2007.	The change of IEC's contact person was corrected in this report (January 2006).

Appendix J

Wastewater Monitoring

—

Test Reports of Wastewater Samples from Discharge Points



ENVIRO LABS LIMITED

環境化驗有限公司

TEST REPORT

JOB NO. : A-61438-2

DATE OF ISSUE : 6 December 2006

PAGE : 1 of 1

1. Customer

Leader - Wal Koo (C&T) Joint Venture

Unit 1001-1005, 10/F., Grand Central Plaza, Tower 1, 138 Shekin Rural Committee Road, She Tin, N.T., HK

Attn.: Mr. Walton Chan

2. Sample Identification

Sample Description : Two batches of water samples said to be wastewater were received in cool condition

Sampling : Conducted by the staff of the Enviro Labs Ltd.

Sampling Point : Outlet of sedimentation tank at

Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)

Preservation : Delivered and stored under refrigerated condition

Sampling Date : 30 Nov 2006

Received Date : 30 Nov 2006

3. Test Method

Parameter	Reference Method	Testing Period
(1) Total Suspended Solids (TSS) Dried at 103-105°C	APHA 17a 2540 D	30 Nov - 6 Dec 2006
1. APHA Standard Methods for the Examination of Water and Wastewater		

4. Test Result*

Sample Label	Test Parameter	Sample No.	Test Result	Discharge Limit**	Unit
Pak Shek Kok Workshop Area Adjacent to Site Office	Total Suspended Solids	01438-1	< 5	≤30	mg/L
Discharge Point near Ma Liu Shui Subway	Total Suspended Solids	01438-3	< 5	≤30	mg/L

* Test results relate only to the items received.

Information provided by the Customer. (It is not a test result, information for reference only).

---END OF REPORT---



APPROVED SIGNATORY:

 Kenneth Kar Kin LAM
(Laboratory Manager)



ENVIRO LABS LIMITED

環境化驗有限公司

TEST REPORT

JOB NO. : A-61438-1

DATE OF ISSUE : 6 December 2006

PAGE : 1 of 1

Customer

Leader - Wai Kee (C&T) Joint Venture

Unit 1001-1005, 10/F., Grand Central Plaza, Tower 1, 138 Sha Tin Rural Committee Road, Sha Tin, N.T., HK
Attn: Mr. Walton Chan

Sample Identification

Sample Description : Two batches of water samples said to be wastewater were received in cool condition
Sampling : Conducted by the staff of the Enviro Labs Ltd.
Sampling Point : Outlet of sedimentation tank at
Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)
Preservation : Delivered and stored under refrigerated condition
Sampling Date : 30 Nov 2006
Received Date : 30 Nov 2006

Test Method

Parameter	Reference Method	Testing Period
pH	APHA 20e 4500-H ⁺ B	30 Nov 2006 (on-site)
Chemical Oxygen Demand (COD)	APHA 20e 5220 C	30 Nov - 6 Dec 2006
APHA Standard Methods for the Examination of Water and Wastewater		

Test Result

Sample Label	Test Parameter	Sample No.	Test Result	Discharge Limit **	Unit
Pak Shek Kok Workshop Area Adjacent to Site Office	pH at 23°C	61438-1	8.4	6 - 9	--
	Chemical Oxygen Demand	61438-2	< 50	≤ 80	mgO ₂ /L
Discharge Point near Ma Liu Shui Subway	pH at 25°C	61438-3	7.5	6 - 9	--
	Chemical Oxygen Demand	61438-4	< 50	≤ 80	mgO ₂ /L

Test results relate only to the items received, information provided by the customer. (It is not a test result, information for reference only).



— END OF REPORT —

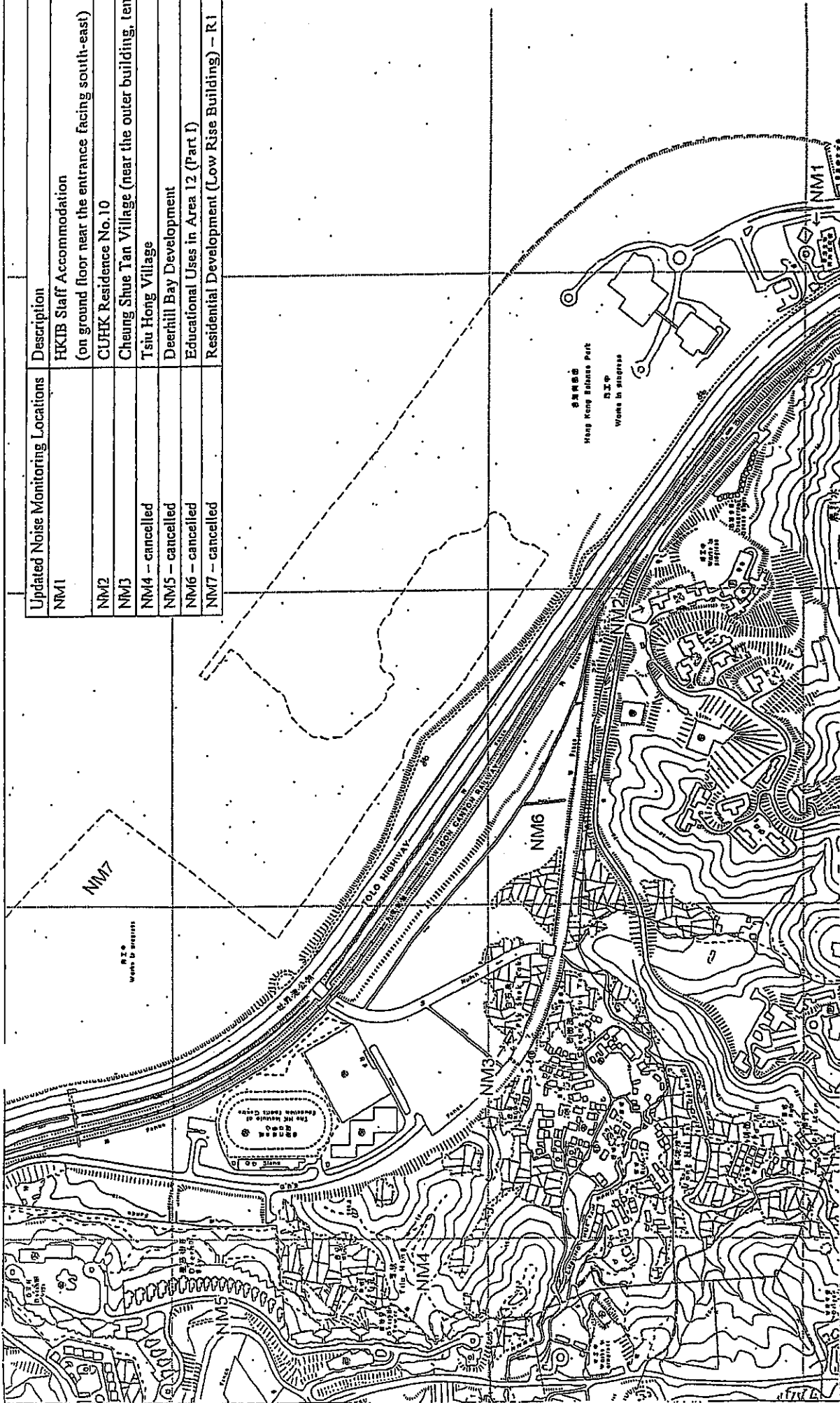
APPROVED SIGNATORY:

Kenneth Kar Kin Lam
Kenneth Kar Kin LAM
(Laboratory Manager)



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 Building) -- R1



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

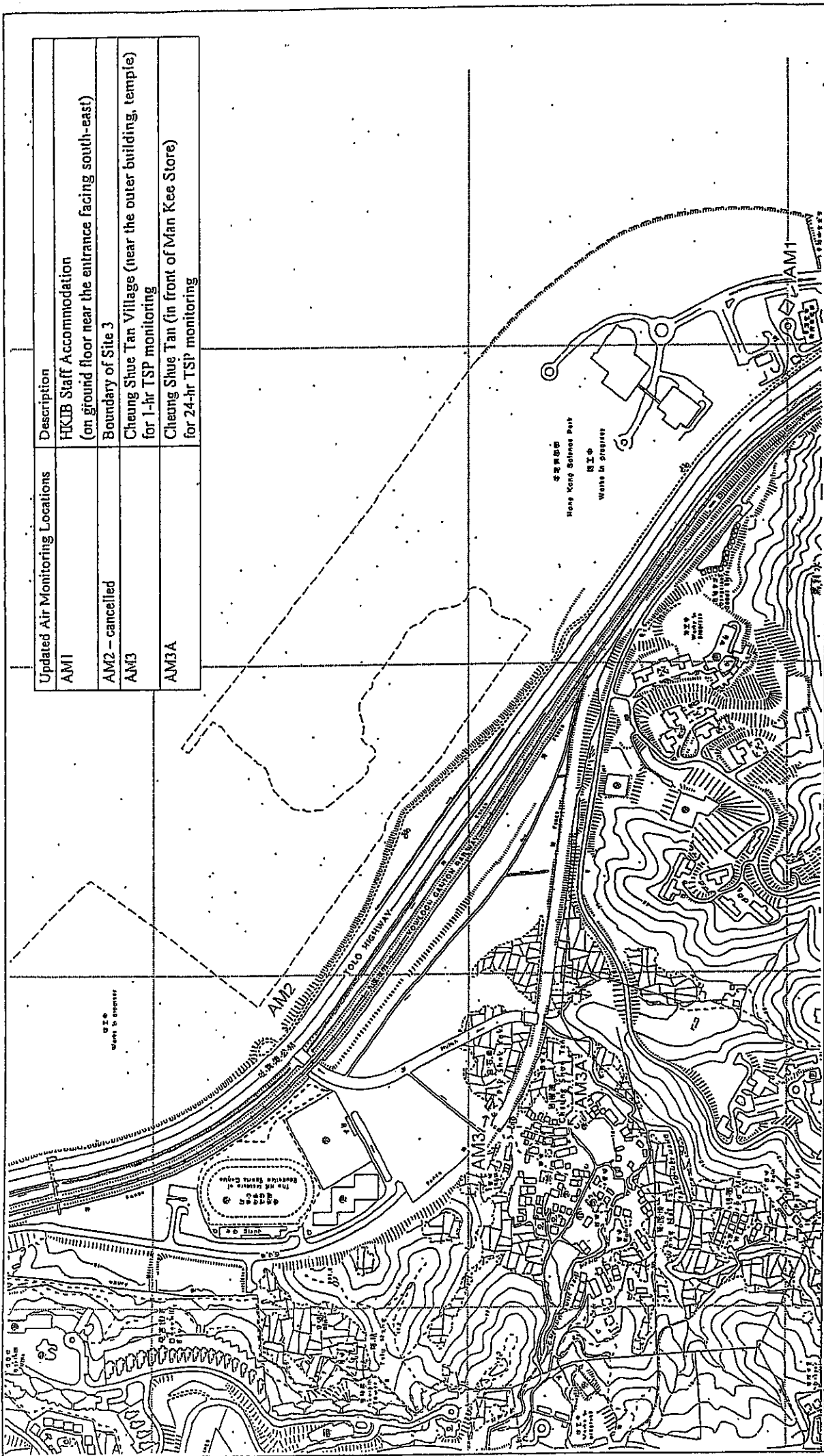
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Revised Date: ...

June 2004



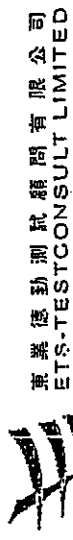
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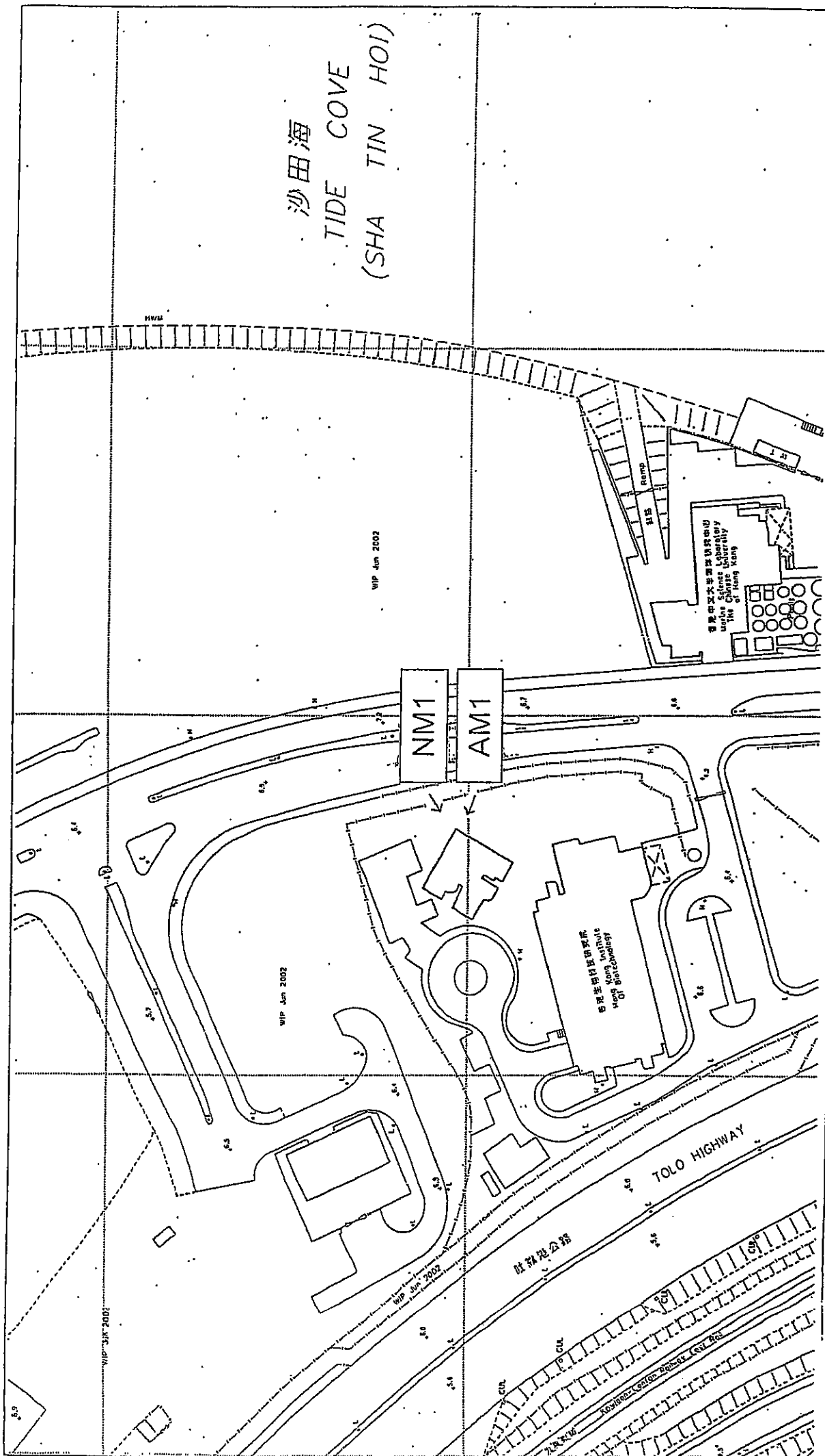
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Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2 A
Contract No. TP 37/03
Figure 2 Location of Air Monitoring Stations



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

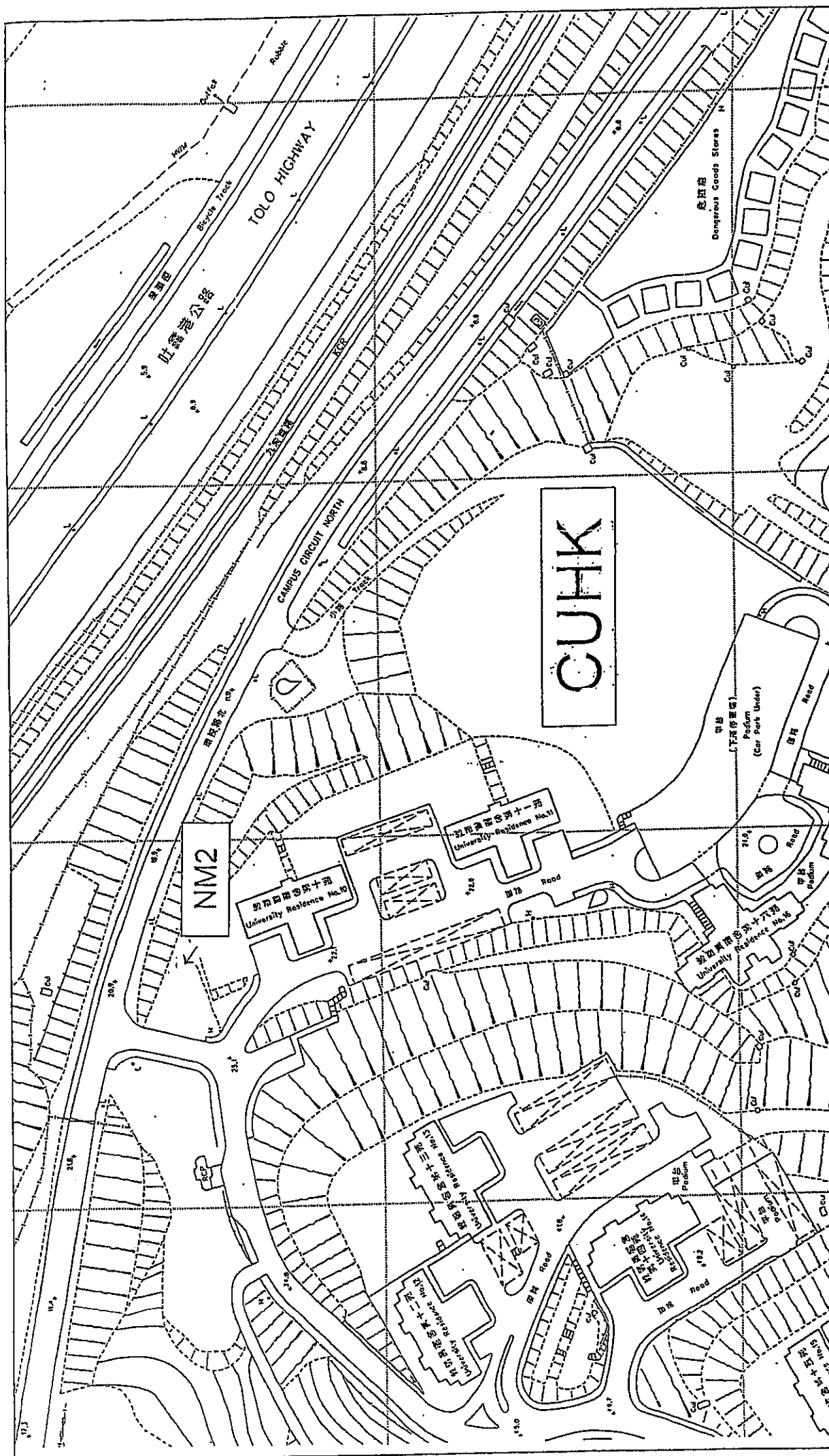
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Scale : ---

Revised Date:

June 2004



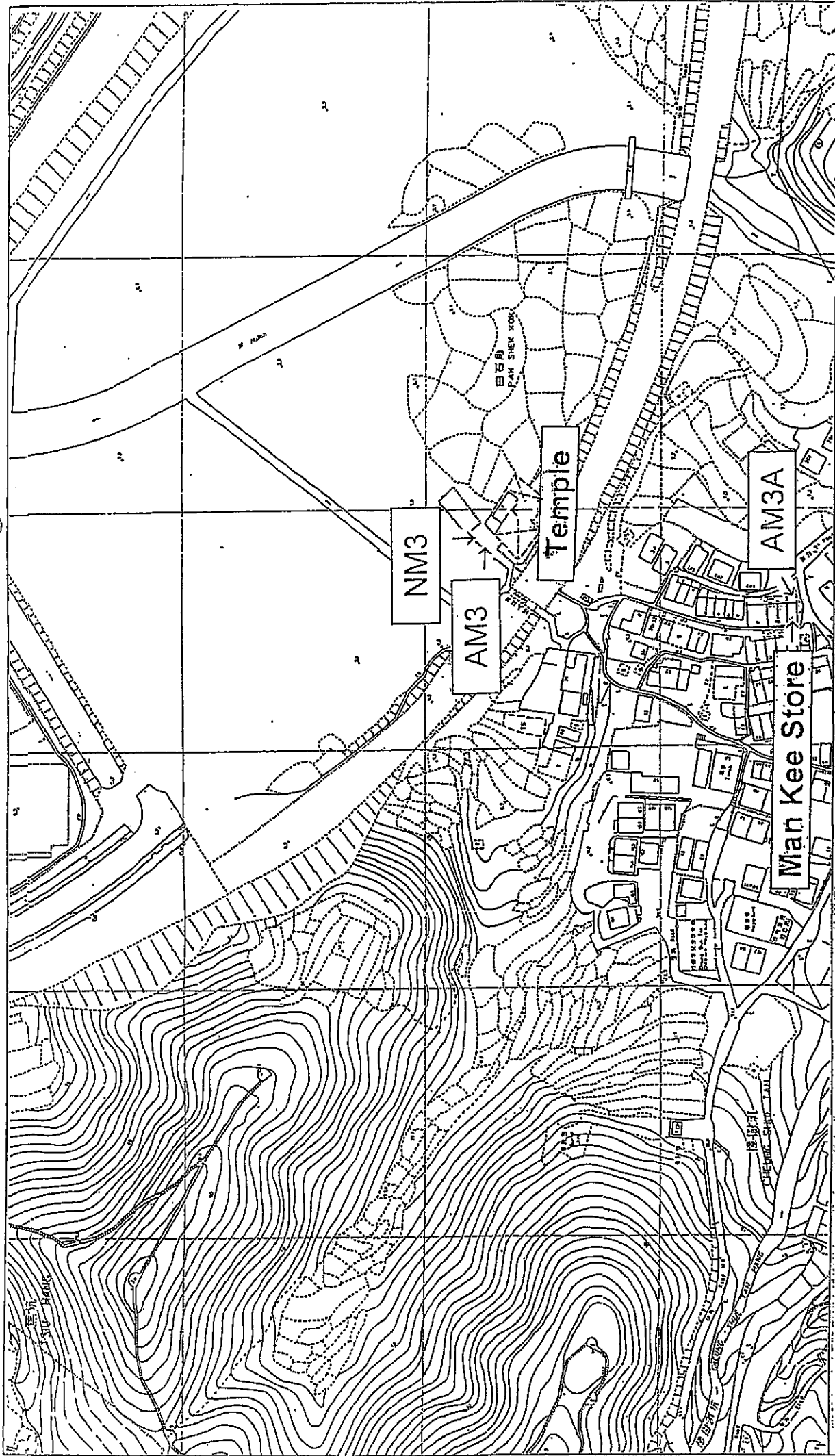
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Remaining Engineering Infrastructure Works for

Pak Shek Kok Development Package 2 A

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 : ---

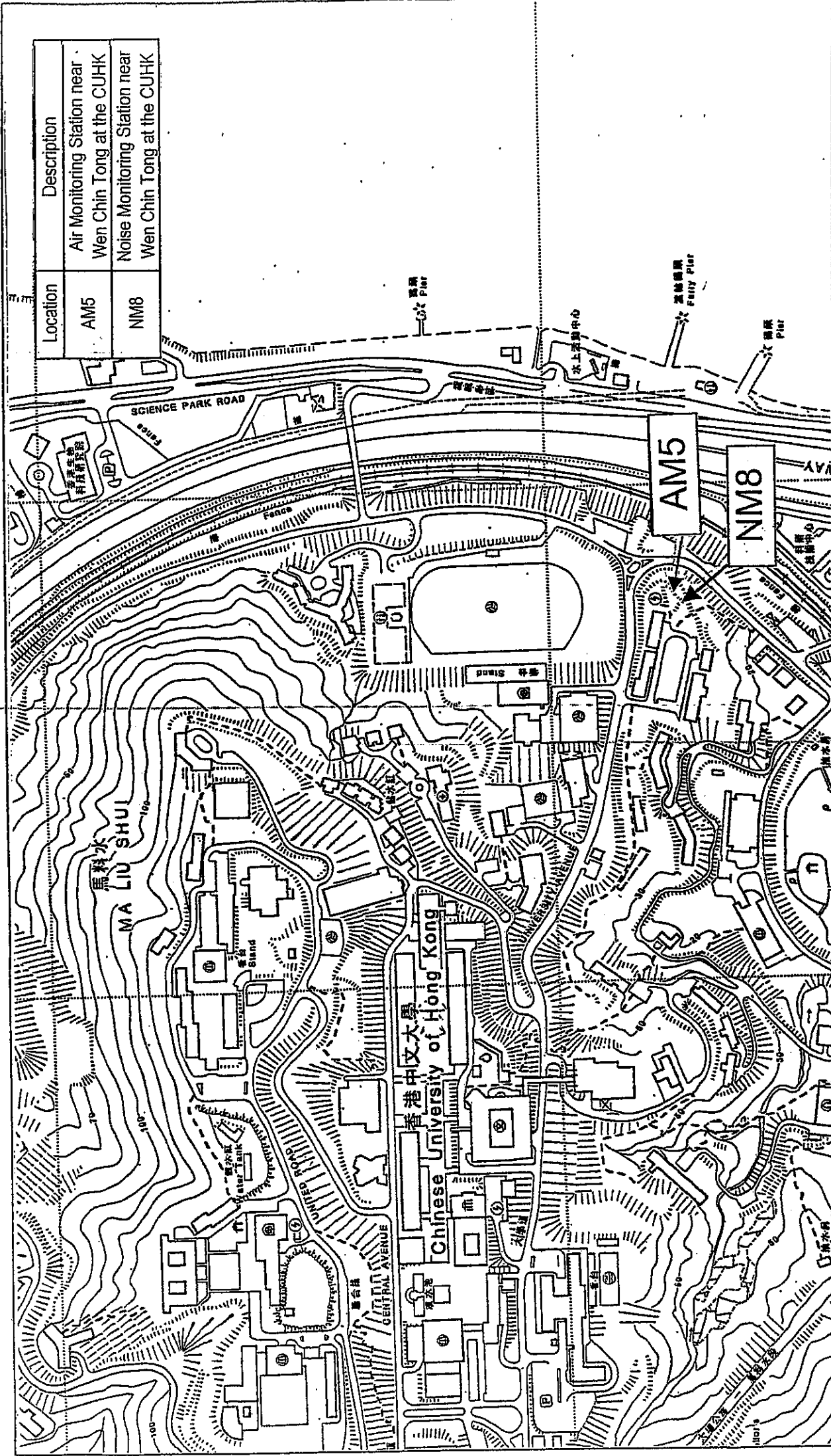
Revised Date:

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

Scale : ---

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

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