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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

(NOVEMBER 2006)

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EXECUTIVE SUMMARY

This monthly EM&A report (No.19) 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 30 November 2006.

Construction Progress

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

- 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.
- 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
- 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): 4 Occasion at 4 designated locations
- 24-hour TSP Monitoring: 5 Occasions at 3 designated locations
- 1-hour TSP Monitoring: 12 Occasions at 3 designated locations
- Weekly-site inspection: 4 Occasions

Noise Monitoring

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

Air Monitoring

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

Wastewater Monitoring

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring was carried out on 30th November 2006.

Site Inspection

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

<i>Concerned Parties</i>	<i>Dates of Audit / Inspection</i>
<i>Weekly site inspection (ET)</i>	<i>04, 11, 18, 24</i>
<i>Monthly site inspection (IEC/LWKJV/RE)</i>	<i>24</i>



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 on site boundary at 'SA 1' were spotted damaged on 04/11/06, 11/11/06.	LWKJV reminded contractor to repair the tear asap or replace with a bigger surface canvas.	Referring to site inspection on 24/11/06, the torn Tarpaulin sheet at 'SA1' was replaced with some new Tarpaulin sheets. The new Tarpaulin sheets were big enough to cover all site boundary at 'SA1'. Thus no more further action is needed.
2	Air	Black smoke was emitted from excavator F29 during weekly site inspections on 26/10/2006.	LWKJV replied to repair the excavator immediately.	The excavator was repaired. No dark smoke emission spotted during site inspection on 04/11/06. Hence no further action is required.
3	Air	Fly dust was observed during unloading material.	LWKJV replied mitigation measures would applied during material loading and unloading.	No more fly dust was noted on 11/11/06 site inspection. Hence no further action is required.
4	Water	Wastewater at SA3 was found passing through desilting tank and then discharged to u-channel during weekly site inspection on 04/11/06.	LWKJV replied to divert the wastewater to sedimentation tank before discharge.	During our routine inspection on 11/11/06, no continuous discharge to drainage channel hence no more further is necessary.
5	Water	Sumpit flooded with wastewater was spotted on site inspection dated 04/11/06.	LWKJV advised a bigger sumpit for increasing wastewater storage is necessary.	A bigger sumpit has applied in place for excess wastewater collection. And no more flooding occurred during our routine inspection on 11/11/06 hence no more further is necessary.
6	Chemical waste	Oil leakage from generator at 'SA 3' was noted on 11/11/06.	LWKJV agreed to provide bigger drip tray for generator.	The sand and mud had been clear up on 18/11/2006 thus no further action is needed.

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, metals, paper/cardboard packaging, plastic and 38.8 m³ 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 30 November 2006.

2.0 PROJECT INFORMATION

2.1 Background

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

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

2.2 Site Description

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

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

2.3 Construction Programme

Details of construction programme are shown in Appendix F.

2.4 Project Organization and Management Structure

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

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.



Table 2.1 Contact Details of Key Personnel

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

3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

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

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

Table 3.1 Major Construction Activities in this reporting month

- 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.
- 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
- 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

<i>Equipment</i>	<i>Model and Make</i>
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

<i>Parameter</i>	<i>Duration</i>	<i>Frequency</i>
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

<i>Monitoring stations</i>	<i>Locations</i>
AM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east) for 1-hr TSP monitoring
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring
AM5	Near Wen Chih Tang at the CUHK

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



Table 4.4 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
Date	Time	Date	Time					
AM1	HKIB Staff Accommodation					02/11/06	10:30	11:30
						07/11/06	09:45	10:45
						09/11/06	10:35	11:35
						11/11/06	08:15	09:15
						14/11/06	09:00	10:00
						16/11/06	10:30	11:30
						18/11/06	09:30	10:30
						21/11/06	09:18	10:18
						23/11/06	11:00	12:00
						25/11/06	11:00	12:00
						28/11/06	09:00	10:00
						30/11/06	09:00	10:00
AM3	Cheung Shue Tan Village (Near the outer building, temple)					02/11/06	14:30	15:30
						07/11/06	14:35	15:35
						09/11/06	15:30	16:30
						11/11/06	10:48	11:48
						14/11/06	10:30	11:30
						16/11/06	13:02	14:02
						18/11/06	13:00	14:00
						21/11/06	10:30	11:30
						23/11/06	13:00	14:00
						25/11/06	13:01	14:01
						28/11/06	10:15	11:15
						30/11/06	10:20	11:20
AM5	Near Wen Chih Tang at the CUHK					02/11/06	16:30	17:30
						07/11/06	16:00	17:00
						09/11/06	16:50	17:50
						11/11/06	09:30	10:30
						14/11/06	13:00	14:00
						16/11/06	14:16	15:16
						18/11/06	14:20	15:20
						21/11/06	10:45	11:45
						23/11/06	14:20	15:20
						25/11/06	15:45	16:45
						28/11/06	13:18	14:18
						30/11/06	16:30	17:30
AM1	HKIB Staff Accommodation	03/11/06	08:00	04/11/06	08:00			
		09/11/06	10:37	10/11/06	10:37			
		15/11/06	10:05	16/11/06	10:10			
		21/11/06	09:00	22/11/06	08:50			
		27/11/06	09:01	28/11/06	10:15			
AM3A	Cheung Shue Tan (in front of Man Kee Store)	03/11/06	08:15	04/11/06	08:47			
		09/11/06	15:25	10/11/06	15:25			
		15/11/06	10:45	16/11/06	10:51			
		21/11/06	09:45	22/11/06	09:31			
		27/11/06	10:05	28/11/06	11:38			
AM5	Near Wen Chih Tang at the CUHK	03/11/06	08:30	04/11/06	08:21			
		09/11/06	16:52	10/11/06	16:52			
		15/11/06	10:30	16/11/06	10:22			
		21/11/06	09:20	22/11/06	09:10			
		27/11/06	09:30	28/11/06	09:13			



4.5 Monitoring Methodology

4.5.1 24-hour TSP Monitoring

Instrumentation

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

Installation

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

Operation/Analytical Procedures

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

Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between $0.6\text{m}^3/\text{min}$ 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.

4.5.2 1-hour TSP Monitoring

Measuring Procedures

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

- Set POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Calibrate the dust meter by zero check;
- Set the TIME CONSTANT of the dust meter;
- Press SAMPLE to start the TSP monitoring;



- Record the maximum, minimum and average reading directly from the dust meter by press STATISTICS when monitoring complete.

Maintenance & Calibration

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

4.5.3 Wind Data Monitoring

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

4.6 Action and Limit Levels

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

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

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

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

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

4.7 Event-Action Plans

Please refer to Appendix E for details.

4.8 Results

4.8.1 24-hour TSP Monitoring

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

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

4.8.2 1-hour TSP Monitoring

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

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



5.0 Noise Monitoring

5.1 Monitoring Requirements

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

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

5.2 Monitoring Equipment

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

Table 5.1 summarized noise monitoring equipment model being used. A copy of the calibration certificates for noise meters and calibrator are attached in Appendix C1.

Table 5.1 Noise Monitoring Equipment

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

5.3 Monitoring Parameters, duration and Frequency

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

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

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

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

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	Parameters	Frequency
Day-time: 0700-1900 hrs on normal weekday	30	L_{eq} , L_{10} , L_{90}	Once per week
Evening-time: 1900-2300 hrs	15	L_{eq} , L_{10} , L_{90}	Once per week
Night-time: 2300-0700 hrs of next day	15	L_{eq} , L_{10} , L_{90}	Once per week
Holiday: 0700-1900 hrs	15	L_{eq} , L_{10} , L_{90}	Once per week

5.4 Monitoring Locations and Period

In this reporting month, there were 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	09:50	10:20	---	---	---	---	---	---
	09:02	09:32	---	---	---	---	---	---
	09:25	09:55	---	---	---	---	---	---
	09:08	09:30						
NM2	17:32	18:02	---	---	---	---	---	---
	17:00	17:30	---	---	---	---	---	---
	13:32	14:02	---	---	---	---	---	---
	14:13	14:43	---	---	---	---	---	---
NM3	14:50	15:20	---	---	---	---	---	---
	10:32	11:02	---	---	---	---	---	---
	10:40	11:20	---	---	---	---	---	---
	11:19	11:39	---	---	---	---	---	---
NM8	16:05	13:35	---	---	---	---	---	---
	13:02	13:32	---	---	---	---	---	---
	11:02	11:32	---	---	---	---	---	---
	13:25	13:55	---	---	---	---	---	---

5.5 Monitoring Procedures and Calibration Details

Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting: A
 - Time weighting : Fast
 - Time measurement : 5 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Free Field correction to the measurements should be made. Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.



Maintenance and Calibration

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

5.6 Action and Limit Levels

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

Table 5.5 Action and Limit Levels for noise monitoring

Time Period	Time Period	Action	Limit
Normal hours	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *
Holiday	0700-1900 hrs on holidays		70 dB(A) **
Evening-time	1900-2300 hrs on all other days		55 dB(A) **
Night-time	2300-0700 hrs of next day		

* = 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, wastewater monitoring was carried out at effluent discharge point on 30 November 2006. The results were attached in Appendix J. Next wastewater monitoring will be scheduled in January 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, wastewater monitoring was carried out at effluent discharge point on 30 November 2006 by ET. The results were attached in Appendix J. Next wastewater monitoring will be scheduled in January 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 on site boundary at 'SA 1' were spotted damaged on 04/11/06, 11/11/06.	LWKJV reminded contractor to repair the tear asap or replace with a bigger surface canvas.	Referring to site inspection on 24/11/06, the torn Tarpaulin sheet at 'SA1' was replaced with some new Tarpaulin sheets. The new Tarpaulin sheets were big enough to cover all site boundary at 'SA1'. Thus no more further action is needed.
2	Air	Black smoke was emitted from excavator F29 during weekly site inspections on 26/10/2006.	LWKJV replied to repair the excavator immediately.	The excavator was repaired. No dark smoke emission spotted during site inspection on 04/11/06. Hence no further action is required.
3	Air	Fly dust was observed during unloading material.	LWKJV replied mitigation measures would applied during material loading and unloading.	No more fly dust was noted on 11/11/06 site inspection. Hence no further action is required.
4	Water	Wastewater at SA3 was found passing through desilting tank and then discharged to u-channel during weekly site inspection on 04/11/06.	LWKJV replied to divert the wastewater to sedimentation tank before discharge.	During our routine inspection on 11/11/06, no continuous discharge to drainage channel hence no more further is necessary.
5	Water	Sumpit flooded with wastewater was spotted on site inspection dated 04/11/06.	LWKJV advised a bigger sumpit for increasing wastewater storage is necessary.	A bigger sumpit has applied in place for excess wastewater collection. And no more flooding occurred during our routine inspection on 11/11/06 hence no more further is necessary.
6	Chemical waste	Oil leakage from generator at 'SA 3' was noted on 11/11/06.	LWKJV agreed to provide bigger drip tray for generator.	The sand and mud had been clear up on 18/11/2006 thus no further action is needed.



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 Reclamation area of Science Park Phase 2 & 3, Pak Shek Kok, N.T.	GW-RN0305-06	17/06/06	16/12/06	<p><u>Group A</u> Two Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101)</p> <p><u>Group B</u> Two Excavator, tracked (CNP081) Two Dump truck (CNP067) One Generator, standard (CNP101)</p>
Construction Noise Permit for the use of Powered Mechanical Equipment for the Purpose of carrying out Construction Work other than Percussive Piling and/or the carrying out of prescribed Construction Work	GW-RN0240-06	30/05/06	29/12/06	<p><u>Group A</u> Two Poker, vibrator, hand-held (CNP170) Two Concrete pump, lorry mounted (CNP047) Two Concrete lorry mixer (CNP044)</p> <p><u>Group B</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Roller, vibratory</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-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 use of Powered Mechanical Equipment for the Purpose of carrying out Construction Work other than Percussive Piling and/or the carrying out of prescribed Construction Work	GW-RN0307-06	21/06/06	20/12/06	<p><u>Group A</u> One Derrick Barge (CNP061) Four Dump truck, 5.5 tonne < gross vehicle weight < 38 tonne One Excavator, tracked (CNP081) One Generator, standard (CNP101)</p> <p><u>Group B</u> One Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101)</p>
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-LL1113-01	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.

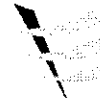
Table 9.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (m ³)	2000	Reused in the Contract	33600
	Broken Concrete (m ³)	0	N/A	160
	Reused in the Contract (m ³)	2000	N/A	2000
	Reused in other Projects (m ³)	0	N/A	0
	Disposal as Public Fill (m ³)	0.00	N/A	15.62
C&D Waste	Metals (1000kg)	0.01	N/A	0.34
	Paper/Cardboard Packaging (1000kg)	0.00	N/A	2.64
	Plastics (1000kg)	0.00	N/A	0.06
	Chemical Waste (1000kg)	0.00	N/A	2.0
	Other, e.g. General Refuse (1000kg)	38.8	SENT	307.35

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, wastewater monitoring was carried out at effluent discharge point on 30 November 2006. The results were attached in Appendix J. Next wastewater monitoring will be scheduled in January 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	December 2006	January 2007
Noise Monitoring (Day-time)	05, 12, 19, 27	02, 09, 16, 23, 30
1-hour TSP	02, 05, 07, 09, 12, 14, 16, 19, 21, 23, 28, 30	02, 04, 06, 09, 11, 13, 16, 18, 20, 23, 25, 27, 30
24-hour TSP	02, 08, 14, 20, 27	02, 06, 12, 18, 24, 30
Site Inspection	07, 14, 21, 28	04, 11, 18, 25

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 December 2006 and January 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

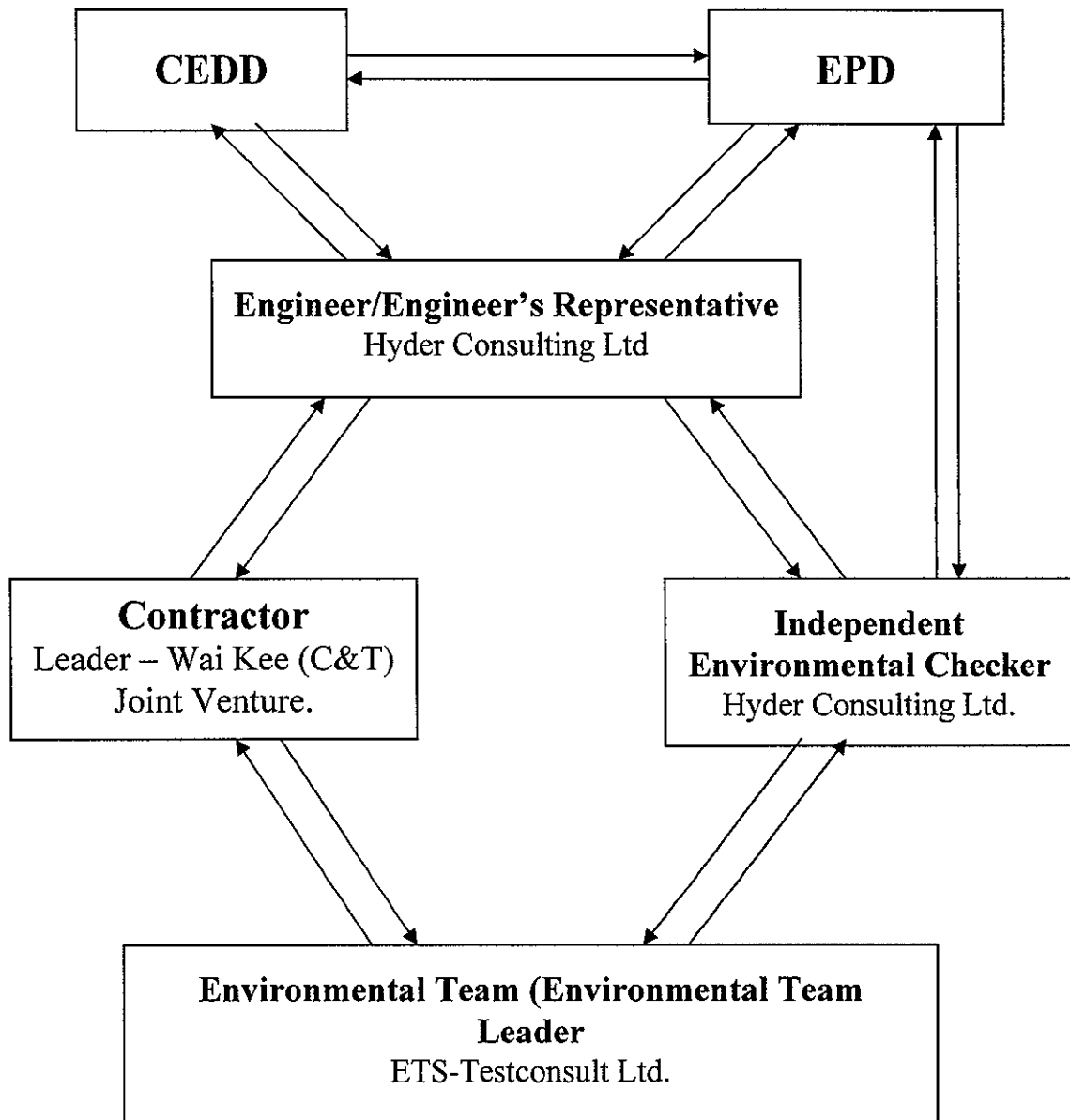


Appendix A

Organization Chart and Lines of Communication



Lines of Communication





Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments



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TEST REPORT

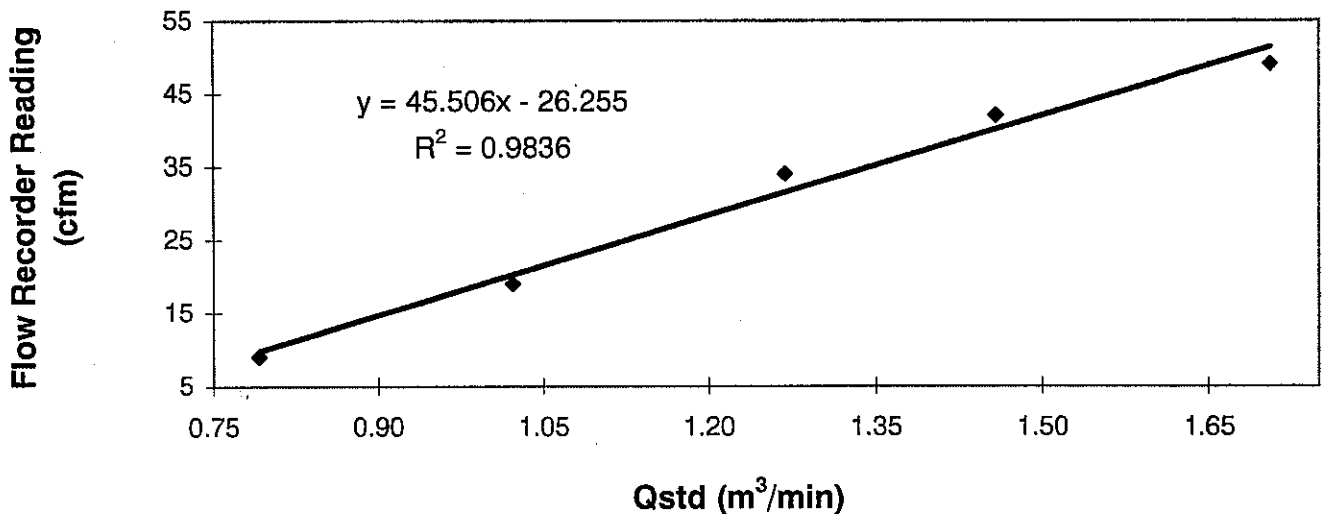
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW **Date of Calibration** : 16 September 2006
Serial No. : 7179 (ET / EA / 003 / 16) **Calibration Due Date** : 15 November 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	49	42	34	19	9
Qstd (Actual flow rate, m ³ /min)	1.71	1.46	1.27	1.02	0.79
Pressure :	751.56 mm Hg			Temp. :	300 K

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM3A)
Date of Calibration: 16 September 2006



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

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

Calibrated by :
LEUNG, Ka Chun
(Technician)

Approved by :
LAW, Sau Yee
(Environmental Officer)



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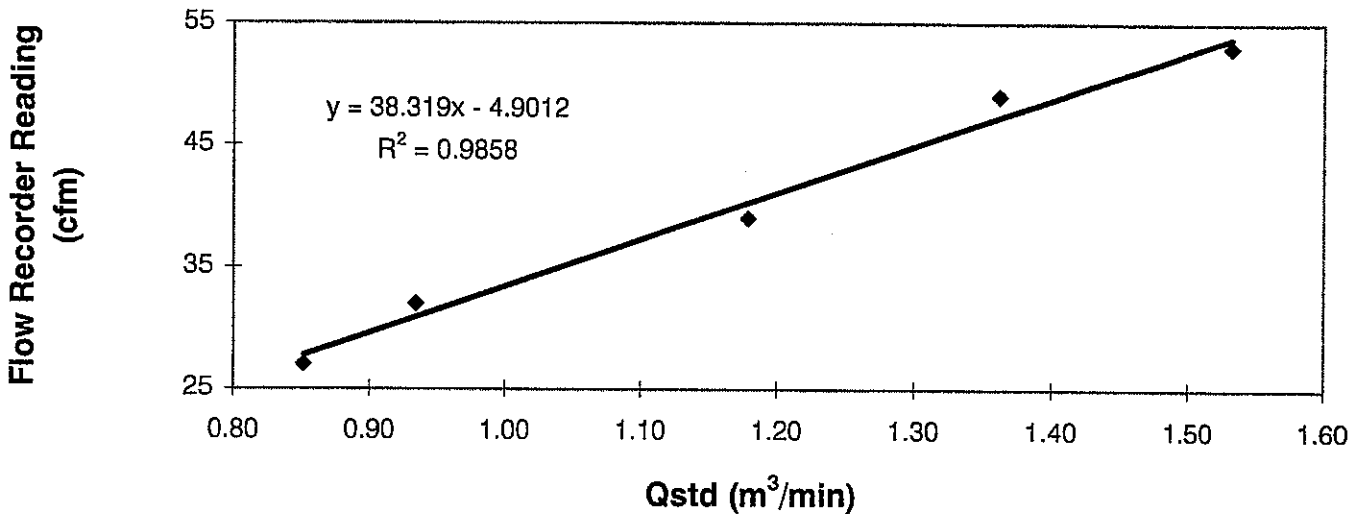
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW **Date of Calibration** : 16 September 2006
Serial No. : 1172 (ET / EA / 003 / 11) **Calibration Due Date** : 15 November 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :


Flow recorder reading (cfm)	53	49	39	32	27
Qstd (Actual flow rate, m ³ /min)	1.53	1.36	1.18	0.93	0.85
Pressure :	751.56 mm Hg			Temp. :	300 K


Sampler 1172 Calibration Curve
Site: Pak Shek Kok (AM5)
Date of Calibration: 16 September 2006



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

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

Calibrated by : 
LEUNG, Ka Chun
(Technician)

Approved by : 
LAW, Sau Yee
(Environmental Officer)



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TEST REPORT

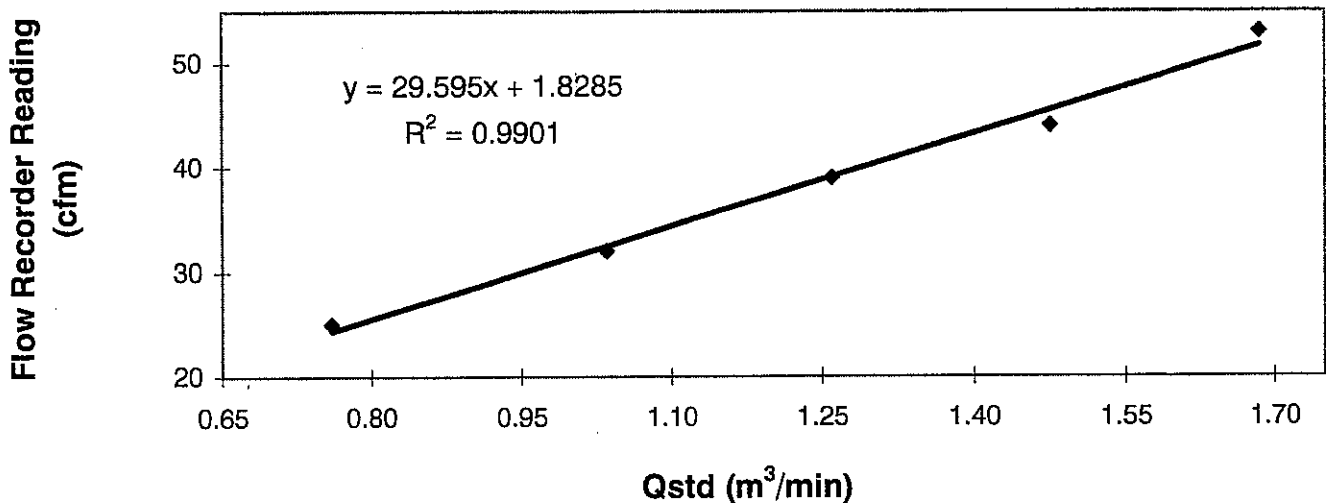
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW **Date of Calibration** : 16 September 2006
Serial No. : 1178 (ET / EA / 003 / 01) **Calibration Due Date** : 15 November 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :


Flow recorder reading (cfm)	53	44	39	32	25
Qstd (Actual flow rate, m ³ /min)	1.68	1.47	1.26	1.03	0.76
Pressure :	751.56 mm Hg			Temp. :	300 K

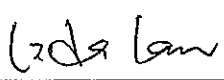
Sampler 1178 Calibration Curve
Site: Pak Shek Kok (AM1) (24hr.)
Date of Calibration: 16 September 2006



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

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

Calibrated by : 
LEUNG, Ka Chun
(Technician)

Approved by : 
LAW, Sau Yee
(Environmental Officer)



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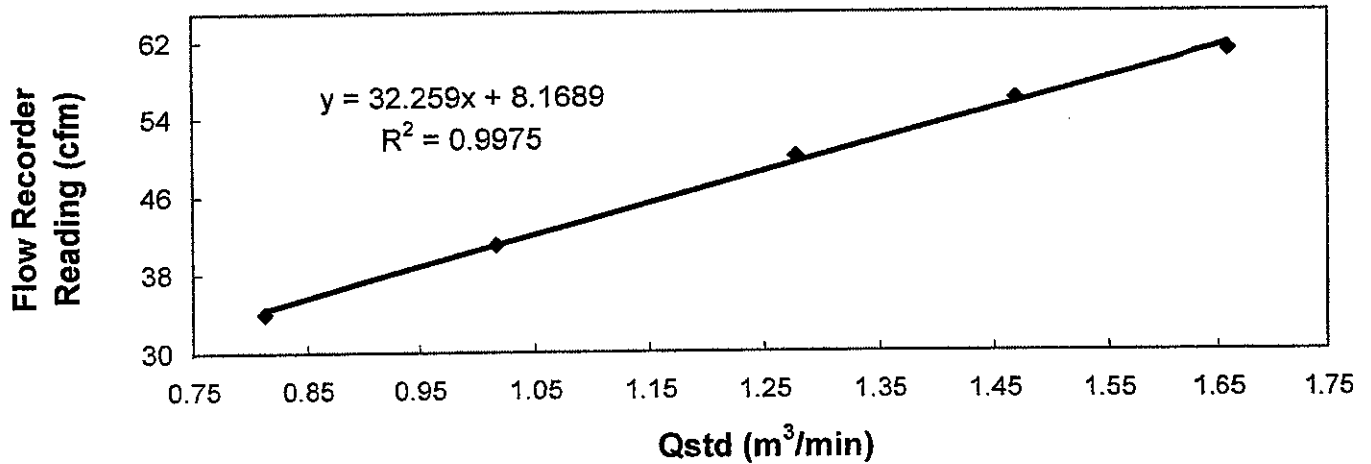
**Calibration Report
of
High Volume Air Sampler**

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
H. T. CHOW
(Asst. Environmental Officer)



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TEST REPORT

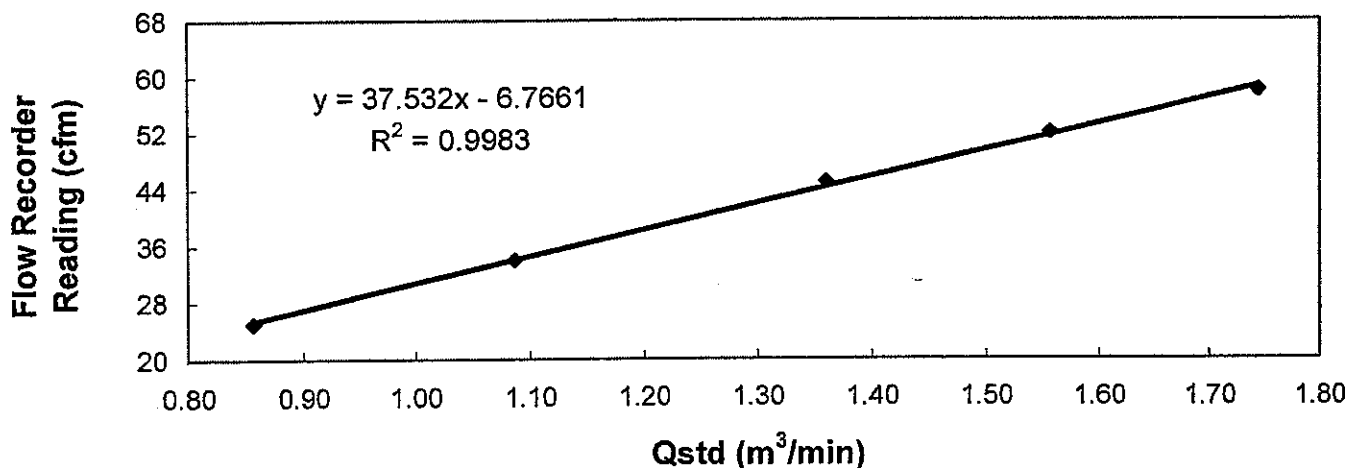
**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 10 November 2006
Serial No. : 1180 (ET / EA / 003 / 04) Calibration Due Date : 09 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)	58	52	45	34	25
Qstd (Actual flow rate, m ³ /min)	1.74	1.56	1.36	1.09	0.86
Pressure :	767.31 mm Hg		Temp. :	303 K	

**Sampler 1180 Calibration Curve
Site: Chai Wan
Date of Calibration: 10 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

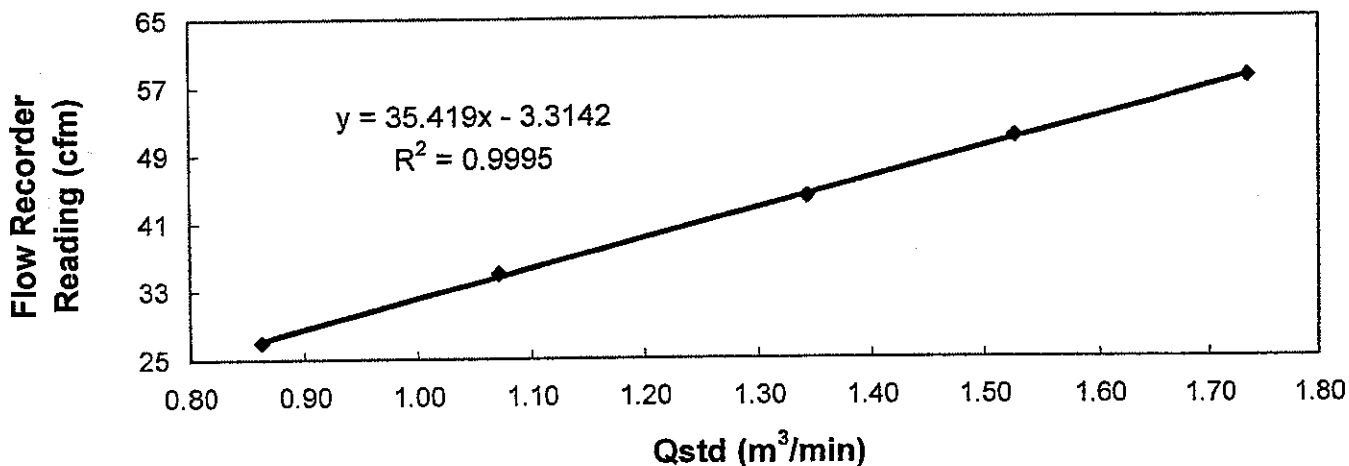
Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 15 November 2006
Serial No. : 0244 (ET / EA / 003 / 20) Calibration Due Date : 14 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)	58	51	44	35	27
Qstd (Actual flow rate, m ³ /min)	1.73	1.53	1.34	1.07	0.86
Pressure :	765.81 mm Hg		Temp. :	298 K	

Sampler 0244 Calibration Curve
Site: Quarry Bay (QA-2)
Date of Calibration: 15 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)



Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1
Location : HKIB Staff Accommodation

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
03/11/06	08:00	04/11/06	08:00	10724.64	10748.64	24.00	1.02	1.02	1.02	2.8942	3.0936	136	Sunny
09/11/06	10:37	10/11/06	10:37	10748.64	10772.64	24.00	1.02	1.02	1.02	2.9105	3.0598	102	Sunny
15/11/06	10:05	16/11/06	10:10	10772.64	10796.64	24.00	1.115	1.115	1.115	2.8930	2.9522	37	Sunny
21/11/06	09:00	22/11/06	08:50	10796.64	10820.47	24.00	1.1156	1.1156	1.1156	2.8942	2.9363	26	Cloudy
27/11/06	09:01	28/11/06	10:15	10820.47	10845.47	24.00	1.1156	1.1156	1.1156	2.9209	2.9824	36	Cloudy

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

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
03/11/06	08:15	04/11/06	08:47	16098.16	16122.70	24.54	1.37	1.37	1.37	2.8766	3.2306	175	Sunny
09/11/06	15:25	10/11/06	15:25	16122.70	16147.14	24.44	1.37	1.37	1.37	2.0090	2.8893	58	Sunny
15/11/06	10:45	16/11/06	10:51	16147.14	16171.24	24.10	1.0530	1.0530	1.0530	2.9324	2.9989	44	Sunny
21/11/06	09:45	22/11/06	09:31	16171.24	16195.00	24.00	1.0530	1.0530	1.0530	2.8739	2.9135	26	Cloudy
27/11/06	10:05	28/11/06	11:38	16195.00	16220.55	24.00	1.0530	1.0530	1.0530	2.8908	2.9718	50	Cloudy

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

Start Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
03/11/06	08:30	04/11/06	08:21	16127.99	16151.99	24.00	1.07	1.07	1.07	2.8864	3.0503	108	Sunny
09/11/06	16:52	10/11/06	16:52	16151.84	16175.84	24.00	1.07	1.07	1.07	2.9054	3.0279	80	Sunny
15/11/06	10:30	16/11/06	10:22	16175.74	16199.60	24.00	0.8627	0.8627	0.8627	2.9159	2.9810	53	Sunny
21/11/06	09:20	22/11/06	09:10	16199.60	16223.44	24.00	0.8627	0.8627	0.8627	2.8979	2.9512	46	Cloudy
27/11/06	09:30	28/11/06	09:13	16223.44	16247.74	24.00	0.8627	0.8627	0.8627	2.9026	2.9818	65	Cloudy

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/11/06	10:30	11:30	84	390	172	Sunny
07/11/06	09:45	10:45	82	382	168	Sunny
09/11/06	10:35	11:35	104	402	187	Sunny
11/11/06	08:15	09:15	86	382	168	Sunny
14/11/06	09:00	10:00	107	402	215	Cloudy
16/11/06	10:30	11:30	96	398	185	Cloudy
18/11/06	09:30	10:30	98	392	187	Cloudy
21/11/06	09:18	10:18	78	376	164	Cloudy
23/11/06	11:00	12:00	95	392	117	Sunny
25/11/06	11:00	12:00	92	395	183	Cloudy
28/11/06	09:00	10:00	87	372	165	Cloudy
30/11/06	09:00	10:00	95	372	104	Cloudy

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	
02/11/06	14:30	15:30	60	321	114	Sunny
07/11/06	14:35	15:35	74	335	121	Sunny
09/11/06	15:30	16:30	68	329	102	Sunny
11/11/06	10:48	11:48	71	354	132	Sunny
14/11/06	10:30	11:30	89	365	132	Cloudy
16/11/06	13:02	14:02	68	330	125	Cloudy
18/11/06	13:00	14:00	67	324	90	Cloudy
21/11/06	11:30	12:30	64	312	130	Cloudy
23/11/06	13:00	14:00	60	324	89	Sunny
25/11/06	13:01	14:01	68	334	121	Cloudy
28/11/06	10:15	11:15	74	318	134	Cloudy
23/11/06	13:00	14:00	62	315	89	Cloudy

Summary of 1-hr TSP Monitoring Results

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

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/11/06	16:30	17:30	75	349	130	Sunny
07/11/06	16:00	17:00	79	365	134	Sunny
09/11/06	16:50	17:50	90	357	117	Sunny
11/11/06	09:30	10:30	78	364	141	Sunny
14/11/06	13:00	14:00	94	392	176	Cloudy
16/11/06	14:16	15:16	86	357	141	Cloudy
18/11/06	14:20	15:20	79	357	102	Cloudy
21/11/06	10:45	11:45	72	337	141	Cloudy
23/11/06	14:20	15:20	81	351	102	Sunny
25/11/06	15:45	16:45	79	352	134	Cloudy
28/11/06	13:18	14:18	79	343	149	Cloudy
30/11/06	16:30	17:30	78	343	83	Cloudy

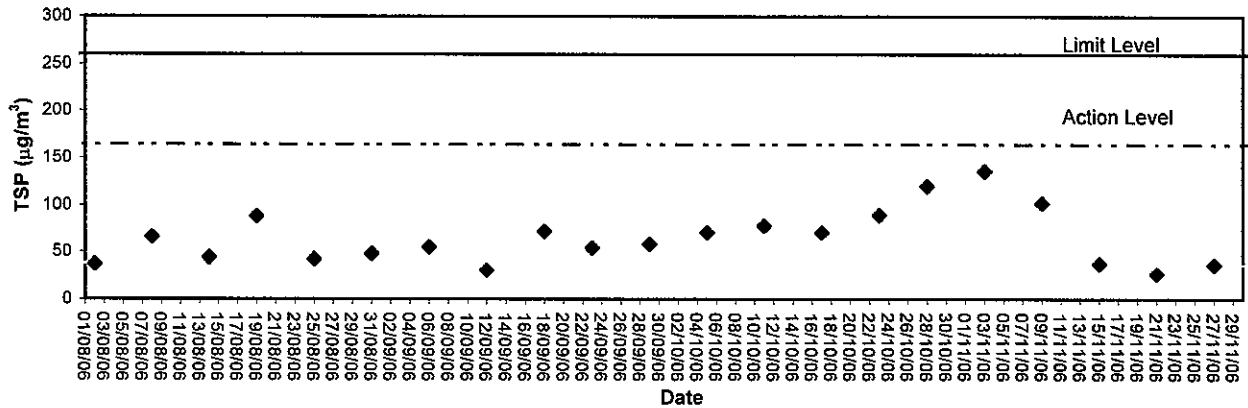


Appendix B3

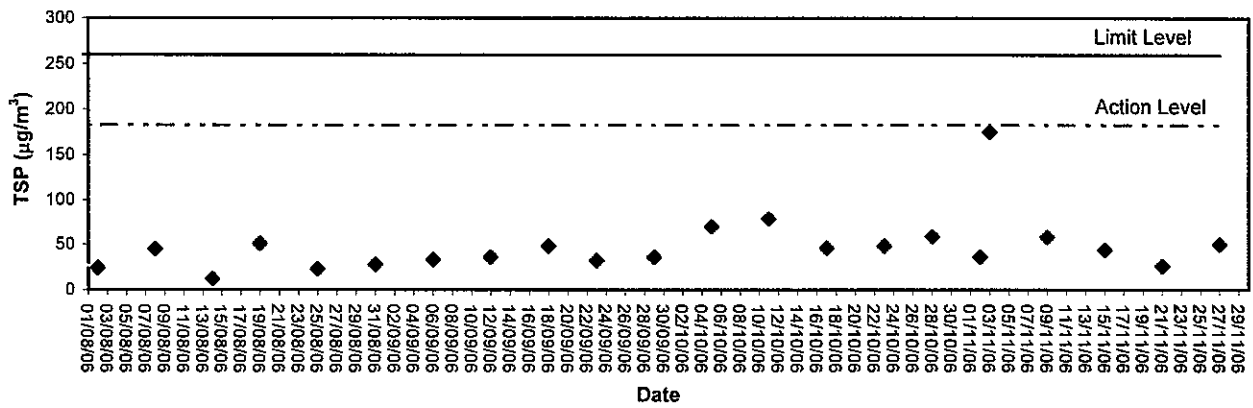
Graphical Plots of Air Quality Monitoring Data



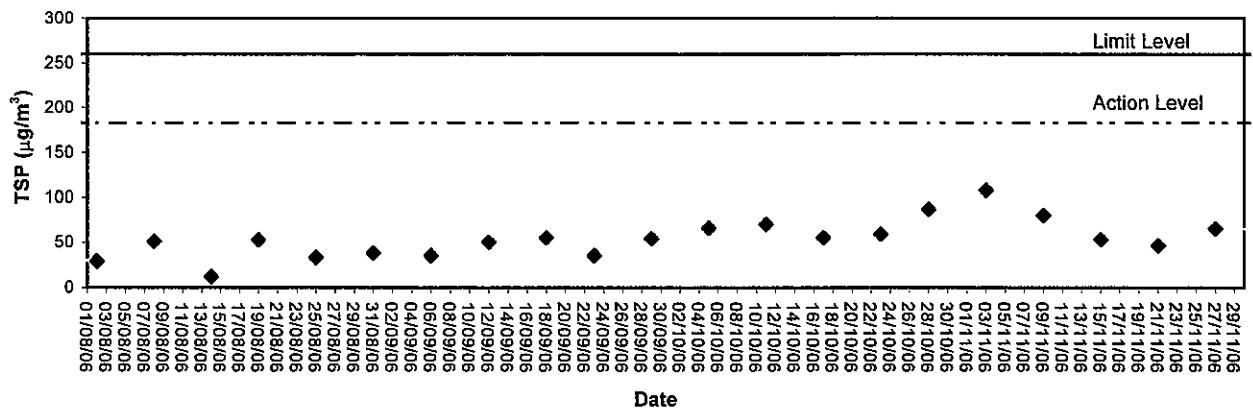
24-hour TSP level at AM1 (HKIB Staff Accommodation)



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

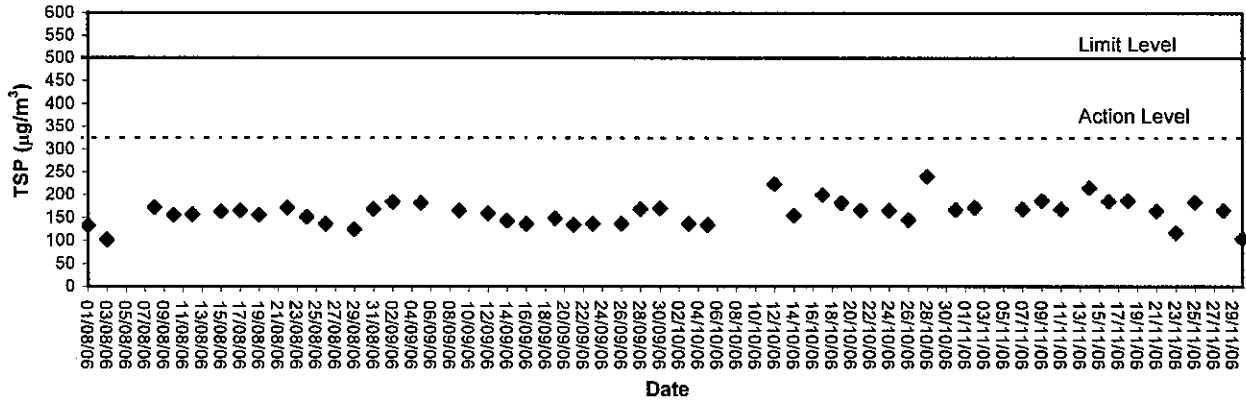


24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)

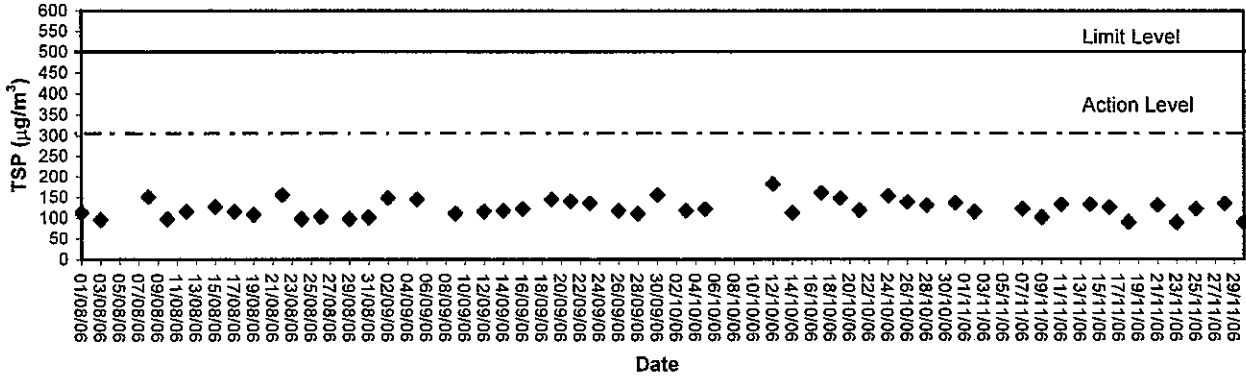




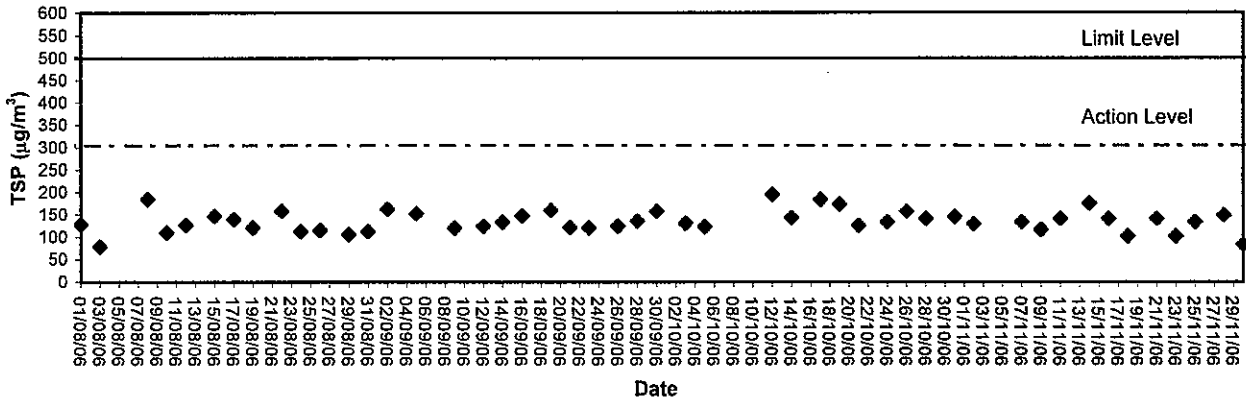
1-hour TSP level at AM1, HKIB Staff Accommodation



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



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





Appendix C1

Calibration Certificates for Noise Monitoring Equipments



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 ± 3)°C

Relative Humidity : (50 ± 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	HKGSCCL
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



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	Fast		93.8
	L _p	Fast		93.8
30 – 120	L _A	Fast	94.0	93.8
		Slow		93.7
	L _C	Fast		93.8
	L _p	Fast		93.8
30 – 120	L _A	Fast	113.9	113.8
		Slow		113.7
	L _C	Fast		113.8
	L _p	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 -----



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		
07/11/06	09:50	61.8	63.8	58.5	1.18	Sunny
14/11/06	09:02	60.2	62.2	59.0	0.97	Cloudy
21/11/06	09:25	63.0	65.5	59.7	1.12	Cloudy
28/11/06	09:08	60.1	65.0	53.9	1.25	Cloudy

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
07/11/06	17:32	61.4	63.2	57.4	1.14	Sunny
14/11/06	17:00	57.6	60.0	54.4	1.02	Cloudy
21/11/06	13:32	63.0	65.5	59.7	1.12	Cloudy
28/11/06	14:13	60.3	62.8	57.6	1.28	Cloudy

Mon Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
07/11/06	14:50	53.9	57.6	52.8	1.25	Sunny
14/11/06	10:32	52.4	55.1	50.5	1.02	Cloudy
21/11/06	14:40	60.4	63.4	57.8	1.37	Cloudy
28/11/06	11:19	58.0	52.2	55.5	1.40	Cloudy

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

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
07/11/06	16:05	58.7	60.6	55.4	1.32	Sunny
14/11/06	13:02	56.0	57.8	53.1	0.95	Cloudy
21/11/06	11:02	58.8	61.2	56.7	1.42	Cloudy
28/11/06	13:25	59.2	62.2	56.7	1.37	Cloudy



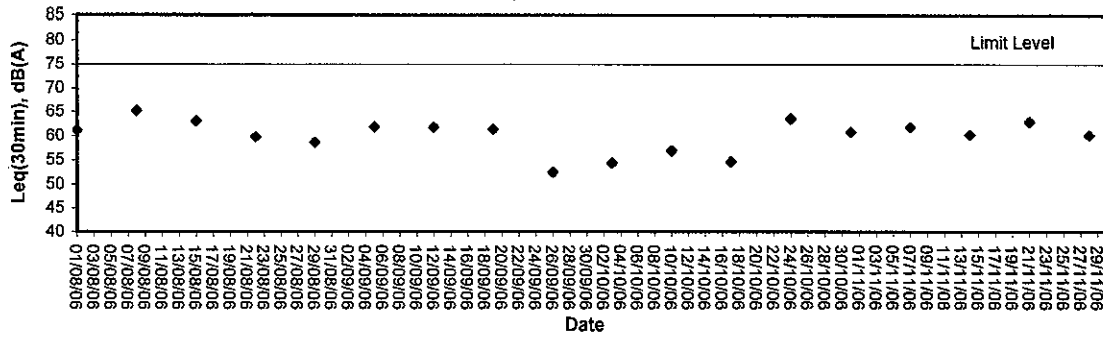
Appendix C3

Graphical Plots of Noise Monitoring Data

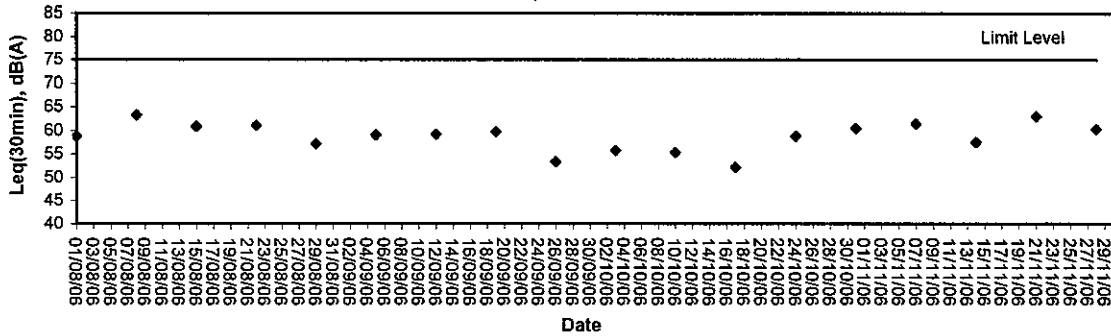


Noise Monitoring (Day-time)

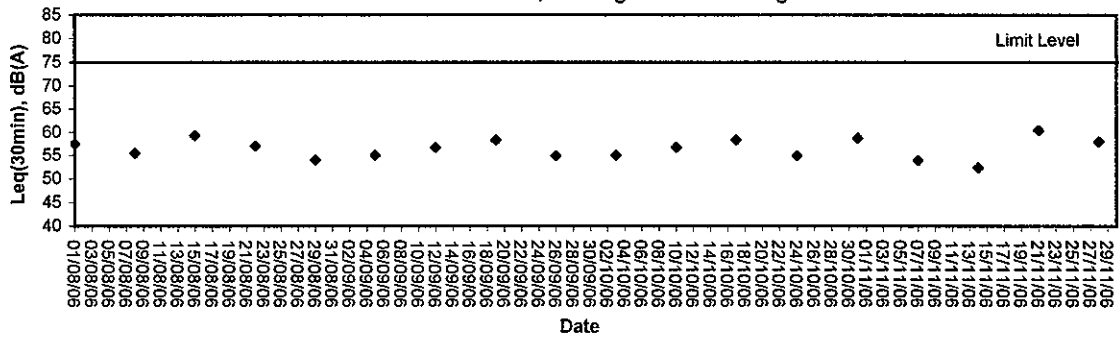
Noise level at NM1, HKIB Staff Accommodation



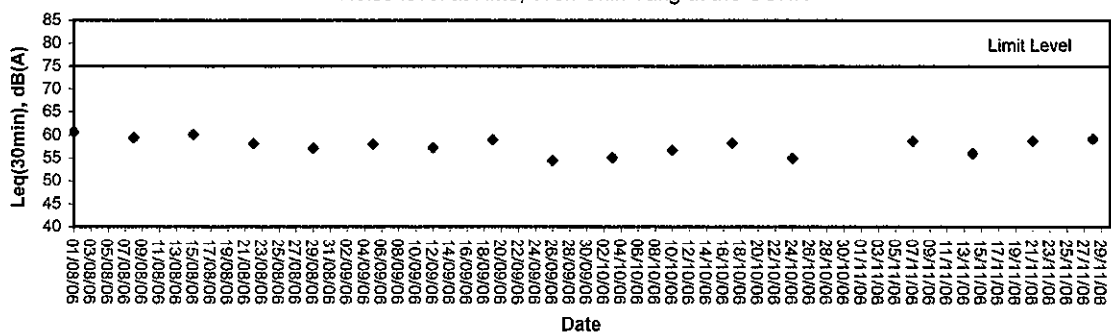
Noise level at NM2, CUHK Residence No.10



Noise level at NM3, Cheung Shue Tan Village



Noise level at NM8, Wen Chih Tang at the CUHK





Appendix D

Weather Condition



Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/11/2006	-	27.1	23.5	47	NNE	<5
02/11/2006	-	25.7	21.9	56	NNE	<5
03/11/2006	Trace	26.4	21.4	66	NEE	<5
04/11/2006	-	28.0	21.3	67	E	<5
05/11/2006	-	27.8	21.8	69	NEE	<5
06/11/2006	-	28.7	22.4	58	NNE	<5
07/11/2006	-	26.6	21.5	61	E	<5
08/11/2006	-	26.4	21.7	68	E	<5
09/11/2006	-	27.4	22.3	75	NEE	<5
10/11/2006	-	28.3	22.7	75	NNE	<5
11/11/2006	-	29.2	23.6	60	NNE	<5
12/11/2006	-	25.8	21.3	57	SEE	<5
13/11/2006	Trace	25.3	21.3	74	NEE	<5
14/11/2006	0.3	26.6	23.4	77	E	<5
15/11/2006	9.2	23.9	20.3	84	NEE	<5
16/11/2006	Trace	24.7	20.4	85	NEE	<5
17/11/2006	-	25.2	22.3	84	E	<5
18/11/2006	1.6	25.9	22.8	90	NEE	<5
19/11/2006	Trace	25.8	23.5	86	NEE	<5
20/11/2006	Trace	25.5	22.4	82	NNE	<5
21/11/2006	66.5	23.6	19.6	90	E	<5
22/11/2006	9.7	21.9	19.4	94	NNE	<5
23/11/2006	3.0	24.0	20.5	83	NNE	<5
24/11/2006	-	23.3	21.1	83	NEE	<5
25/11/2006	Trace	23.2	22.1	91	NEE	<5
26/11/2006	1.2	25.7	22.5	88	E	<5
27/11/2006	7.0	25.2	21.8	90	NEE	<5
28/11/2006	1.1	22.4	18.7	80	NNE	<5
29/11/2006	Trace	21.9	20.0	84	NEE	<5
30/11/2006	-	22.5	19.0	78	NNE	<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	ET Leader	IC(E)	ACTION		CNOTRACTOR
			ER	ER	
<p>Action Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two more consecutive samples</p>	<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"> 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"> Check monitoring data submitted by ET Check Contractor's working method. <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"> Notify Contractor <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"> Rectify any unacceptable practice Amend working methods if possible <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 	
<p>Limit Level</p> <p>1. Exceedance of one sample</p>	<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 	
<p>2. Exceedance for two or more consecutive samples</p>	<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 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 measures to be implemented with the Contractor on the remedial 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	ACTION			CNTRACTOR
	ET Leader	IC(E)	ER	
Action Level	<ol style="list-style-type: none"> 1. Notify IC(E) and Contractor 2. Carry out investigation 3. Report the results of investigation to the IC(E) and Contractor 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the analyzed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. 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 Contractor 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IC(E), ER and EPD the causes & action taken for the exceedances 7. Assess effectiveness of Contractor's remedial action and keep IC(E), EPD and ER informed to the results 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated



Appendix F

Construction Programme

Item No.	Description	Start	Finish	Quantity	Unit	Submittal No.	Approval Date
SUG50100	Section 1	06JUN06	20JUL06*	10		10AJUN06A	20JUL06A
SUG50200	Section 2	25DEC06	20DEC06*	12		25JUN06A	20JUL06A
SUG50300	Section 3	02DEC06	20DEC06*	24		10JUN06A	20JUL06A
SUG50400	Section 4	17NOV06	20DEC06*	10		05JUN06A	05JUL06A
SUG50500	Section 5	10NOV06	24JUL06*	10		02AUG06A	02AUG06A
SUG50600	Section 6	20DEC06	21FEB06*	10		02AUG06A	08SEP06A
SUG50700	Section 7	15JUN06	08NOV06*	10		10AUG06A	08SEP06A
SUG50800	Section 8	09OCT06	20DEC06*	10		10AUG06A	08SEP06A
SUG50900	Section 9	23OCT06	20DEC06*	10		10AUG06A	08SEP06A
SUG51000	Section 10	18AUG06	20DEC06*	10		10AUG06A	08SEP06A
SUG51100	Section 11	27JUL06	18FEB06*	10		10AUG06A	08SEP06A
SUG51200	Section 12	17OCT06	08NOV06*	10		10AUG06A	08SEP06A
SUG51300	Section 13	15SEP06	20DEC06*	10		10AUG06A	08SEP06A
SUG51400	Section 14	21JUL07	10FEB07*	10		10AUG06A	08SEP06A
SUG51500	Section 15	15OCT07	08NOV07*	10		10AUG06A	08SEP06A
SUG51600	Section 16	20OCT07	20DEC07*	10		10AUG06A	08SEP06A
SUG51700	Section 17						
SUG51800	Section 18						
SUG51900	Section 19						
SUG52000	Section 20						
SUG52100	Section 21						
SUG52200	Section 22						
SUG52300	Section 23						
SUG52400	Section 24						
SUG52500	Section 25						
SUG52600	Section 26						
SUG52700	Section 27						
SUG52800	Section 28						
SUG52900	Section 29						
SUG53000	Section 30						
SUG53100	Section 31						
SUG53200	Section 32						
SUG53300	Section 33						
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SUG53800	Section 38						
SUG53900	Section 39						
SUG54000	Section 40						
SUG54100	Section 41						
SUG54200	Section 42						
SUG54300	Section 43						
SUG54400	Section 44						
SUG54500	Section 45						
SUG54600	Section 46						
SUG54700	Section 47						
SUG54800	Section 48						
SUG54900	Section 49						
SUG55000	Section 50						

Item No.	Description	Start	Finish	Quantity	Unit	Submittal No.	Approval Date
SUG55100	Section 51						
SUG55200	Section 52						
SUG55300	Section 53						
SUG55400	Section 54						
SUG55500	Section 55						
SUG55600	Section 56						
SUG55700	Section 57						
SUG55800	Section 58						
SUG55900	Section 59						
SUG56000	Section 60						
SUG56100	Section 61						
SUG56200	Section 62						
SUG56300	Section 63						
SUG56400	Section 64						
SUG56500	Section 65						
SUG56600	Section 66						
SUG56700	Section 67						
SUG56800	Section 68						
SUG56900	Section 69						
SUG57000	Section 70						
SUG57100	Section 71						
SUG57200	Section 72						
SUG57300	Section 73						
SUG57400	Section 74						
SUG57500	Section 75						
SUG57600	Section 76						
SUG57700	Section 77						
SUG57800	Section 78						
SUG57900	Section 79						
SUG58000	Section 80						
SUG58100	Section 81						
SUG58200	Section 82						
SUG58300	Section 83						
SUG58400	Section 84						
SUG58500	Section 85						
SUG58600	Section 86						
SUG58700	Section 87						
SUG58800	Section 88						
SUG58900	Section 89						
SUG59000	Section 90						

- Section 1
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- Section 3
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- Section 98
- Section 99
- Section 100

Legend:
 [Green Bar] - Safety Bar
 [Red Bar] - Proposed Bar
 [Blue Bar] - Critical Bar
 [Yellow Bar] - Summary Bar
 [Purple Bar] - Summary Bar
 [Pink Bar] - Summary Bar
 [Light Blue Bar] - Summary Bar
 [Light Green Bar] - Summary Bar

ID	Description	Dir	Flon	Percent Complete	Start	Finish	Start	Finish
SVA5841000	CEDO Approval of A.D.	28	100	31DEC04 A	26JUL05 A	31DEC04 A	26JUL05 A	
SVA5841001	Submit & Approve Preliminary Design	38	100	18AUG04 A	28SEP04 A	18AUG04 A	28SEP04 A	
SVA5841002	Submit Preliminary Design to ACABAS	3	100	30SEP04 A	10OCT04 A	30SEP04 A	10OCT04 A	
SVA5841003	ACABAS Approval	1	100	10OCT04 A	18OCT04 A	10OCT04 A	18OCT04 A	
SVA5841004	Acoustic Review	38	100	20OCT04 A	12JAN05 A	20OCT04 A	12JAN05 A	
SVA5841005	ACABAS Submission (Landmarks)	0	100	23MAY05 A	23MAY05 A	23MAY05 A	23MAY05 A	
SVA5841006	Detail Design	101	100	18MAY05 A	18MAY05 A	18MAY05 A	18MAY05 A	
SVA5841007	Submit Detail Design to the Engineer	0	100	27MAY05 A	27MAY05 A	27MAY05 A	27MAY05 A	
SVA5841008	Engineer Approval	24	100	28MAY05 A	28MAY05 A	28MAY05 A	28MAY05 A	
SVA5841009	CEDO Approval of A.D.	30	100	26JUL05 A	26JUL05 A	26JUL05 A	26JUL05 A	
Submittals								
Submitter's Site Accommodation								
PRCS0100	Notification	12	100	26JUN04 A	10JUL04 A	26JUN04 A	10JUL04 A	
PRCS0200	Erect Contractor Site Office	38	100	12JUL04 A	31JUL04 A	12JUL04 A	31JUL04 A	
Temporary Works								
PRPR0000	Arrange ULO Meeting	60	100	26JUN04 A	18JUL04 A	26JUN04 A	18JUL04 A	
PRPR0100	Arrange TMUG Meeting	48	100	26JUL04 A	26JUL04 A	26JUL04 A	26JUL04 A	
PRPR0200	Tree Survey	6	100	26JUN04 A	06AUG04 A	26JUN04 A	06AUG04 A	
PRPR0300	Engineer Approval of Tree Survey	12	100	07AUG04 A	30AUG04 A	07AUG04 A	30AUG04 A	
PRPR0400	Tree Transplant	24	100	31AUG04 A	31AUG04 A	31AUG04 A	31AUG04 A	
PRPR0500	Tree Felling	12	100	30AUG04 A	30AUG04 A	30AUG04 A	30AUG04 A	
PRPR1100	Procure Third Party Insurance	12	100	10AUN04 A	26JUN04 A	10AUN04 A	26JUN04 A	
PRPR1200	Erect Project Sign Board	16	100	20AUG04 A	18MAY05 A	20AUG04 A	18MAY05 A	
PRPR1300	14 Site Safety/Environmental Committee Meeting	24	100	26JUN04 A	20JUL04 A	26JUN04 A	20JUL04 A	
PRPR1500	14 SSE/EC Meeting	24	100	28JUL04 A	28JUL04 A	28JUL04 A	28JUL04 A	
PRPR1600	Propose Location of Temporary Landing Facilities	24	100	10JUN04 A	26JUN04 A	10JUN04 A	26JUN04 A	
PRPR1700	Engineer Approval for Temp Landing Location	12	100	27AUG04 A	17AUG04 A	27AUG04 A	17AUG04 A	
PRPR1800	Provide Temp Landing Facilities	16	100	18AUG04 A	18AUG04 A	18AUG04 A	18AUG04 A	
PRPR1810	Engineer Review Drafting Plan to EPD	1	100	06SEP04 A	06SEP04 A	06SEP04 A	06SEP04 A	
PRPR1900	Apply Dumping Permit	16	100	10AUN04 A	06JUL04 A	10AUN04 A	06JUL04 A	
PRPR2000	Approval of Dumping Permit	42	100	06JUL04 A	18MAY05 A	06JUL04 A	18MAY05 A	
PRPR2100	Propose Accurate Pollution Control at Disposal	8	100	28AUG04 A	20OCT04 A	28AUG04 A	20OCT04 A	
PRPR2200	Engineer Approval of Proposal	12	100	20OCT04 A	20OCT04 A	20OCT04 A	20OCT04 A	
PRPR2300	Provide Water Quality Monitoring Equipment	27	100	10JUN04 A	16OCT04 A	10JUN04 A	16OCT04 A	
PRPR2400	Install Sounding Pile	12	100	16SEP04 A	16SEP04 A	16SEP04 A	16SEP04 A	
PRPR2500	Ordering of Precast Concrete Piles	700	100	10JUL04 A	10JUL04 A	10JUL04 A	10JUL04 A	
PRPR2600	Ordering of Pile and Fillings	1	100	06FEB05 A	06FEB05 A	06FEB05 A	06FEB05 A	
PRPR2700	Concrete Test Mix	6	100	13JUL04 A	13JUL04 A	13JUL04 A	13JUL04 A	
PRPR2800	Manufacture & Delivery of Sewall Blocks	210	-7/d	70	16DEC04 A	16DEC04 A	16DEC04 A	
CTIONS								
15555100	Complete Laying of Uppile	0	-1/8/d	0	06JAN06	06JAN06	06JAN06	

o ACABAS Submission (Landmarks)
 o Detail Design
 o Submit Detail Design to the Engineer
 o Engineer Approval
 o CEDO Approval of A.D.

o ACABAS Submission (Landmarks)
 o Detail Design
 o Submit Detail Design to the Engineer
 o Engineer Approval
 o CEDO Approval of A.D.

o Arrange ULO Meeting
 o Arrange TMUG Meeting
 o Tree Survey
 o Engineer Approval of Tree Survey
 o Tree Transplant
 o Tree Felling
 o Procure Third Party Insurance
 o 14 Site Safety/Environmental Committee Meeting
 o 14 SSE/EC Meeting
 o Propose Location of Temporary Landing Facilities
 o Engineer Approval for Temp Landing Location
 o Provide Temp Landing Facilities
 o Engineer Review Drafting Plan to EPD
 o Apply Dumping Permit
 o Approval of Dumping Permit
 o Propose Accurate Pollution Control at Disposal
 o Engineer Approval of Proposal
 o Provide Water Quality Monitoring Equipment
 o Install Sounding Pile
 o Ordering of Precast Concrete Piles
 o Ordering of Pile and Fillings
 o Concrete Test Mix

o Complete Laying of Uppile

o Manufacture & Delivery of Sewall Blocks

o Complete Laying of Uppile

Leader - Wai Koo (C&T) Joint Venture
 TP37/03 - Revised Works Programme - RP04

10/10/04
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Wai Koo (C&T) Joint Venture
 Project Manager
 Site Engineer
 Surveying Manager
 Safety Officer
 Environmental Officer

Item No.	Description	Estimate No.	Estimate Value	Start	Finish	Contractor	Remarks
1	Complete Connection to ASD's Works	0	1130	0	20JUN06	ASD's Contractor	Complete Connection to ASD's Works
2	Complete Trench & Partition by ASD's Contractor	0	100	20DEC04	20DEC04	ASD's Contractor	Complete Trench & Partition by ASD's Contractor
3	Complete Trench & Partition by ASD's Contractor	0	34	0	02NOV05	ASD's Contractor	Complete Trench & Partition by ASD's Contractor
4	Complete Connection of Utilities	0	216	0	11MAY08	ASD's Contractor	Complete Connection of Utilities
5	Commence ASD's Works	0	656	0	26SEP05	ASD's Contractor	Commence ASD's Works
6	Complete ASD's Works	0	976	0	27SEP06	ASD's Contractor	Complete ASD's Works
Section 2							
Section 3							
7	Issue VO017A (Section 3)	0	100	22MAR05	22MAR05	ASD's Contractor	Issue VO017A (Section 3)
8	Issue VO018 (Section 3)	0	100	17APR05	17APR05	ASD's Contractor	Issue VO018 (Section 3)
9	Issue VO019 (Section 3)	0	100	03JUN05	03JUN05	ASD's Contractor	Issue VO019 (Section 3)
10	Issue VO020 (Section 3 & 11)	0	100	07JUN05	07JUN05	ASD's Contractor	Issue VO020 (Section 3 & 11)
11	Issue VO021 (Section 11 & 12)	0	100	07JUN05	07JUN05	ASD's Contractor	Issue VO021 (Section 11 & 12)
12	Issue VO022 (Section 7)	0	100	23JUN05	23JUN05	ASD's Contractor	Issue VO022 (Section 7)
13	Issue VO023 (Section 7 & 8)	0	100	23JUN05	23JUN05	ASD's Contractor	Issue VO023 (Section 7 & 8)
14	Issue VO024 (Section 3)	0	100	27JUN05	27JUN05	ASD's Contractor	Issue VO024 (Section 3)
15	Issue VO025 (Section 7)	0	100	05JUL05	05JUL05	ASD's Contractor	Issue VO025 (Section 7)
16	Issue VO026 (Section 7)	0	100	11JUL05	11JUL05	ASD's Contractor	Issue VO026 (Section 7)
17	Issue VO027 (Section 3)	0	100	21JUL05	21JUL05	ASD's Contractor	Issue VO027 (Section 3)
18	Issue VO028 (Section 7)	0	100	28JUL05	28JUL05	ASD's Contractor	Issue VO028 (Section 7)
19	Issue VO029 (Section 7 & 8)	0	100	28JUL05	28JUL05	ASD's Contractor	Issue VO029 (Section 7 & 8)
20	Issue VO030 (Section 7)	0	100	29AUG05	29AUG05	ASD's Contractor	Issue VO030 (Section 7)
21	Issue VO031 (Section 3)	0	100	30AUG05	30AUG05	ASD's Contractor	Issue VO031 (Section 3)
22	Issue VO032 (Section 11, 12 & 13)	0	100	05SEP05	05SEP05	ASD's Contractor	Issue VO032 (Section 11, 12 & 13)
23	Issue VO033 (Section 8)	0	100	15SEP05	15SEP05	ASD's Contractor	Issue VO033 (Section 8)
Section 4							
24	Remove Ext. Surcharge Island	22	342	0	21OCT06	17NOV05	20DEC05
25	Decide Exact Location of Manholes & Catchers	1	561	0	05SEP05	05SEP05	05SEP05
26	Existing Box Culvert	43	853	0	12OCT05	09NOV05	10FEB06
27	Existing Box Culvert	49	856	0	01DEC05	21JAN06	11FEB06
28	Existing Box Culvert	38	342	0	20DEC05	09FEB06	24MAR06
29	Existing Box Culvert	35	342	0	18NOV05	00DEC05	06FEB06
30	Existing Box Culvert	30	726	0	18NOV05	22APR06	14JUN06
31	Existing Box Culvert	24	672	0	01JAN06	28APR06	18JUL06
32	Existing Box Culvert	27	662	0	20FEB06	20APR06	01JUN06
33	Existing Box Culvert	43	825	0	23JAN06	17MAR06	04APR06
34	Existing Box Culvert	24	649	0	07MAR06	26APR06	13MAY06
35	Existing Box Culvert	18	876	0	18MAR06	06JUN06	18JUL06
36	Existing Box Culvert	15	764	0	01MAY06	16APR06	19JUL06
37	Existing Box Culvert	8	845	0	18MAY06	27MAR06	11JUN06
Section 5							
38	Watermain - WPs 4 to 14 (North Section)	18	876	0	18MAR06	06JUN06	18JUL06
39	Watermain - WPs 3 to 17 (North Section)	15	764	0	01MAY06	16APR06	19JUL06
40	Watermain - WPs 1 to 2 (North Section)	8	845	0	18MAY06	27MAR06	11JUN06
Section 6							
41	Public Lighting	1	100	0	01JAN06	01JAN06	01JAN06

Notes:
 1. Issue VO017A (Section 3)
 2. Issue VO018 (Section 3)
 3. Issue VO019 (Section 3)
 4. Issue VO020 (Section 3 & 11)
 5. Issue VO021 (Section 11 & 12)
 6. Issue VO022 (Section 7)
 7. Issue VO023 (Section 7 & 8)
 8. Issue VO024 (Section 3)
 9. Issue VO025 (Section 7)
 10. Issue VO026 (Section 7)
 11. Issue VO027 (Section 3)
 12. Issue VO028 (Section 7)
 13. Issue VO029 (Section 7 & 8)
 14. Issue VO030 (Section 7)
 15. Issue VO031 (Section 3)
 16. Issue VO032 (Section 11, 12 & 13)
 17. Issue VO033 (Section 8)

Comments:
 1. Complete Trench & Partition by ASD's Contractor
 2. Complete Connection of Utilities
 3. Commence ASD's Works
 4. Complete ASD's Works

Remarks:
 1. Remove Ext. Surcharge Island
 2. Decide Exact Location of Manholes & Catchers
 3. Existing Box Culvert
 4. Existing Box Culvert
 5. Existing Box Culvert
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 40. Existing Box Culvert
 41. Existing Box Culvert

Legend:
 - Issue VO017A (Section 3)
 - Issue VO018 (Section 3)
 - Issue VO019 (Section 3)
 - Issue VO020 (Section 3 & 11)
 - Issue VO021 (Section 11 & 12)
 - Issue VO022 (Section 7)
 - Issue VO023 (Section 7 & 8)
 - Issue VO024 (Section 3)
 - Issue VO025 (Section 7)
 - Issue VO026 (Section 7)
 - Issue VO027 (Section 3)
 - Issue VO028 (Section 7)
 - Issue VO029 (Section 7 & 8)
 - Issue VO030 (Section 7)
 - Issue VO031 (Section 3)
 - Issue VO032 (Section 11, 12 & 13)
 - Issue VO033 (Section 8)

Scale: 1:1
Author: [Name]
Check: [Name]
Date: 15/05/2007

ID	Description	Unit	Quantity	Start	Finish	Start	Finish	Start	Finish
A11A000000	Construct Dwell Wall (South Section)	23	726	01/17/06	11/24/06	13/JUN/06			
A11A000000	Construct Dwell Wall (North Section)	21	672	03/MAR/06	03/MAR/06	26/MAY/06			
A11A000000	Construct Edging Beam (South Section)	22	560	18/FEB/06	02/APR/06	28/APR/06			
A11A000000	Construct Edging Beam (North Section)	18	348	01/FEB/06	02/MAR/06	28/MAR/06			
A11A000000	Lighting Dwell Wall & Cable Duct (South Section)	16	768	01/FEB/06	02/MAR/06	01/JAN/06			
A11A000000	Lighting Dwell Wall & Cable Duct (North Section)	10	480	01/JAN/06	17/MAR/06	04/MAY/06			
A11A000000	Paving Block (South Section)	40	560	01/JAN/06	10/MAY/06	02/JUL/06			
A11A000000	Paving Block (North Section)	24	346	01/JAN/06	06/JUN/06	18/JUL/06			
A11A000000	Remove Ext Surcharges Road	16	76	01/NOV/05	25/OCT/06	18/OCT/06			
A11A000000	Double Ended Location of Manholes & Catchpits	4	176	01/NOV/05	30/SEP/06	25/OCT/06			
A11A000000	5688 - Existing Box Culvert	42	378	01/OCT/05	26/OCT/05	18/OCT/05			
A11A000000	5881 - Existing Box Culvert	42	378	01/OCT/05	10/OCT/05	01/NOV/05			
A11A000000	5882 - Existing Box Culvert	41	368	01/OCT/05	06/FEB/06	21/FEB/06			
A11A000000	5897 - 5898	18	450	01/MAY/05	20/DEC/05	06/JAN/06			
A11A000000	CLP - 11V Cable (South Section)	38	76	01/JAN/06	21/FEB/06	26/JAN/06			
A11A000000	CLP - 11V Cable (North Section)	28	56	01/FEB/06	19/MAR/06	13/FEB/06			
A11A000000	CATV - 2 ways Cable TV Duct (South Section)	16	76	01/NOV/05	17/MAR/06	08/MAR/06			
A11A000000	CATV - 2 ways Cable TV Duct (North Section)	16	56	01/MAR/06	24/MAR/06	10/MAR/06			
A11A000000	CATV - Cable Connection	20	116	01/MAR/06	31/MAR/06	08/MAY/06			
A11A000000	Watermain - 250 Dia (South Section)	35	76	01/DEC/05	23/JUN/06	08/OCT/06			
A11A000000	Watermain - 250 Dia (North Section)	20	56	01/JAN/06	17/FEB/06	01/FEB/06			
A11A000000	Watermain - Testing and Connection of 500 Dia	18	56	01/JAN/06	06/APR/06	21/APR/06			
A11A000000	Watermain - Testing and Connection of 250 Dia	10	35	01/FEB/06	08/MAR/06	31/MAR/06			
A11A000000	Install Public Lighting Pole	6	80	01/MAY/06	16/MAY/06	11/JUL/06			
A11A000000	Construct Dwell Wall (South Section)	18	76	01/MAR/06	06/APR/06	21/MAR/06			
A11A000000	Construct Dwell Wall (North Section)	16	56	01/JAN/06	16/APR/06	31/MAR/06			
A11A000000	Lay Kerb (South Section)	14	56	01/MAR/06	02/APR/06	06/APR/06			
A11A000000	Lay Kerb (North Section)	11	108	01/MAR/06	07/APR/06	07/APR/06			
A11A000000	Lighting Dwell Wall & Cable Duct (South Section)	16	76	01/APR/06	22/APR/06	11/APR/06			
A11A000000	Lighting Dwell Wall & Cable Duct (North Section)	16	56	01/APR/06	28/APR/06	16/APR/06			
A11A000000	Trim Formation & Lay Subbase (South Section)	12	76	01/APR/06	26/APR/06	25/APR/06			
A11A000000	Trim Formation & Lay Subbase (North Section)	16	66	01/APR/06	02/MAY/06	26/APR/06			
A11A000000	Lay Cycle Track Pavement (South Section)	16	76	01/MAY/06	23/MAY/06	10/MAY/06			
A11A000000	Lay Cycle Track Pavement (North Section)	18	56	01/MAY/06	19/MAY/06	19/MAY/06			
A11A000000	Apply Road Marking	3	66	01/MAY/06	17/MAY/06	01/JUN/06			
A11A000000	Apply Road Marking	4	62	02/JUL/06	02/MAY/06	16/JUL/06			
A11A000000	Install Manhole, Frame & RD	6	66	01/MAY/06	09/MAY/06	18/JUL/06			

Remain: Est Schedule Hours
Depth Grad Location of Manholes & Catchpits
5688 - Existing Box Culvert
5881 - Existing Box Culvert
5882 - Existing Box Culvert
5897 - 5898

CLP - 11V Cable (South Section)
CLP - 11V Cable (North Section)
CATV - 2 ways Cable TV Duct (South Section)
CATV - 2 ways Cable TV Duct (North Section)
CATV - Cable Connection
Watermain - 250 Dia (South Section)
Watermain - 250 Dia (North Section)
Watermain - Testing and Connection of 500 Dia
Watermain - Testing and Connection of 250 Dia
Install Public Lighting Pole

Construct Dwell Wall (South Section)
Construct Dwell Wall (North Section)
Lay Kerb (South Section)
Lay Kerb (North Section)
Lighting Dwell Wall & Cable Duct (South Section)
Lighting Dwell Wall & Cable Duct (North Section)
Trim Formation & Lay Subbase (South Section)
Trim Formation & Lay Subbase (North Section)
Lay Cycle Track Pavement (South Section)
Lay Cycle Track Pavement (North Section)
Apply Road Marking
Install Manhole, Frame & RD

Apply Road Marking
Install Manhole, Frame & RD

Apply Road Marking, Finishing & etc

Apply Road Marking
Install Manhole, Frame & RD

Apply Road Marking, Finishing & etc

ITTA No.	Description	Start	Finish	Duration	Completion	Out	Div	Estimate	Unit	Rate	Total	Remarks
A2THAS001	ITTA No. 01 - Sul Chung St. (S/B Slow Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 01 - Sul Chung St. (S/B Slow Lane)
A2THAS002	ITTA No. 02 - Sul Chung St. (S/B Fast Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 02 - Sul Chung St. (S/B Fast Lane)
A2THAS003	ITTA No. 03 - Existing Mt Lushu Bridge	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 03 - Existing Mt Lushu Bridge
A2THAS004	ITTA No. 04 - Cycle Track	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 04 - Cycle Track
A2THAS005	ITTA No. 05 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St. Roundabout
A2THAS006	ITTA No. 06 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 06 - Sul Chung St. Roundabout
A2THAS007	ITTA No. 07 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 07 - Sul Chung St. Roundabout
A2THAS008	ITTA No. 08 - Sul Chung St. & ENLBS	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 08 - Sul Chung St. & ENLBS
A2THAS009	ITTA No. 09 - Road 01 & Sul Chung St. R/A	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 09 - Road 01 & Sul Chung St. R/A
A2THAS1000	Implement Permanent Traffic Scheme	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St

ITTA No.	Description	Start	Finish	Duration	Completion	Out	Div	Estimate	Unit	Rate	Total	Remarks
A2THAS001	ITTA No. 01 - Sul Chung St. (S/B Slow Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 01 - Sul Chung St. (S/B Slow Lane)
A2THAS002	ITTA No. 02 - Sul Chung St. (S/B Fast Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 02 - Sul Chung St. (S/B Fast Lane)
A2THAS003	ITTA No. 03 - Existing Mt Lushu Bridge	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 03 - Existing Mt Lushu Bridge
A2THAS004	ITTA No. 04 - Cycle Track	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 04 - Cycle Track
A2THAS005	ITTA No. 05 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St. Roundabout
A2THAS006	ITTA No. 06 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 06 - Sul Chung St. Roundabout
A2THAS007	ITTA No. 07 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 07 - Sul Chung St. Roundabout
A2THAS008	ITTA No. 08 - Sul Chung St. & ENLBS	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 08 - Sul Chung St. & ENLBS
A2THAS009	ITTA No. 09 - Road 01 & Sul Chung St. R/A	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 09 - Road 01 & Sul Chung St. R/A
A2THAS1000	Implement Permanent Traffic Scheme	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St

ITTA No.	Description	Start	Finish	Duration	Completion	Out	Div	Estimate	Unit	Rate	Total	Remarks
A2THAS001	ITTA No. 01 - Sul Chung St. (S/B Slow Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 01 - Sul Chung St. (S/B Slow Lane)
A2THAS002	ITTA No. 02 - Sul Chung St. (S/B Fast Lane)	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 02 - Sul Chung St. (S/B Fast Lane)
A2THAS003	ITTA No. 03 - Existing Mt Lushu Bridge	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 03 - Existing Mt Lushu Bridge
A2THAS004	ITTA No. 04 - Cycle Track	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 04 - Cycle Track
A2THAS005	ITTA No. 05 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St. Roundabout
A2THAS006	ITTA No. 06 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 06 - Sul Chung St. Roundabout
A2THAS007	ITTA No. 07 - Sul Chung St. Roundabout	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 07 - Sul Chung St. Roundabout
A2THAS008	ITTA No. 08 - Sul Chung St. & ENLBS	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 08 - Sul Chung St. & ENLBS
A2THAS009	ITTA No. 09 - Road 01 & Sul Chung St. R/A	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 09 - Road 01 & Sul Chung St. R/A
A2THAS1000	Implement Permanent Traffic Scheme	13/08/08	21/08/08	8	100		0714000		0714000			ITTA No. 05 - Sul Chung St

Division of Est. Drainage at VA (NOV0838)

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Division of Est. Drainage at VA (NOV0838)

ID #	Activity	Qty	Unit	Start	Finish	Duration	Notes
A38RVA000	Construct Ground Beams (Stage 3)	12	fd	07JAN08	20JAN08	13	
A38RVA001	Construct Ground Beams (Stage 4)	12	fd	07JAN08	06JAN08	29	
A38RVA002	Construct Ground Beams (Stage 5)	12	fd	07FEB08	23JAN08	07FEB08	
A38RVA003	Construct Wall (Stage 1)	16	fd	07FEB08	03JUN08	184	
A38RVA004	Construct Wall (Stage 2)	16	fd	07FEB08	22FEB08	14	
A38RVA005	Construct Wall (Stage 3)	16	fd	07FEB08	15MAR08	05APR08	
A38RVA006	Construct Wall (Stage 4)	16	fd	07FEB08	06FEB08	26	
A38RVA007	Construct Wall (Stage 5)	16	fd	07FEB08	27FEB08	18	
A38RVA100	Construct Slab	36	fd	06APR08	17MAY08	24	
A38RVA101	Construct Fire Cap	12	4rd	07JAN08	20JAN08	13	
A38RVA102	Construct Columns	21	4rd	07JAN08	18FEB08	11	
A38RVA103	Construct RE Wall to Formation of Abutment	16	24d	06JAN08	06FEB08	28	
A38RVA104	Construct RE Wall to Formation of RC Wall Type A	30	33d	01FEB08	16MAR08	14	
A38RVA105	Fit RE Wall to Face of Abutment & RC Wall	36	27d	01APR08	26MAY08	25	
A38RVA106	Construct Fire Cap	36	24d	01FEB08	21MAR08	19	
A38RVA107	Construct Abutment Wall	24	24d	02FEB08	23MAR08	18	
A38RVA108	Construct RC Wall Type A	36	37d	02MAR08	06MAY08	14	
A38RVA109	Construct RC Wall Type B	36	33d	01FEB08	16MAR08	14	
A38RVA110	Construct RC Wall Type C	16	33d	01MAR08	06APR08	24	
A38RVA111	Erect Scaffolding	16	16	06APR08	26APR08	06APR08	
A38RVA112	Erect Formwork (Bottom Slab)	12	16	06APR08	27APR08	16MAY08	
A38RVA113	Steel Piling	8	13d	01MAY08	19MAY08	29MAY08	
A38RVA114	Erect Formwork (Piles)	8	13d	02MAY08	20MAY08	06JUN08	
A38RVA115	Concreting	1	13d	03MAY08	30MAY08	15JUN08	
A38RVA116	Erect Formwork (Diaphragm & Top Slab)	10	13d	03JUN08	18JUN08	27JUN08	
A38RVA117	Steel Piling	8	13d	03JUN08	20JUN08	07JUL08	
A38RVA118	Concreting	1	13d	02JUN08	21JUN08	06JUL08	
A38RVA119	Formwork Formwork & Scaffolding	24	16	06JUL08	01AUG08	10JUL08	
A38RVA120	Remove Formwork & Scaffolding	8	45d	01AUG08	21AUG08	01OCT08	
A38RVA121	Concrete Transfer	70	16	06AUG08	30OCT08	07AUG08	
A38RVA122	Construct Cable Barrier	36	16	02SEP08	03NOV08	22SEP08	
A38RVA123	Erect Scaffolding	16	24d	02MAY08	12APR08	20APR08	
A38RVA124	Erect Formwork (Bottom Slab)	12	16	01MAY08	21MAY08	19MAY08	
A38RVA125	Steel Piling	8	16	02MAY08	05JUN08	26MAY08	
A38RVA126	Erect Formwork (Piles)	8	16	02MAY08	05JUN08	08JUN08	
A38RVA127	Concreting	1	16	04JUN08	16JUN08	16JUN08	
A38RVA128	Erect Formwork (Diaphragm & Top Slab)	10	16	05JUN08	18JUN08	18JUN08	
A38RVA129	Steel Piling	8	16	07JUN08	08JUL08	28JUN08	
A38RVA130	Concreting	1	16	07JUN08	07JUL08	06JUL08	
A38RVA131	Erect Formwork (Diaphragm & Top Slab)	24	16	08JUL08	01AUG08	10JUL08	
A38RVA132	Formwork Formwork & Scaffolding	8	30d	01AUG08	28AUG08	01OCT08	
A38RVA133	Concrete Transfer	70	16	02AUG08	28OCT08	07AUG08	

Construct Ground Beams (Stage 4)

Construct Ground Beams (Stage 5)

Construct Wall (Stage 1)

Construct Wall (Stage 2)

Construct Wall (Stage 3)

Construct Wall (Stage 4)

Construct Wall (Stage 5)

Construct Slab

Construct Fire Cap

Construct Columns

Construct RE Wall to Formation of Abutment

Construct RE Wall to Formation of RC Wall Type A

Fit RE Wall to Face of Abutment & RC Wall

Construct Fire Cap

Construct Abutment Wall

Construct RC Wall Type A

Construct RC Wall Type B

Construct RC Wall Type C

Erect Scaffolding

Erect Formwork (Bottom Slab)

Steel Piling

Erect Formwork (Piles)

Concreting

Erect Formwork (Diaphragm & Top Slab)

Steel Piling

Concreting

Install, Strengthening & Grout

Remove Formwork & Scaffolding

Concrete Transfer

Construct Cable Barrier

Erect Scaffolding

Erect Formwork (Bottom Slab)

Steel Piling

Erect Formwork (Piles)

Concreting

Erect Formwork (Diaphragm & Top Slab)

Steel Piling

Concreting

Install, Strengthening & Grout

Remove Formwork & Scaffolding

Concrete Transfer

Construct Cable Barrier

Erect Scaffolding

Erect Formwork (Bottom Slab)

Steel Piling

Erect Formwork (Piles)

Concreting

Erect Formwork (Diaphragm & Top Slab)

Steel Piling

Concreting

Install, Strengthening & Grout

Remove Formwork & Scaffolding

Concrete Transfer

Construct Cable Barrier

07JAN08

06JAN08

23JAN08

03JUN08

22FEB08

15MAR08

06FEB08

27FEB08

16MAR08

06APR08

17MAY08

20JAN08

18FEB08

16MAR08

06FEB08

16MAR08

22APR08

26MAY08

06JUN08

15JUN08

27JUN08

07JUL08

06JUL08

10JUL08

01OCT08

07AUG08

22SEP08

03NOV08

12APR08

19MAY08

26MAY08

08JUN08

16JUN08

18JUN08

28JUN08

08JUL08

07JUL08

01AUG08

28AUG08

28OCT08

11MAY08

28MAY08

06JUN08

14JUN08

16JUN08

18JUN08

28JUN08

08JUL08

06JUL08

10JUL08

01AUG08

28AUG08

28OCT08

07AUG08

28OCT08

07AUG08

LEADER

L10 AIR

UNIT

TP3703 - Revised Works Programme - RPO4

APP	CDP	Total	Estimated	Early	Final	Late	Task
	Code	Flow	Flow	Start	Start	Start	Code
ASMR001300	Concrete Central Bar	36	16	01/16/98	08/26/98	28/26/98	08/NOV/98
ASMR001400	Inlet Drainage System	16	74	01/20/98	28/02/98	11/02/98	08/NOV/98
ASMR001500	Inlet Alumination Tank	18	70	01/20/98	28/02/98	11/02/98	08/NOV/98
ASMR001600	Inlet Public Lighting Post	12	132	01/27/98	10/NOV/98	19/NOV/98	28/NOV/98
ASMR001700	Bulk Lighting	8	422	01/28/98	11/02/98	21/SEP/98	03/OCT/98
ASMR001800	North Abutment - Backfill to Formation	40	900	01/28/98	28/01/98	08/NOV/98	18/SEP/98
ASMR001900	North Abutment - Lay Subbase	8	892	01/30/98	10/01/98	28/OCT/98	08/NOV/98
ASMR002000	Road Paving	16	16	01/29/98	28/NOV/98	08/NOV/98	28/NOV/98
ASMR002100	Apply Road Finishing	6	16	01/28/98	01/DEC/98	27/NOV/98	02/DEC/98
ASMR002200	Erect Signs	12	16	01/29/98	28/NOV/98	18/NOV/98	28/NOV/98
ASMR002300	Remove Est. Surchurn's Mound	22	454	01/21/98	17/NOV/98	16/DEC/98	11/JAN/99
ASMR002400	Bay 1	16	430	01/16/98	09/DEC/98	12/JAN/99	01/FEB/99
ASMR002500	Bay 2	14	436	01/21/98	21/DEC/98	09/FEB/99	17/FEB/99
ASMR002600	Bay 3	14	454	01/23/98	10/JAN/99	16/FEB/99	06/MAR/99
ASMR002700	Bay 4	14	456	01/11/98	26/JAN/99	07/MAR/99	22/MAR/99
ASMR002800	Bay 5	14	476	01/16/98	03/DEC/98	14/JAN/99	01/FEB/99
ASMR002900	Bay 6	14	476	01/09/98	20/DEC/98	09/FEB/99	17/FEB/99
ASMR003000	Bay 7	14	476	01/21/98	07/JAN/99	18/FEB/99	06/MAR/99
ASMR003100	Bay 8	14	476	01/28/98	24/MAR/99	07/MAR/99	22/MAR/99
ASMR003200	Bay 9	14	294	01/20/98	15/JAN/99	09/FEB/99	17/FEB/99
ASMR003300	Bay 10	14	296	01/13/98	20/JAN/99	16/FEB/99	06/MAR/99
ASMR003400	Bay 11	14	296	01/17/98	16/FEB/99	07/MAR/99	22/MAR/99
ASMR003500	Flag to Road Formation Levels	20	294	01/09/98	28/FEB/99	11/MAR/99	03/APR/99
ASMR003600	Decide Exact Location of Manholes & Catchbells	1	1234	01/30/98	30/SEP/98	28/FEB/99	21/APR/99
ASMR003700	8815 - 8705	36	86	01/10/98	25/MAR/99	18/FEB/99	03/JUN/99
ASMR003800	8828 - 8828	31	669	01/24/98	26/JUN/99	16/SEP/99	25/OCT/99
ASMR003900	8810 - 8829	24	85	01/16/98	28/MAR/99	12/JUN/99	10/JUL/99
ASMR004000	8808 - 8710	27	649	01/14/98	06/MAR/99	09/MAR/99	31/MAR/99
ASMR004100	8810 - 8810 (TTA No. 01)	20	160	01/14/98	06/MAR/99	06/MAR/99	30/MAR/99
ASMR004200	8810 - 8710 (TTA No. 04)	22	216	01/26/98	24/JUN/99	30/MAR/99	26/JUL/99
ASMR004300	Replace 600 PPG by 600 PPG (TTA No. 04)	20	201	01/20/98	01/JUN/99	23/JUN/99	17/JUL/99
ASMR004400	Reconnect Est. 641 w/ 1800 Chamber (TTA No. 06)	22	310	01/23/98	16/SEP/99	27/SEP/99	21/OCT/99
ASMR004500	Connect Drains to Surface Pipe (TTA No. 06)	18	50	01/28/98	01/OCT/99	18/SEP/99	09/OCT/99
ASMR004600	NHT & HOC - Laying Cable Duct	17	84	01/21/MAR/99	16/APR/99	01/APR/99	21/APR/99
ASMR004700	NHT & HOC Cable Connection	21	126	01/17/APR/99	16/MAY/99	03/MAY/99	05/JUN/99
ASMR004800	WTSY - Laying Cable Duct	17	86	01/17/APR/99	06/MAY/99	22/APR/99	12/JUN/99
ASMR004900	WTSY - Cable Connection	26	1700	01/MAY/99	07/JUN/99	27/NOV/99	20/DEC/99
ASMR005000	POCH - Laying Cable Duct	40	86	01/17/APR/99	03/JUN/99	22/APR/99	06/JUN/99
ASMR005100	POCH - Cable Connection	26	1170	01/05/JUL/99	05/JUL/99	27/NOV/99	29/DEC/99

CONTRACT WORK
 ASMR001300 Concrete Central Bar
 ASMR001400 Inlet Drainage System
 ASMR001500 Inlet Alumination Tank
 ASMR001600 Inlet Public Lighting Post
 ASMR001700 Bulk Lighting
 ASMR001800 North Abutment - Backfill to Formation
 ASMR001900 North Abutment - Lay Subbase
 ASMR002000 Road Paving
 ASMR002100 Apply Road Finishing
 ASMR002200 Erect Signs
 ASMR002300 Remove Est. Surchurn's Mound
 ASMR002400 Bay 1
 ASMR002500 Bay 2
 ASMR002600 Bay 3
 ASMR002700 Bay 4
 ASMR002800 Bay 5
 ASMR002900 Bay 6
 ASMR003000 Bay 7
 ASMR003100 Bay 8
 ASMR003200 Bay 9
 ASMR003300 Bay 10
 ASMR003400 Bay 11
 ASMR003500 Flag to Road Formation Levels

CONTRACT WORK
 ASMR003600 Decide Exact Location of Manholes & Catchbells
 ASMR003700 8815 - 8705
 ASMR003800 8828 - 8828
 ASMR003900 8810 - 8829
 ASMR004000 8808 - 8710
 ASMR004100 8810 - 8810 (TTA No. 01)
 ASMR004200 8810 - 8710 (TTA No. 04)
 ASMR004300 Replace 600 PPG by 600 PPG (TTA No. 04)
 ASMR004400 Reconnect Est. 641 w/ 1800 Chamber (TTA No. 06)
 ASMR004500 Connect Drains to Surface Pipe (TTA No. 06)
 ASMR004600 NHT & HOC - Laying Cable Duct
 ASMR004700 NHT & HOC Cable Connection
 ASMR004800 WTSY - Laying Cable Duct
 ASMR004900 WTSY - Cable Connection
 ASMR005000 POCY - Laying Cable Duct
 ASMR005100 POCY - Cable Connection

CONTRACT WORK
 ASMR005200
 ASMR005300
 ASMR005400
 ASMR005500
 ASMR005600
 ASMR005700
 ASMR005800
 ASMR005900
 ASMR006000
 ASMR006100
 ASMR006200
 ASMR006300
 ASMR006400
 ASMR006500
 ASMR006600
 ASMR006700
 ASMR006800
 ASMR006900
 ASMR007000

CONTRACT WORK
 ASMR007100
 ASMR007200
 ASMR007300
 ASMR007400
 ASMR007500
 ASMR007600
 ASMR007700
 ASMR007800
 ASMR007900
 ASMR008000
 ASMR008100
 ASMR008200
 ASMR008300
 ASMR008400
 ASMR008500
 ASMR008600
 ASMR008700
 ASMR008800
 ASMR008900
 ASMR009000

CONTRACT WORK
 ASMR009100
 ASMR009200
 ASMR009300
 ASMR009400
 ASMR009500
 ASMR009600
 ASMR009700
 ASMR009800
 ASMR009900
 ASMR010000

CONTRACT WORK
 ASMR010100
 ASMR010200
 ASMR010300
 ASMR010400
 ASMR010500
 ASMR010600
 ASMR010700
 ASMR010800
 ASMR010900
 ASMR011000

CONTRACT WORK
 ASMR011100
 ASMR011200
 ASMR011300
 ASMR011400
 ASMR011500
 ASMR011600
 ASMR011700
 ASMR011800
 ASMR011900
 ASMR012000

CONTRACT WORK
 ASMR012100
 ASMR012200
 ASMR012300
 ASMR012400
 ASMR012500
 ASMR012600
 ASMR012700
 ASMR012800
 ASMR012900
 ASMR013000

Legend - Wat Kap (C&T) Joint Venture
 TP-37/05 - Revised Works Programme - RP04

ID	Activity	Description	Estimate	Start	End	Start	End	Notes
ASR00P0050	Watermain - Lay and Set	Watermain - Lay and Set	12	54	01/27/08	01/27/08	15/04/08	
ASR00P0100	Watermain - Replaced Fresh Man (TTA No. 01)	Watermain - Replaced Fresh Man (TTA No. 01)	8	203	02/11/08	02/11/08	15/04/08	
ASR00P0200	Watermain - Replace Fresh Man (TTA No. 01)	Watermain - Replace Fresh Man (TTA No. 01)	18	191	03/04/08	03/04/08	15/04/08	
ASR00P0300	Watermain - Replace Fresh Man (TTA No. 00)	Watermain - Replace Fresh Man (TTA No. 00)	18	50	03/24/08	03/24/08	15/04/08	
ASR00P0400	Install Public Lighting Post (TTA No. 04)	Install Public Lighting Post (TTA No. 04)	8	262	04/18/08	04/18/08	15/04/08	
ASR00P0500	Install Public Lighting Post (TTA No. 00)	Install Public Lighting Post (TTA No. 00)	8	263	04/08/08	04/08/08	15/04/08	
ASR00P0600	Lay Kurb	Lay Kurb	14	264	04/18/08	04/18/08	15/04/08	
ASR00P0700	Lay Kurb	Lay Kurb	8	205	07/14/08	07/14/08	15/04/08	
ASR00P0800	Construct Central Divider	Construct Central Divider	24	304	07/08/08	07/08/08	15/04/08	
ASR00P0900	Construct Central Divider	Construct Central Divider	12	10	07/15/08	07/15/08	15/04/08	
ASR00P1000	Construct Central Divider	Construct Central Divider	24	305	08/11/08	08/11/08	15/04/08	
ASR00P1100	Lighting Ductwork & Cable Duct	Lighting Ductwork & Cable Duct	18	255	08/25/08	08/25/08	15/04/08	
ASR00P1200	Lighting Ductwork & Cable Duct	Lighting Ductwork & Cable Duct	8	268	09/15/08	09/15/08	15/04/08	
ASR00P1300	Lighting Ductwork & Cable Duct	Lighting Ductwork & Cable Duct	8	269	09/22/08	09/22/08	15/04/08	
ASR00P1400	Lighting Ductwork & Cable Duct	Lighting Ductwork & Cable Duct	8	270	10/07/08	10/07/08	15/04/08	
ASR00P1500	Trim Formation & Lay Subbase	Trim Formation & Lay Subbase	20	271	09/29/08	09/29/08	15/04/08	
ASR00P1600	Trim Formation & Lay Subbase	Trim Formation & Lay Subbase	10	181	10/08/08	10/08/08	15/04/08	
ASR00P1700	Trim Formation & Lay Subbase	Trim Formation & Lay Subbase	8	956	10/20/08	10/20/08	15/04/08	
ASR00P1800	Trim Formation & Lay Subbase	Trim Formation & Lay Subbase	8	200	11/11/08	11/11/08	15/04/08	
ASR00P1900	Trim Formation & Lay Subbase	Trim Formation & Lay Subbase	12	56	11/03/08	11/03/08	15/04/08	
ASR00P2000	Road Pavement - W/C	Road Pavement - W/C	8	256	12/03/08	12/03/08	15/04/08	
ASR00P2100	Road Pavement - W/C	Road Pavement - W/C	10	103	12/14/08	12/14/08	15/04/08	
ASR00P2200	Road Pavement - W/C	Road Pavement - W/C	2	957	01/03/09	01/03/09	15/04/08	
ASR00P2300	Road Pavement - W/C	Road Pavement - W/C	12	208	02/02/09	02/02/09	15/04/08	
ASR00P2400	Road Pavement - W/C	Road Pavement - W/C	8	216	02/09/09	02/09/09	15/04/08	
ASR00P2500	Road Pavement - W/C	Road Pavement - W/C	8	218	02/16/09	02/16/09	15/04/08	
ASR00P2600	Construct Footing for Box & DI	Construct Footing for Box & DI	38	578	03/02/09	03/02/09	15/04/08	
ASR00P2700	Apply Road Marking (TTA No. 04)	Apply Road Marking (TTA No. 04)	4	266	03/18/09	03/18/09	15/04/08	
ASR00P2800	Apply Road Marking (TTA No. 06)	Apply Road Marking (TTA No. 06)	2	30	03/23/09	03/23/09	15/04/08	
ASR00P2900	Erect Signage	Erect Signage	8	216	03/20/09	03/20/09	15/04/08	
ASR00P3000	Erect Signage	Erect Signage	8	104	04/01/09	04/01/09	15/04/08	
ASR00P3100	Install Bump, Fencing & etc	Install Bump, Fencing & etc	8	216	03/24/09	03/24/09	15/04/08	
ASR00P3200	Install Bump, Fencing & etc	Install Bump, Fencing & etc	8	104	04/08/09	04/08/09	15/04/08	
ASR00P3300	Remove Existing Signage	Remove Existing Signage	23	106	04/20/09	04/20/09	15/04/08	
ASR00P3400	Erect Signage	Erect Signage	12	106	04/20/09	04/20/09	15/04/08	
ASR00P3500	Remove Existing Signage	Remove Existing Signage	24	105	04/20/09	04/20/09	15/04/08	
ASR00P3600	Erect Signage	Erect Signage	1	551	04/27/09	04/27/09	15/04/08	
ASR00P3700	Remove Existing Signage	Remove Existing Signage	29	106	05/12/09	05/12/09	15/04/08	
ASR00P3800	Erect Signage	Erect Signage	20	104	05/18/09	05/18/09	15/04/08	
ASR00P3900	Erect Signage	Erect Signage	10	104	05/18/09	05/18/09	15/04/08	
ASR00P4000	Erect Signage	Erect Signage	30	209	06/11/09	06/11/09	15/04/08	

Watermain - Lay and Set

Watermain - Replaced Fresh Man (TTA No. 01)

Watermain - Replace Fresh Man (TTA No. 01)

Watermain - Replace Fresh Man (TTA No. 00)

Install Public Lighting Post (TTA No. 04)

Install Public Lighting Post (TTA No. 00)

Lay Kurb

Lay Kurb (TTA No. 04)

Lay Kurb (TTA No. 00)

Construct Central Divider

Construct Central Divider

Lighting Ductwork & Cable Duct

Lighting Ductwork & Cable Duct (TTA No. 04)

Lighting Ductwork & Cable Duct (TTA No. 00)

Trim Formation & Lay Subbase

Trim Formation & Lay Subbase (TTA No. 01)

Trim Formation & Lay Subbase (TTA No. 02)

Trim Formation & Lay Subbase (TTA No. 04)

Trim Formation & Lay Subbase (TTA No. 08)

Road Pavement - W/C

Road Pavement - W/C (TTA No. 01)

Road Pavement - W/C (TTA No. 02)

Road Pavement - W/C (TTA No. 04)

Road Pavement - W/C (TTA No. 06)

Road Pavement - W/C (TTA No. 08)

Construct Footing for Box & DI

Apply Road Marking (TTA No. 04)

Apply Road Marking (TTA No. 06)

Erect Signage

Erect Signage

Install Bump, Fencing & etc

Install Bump, Fencing & etc

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

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Remove Existing Signage

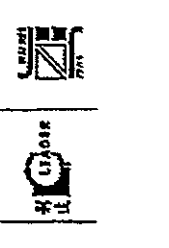
Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage

Remove Existing Signage



10000	10000	10000
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Date: / /
 Project:
 Location:
 Scale:

Item No.	Description	QTY	Unit	Start	Finish	Estimate No.
ASER00100	Laying Lighting Cross Road Duct (TTA No. 06)	4	101d	01JUN06	19JUN06	100CT06
ASER00200	Laying Lighting Cross Road Duct (TTA No. 06)	4	101d	01JUN06	20JUN06	210CT06
ASER00300	Demolish Existing Island (TTA No. 06)	0	101d	01JUN06	07JUN06	215EP06
ASER00400	Construct Proposed Island (TTA No. 06)	0	101d	01JUN06	11OCT06	190GT06
ASER00500	Demolish Existing Kerb (TTA No. 06)	2	101d	01JUN06	21JUN06	210CT06
ASER00600	Lay Kerb (TTA No. 06)	0	101d	01JUN06	10JUL06	260CT06
ASER00700	Demolish Existing Roundabout (TTA No. 07)	0	101d	01JUL06	22JUL06	11HOV06
ASER00800	Reconstruct Roundabout (TTA No. 07)	0	101d	01AUG06	21NOV06	20NOV06
ASER00900	Reconstruct Road Pavement (TTA No. 08)	2	101d	01AUG06	12JUL06	06HOV06
ASER01000	Resurfacing Wearing Course	0	101d	02AUG06	08AUG06	08DEC06
ASER01100	Construct Proposed Island (TTA No. 06)	12	7d	01OCT06	18DEC06	21DEC06
ASER01200	Apply Road Marking	2	101d	02AUG06	20AUG06	21DEC06
ASER01300	Erect Signage	12	101d	01AUG06	21AUG06	00DEC06
ASER01400	Install Railings, Fencing & etc	12	101d	01AUG06	21AUG06	00DEC06
ASER01500	Install Public Lighting	0	81d	01OCT06	19OCT06	18DEC06
ASER01600	Lay Kerb (TTA No. 06)	0	13JUN06	21JUN06	07AUG06	14AUG06
ASER01700	Cable Duct Laying on Island (TTA No. 06)	0	75d	02AUG06	01SEP06	21NOV06
ASER01800	Cable Duct Laying on Reserve (TTA No. 06)	0	87d	01SEP06	11SEP06	19NOV06
ASER01900	Demolish Existing Proposed (TTA No. 05)	12	111d	01MAY06	12JUN06	19OCT06
ASER02000	Demolish Island & Pavement (TTA No. 05)	12	46d	01MAY06	12JUN06	21JUN06
ASER02100	Road Pavement (TTA No. 05)	0	46d	01MAY06	12JUN06	21JUN06
ASER02200	Construct Roundabout on Valleyside (TTA No. 05)	0	114d	01JUN06	21JUN06	26OCT06
ASER02300	Remove Pavement in Proposed Island (TTA No. 06)	4	75d	02AUG06	23AUG06	20NOV06
ASER02400	Construct Traffic Island (TTA No. 06)	0	75d	02SEP06	11SEP06	01DEC06
ASER02500	Construct Resurfacing Roundabout (TTA No. 06)	12	81d	02AUG06	01SEP06	27NOV06
ASER02600	Demolish Existing Central Reserve (TTA No. 06)	12	87d	02AUG06	01SEP06	26OCT06
ASER02700	Construct New Central Reserve (TTA No. 06)	18	57d	01SEP06	02OCT06	00DEC06
ASER02800	Apply Road Marking (TTA No. 05)	1	46d	03JUN06	03JUN06	28AUG06
ASER02900	Apply Road Marking (TTA No. 06)	1	57d	01OCT06	16OCT06	25DEC06
ASER03000	Erect Signage	12	57d	03OCT06	17OCT06	23DEC06
ASER03100	Install Railings, Fencing & etc	12	57d	03OCT06	17OCT06	23DEC06
ASER03200	Install Public Lighting Pole	0	86d	01MAY06	20MAY06	19AUG06
ASER03300	Apply Road Marking (TTA No. 06)	21	66d	01JUN06	10JUN06	13SEP06
ASER03400	Erect Signage	18	66d	01JUN06	10JUN06	20SEP06
ASER03500	Install Public Lighting Pole	4	106d	01AUG06	22AUG06	19DEC06
ASER03600	Demolish Overhead Wire	23	86d	03OCT06	17OCT06	26OCT06
ASER03700	Lay Kerb	0	86d	01AUG06	19AUG06	21NOV06

Legend:
 ■ Lay Kerb (TTA No. 06)
 ■ Cable Duct Laying on Island (TTA No. 06)
 ■ Cable Duct Laying on Reserve (TTA No. 06)
 ■ Demolish Existing Proposed (TTA No. 05)
 ■ Demolish Island & Pavement (TTA No. 05)
 ■ Construct Roundabout on Valleyside (TTA No. 05)
 ■ Remove Pavement in Proposed Island (TTA No. 06)
 ■ Construct Traffic Island (TTA No. 06)
 ■ Construct Resurfacing Roundabout (TTA No. 06)
 ■ Demolish Existing Central Reserve (TTA No. 06)
 ■ Construct New Central Reserve (TTA No. 06)
 ■ Apply Road Marking (TTA No. 05)
 ■ Apply Road Marking (TTA No. 06)
 ■ Erect Signage
 ■ Install Railings, Fencing & etc
 ■ Install Public Lighting Pole
 ■ Demolish Overhead Wire
 ■ Lay Kerb

Leader - Wai Koo (C&T) Joint Venture
 TP37/03 - Roadwork Programme - RP04

Legend:
 ■ Lay Kerb
 ■ Cable Duct Laying on Island (TTA No. 06)
 ■ Cable Duct Laying on Reserve (TTA No. 06)
 ■ Demolish Existing Proposed (TTA No. 05)
 ■ Demolish Island & Pavement (TTA No. 05)
 ■ Construct Roundabout on Valleyside (TTA No. 05)
 ■ Remove Pavement in Proposed Island (TTA No. 06)
 ■ Construct Traffic Island (TTA No. 06)
 ■ Construct Resurfacing Roundabout (TTA No. 06)
 ■ Demolish Existing Central Reserve (TTA No. 06)
 ■ Construct New Central Reserve (TTA No. 06)
 ■ Apply Road Marking (TTA No. 05)
 ■ Apply Road Marking (TTA No. 06)
 ■ Erect Signage
 ■ Install Railings, Fencing & etc
 ■ Install Public Lighting Pole
 ■ Demolish Overhead Wire
 ■ Lay Kerb

Item No.	Description	Unit	Start	Finish	Start	Finish
10	Public Lighting, Cables	10	18JUL06	29AUG06	06DEC06	10NOV06
15	Lighting Drawl & Cable duct	15	18JUL06	09AUG06	31OCT06	10NOV06
16	Trim Formation & Lay Slabs	6	14AUG06	22AUG06	06DEC06	14DEC06
17	Road Pavement	6	23AUG06	31AUG06	15DEC06	23DEC06
18	Construct Footpath	18	14AUG06	09SEP06	27NOV06	10DEC06
19	Apply Road Marking	2	11SEP06	12SEP06	20DEC06	20DEC06
20	Erect Signage	3	04SEP06	05SEP06	18DEC06	20DEC06
21	Install Railing, Fencing & etc	8	09SEP06	09SEP06	18DEC06	21DEC06
Contract 2 - Water Poles						
1	Construct U-Channels	11	18JUL06	07AUG06	06DEC06	21NOV06
2	Water Pole WP1-3 to Water Meter	18	06SEP06	29SEP06	22NOV06	14DEC06
3	Water Pole WP4-3 to Water Meter	17	23JUL06	18JUL06	07DEC06	20DEC06
4	Water Pole WP5-3 to Water Meter	20	22JUL06	21AUG06	21NOV06	20DEC06
5	Water Pole WP6-3 to Water Meter	12	03SEP06	11OCT06	15DEC06	20DEC06
Contract 3 - Water Poles						
1	Remove Subways Mound	11	09SEP06	22OCT06	07OCT06	20OCT06
2	Construct Base Slab	8	07NOV06	15NOV06	19NOV06	21NOV06
3	Construct Wall up to Base Slab	8	19NOV06	24NOV06	29NOV06	30NOV06
4	Construct Wall up to Top Slab	12	09DEC06	22DEC06	10DEC06	30DEC06
5	Construct Top Slab	12	02JAN06	21JAN06	07JAN06	03FEB06
6	Install Isolating Beam	8	02JAN06	07JAN06	13JAN06	13JAN06
Contract 4 - Excavation						
1	Excavation	21	24OCT06	19NOV06	29OCT06	25NOV06
2	Construct Subway #1 Base Slab	9	21NOV06	30NOV06	29DEC06	06JAN06
3	Construct Subway #2 Base Slab	9	17NOV06	26NOV06	07DEC06	14DEC06
4	Construct Subway #3 Base Slab	8	07NOV06	16NOV06	18NOV06	28NOV06
5	Construct Subway #4 Base Slab	12	28NOV06	08DEC06	01DEC06	14DEC06
6	Construct Subway #1 Wall + Top Slab	18	24DEC06	21JAN06	07JAN06	21JAN06
7	Construct Subway #2 Wall + Top Slab	18	09DEC06	23DEC06	17DEC06	06JAN06
8	Construct Subway #3 Wall + Top Slab	16	17NOV06	03DEC06	29NOV06	10DEC06
9	Construct Subway #4 Wall + Top Slab	16	09JAN06	26JAN06	14JAN06	10FEB06
10	Backfilling	18	20JAN06	11FEB06	26JAN06	17FEB06
Contract 5 - Excavation (East Ramp)						
1	Excavation (East Ramp)	24	01OCT06	19NOV06	04NOV06	07DEC06
2	Construct E1 Ramp Base Slab	6	19DEC06	17DEC06	24DEC06	02JAN06
3	Construct E2 Ramp Base Slab	6	11OCT06	10DEC06	17DEC06	23DEC06
4	Construct E3 Ramp Base Slab	6	28NOV06	03DEC06	06DEC06	10DEC06
5	Construct E4 Ramp Base Slab	6	01NOV06	29NOV06	29NOV06	07DEC06
6	Construct E5 Ramp Base Slab	6	10DEC06	10DEC06	18DEC06	23DEC06
7	Construct E6 Ramp Base Slab	6	23NOV06	01DEC06	03DEC06	12DEC06
8	Construct E7 Ramp Base Slab	12	09NOV06	23NOV06	18NOV06	29NOV06

Contract 1 - Lighting

- Public Lighting, Cables
- Lighting Drawl & Cable duct
- Trim Formation & Lay Slabs
- Road Pavement
- Construct Footpath
- Apply Road Marking
- Erect Signage
- Install Railing, Fencing & etc

Contract 2 - Water Poles

- Construct U-Channels
- Water Pole WP1-3 to Water Meter
- Water Pole WP4-3 to Water Meter
- Water Pole WP5-3 to Water Meter

Contract 3 - Water Poles

- Remove Subways Mound
- Construct Base Slab
- Construct Wall up to Base Slab
- Construct Wall up to Top Slab
- Construct Top Slab
- Install Isolating Beam

Contract 4 - Excavation

- Excavation
- Construct Subway #1 Base Slab
- Construct Subway #2 Base Slab
- Construct Subway #3 Base Slab
- Construct Subway #4 Base Slab
- Construct Subway #1 Wall + Top Slab
- Construct Subway #2 Wall + Top Slab
- Construct Subway #3 Wall + Top Slab
- Construct Subway #4 Wall + Top Slab
- Backfilling

Contract 5 - Excavation (East Ramp)

- Excavation (East Ramp)
- Construct E1 Ramp Base Slab
- Construct E2 Ramp Base Slab
- Construct E3 Ramp Base Slab
- Construct E4 Ramp Base Slab
- Construct E5 Ramp Base Slab
- Construct E6 Ramp Base Slab
- Construct E7 Ramp Base Slab

Legend - Wal Koo (C&T) Joint Venture

TP37/03 - Revised Works Programme - RPD4

UPD DATE	BY	FOR
2007/07	MMW	Final
2007/06	MMW	Contract
2007/05	MMW	Final
2007/04	MMW	Final
2007/03	MMW	Final
2007/02	MMW	Final
2007/01	MMW	Final

Contract Legend

- MMW: Main Works
- JV: Joint Venture
- CP: Client Provided
- CS: Client Supplied
- SC: Site Conditions
- CC: Contractor Provided
- CCP: Contractor Provided - Client Provided
- SCC: Site Conditions - Client Provided
- CCP/SCC: Contractor Provided - Client Provided - Site Conditions
- CC/SCC: Contractor Provided - Site Conditions
- CCP/SCC/CP: Contractor Provided - Client Provided - Site Conditions - Client Provided
- CC/SCC/CP: Contractor Provided - Site Conditions - Client Provided
- CCP/SCC/CP/CS: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied
- CC/SCC/CP/CS: Contractor Provided - Site Conditions - Client Provided - Client Supplied
- CCP/SCC/CP/CS/CC: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided
- CC/SCC/CP/CS/CC: Contractor Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided

Contract Legend

- MMW: Main Works
- JV: Joint Venture
- CP: Client Provided
- CS: Client Supplied
- SC: Site Conditions
- CC: Contractor Provided
- CCP: Contractor Provided - Client Provided
- SCC: Site Conditions - Client Provided
- CCP/SCC: Contractor Provided - Client Provided - Site Conditions
- CC/SCC: Contractor Provided - Site Conditions
- CCP/SCC/CP: Contractor Provided - Client Provided - Site Conditions - Client Provided
- CC/SCC/CP: Contractor Provided - Site Conditions - Client Provided
- CCP/SCC/CP/CS: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied
- CC/SCC/CP/CS: Contractor Provided - Site Conditions - Client Provided - Client Supplied
- CCP/SCC/CP/CS/CC: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided
- CC/SCC/CP/CS/CC: Contractor Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided

Contract 1 - Lighting

Contract 2 - Water Poles

Contract 3 - Water Poles

Contract 4 - Excavation

Contract 5 - Excavation (East Ramp)

MMW: Main Works
JV: Joint Venture
CP: Client Provided
CS: Client Supplied
SC: Site Conditions
CC: Contractor Provided
CCP: Contractor Provided - Client Provided
SCC: Site Conditions - Client Provided
CCP/SCC: Contractor Provided - Client Provided - Site Conditions
CC/SCC: Contractor Provided - Site Conditions
CCP/SCC/CP: Contractor Provided - Client Provided - Site Conditions - Client Provided
CC/SCC/CP: Contractor Provided - Site Conditions - Client Provided
CCP/SCC/CP/CS: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied
CC/SCC/CP/CS: Contractor Provided - Site Conditions - Client Provided - Client Supplied
CCP/SCC/CP/CS/CC: Contractor Provided - Client Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided
CC/SCC/CP/CS/CC: Contractor Provided - Site Conditions - Client Provided - Client Supplied - Contractor Provided

ALL WORK TO BE COMPLETED BY THE END OF THE MONTH INDICATED IN THE "START DATE" COLUMN. THE "COMPLETION DATE" COLUMN IS THE TARGET DATE FOR COMPLETION OF THE WORK. THE "ESTIMATED COST" COLUMN IS THE ESTIMATED COST OF THE WORK. THE "ESTIMATED QUANTITY" COLUMN IS THE ESTIMATED QUANTITY OF THE WORK. THE "ESTIMATED RATE" COLUMN IS THE ESTIMATED RATE OF THE WORK. THE "ESTIMATED TOTAL" COLUMN IS THE ESTIMATED TOTAL OF THE WORK. THE "ESTIMATED VARIATION" COLUMN IS THE ESTIMATED VARIATION OF THE WORK. THE "ESTIMATED RISK" COLUMN IS THE ESTIMATED RISK OF THE WORK. THE "ESTIMATED IMPACT" COLUMN IS THE ESTIMATED IMPACT OF THE WORK. THE "ESTIMATED STATUS" COLUMN IS THE ESTIMATED STATUS OF THE WORK. THE "ESTIMATED COMMENTS" COLUMN IS THE ESTIMATED COMMENTS OF THE WORK.

Item No.	Description	Unit	Est. Qty	Est. Rate	Est. Total	Start Date	Completion Date	Remarks
AS18SE1100	Construct E1 Ramp Base Slab	Sq. M	150	100	15000	01/01/08	01/01/08	
AS18SE1200	Construct E1 Ramp Walls	M	150	100	15000	01/01/08	01/01/08	
AS18SE1300	Construct E2 Ramp Base Slab	Sq. M	84	100	8400	01/01/08	01/01/08	
AS18SE1400	Construct E2 Ramp Walls	M	84	100	8400	01/01/08	01/01/08	
AS18SE1500	Construct E3 Ramp Base Slab	Sq. M	94	100	9400	01/01/08	01/01/08	
AS18SE1600	Construct E3 Ramp Walls	M	94	100	9400	01/01/08	01/01/08	
AS18SE1700	Construct E4 Ramp Base Slab	Sq. M	10	100	1000	01/01/08	01/01/08	
AS18SE1800	Construct E4 Ramp Walls	M	10	100	1000	01/01/08	01/01/08	
AS18SE1900	Construct E5 Ramp Base Slab	Sq. M	50	100	5000	01/01/08	01/01/08	
AS18SE2000	Construct E5 Ramp Walls	M	50	100	5000	01/01/08	01/01/08	
AS18SE2100	Construct E6 Ramp Base Slab	Sq. M	54	100	5400	01/01/08	01/01/08	
AS18SE2200	Construct E6 Ramp Walls	M	54	100	5400	01/01/08	01/01/08	
AS18SE2300	Construct E7 Ramp Base Slab	Sq. M	84	100	8400	01/01/08	01/01/08	
AS18SE2400	Construct E7 Ramp Walls	M	84	100	8400	01/01/08	01/01/08	
AS18SE2500	Construct E8 Ramp Base Slab	Sq. M	84	100	8400	01/01/08	01/01/08	
AS18SE2600	Construct E8 Ramp Walls	M	84	100	8400	01/01/08	01/01/08	
AS18SE2700	Construct E9 Ramp Base Slab	Sq. M	20	100	2000	01/01/08	01/01/08	
AS18SE2800	Construct E9 Ramp Walls	M	20	100	2000	01/01/08	01/01/08	
AS18SE2900	Install Roof Steel Posts	M	18	628	11304	01/01/08	01/01/08	
AS18SE3000	Construct Roof Slab E9	Sq. M	12	874	10488	01/01/08	01/01/08	
AS18SE3100	Construct Roof Slab E1, E7	Sq. M	17	874	14858	01/01/08	01/01/08	
AS18SE3200	Construct Roof Slab E3, E8	Sq. M	12	874	10488	01/01/08	01/01/08	
AS18SE3300	Construct Roof Slab E2	Sq. M	12	874	10488	01/01/08	01/01/08	
AS18SE3400	Construct Roof Slab E1, E9	Sq. M	12	874	10488	01/01/08	01/01/08	
AS18SE3500	Excavation (Western Ramp)	M	41	261	10701	01/01/08	01/01/08	
AS18SE3600	Construct W1 Ramp Base Slab	Sq. M	8	436	3488	01/01/08	01/01/08	
AS18SE3700	Construct W2 Ramp Base Slab	Sq. M	8	436	3488	01/01/08	01/01/08	
AS18SE3800	Construct W3 Ramp Base Slab	Sq. M	10	266	2660	01/01/08	01/01/08	
AS18SE3900	Construct W4 Ramp Base Slab	Sq. M	12	206	2472	01/01/08	01/01/08	
AS18SE4000	Construct W5 Ramp Base Slab	Sq. M	10	206	2060	01/01/08	01/01/08	
AS18SE4100	Construct W6 Ramp Base Slab	Sq. M	8	514	4112	01/01/08	01/01/08	
AS18SE4200	Construct W7 Ramp Walls	M	10	206	2060	01/01/08	01/01/08	
AS18SE4300	Construct W2 Ramp Walls	M	10	206	2060	01/01/08	01/01/08	
AS18SE4400	Construct W3 Ramp Walls	M	10	206	2060	01/01/08	01/01/08	
AS18SE4500	Construct W4 Ramp Walls	M	20	206	4120	01/01/08	01/01/08	
AS18SE4600	Construct W5 Ramp Walls	M	20	206	4120	01/01/08	01/01/08	
AS18SE4700	Construct W6 Ramp Walls	M	10	206	2060	01/01/08	01/01/08	
AS18SE4800	Construct W7 Ramp Walls	M	10	206	2060	01/01/08	01/01/08	
AS18SE4900	Install Roof Posts	M	20	206	4120	01/01/08	01/01/08	
AS18SE5000	Construct Roof Slab W3	Sq. M	12	206	2472	01/01/08	01/01/08	
AS18SE5100	Construct Roof Slab W4	Sq. M	12	206	2472	01/01/08	01/01/08	
AS18SE5200	Construct Roof Slab W2, W5	Sq. M	12	206	2472	01/01/08	01/01/08	
AS18SE5300	Construct Roof Slab W1, W6	Sq. M	12	206	2472	01/01/08	01/01/08	
AS18SE5400	Pumping System Installation	M	50	100	5000	01/01/08	01/01/08	
AS18SE5500	Drainage System Installation	M	20	206	4120	01/01/08	01/01/08	
AS18SE5600	Finishing Works at Barr	M	24	449	10776	01/01/08	01/01/08	
AS18SE5700	Finishing Works at Barr	M	24	206	4944	01/01/08	01/01/08	

Legend - Wai Kee (C&T) Joint Venture
TP37/03 - Revised Works Programme - RP04

■ Ready bar
 ■ Proprietary bar
 ■ Crimped bar
 ■ Unbraced bar
 ■ Start reference point
 ◆ Finish reference point

Wai Kee
 CR
 Wai Kee
 CR

Activity ID	Description	Quantity	Unit	Start Date	End Date	Actual Start	Actual End	Progress %	Notes
30301004	Excavation to Formation Level	6	564	12/10/05	12/10/05			100%	
30301005	Subsoil Inspection by Structural Engineer	1	368	12/10/05	12/10/05			100%	
30301006	Reinforcing	1	364	12/10/05	12/10/05			100%	
30301007	Steel Fixing for Footing	6	363	12/10/05	12/10/05			100%	
30301008	Formwork	4	316	12/10/05	12/10/05			100%	
30301009	Concreting	1	318	12/10/05	12/10/05			100%	
30301010	Steel Fixing for Walls & Columns	3	363	12/10/05	12/10/05			100%	
30301011	Formwork	4	363	12/10/05	12/10/05			100%	
30301012	Concreting	1	366	12/10/05	12/10/05			100%	
30301013	Remove Formwork	6	366	12/10/05	12/10/05			100%	
30301014	Backfilling	12	366	12/10/05	12/10/05			100%	
30301015	Erect Propping & Formwork	6	364	12/10/05	12/10/05			100%	
30301016	Ground Slab Steel Fixing	3	363	12/10/05	12/10/05			100%	
30301017	Formwork	2	366	12/10/05	12/10/05			100%	
30301018	Concreting	1	366	12/10/05	12/10/05			100%	
30301019	Erect Scaffolding	3	364	12/10/05	12/10/05			100%	
30301020	Walls & Columns Formwork	3	366	12/10/05	12/10/05			100%	
30301021	Steel Fixing for Walls & Columns	3	366	12/10/05	12/10/05			100%	
30301022	Formwork	3	366	12/10/05	12/10/05			100%	
30301023	Concreting	1	366	12/10/05	12/10/05			100%	
30301024	Remove Formwork & Propping	12	366	12/10/05	12/10/05			100%	
30301025	Erect Propping & Formwork	6	364	12/10/05	12/10/05			100%	
30301026	Upper Massing Slab Steel Fixing	2	366	12/10/05	12/10/05			100%	
30301027	Formwork	3	366	12/10/05	12/10/05			100%	
30301028	Concreting	1	366	12/10/05	12/10/05			100%	
30301029	Walls & Columns Formwork	3	366	12/10/05	12/10/05			100%	
30301030	Steel Fixing for Walls & Columns	3	366	12/10/05	12/10/05			100%	
30301031	Formwork	3	366	12/10/05	12/10/05			100%	
30301032	Concreting	1	366	12/10/05	12/10/05			100%	
30301033	Remove Formwork & Propping	12	366	12/10/05	12/10/05			100%	
30301034	Erect Propping & Formwork	6	366	12/10/05	12/10/05			100%	
30301035	Upper Massing Slab Steel Fixing	3	366	12/10/05	12/10/05			100%	
30301036	Formwork	2	366	12/10/05	12/10/05			100%	
30301037	Concreting	1	366	12/10/05	12/10/05			100%	
30301038	Remove Formwork & Propping	12	366	12/10/05	12/10/05			100%	
30301039	Prepare & Submit Shop Drawings	30	336	01/26/06	01/26/06			100%	
30301040	Engineer Approval of Shop Drawings	12	336	01/26/06	01/26/06			100%	
30301041	Procurement of Structural Steel	12	336	01/26/06	01/26/06			100%	
30301042	Delivery of Structural Steel Materials	12	336	01/26/06	01/26/06			100%	
30301043	Inspection & Tying	16	336	01/26/06	01/26/06			100%	

Legend
 [Green] In Progress
 [Yellow] On Hold
 [Red] Complete
 [Blue] Not Started

Notes
 1. Excavation to Formation Level
 2. Subsoil Inspection by Structural Engineer
 3. Reinforcing
 4. Steel Fixing for Footing
 5. Formwork
 6. Concreting
 7. Steel Fixing for Walls & Columns
 8. Formwork
 9. Concreting
 10. Remove Formwork
 11. Backfilling
 12. Erect Propping & Formwork
 13. Ground Slab Steel Fixing
 14. Formwork
 15. Concreting
 16. Erect Scaffolding
 17. Walls & Columns Formwork
 18. Steel Fixing for Walls & Columns
 19. Formwork
 20. Concreting
 21. Remove Formwork & Propping
 22. Erect Propping & Formwork
 23. Upper Massing Slab Steel Fixing
 24. Formwork
 25. Concreting
 26. Walls & Columns Formwork
 27. Steel Fixing for Walls & Columns
 28. Formwork
 29. Concreting
 30. Remove Formwork & Propping
 31. Erect Propping & Formwork
 32. Upper Massing Slab Steel Fixing
 33. Formwork
 34. Concreting
 35. Remove Formwork & Propping
 36. Prepare & Submit Shop Drawings
 37. Engineer Approval of Shop Drawings
 38. Procurement of Structural Steel
 39. Delivery of Structural Steel Materials
 40. Inspection & Tying

Company Information
 Leader - Wai Koo (C&T) Joint Venture
 TP-3703 - Revland Works Programme - RP04
 100% Local Content
 100% Local Labour
 100% Local Materials
 100% Local Services

Job No.	Code	Activity	Comp	Start	Finish	Start	End
1035005	1035005	Fabrication & Parkway of Streetworks	540	12APR06	12APR06	12APR06	22JUL06
1035010	1035010	Delivery of Prefabricated Streetworks	330	14JUN06	27JUN06	24JUL06	05AUG06
1035015	1035015	Erection of Streetworks	340	23AUG06	05AUG06	07AUG06	10SEP06
1035020	1035020	Touch Up Painting	320	10AUG06	23AUG06	16SEP06	30SEP06
1035025	1035025	Supply of Prefabricated Streetworks	300	23MAY06	20MAY06	20MAY06	08JUL06
1035030	1035030	Supply of Concrete Block Work Wall	24	28MAY06	23JUN06	10JUL06	09AUG06
1035035	1035035	Internal Wall Tie	24	21SEP06	19OCT06	01NOV06	28NOV06
1035040	1035040	External Wall Tie	24	24JUN06	22JUL06	07AUG06	06SEP06
1035045	1035045	Tolerances Installation	24	24JUL06	19AUG06	04SEP06	30SEP06
1035050	1035050	Floor Tile	24	28AUG06	20SEP06	09OCT06	31OCT06
1035055	1035055	Road Chalking	24	09OCT06	17NOV06	28NOV06	20DEC06
1035060	1035060	Metal Works & Interdependency Installation	24	08OCT06	17NOV06	28NOV06	20DEC06
1035065	1035065	Plumbing Works	24	08AUG06	16SEP06	05OCT06	31OCT06
1035070	1035070	Electrical & Mechanical Preliminary	48	01SEP06	01NOV06	01NOV06	24DEC06
1035075	1035075	Electrical	48	01SEP06	01NOV06	01NOV06	24DEC06
1035080	1035080	Plumbing	48	01SEP06	01NOV06	01NOV06	24DEC06
1035085	1035085	Electrical	48	01SEP06	01NOV06	01NOV06	24DEC06
1035090	1035090	Plumbing	48	01SEP06	01NOV06	01NOV06	24DEC06

Delivery of Prefabricated Streetworks
Erection of Streetworks
Touch Up Painting

Supply of Concrete Block Work Wall
Internal Wall Tie
External Wall Tie

Tolerances Installation
Floor Tile
Road Chalking

Metal Works & Interdependency
Installation

Plumbing Works
Electrical & Mechanical Preliminary

Electrical
Plumbing
Electrical

Plumbing
Electrical

Hand Over 2x2500 Pipe Upstream for Connection
F414 to F427 (in Zone 2C)
Culvert - 8413 (2x2500)
8407 - 8407A (2x2500)
Connection Point (F413) to F428 (in Zone 2C)
84-0228 - 8412x
CP#10 - 8412x
84-0228 - 8412x
8108 - 8407 (1800)
Pavement Interceptor - 84017a & 8412
Connection Point - 84-0228 - 8413
84-0228 - 8412x
Connection Point to F425
84-0228 - 8412x & gullies
F127 - F428
F416 - F414
Connection Point - 8104 - 8408
CP#3 & CP#3 - 84-0228
CP#24 - F422
F422 - F422
84-0228 - 8407 & gullies
CP#7 & CP#8 - 8408
8409 - 84-0228

Check Best Location of Manholes & Catchpits

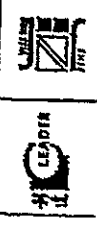
Hand Over 2x2500 Pipe Upstream for Connection
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8407 - 8407A (2x2500)
Connection Point (F413) to F428 (in Zone 2C)
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CP#10 - 8412x
84-0228 - 8412x
8108 - 8407 (1800)
Pavement Interceptor - 84017a & 8412
Connection Point - 84-0228 - 8413
84-0228 - 8412x
Connection Point to F425
84-0228 - 8412x & gullies
F127 - F428
F416 - F414
Connection Point - 8104 - 8408
CP#3 & CP#3 - 84-0228
CP#24 - F422
F422 - F422
84-0228 - 8407 & gullies
CP#7 & CP#8 - 8408
8409 - 84-0228

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F422 - F422
84-0228 - 8407 & gullies
CP#7 & CP#8 - 8408
8409 - 84-0228

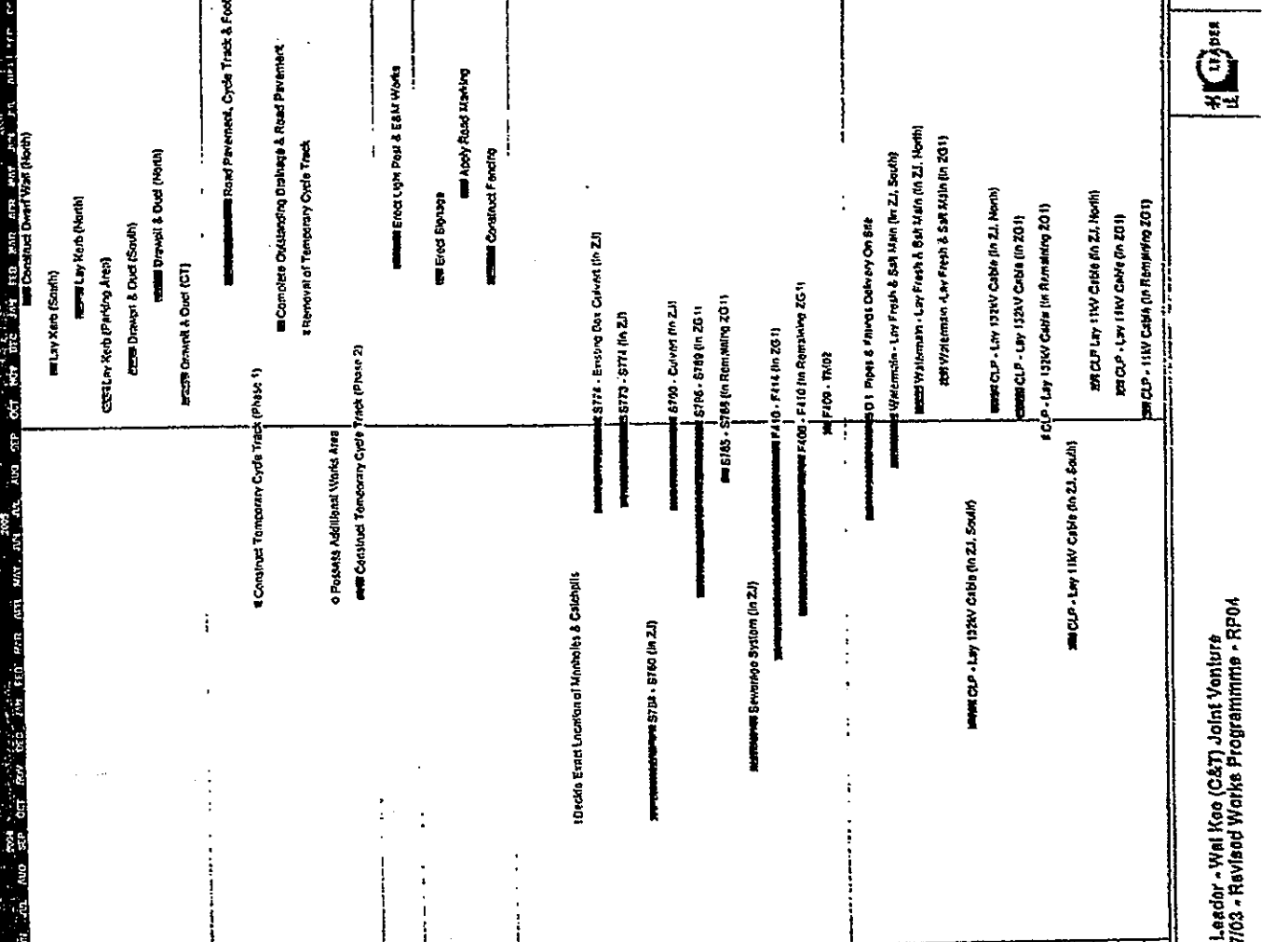
Hand Over 2x2500 Pipe Upstream for Connection
F414 to F427 (in Zone 2C)
Culvert - 8413 (2x2500)
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F422 - F422
84-0228 - 8407 & gullies
CP#7 & CP#8 - 8408
8409 - 84-0228



1035095	1035095	Finish of Manholes	48	24AUG06	05OCT06	24AUG06	13JUN06
1035100	1035100	Finish of Manholes	48	24AUG06	05OCT06	24AUG06	13JUN06
1035105	1035105	Finish of Manholes	48	24AUG06	05OCT06	24AUG06	13JUN06

Summary for
24AUG06 - 13JUN06
Start Manhole point
Finish Manhole point



Task	Start	End	Duration	Early Start	Early End	Lag	Finish	Finish
ASRLP0020	08/19/13	08/19/13	1	08/19/13	08/19/13		08/19/13	08/19/13
ASRLP0030	08/26/13	08/26/13	1	08/26/13	08/26/13		08/26/13	08/26/13
ASRLP0040	09/03/13	09/03/13	1	09/03/13	09/03/13		09/03/13	09/03/13
ASRLP0050	09/10/13	09/10/13	1	09/10/13	09/10/13		09/10/13	09/10/13
ASRLP0060	09/17/13	09/17/13	1	09/17/13	09/17/13		09/17/13	09/17/13
ASRLP0070	09/24/13	09/24/13	1	09/24/13	09/24/13		09/24/13	09/24/13
ASRLP0080	10/01/13	10/01/13	1	10/01/13	10/01/13		10/01/13	10/01/13
ASRLP0090	10/08/13	10/08/13	1	10/08/13	10/08/13		10/08/13	10/08/13
ASRLP0100	10/15/13	10/15/13	1	10/15/13	10/15/13		10/15/13	10/15/13
ASRLP0110	10/22/13	10/22/13	1	10/22/13	10/22/13		10/22/13	10/22/13
ASRLP0120	10/29/13	10/29/13	1	10/29/13	10/29/13		10/29/13	10/29/13
ASRLP0130	11/05/13	11/05/13	1	11/05/13	11/05/13		11/05/13	11/05/13
ASRLP0140	11/12/13	11/12/13	1	11/12/13	11/12/13		11/12/13	11/12/13
ASRLP0150	11/19/13	11/19/13	1	11/19/13	11/19/13		11/19/13	11/19/13
ASRLP0160	11/26/13	11/26/13	1	11/26/13	11/26/13		11/26/13	11/26/13
ASRLP0170	12/03/13	12/03/13	1	12/03/13	12/03/13		12/03/13	12/03/13
ASRLP0180	12/10/13	12/10/13	1	12/10/13	12/10/13		12/10/13	12/10/13
ASRLP0190	12/17/13	12/17/13	1	12/17/13	12/17/13		12/17/13	12/17/13
ASRLP0200	12/24/13	12/24/13	1	12/24/13	12/24/13		12/24/13	12/24/13
ASRLP0210	01/07/14	01/07/14	1	01/07/14	01/07/14		01/07/14	01/07/14
ASRLP0220	01/14/14	01/14/14	1	01/14/14	01/14/14		01/14/14	01/14/14
ASRLP0230	01/21/14	01/21/14	1	01/21/14	01/21/14		01/21/14	01/21/14
ASRLP0240	01/28/14	01/28/14	1	01/28/14	01/28/14		01/28/14	01/28/14
ASRLP0250	02/04/14	02/04/14	1	02/04/14	02/04/14		02/04/14	02/04/14
ASRLP0260	02/11/14	02/11/14	1	02/11/14	02/11/14		02/11/14	02/11/14
ASRLP0270	02/18/14	02/18/14	1	02/18/14	02/18/14		02/18/14	02/18/14
ASRLP0280	02/25/14	02/25/14	1	02/25/14	02/25/14		02/25/14	02/25/14
ASRLP0290	03/04/14	03/04/14	1	03/04/14	03/04/14		03/04/14	03/04/14
ASRLP0300	03/11/14	03/11/14	1	03/11/14	03/11/14		03/11/14	03/11/14
ASRLP0310	03/18/14	03/18/14	1	03/18/14	03/18/14		03/18/14	03/18/14
ASRLP0320	03/25/14	03/25/14	1	03/25/14	03/25/14		03/25/14	03/25/14
ASRLP0330	04/01/14	04/01/14	1	04/01/14	04/01/14		04/01/14	04/01/14
ASRLP0340	04/08/14	04/08/14	1	04/08/14	04/08/14		04/08/14	04/08/14
ASRLP0350	04/15/14	04/15/14	1	04/15/14	04/15/14		04/15/14	04/15/14
ASRLP0360	04/22/14	04/22/14	1	04/22/14	04/22/14		04/22/14	04/22/14
ASRLP0370	04/29/14	04/29/14	1	04/29/14	04/29/14		04/29/14	04/29/14
ASRLP0380	05/06/14	05/06/14	1	05/06/14	05/06/14		05/06/14	05/06/14
ASRLP0390	05/13/14	05/13/14	1	05/13/14	05/13/14		05/13/14	05/13/14
ASRLP0400	05/20/14	05/20/14	1	05/20/14	05/20/14		05/20/14	05/20/14
ASRLP0410	05/27/14	05/27/14	1	05/27/14	05/27/14		05/27/14	05/27/14
ASRLP0420	06/03/14	06/03/14	1	06/03/14	06/03/14		06/03/14	06/03/14
ASRLP0430	06/10/14	06/10/14	1	06/10/14	06/10/14		06/10/14	06/10/14
ASRLP0440	06/17/14	06/17/14	1	06/17/14	06/17/14		06/17/14	06/17/14
ASRLP0450	06/24/14	06/24/14	1	06/24/14	06/24/14		06/24/14	06/24/14
ASRLP0460	07/01/14	07/01/14	1	07/01/14	07/01/14		07/01/14	07/01/14
ASRLP0470	07/08/14	07/08/14	1	07/08/14	07/08/14		07/08/14	07/08/14
ASRLP0480	07/15/14	07/15/14	1	07/15/14	07/15/14		07/15/14	07/15/14
ASRLP0490	07/22/14	07/22/14	1	07/22/14	07/22/14		07/22/14	07/22/14
ASRLP0500	07/29/14	07/29/14	1	07/29/14	07/29/14		07/29/14	07/29/14

As of 12/31/23, the following projects are complete:

As of 12/31/23	Job No.	Description	Start	Finish	Early Start	Early Finish	Slack	ES/LS	EF/LS
12	10210	CUP - 11KV Cable Connection (in Z31)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
17	10211	CUP - Lay LV Cable (in Z1, South)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
11	10212	CUP - Lay LV Cable (in Z1, North)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
11	10213	CUP - Lay LV Cable (in Z31)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
11	10214	CUP - Lay LV Cable (in Remolding Z01)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
12	10215	CUP - LV Cable Connection (in Z31)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
36	10216	HKCG - Lay 250 Gas Main (in Z1) (Deleted)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
14	10217	HKCG - Lay 250 Gas Main (in Z31) (Deleted)	02/08/2005	02/08/2005	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
15	11110	Apply & Issue SP for TTA Nos. 10 - 12	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
10	11111	Lay Cable (in Z1, South)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
12	11112	Lay Cable (in Z1, North)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
16	11113	Lay Cable (in Z31)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
12	11114	Lay Cable (in Z31)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
12	11115	Apply & Issue SP for TTA Nos. 10 - 12	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
4	11116	Apply Road Marking	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
16	11117	Erect Signage	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
21	11118	Construct Fence	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
10	11119	Construct Primer Wall (in Z1, South)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
10	11120	Lay Cycle Track Pavement (in Z1, North)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
10	11121	Lay Cycle Track Pavement (in Z1, North)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
16	11122	Lay Cycle Track Pavement (in Z31)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
11	11123	Construct Primer Wall (in Z1, North)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
18	11124	Construct Primer Wall (in Z31)	01/04/2005	01/04/2005	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005

SECTION 7 Temporary Traffic Management Schemes

Job No.	Description	Start	Finish	Slack	ES/LS	EF/LS
1	Apply & Issue SP for TTA Nos. 10 - 12	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
1	Implement TTA No. 10	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
1	Implement TTA No. 11	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
1	Implement TTA No. 12	01/04/2005	01/04/2005	0	01/04/2005	01/04/2005
71	Apply & Issue SP for TTA Nos. 48 - 51	07/07/2005	07/07/2005	0	07/07/2005	07/07/2005
1	Implement TTA No. 48 (VOR006E, 083A & 073)	07/07/2005	07/07/2005	0	07/07/2005	07/07/2005
1	Implement TTA No. 49 (VOR006E, 083A & 073)	07/07/2005	07/07/2005	0	07/07/2005	07/07/2005
1	Implement TTA No. 50 (VOR006E, 083A & 073)	07/07/2005	07/07/2005	0	07/07/2005	07/07/2005
1	Implement TTA No. 51 (VOR006E)	07/07/2005	07/07/2005	0	07/07/2005	07/07/2005
10	Drilling (Two Drilling)	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
5	Taking Up of Existing Ampour to +2.5	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
2	Taking Up of Existing Underlayer to +2.5	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
14	Taking Up of Existing Rubble to +2.5	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
8	Dismantle Existing Curbs Urns	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
8	Taking Up Existing 2000 Dia. Concrete Pipe	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005
8	Taking Up of Existing Ampour, Block +2.5	02/08/2005	02/08/2005	0	02/08/2005	02/08/2005

W&K
L&M

Leader - Wilk (C&T) Joint Venture
TP37103 - Revised Works Programme - RPO4

2-2-2005

W&K L&M
W&K L&M
W&K L&M
W&K L&M

Start Date
Finish Date
ES/LS
EF/LS

Early Start
Early Finish
Slack
ES/LS
EF/LS

Project Progress Bar
Critical Path
Summary Bar
Milestones Point

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A.I. D.P. 303
 Date: 07/19/84
 Drawn By: R.K.
 Checked By: M.S.
 Description: 10x20m Emet Location of Manholes & Catchpits
 Scale: 1:100
 Sheet No: 1 of 1
 Project No: TP37/03 - RP04

U.I.D.	Original No.	Description	Urg. Dur.	Quantity	Unit	Estimate	Remarks
ATLCHS0540	2	2	1580	0	19NOV83	16JAN84	Take up of Existing Underlayer, Below +2.5
ATLCHS0550	18	18	1580	0	19NOV83	05DEC83	Take up of Existing Rubble, Below +2.5
ATLCHS0550	23	1580	0	05DEC83	26JUN84	Placing Leveling Stone	
ATLCHS0660	31	1580	0	20DEC83	21JAN84	Block Wall Construction	
ATLCHS0740	10	1580	0	21JAN84	08FEB83	Block Wall Reinforced	
ATLCHS0840	14	1580	0	08FEB83	22FEB83	Reinforce 220 Dia. Concrete Pipe	
ATLCHS0900	70	1044	0	11DEC83	22FEB83	Fabrication of Box Culvert Outlets	
ATLCHS1000	12	1044	0	23FEB83	05NOV83	Install Box Culvert Outlets	
ATLCHS1100	4	1044	0	07JAN84	18NOV83	Install Remaining Blocks for Slope Side Outlet	
ATLCHS1200	10	1044	0	11JAN84	28JAN84	Release Armour & Underlayer	

U.I.D.	Original No.	Description	Urg. Dur.	Quantity	Unit	Estimate	Remarks
ATHP03100	48	48	154	0	22NOV83	11JAN84	Construct Infiltration Pump House
ATHP03110	1	1	84	100	24JUL84	28JUL84	Decide Exact Location of Manholes & Catchpits
ATHP03120	46	84	0	18OCT83	18OCT83	87JUN84	S708 - S716
ATHP03130	46	84	0	18OCT83	18OCT83	14DEC84	S701 - S709
ATHP03140	30	1320	0	06FEB84	08JAN84	S714 - Existing Box Culvert	
ATHP03150	16	144	0	28FEB84	24JUN84	F801 - F802 (TTA No. 10) Partially Aborted	
ATHP03160	34	144	0	16MAY84	24JUN84	F802 - F803 (TTA No. 11) Aborted	
ATHP03170	18	144	0	10JUN84	24JUN84	F803 - F804 (TTA No. 12)	
ATHP03180	6	144	0	06OCT83	18APR84	F801 - F802 (TTA No. 48) (NOV83)	
ATHP03190	16	144	0	24NOV83	20DEC83	F801 - F802 (TTA No. 49) (NOV83)	
ATHP03200	24	144	0	23DEC83	20JAN84	F802 - F803 (TTA No. 50) (NOV83)	
ATHP03210	28	144	0	04JAN84	18JUN84	F802 - F803 (TTA No. 51) (NOV83)	
ATHP03220	25	132	0	24SEP83	28OCT83	S770 - S773 - S771 (NOV83)	
ATHP03230	16	144	0	08OCT83	30CT83	S773 - Est. Manhole (TTA No. 48) (NOV83)	
ATHP03240	16	1856	0	01NOV83	18MAY84	S773 - Est. Manhole (TTA No. 49) (NOV83)	
ATHP03250	24	132	0	31NOV83	20DEC83	S773 - Est. Manhole (TTA No. 50) (NOV83)	
ATHP03260	20	132	0	29OCT83	21NOV83	CP102 - CP104 (in 2U)	
ATHP03270	20	784	0	06DEC83	05JAN84	Est. Man. H.H.35 - F801 (NOV83A)	
ATHP03280	22	132	0	23FEB84	14FEB84	S710 - Existing Box Culvert	
ATHP03290	20	872	0	03NOV83	22DEC83	225 Dia. Perforated Drain (in 25 S. End - 200m)	
ATHP03300	28	964	0	28NOV83	21DEC83	225 Dia. Perforated Drain (in 25 200m - 400m)	
ATHP03310	12	1372	0	11APR84	27APR84	225 Dia. Perforated Drain (in 25 400m - N. End)	
ATHP03320	50	824	0	04MAY84	01MAY84	225 Dia. Perforated Drain (in 25 S. End - 200m)	
ATHP03330	24	472	0	23NOV83	28FEB84	225 Dia. Perforated Drain (in 25 200m - 400m)	
ATHP03340	25	472	0	28DEC83	20OCT84	225 Dia. Perforated Drain (in 25 200m - 400m)	
ATHP03350	21	488	0	22NOV83	18DEC83	225 Dia. Perforated Drain (in 25 200m - 400m)	
ATHP03360	18	324	0	28OCT83	18NOV83	300 CUC (in 2U)	
ATHP03370	18	716	0	05JAN84	30SEP84	225 Dia. Perforated Drain (in 2U)	

U.I.D.	Original No.	Description	Urg. Dur.	Quantity	Unit	Estimate	Remarks
ATHP03380	50	488	48	27APR84	18OCT84	30JUN85	D.1. Pipe & Filter Delivery On Site
ATHP03390	74	1320	22	05FEB84	07DEC84	01JAN85	Check & Fillings Delivery On Site
ATHP03400	10	100	100	18APR84	24JUN84	24JUN84	Watermain - Lay Bell Man (TTA No. 10) Aborted

Legend:
 [] Empty box
 [] Filled box
 [] Hatched box
 [] Shaded box
 [] Dotted box
 [] Striped box
 [] Solid black box

[] 100% Complete
 [] 75% Complete
 [] 50% Complete
 [] 25% Complete
 [] Not Started

[] 100% Complete
 [] 75% Complete
 [] 50% Complete
 [] 25% Complete
 [] Not Started

U.I.D. 303
 Date: 07/19/84
 Drawn By: R.K.
 Checked By: M.S.
 Description: 10x20m Emet Location of Manholes & Catchpits
 Scale: 1:100
 Sheet No: 1 of 1
 Project No: TP37/03 - RP04

Loader - Wai Koo (C&T) Joint Venture
 TP37/03 - Roadwork Programme - RP04

Item No.	Description	Quantity	Unit	Start Date	End Date	Remarks
1	Public Lighting (in 2U)	100	10AUG05 A	24JUN05	24JUN05	Public Lighting (in 2U)
2	Public Lighting (in 2S)	100	10AUG05 A	24JUN05	24JUN05	Public Lighting (in 2S)
3	Lay Paving Block (in 2U)	30	07FEB06	28MAR06	07FEB06	Lay Paving Block (in 2U)
4	Lay Paving Block (in 2S)	30	07FEB06	28MAR06	07FEB06	Lay Paving Block (in 2S)
5	Finishing Works (in 2U)	30	07FEB06	28MAR06	07FEB06	Finishing Works (in 2U)
6	Finishing Works (in 2S)	30	07FEB06	28MAR06	07FEB06	Finishing Works (in 2S)
7	Installation System (in 2U)	30	07FEB06	28MAR06	07FEB06	Installation System (in 2U)
8	Installation System (in 2S)	30	07FEB06	28MAR06	07FEB06	Installation System (in 2S)
9	Watering Works	30	07FEB06	28MAR06	07FEB06	Watering Works
10	Testing & Commissioning	30	07FEB06	28MAR06	07FEB06	Testing & Commissioning
11	Planting Works (in 2U)	30	07FEB06	28MAR06	07FEB06	Planting Works (in 2U)
12	Planting Works (in 2S)	30	07FEB06	28MAR06	07FEB06	Planting Works (in 2S)
13	Apply Road Marking	30	07FEB06	28MAR06	07FEB06	Apply Road Marking
14	Planting Wall (in 2S, South End - 100m)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2S, South End - 100m)
15	Planting Wall (in 2S, 100 - 200m)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2S, 100 - 200m)
16	Planting Wall (in 2S, 200 - 300m)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2S, 200 - 300m)
17	Planting Wall (in 2S, 300 - 400m)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2S, 300 - 400m)
18	Planting Wall (in 2S, 400 - North End)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2S, 400 - North End)
19	Planting Wall (in 2U)	20	07FEB06	28MAR06	07FEB06	Planting Wall (in 2U)
20	Planting Wall Along Sapwell (500m)	20	07FEB06	28MAR06	07FEB06	Planting Wall Along Sapwell (500m)
21	Concrete Curbs (in 2U)	20	07FEB06	28MAR06	07FEB06	Concrete Curbs (in 2U)
22	Concrete Curbs (in 2S)	20	07FEB06	28MAR06	07FEB06	Concrete Curbs (in 2S)
23	Concrete Paving (in 2U)	20	07FEB06	28MAR06	07FEB06	Concrete Paving (in 2U)
24	Concrete Paving (in 2S)	20	07FEB06	28MAR06	07FEB06	Concrete Paving (in 2S)
25	Water Poles WP21-3 to 21-4 (in 2U)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-3 to 21-4 (in 2U)
26	Water Poles WP21-3 to 21-4 (in 2S)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-3 to 21-4 (in 2S)
27	Water Poles WP21-5 to 21-6 (in 2U)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-5 to 21-6 (in 2U)
28	Water Poles WP21-5 to 21-6 (in 2S)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-5 to 21-6 (in 2S)
29	Water Poles WP21-7 to 21-8 (in 2U)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-7 to 21-8 (in 2U)
30	Water Poles WP21-7 to 21-8 (in 2S)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-7 to 21-8 (in 2S)
31	Water Poles WP21-9 to 21-10 (in 2U)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-9 to 21-10 (in 2U)
32	Water Poles WP21-9 to 21-10 (in 2S)	15	07FEB06	28MAR06	07FEB06	Water Poles WP21-9 to 21-10 (in 2S)

Legend:
 [Symbol] Public Lighting (in 2U)
 [Symbol] Public Lighting (in 2S)
 [Symbol] Lay Paving Block (in 2U)
 [Symbol] Lay Paving Block (in 2S)
 [Symbol] Finishing Works (in 2U)
 [Symbol] Finishing Works (in 2S)
 [Symbol] Installation System (in 2U)
 [Symbol] Installation System (in 2S)
 [Symbol] Watering Works
 [Symbol] Testing & Commissioning
 [Symbol] Planting Works (in 2U)
 [Symbol] Planting Works (in 2S)
 [Symbol] Apply Road Marking
 [Symbol] Planting Wall (in 2S, South End - 100m)
 [Symbol] Planting Wall (in 2S, 100 - 200m)
 [Symbol] Planting Wall (in 2S, 200 - 300m)
 [Symbol] Planting Wall (in 2S, 300 - 400m)
 [Symbol] Planting Wall (in 2S, 400 - North End)
 [Symbol] Planting Wall (in 2U)
 [Symbol] Planting Wall Along Sapwell (500m)
 [Symbol] Concrete Curbs (in 2U)
 [Symbol] Concrete Curbs (in 2S)
 [Symbol] Concrete Paving (in 2U)
 [Symbol] Concrete Paving (in 2S)
 [Symbol] Water Pole WP21-3 to 21-4 (in 2U)
 [Symbol] Water Pole WP21-3 to 21-4 (in 2S)
 [Symbol] Water Pole WP21-5 to 21-6 (in 2U)
 [Symbol] Water Pole WP21-5 to 21-6 (in 2S)
 [Symbol] Water Pole WP21-7 to 21-8 (in 2U)
 [Symbol] Water Pole WP21-7 to 21-8 (in 2S)

Scale: _____
 Date: _____
 Drawn by: _____
 Checked by: _____
 Approved by: _____
 Project Manager: _____
 Client: _____
 Site: _____
 Drawing No: _____

Item No.	Description	Quantity	Unit	Start Date	Finish Date	Percentage Complete	Remarks
ABALM001	Removal of Est. Utility Services	24	-476	01/07/2006	20/06/05	30/04/05	21/08/05
ABALM002	Removal of Est. Cycle Track	12	-536	01/07/2006	20/06/05	20/06/05	11/08/05
ABALM003	Removal of Est. Cycle Track	1	-360	01/07/2006	21/06/05	21/06/05	14/08/05
General Advance to Launching Stage							
ABALM004	Taking Up of Armour to +2.5 (South Section)	2	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM005	Taking Up of Underlayer to +2.5 (South Section)	2	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM006	Taking Up of Rubble to +2.5 (South Section)	8	100	01/07/2006	17/06/04	17/06/04	17/06/04
ABALM007	Taking Up of Armour below +2.5 (South Section)	3	100	01/07/2006	01/06/04	01/06/04	01/06/04
ABALM008	Taking Up of Underlayer below +2.5 (South Section)	3	100	01/07/2006	01/06/04	01/06/04	01/06/04
ABALM009	Taking Up of Rubble below +2.5 (South Section)	12	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM010	Placing Leveling Stone (South Section)	10	100	01/07/2006	03/06/04	03/06/04	03/06/04
ABALM011	Block Wall Construction (South Section)	23	100	01/07/2006	17/06/04	17/06/04	17/06/04
ABALM012	Backfill the Rubble Behind (South Section)	6	-480	01/07/2006	28/06/04	28/06/04	18/08/04
ABALM013	Backfill G200 Roadfill Behind (South Section)	5	-468	01/07/2006	01/06/04	01/06/04	18/08/04
ABALM014	Division of Est. Cycle Track (Phase 1)	1	100	01/07/2006	28/06/04	28/06/04	28/06/04
ABALM015	Removal of Est. Cycle Track Pavement (Phase 1)	2	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM016	Take Up / Divert Est. Utility Services (Phase 1)	18	100	01/07/2006	01/06/04	01/06/04	01/06/04
ABALM017	Taking Up of Armour to +2.5 (North Section)	2	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM018	Taking Up of Underlayer to +2.5 (North Section)	2	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM019	Taking Up of Rubble to +2.5 (North Section)	8	100	01/07/2006	17/06/04	17/06/04	17/06/04
ABALM020	Taking Up of Armour below +2.5 (North Section)	3	100	01/07/2006	01/06/04	01/06/04	01/06/04
ABALM021	Taking Up of Underlayer below +2.5 (North Section)	3	100	01/07/2006	01/06/04	01/06/04	01/06/04
ABALM022	Taking Up of Rubble below +2.5 (North Section)	10	100	01/07/2006	11/06/04	11/06/04	11/06/04
ABALM023	Placing Leveling Stone (North Section)	10	100	01/07/2006	03/06/04	03/06/04	03/06/04
ABALM024	Block Wall Construction (North Section)	23	100	01/07/2006	17/06/04	17/06/04	17/06/04
ABALM025	Backfill the Rubble Behind (North Section)	6	-480	01/07/2006	28/06/04	28/06/04	18/08/04
ABALM026	Backfill G200 Roadfill Behind (North Section)	5	-468	01/07/2006	01/06/04	01/06/04	18/08/04
ABALM027	Reinstatement of Armour & Underlayer	14	1164	01/07/2006	16/08/05	16/08/05	16/08/05

Legend - (W) Koa (G&T) Joint Venture
TP3703 - Revised Works Programme - RPO4

 Approved
 Proposed
 On Hold
 Summary bar
 Start reference point
 Finish reference point

JOB NO. 2019-0001
 LOCATION: Off Highway
 CONTRACT NO. 2019-0001
 DATE: 10/23/19
 PROJECT: New Highway Construction
 DRAWING NO. 2019-0001-01
 SHEET NO. 1 OF 1
 ASSESSOR: [Redacted]
 ENGINEER: [Redacted]

Item No.	Description	Unit	Quantity	Material	Notes
AWPHL100	Parcel Wall along Sewer (to Z1 Z1 Z1)	100'	250'	0.250	24008 A, 24009 A, 24010 A
AWPHL100	Concrete Parapet (0 to 1)	72	884	0.114	24010 A, 24011 A, 24012 A
AWPHL100	Water Post WP21-L to 21-1	15	216	0.144	24012 A, 24013 A, 24014 A
AWPHL100	Water Post WP21-S to 21-1	16	186	0.116	24014 A, 24015 A, 24016 A
AWPHL100	Water Post WP21-L to 21-1	12	288	0.024	24016 A, 24017 A, 24018 A
AWPHL100	Water Post WP21-S to 21-1	21	378	0.021	24018 A, 24019 A, 24020 A
AWPHL1700	Water Post WP10-L to 10-1	16	144	0.016	24020 A, 24021 A, 24022 A
AWPHL1700	Water Post WP10-S to 10-2	12	216	0.012	24022 A, 24023 A, 24024 A
AWPHL1700	Water Post WP10-L to 10-1	18	162	0.018	24024 A, 24025 A, 24026 A
AWPHL2000	Water Post WP16-S to 16-1	12	228	0.012	24026 A, 24027 A, 24028 A
AWPHL2000	ASOT Concrete Works	3.03	-574	0.263	24028 A, 24029 A, 24030 A

SECTION 3 - PARAPET WALL WORK

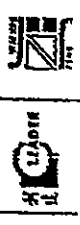
Item No.	Description	Unit	Quantity	Material	Notes
ASL3A10100	Propose Mockup Plan for OSD's Submarine Pipe	SQ	1	0.001	02010 A, 02011 A
ASL3A10200	Insurer & DSD Approval of Mockup Plan	30	1	0.01	02011 A, 02012 A
ASL3A10300	Setback Mockup for OSD's Submarine Pipeline	30	1	0.01	02012 A, 02013 A
ASL3A10400	Cracking & CPPT	30	1	0.01	02013 A, 02014 A
ASL3A10500	Tracing Up of Existing Armour to +2.5	4	1	0.004	02014 A, 02015 A
ASL3A10600	Tracing Up of Existing Underlayer to +2.5	3	1	0.003	02015 A, 02016 A
ASL3A10700	Tracing Up of Existing Rubble to +2.5	3	1	0.003	02016 A, 02017 A
ASL3A10800	Tracing Up of Existing Rubble to +2.5	3	1	0.003	02017 A, 02018 A
ASL3A10900	Tracing Up of Existing Rubble to +2.5	3	1	0.003	02018 A, 02019 A
ASL3A11000	Tracing Up of Existing Rubble Below +2.5	15	1	0.015	02019 A, 02020 A
ASL3A11100	Cracking of Marine Aid	20	1	0.02	02020 A, 02021 A
ASL3A11200	Placing of Rubble Foundation	15	1	0.015	02021 A, 02022 A
ASL3A11300	Placing Leveling Stone	23	1	0.023	02022 A, 02023 A
ASL3A11400	Block Wall Construction 2 Layers from Bottom (H)	6	1	0.006	02023 A, 02024 A
ASL3A11500	Block Wall Construction 2 Layers from Bottom (S)	6	1	0.006	02024 A, 02025 A
ASL3A11600	Block Wall Construction to Top Level	60	1	0.06	02025 A, 02026 A
ASL3A11700	Placing of Emission	4	1	0.004	02026 A, 02027 A
ASL3A11800	Backfill the RUBBLE Behind	14	2016	0.14	02027 A, 02028 A
ASL3A11900	Backfill the 0.300 Roadfill Behind	4	2016	0.04	02028 A, 02029 A

1. Parapet Wall along Sewer (to Z1 Z1 Z1)
 2. Concrete Parapet (0 to 1)
 3. Water Post WP21-L to 21-1
 4. Water Post WP21-S to 21-1
 5. Water Post WP21-L to 21-1
 6. Water Post WP21-S to 21-1
 7. Water Post WP10-L to 10-1
 8. Water Post WP10-S to 10-2
 9. Water Post WP10-L to 10-1
 10. Water Post WP16-S to 16-1
 11. ASOT Concrete Works
 12. Propose Mockup Plan for OSD's Submarine Pipe
 13. Insurer & DSD Approval of Mockup Plan
 14. Setback Mockup for OSD's Submarine Pipeline
 15. Cracking & CPPT
 16. Tracing Up of Existing Armour to +2.5
 17. Tracing Up of Existing Underlayer to +2.5
 18. Tracing Up of Existing Rubble to +2.5
 19. Tracing Up of Existing Rubble to +2.5
 20. Tracing Up of Existing Rubble to +2.5
 21. Tracing Up of Existing Rubble Below +2.5
 22. Cracking of Marine Aid
 23. Placing of Rubble Foundation
 24. Placing Leveling Stone
 25. Block Wall Construction 2 Layers from Bottom (H)
 26. Block Wall Construction 2 Layers from Bottom (S)
 27. Block Wall Construction to Top Level
 28. Placing of Emission
 29. Backfill the RUBBLE Behind
 30. Backfill the 0.300 Roadfill Behind
 31. Submit Shop Drawings & Calculation of Roof Cover
 32. Engineer Approval of Shop Drawings & Calculation
 33. Procurement of Pyraming Slightly
 34. Procurement of Structural Steel
 35. Delivery of Pyraming Slightly
 36. Delivery of Structural Steel
 37. Installation & Tying
 38. Fabrication & Painting of Steel Work
 39. Concrete Curing with 10 litre Gallon & Handral
 40. Concrete Shutter Filling
 41. Construct Shutter Column

Lender - Wal Koo (G&T) Joint Venture
TP37103 - Revised Works Programme - RP04

Project No.	2019-0001
Revision No.	1
Date	10/23/19
Scale	AS1:1
Author	[Redacted]
Checker	[Redacted]
Drawn	[Redacted]
Reviewed	[Redacted]

ACTIVITY	DESCRIPTION	Quant	Unit	Start	Finish	Percent Complete	Start	Finish	Start	Finish	Start	Finish
AVL/SLW/1000	Demolish Shower Floor	24	SqM	01/14/08	01/14/08	100%	18/SEP/06	10/NOV/06				
AVL/SLW/1100	Public Lighting	8	SqM	01/14/08	01/14/08	100%	17/OCT/06	25/OCT/06				
AVL/SLW/1200	Rubber, Strip & Land Step Fender	18	SqM	01/14/08	01/14/08	100%	28/OCT/06	18/NOV/06				
AVL/SLW/1300	Surface Horizontal Seals	18	SqM	01/14/08	01/14/08	100%	17/NOV/06	07/DEC/06				
AVL/SLW/1700	Construct new Concrete Parking	18	SqM	01/20/08	01/20/08	100%	08/DEC/06	28/DEC/06				
SECTION 10 - Remodel Works												
10-0000000												
BORVMH/100	El to Demolish HY/98/02 CRE Office	1	1076	01/03/08	01/03/08	100%	11/JUL/06	11/JUL/06				
BORVMH/200	Demolish HY/98/02 CRE Office (PT)	30	1076	01/03/08	01/03/08	100%	02/AUG/06	02/AUG/06				
BORVMH/300	El to Demolish HY/98/02 Contractor's Office	1	400	22/NOV/08	22/NOV/08	100%	22/NOV/04	22/NOV/04				
BORVMH/400	Demolish HY/98/02 Contractor's Office (PT)	30	100	21/MAY/08	21/MAY/08	100%	21/MAY/04	21/MAY/04				
BORVMH/500	El to Remove Run-In & Reinstall PFCPT	1	1546	01/02/08	01/02/08	100%	02/AUG/06	02/AUG/06				
BORVMH/600	Remove Run-In & Reinstall PFCPT (PT)	18	1148	01/14/08	01/14/08	100%	25/OCT/06	15/NOV/06				
BORVMH/700	El to Demolish Existing Parking	1	1076	01/14/08	01/14/08	100%	06/SEP/06	06/SEP/06				
BORVMH/800	Demolish Existing Parking (PT)	18	1076	01/14/08	01/14/08	100%	28/SEP/06	19/OCT/06				
BORVMH/900	El to Remove Awnings Around Site	1	1162	01/07/08	01/07/08	100%	18/NOV/06	18/NOV/06				
BORVMH/1000	Fencing Around LO Site (PT)	10	1118	01/26/08	01/26/08	100%	04/DEC/06	28/DEC/06				
SECTION 11 - Area 2A1, 2A1E & 2A1F												
11-0000000												
B1AASL/0100	Soil Mix (Station 5)	24	-1328	01/06/08	07/MAR/08	100%	10/AUG/06	27/SEP/06				
B1AASL/0200	Soil Mix (In 2S, South End - 100m)	10	-473	01/06/08	14/DEC/08	100%	18/SEP/06	24/SEP/06				
B1AASL/0300	Soil Mix (In 2S, 100 - 200m)	10	-683	01/11/08	21/JAN/08	100%	13/SEP/06	24/SEP/06				
B1AASL/0400	Soil Mix (In 2S, 200 - 300m)	10	-888	01/11/08	31/MAR/08	100%	09/OCT/06	13/NOV/06				
B1AASL/0500	Soil Mix (In 2S, 300 - 400m)	10	-754	01/28/08	16/SEP/08	100%	08/OCT/06	15/NOV/06				
B1AASL/0600	Soil Mix (In 2S, 400 - North End)	10	-1328	01/17/08	27/MAY/08	100%	07/DEC/06	17/DEC/06				
B1AASL/0700	Soil Mix (In 2L, 300m)	30	-788	01/28/08	08/MAR/08	100%	21/OCT/06	28/NOV/06				
B1AASL/0800	Planting Works	90	-1328	01/08/08	21/JUN/08	100%	28/SEP/06	12/JUN/08				
B1AASL/0900	Groundcover Works	60	-1328	01/20/08	27/JUL/08	100%	10/DEC/06	18/FEB/08				
B1AASL/1000	Root Barrier (2S, 100a - 200m) (V/O/2S/1A)	12	-768	01/03/08	18/DEC/08	100%	30/AUG/06	12/SEP/06				
B1AASL/1100	Root Barrier (2S, 200a - 300m) (V/O/2S/1A)	12	-552	01/22/08	04/JUN/08	100%	19/OCT/06	01/NOV/06				
B1AASL/1200	Root Barrier (2S, 300m - 400m) (V/O/2S/1A)	12	-552	01/22/08	04/JUN/08	100%	19/OCT/06	01/NOV/06				
B1AASL/1300	Root Barrier (2L, 400m - N. End) (V/O/2S/1A)	2	-1182	01/28/08	30/APR/08	100%	08/DEC/06	08/DEC/06				
SECTION 12 - Area 2A1, 2A1E, 2A1F & 2A1S												
12-0000000												
B2AASL/0100	Soil Mix (In 2S, 550m)	47	164	01/22/08	17/JUN/08	100%	16/MAY/06	10/JUL/06				
B2AASL/0200	Soil Mix (In 2K, 190m)	24	268	01/19/08	17/MAY/08	100%	23/MAY/06	20/JUN/06				
B2AASL/0300	Soil Mix (In 2L, 550m)	12	372	01/21/08	07/APR/08	100%	09/MAY/06	03/MAY/06				
B2AASL/0400	Soil Mix (In 2L, 50m)	3	372	01/14/08	28/MAR/08	100%	03/APR/06	03/MAY/06				
B2AASL/0500	Soil Mix (2J - Landscape Table 1 South, 200m)	30	184	01/08/08	20/APR/08	100%	11/APR/06	21/MAY/06				
B2AASL/0600	Soil Mix (2L, 2L1, 2J)	71	162	01/08/08	05/MAY/08	100%	27/FEB/06	23/MAY/06				
B2AASL/0700	Planting Works	90	162	01/08/08	18/AUG/08	100%	28/MAY/06	08/SEP/06				
B2AASL/0800	Groundcover Works	60	162	01/18/08	17/OCT/08	100%	02/FEB/06	01/NOV/06				
B2AASL/0900	Root Barrier (In 2D) (V/O/2S/1A)	12	216	01/12/08	24/MAR/08	100%	13/FEB/06	23/FEB/06				
B2AASL/1000	Root Barrier (In 2H) (V/O/2S/1A)	2	318	01/21/08	01/APR/08	100%	12/MAY/06	12/MAY/06				



Lender - Wei Koo (C&T) Joint Venture
TP37703 - Revised Works Programme - R/P01

DATE	BY	DESCRIPTION
10/01/04	XXXX	Issue for Information
10/01/04	XXXX	Final Information
10/01/04	XXXX	Final Information
10/01/04	XXXX	Final Information
10/01/04	XXXX	Final Information

ID No. Description Start Date End Date Start Date End Date Start Date End Date Start Date End Date
 SECTION 13 Area SA1, SA2, SA3, SA4 & SA5

ID No.	Description	Start Date	End Date	Start Date	End Date	Start Date	End Date	Start Date	End Date
SECTION 13									
Area SA1, SA2, SA3, SA4 & SA5									
Establishment Works									
83A05S0100	Bot Mix (Area SA1 - South Section)	30	1130	01MAY08	18MAY08	23AUG08	26SEP08		
83A1CS0200	Bot Mix (Area SA1 - North Section)	30	1070	01MAY08	22MAY08	22AUG08	26SEP08		
83A1CS0300	Bot Mix (Car Park Loading & Unloading Area)	6	510	01MAY08	06SEP08	03NOV08	06NOV08		
83A1CS0400	Bot Mix (Area Adjacent Road SLU)	30	310	01MAY08	21JUL08	23AUG08	26SEP08		
83A1CS0500	Planting Works	80	870	01MAY08	26SEP08	27SEP08	07DEC08		
83A1CS0600	Planting Works (Car Park Loading/Unloading Area)	6	850	01MAY08	18SEP08	20DEC08	26DEC08		
Area SA1, SA2, SA3, SA4, SA5 & SA13									
Establishment Works									
83A1CS0700	Planting Works	46	1070	01MAY08	17JUL08	21SEP08	21NOV08		
83A1CS0800	Groundworks Works	50	1070	01MAY08	21AUG08	22NOV08	26DEC08		
SECTION 14									
Area SA1, SA2, SA3, SA4 & SA5									
Establishment Works									
83A1CS0900	Establishment Works	300	4120	01JUL08	28FEB08	17FEB07			
SECTION 15									
Area SA7, SA10, SA11A, SA12 & SA13									
Establishment Works									
83A1CS1000	Establishment Works	300	300	01NOV08	19OCT07	11NOV08	06NOV07		
SECTION 16									
Area SA1, SA2, SA3, SA4 & SA5									
Establishment Works									
83A1CS1100	Establishment Works	320	570	01NOV08	20OCT07	06DEC08	26DEC07		
SECTION 17									
Area SA1, SA2, SA3, SA4, SA17 & SA18									
Establishment Works									
83A1CS1200	Establishment Works	300	1110	01MAY08	18AUG07	02JAN07	26DEC07		

Bot Mix (Area SA1 - South Section)
 Bot Mix (Area SA1 - North Section)
 Bot Mix (Car Park, Load
 Area Adjacent Road SLU)
 Planting Works
 Planting Works (Car P

Planting Works
 Groundworks Works

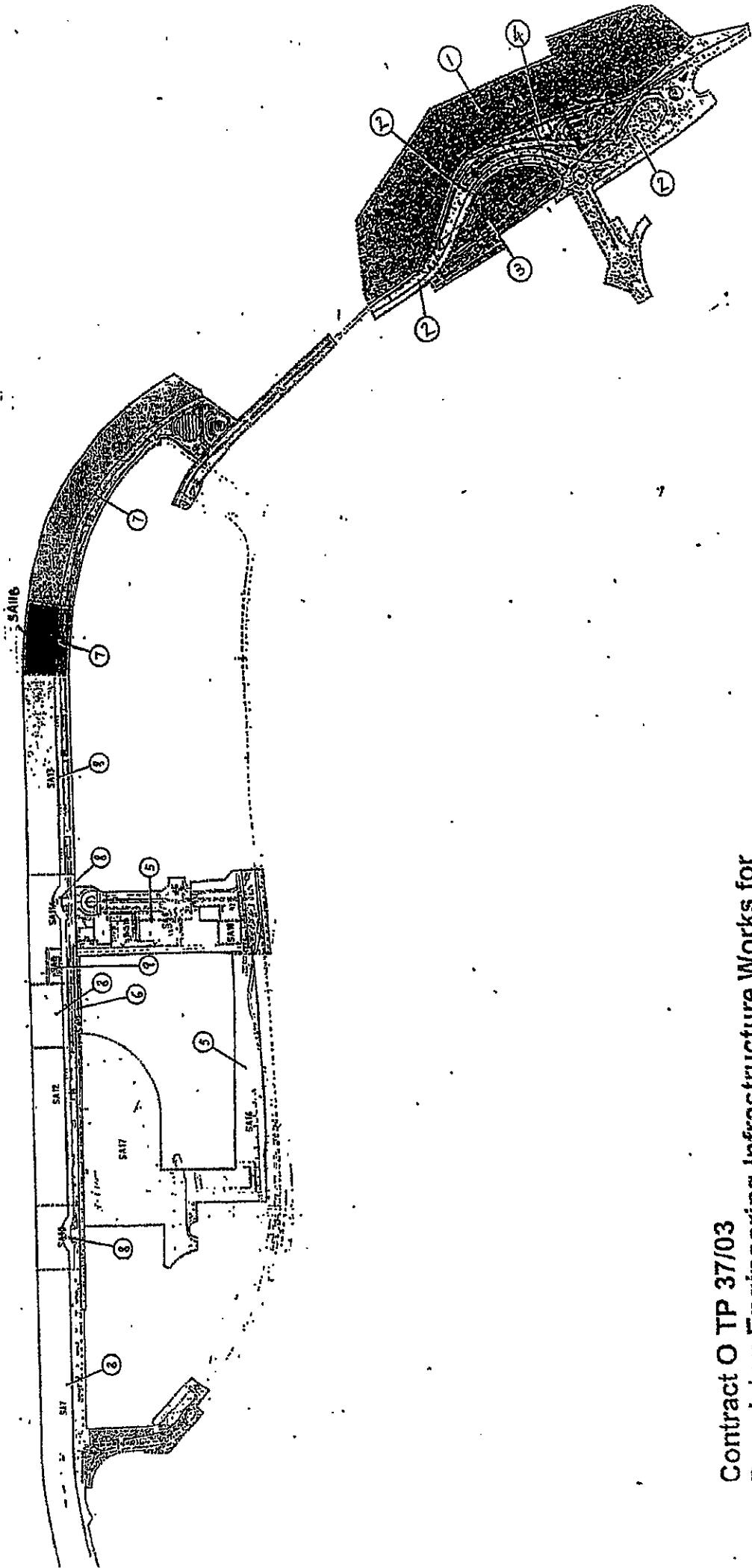
Legend:
 ■ Early Start
 ■ Progress bar
 ■ Critical bar
 ■ Summary bar
 ■ Milestone point
 ◆ Milestone point

Leader - Wai Koo (C&T) Joint Venture
 TP37/03 - Revised Works Programme - RP04





Appendix G
Construction Site Area



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

Location and Key Pan



Appendix H

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



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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 4 November 2006 Inspected by Name : (RSS) Eric Leung (LWKIV) Wai Tsang Chan (ET) H.T. Chow
 Time : 10:15 Signature : *[Signature]*

Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 25°C
 Humidity : High / Moderate / Low

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

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

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

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



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

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

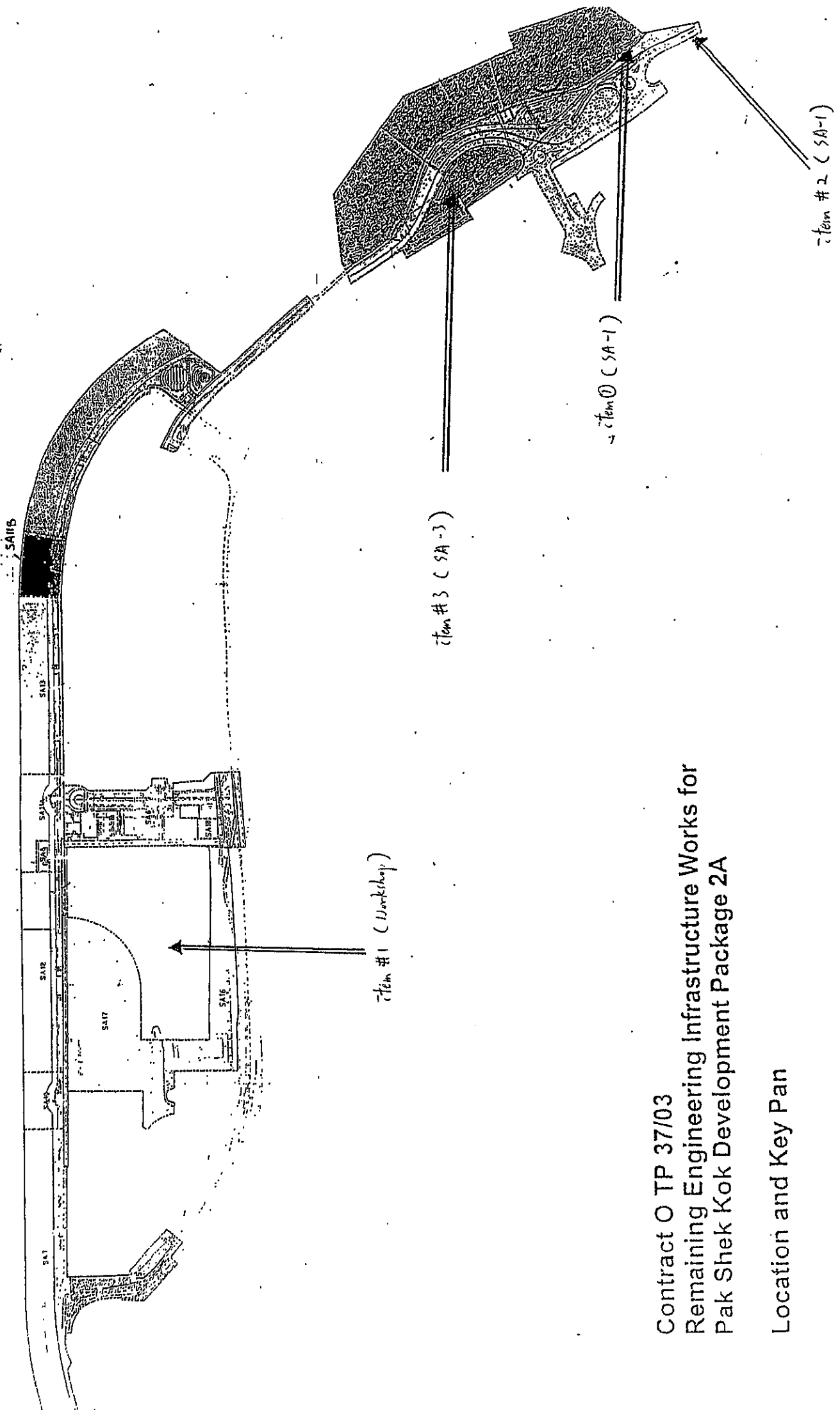
12/11/20

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

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item ① on (12-10-06), #2 (19-10-06) and #3 (26-10-06), the oil trap tank at "Workshop" was still flooded.	Workshop	The Contractor should provide bigger sumpit immediately and ensure the oil trap tank is normal operation.	11-11-06
#2	Follow up action to previous site inspection item ① on (19-10-06) and #3 (26-10-06), tarpaulin sheets was still not enough covered the site boundary at "SA-1".	SA-1	The Contractor was remind to replace a bigger surface canvas.	11-11-06
#3	Follow up action to previous site inspection item ① on (19-10-06) and #4 (26-10-06), partial waste water pipe was still found direct discharge to the drainage channel.	SA-3	The Contractor should passing through the sedimentation tank before discharge.	11-11-06
#4	Follow up action to previous site inspection item ① on 26-10-06, an excavator (F29) at SA-3 was repaired.	SA-3	Follow up action was completed, no further action to be taken.	N/A
#5	Follow up action to previous site inspection item ② on 26-10-06, litter bags was provided for SA-3.	SA-3	Follow up action was completed, no further action to be taken.	N/A
①	Fugitive dust was observed from unloading materials.	SA-1	The Contractor should be sprayed prior to loading materials.	11-11-06
Others:	pH value checking were carried out at workshop and SA-3 discharge point respectively, there were within the discharge standard (pH 6~9).			

Signature:	RSS	LWKJY	ET
Name:	Eric Leung	WATSON CHOW	H. T. Chow
Date:	04-11-2006	4-11-2006	4-11-2006



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 : 11 November 2006 Inspected by Name : (RSS) Eric Leung (LWKJM) *Wong Kong Chan* (ET) H.T. Chow
 Time : 10:00 Signature : *Eric Leung*
 Weather Condition Wind : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
 Temperature : 27°C
 Humidity : High / Moderate / Low

	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

	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.	✓			# 3
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.	✓			# 1
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 (bundled) 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

	Implementation Stages*		Remark
	Yes	No / N/A	
Mitigation Measures on Waste Management			
Filling Activities			
<ul style="list-style-type: none"> ▪ 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			
<ul style="list-style-type: none"> ▪ 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 750m³ 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			
<ul style="list-style-type: none"> ▪ 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

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



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

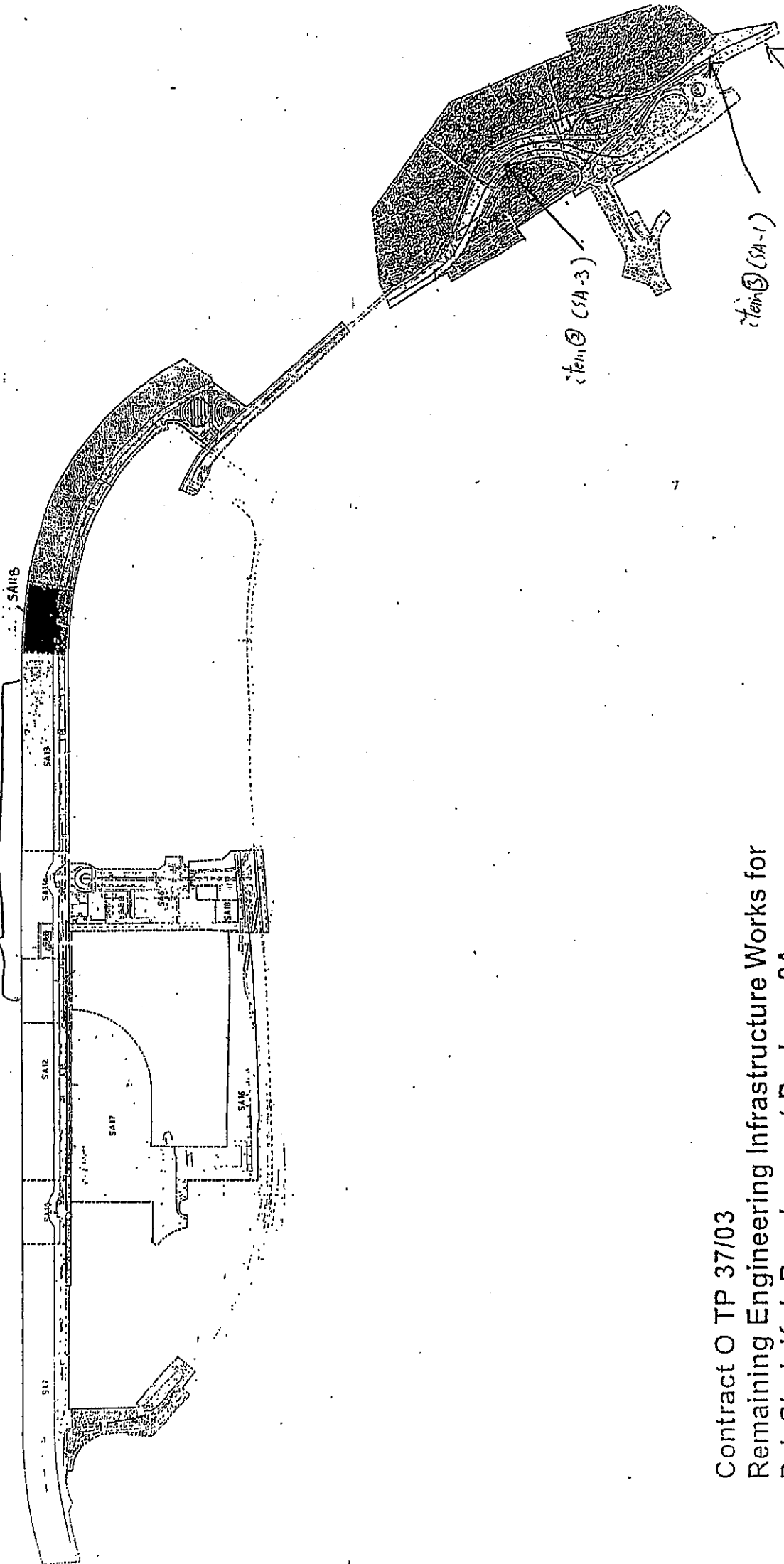
	Implementation Stages*	Remark
Mitigation Measures on Waste Management		
• Spillage	✓	
• Establish source of spill or discharge and determine nature of material, where possible halt discharge	✓	
• Commencing at the source of the spill, establish all current and potential impacted areas	✓	
• Commence containment 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 items ① (12-10-06), #2 (19-10-06), #3 (26-10-06) and #1 (4-11-06), bigger sump pit was provided at Workshop 11 for the oil trap tank.	Workshop	Follow up action was completed, no further action to be taken.	N/A
#2	Follow up action to previous site inspection item ① (19-10-06), #3 (26-10-06) and #2 (4-11-06), tarpaulin sheets was still not enough covered the site boundary at "SA-1"	SA-1	The Contractor was reminded to replace a bigger surface canvas.	18-11-06
#3	Follow up action to previous site inspection item ② (19-10-06), #4 (26-10-06) and #3 (4-11-06), no wastewater direct discharge to the drainage channel was observed.	SA-3	Follow up action was completed, no further action to be taken.	N/A
#4	Follow up action to previous site inspection item ① on 4-11-06, no fugitive dust was observed from unloading materials at "SA-1"	SA-1	Follow up action was completed, no further action to be taken.	N/A
①	Flying dust was observed at Node 2 haul road.	Node 2	The Contractor was reminded to apply a frequent water spray to prevent fugitive dust during traffic. Sst.	18-11-06
②	Oil leakage from generator was observed at "SA-3"	SA-3	The Contractor should provide an adaptive drip tray for generator.	18-11-06
③	Waste water was found accumulated at SA-1 site	SA-1 site entrance	The Contractor should remove the wastewater immediately to avoid mosquito breeding. Sst.	18-11-06

Signature:	RSS	LWKJV	ET
Name:	Eric		Sst.
Date:	Eric beamy 11-11-2006	WATSON CHONG 11-11-2006	H. T. Cheong 11-11-2006

Item 0 (Node 2)



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 : 18 November 2006 Inspected by Name : (RSS) Sunny WENY (LWKUV) MASON CHAN (ET) H. T. CHOW
Time : 10:15 Signature : *[Signature]*

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

Temperature : 24 °C
Humidity : ~~High~~ / Moderate / Low

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

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
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.	✓			Item 4
▪ 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.	✓			Item 2
▪ 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 (bundled) 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

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

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





SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

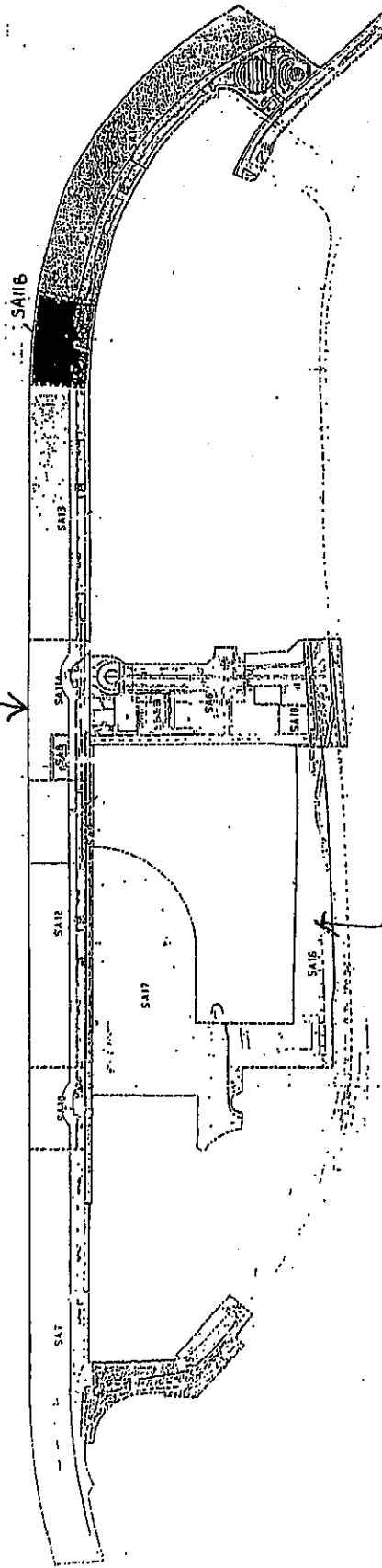
	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge				
• Commencing at the source of the spill, establish all current and potential impacted areas	✓			
• 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	✓			2/10/03
• 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.	✓			# 3
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			2/10/03

2/10/03

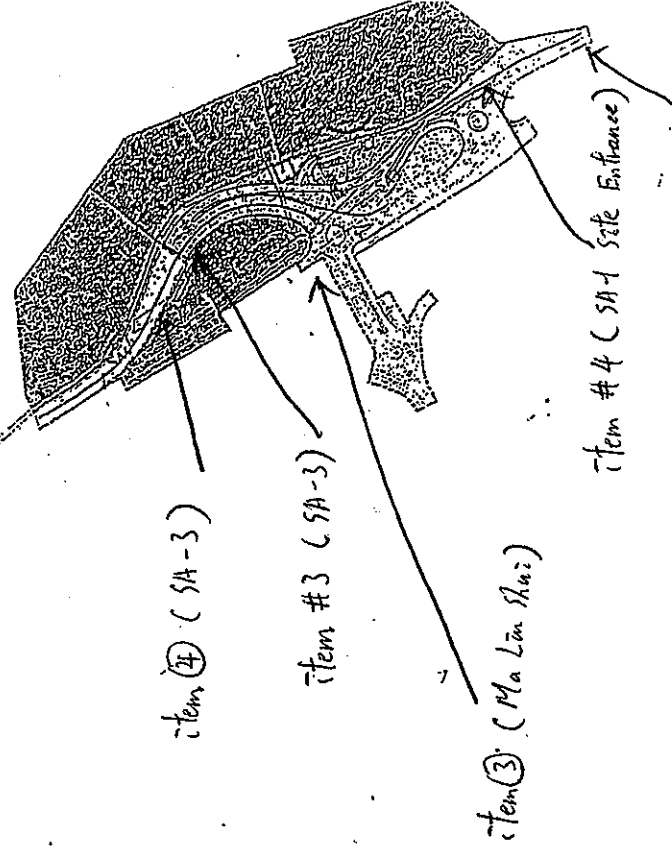
Table for follow-up Action:

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 ① (19-10-06), #3 (26-10-06), #2 (4-11-06) and #2 (11-11-06), tarpaulin sheets was still not enough covered the site boundary at "SA-1".	SA-1	The Contractor was reminded to replace a bigger surface canvas.	24-11-06
#2	Follow up action to previous site inspection item ① on 11-11-06, a frequent water spray to haul road was applied.	Node 2	Follow up action was completed, no further action to be taken.	N/A
#3	Follow up action to previous site inspection item ② on 11-11-06, the contaminated soil was cleaned up, but oil leakage still found from a small hole of P-7p tray.	SA-3	The Contractor should provide an adaptive trap tray for generator.	24-11-06
#4	Follow up action to previous site inspection item ③ on 11-11-06, waste water was still accumulated at SA-1 site entrance.	SA-1 Site Entrance	The Contractor should remove waste water immediately to avoid mosquito breeding.	24-11-06
①	Rubbish was generated on the marine surface at Node-2.	Node-2	The Contractor was reminded to clean up the marine working area.	24-11-06
②	Mud and vegetation was accumulated in the main drainage channel along area SA-16.	SA-16	The Contractor should clean up the channel as soon as possible.	24-11-06
③	Oil leakage from pumping truck was observed at SA-3 site entrance.	Ma Lim Shui	The pump truck have to be constantly maintained in good condition.	24-11-06
④	Site runoff was found direct discharge to the channel.	SA-3	The Contractor should use sedimentation tank before discharge.	24-11-06
Other: pH value checking were carried out at workshop and SA-3 discharge point respectively, there are within the standard (pH 6-9).				
Signature:		LWKJV		ET
Name:	Raymond Yennyng	WATSON CHAN	H. T. Chan	
Date:	18-11-06	18.11.2006	18-11-2006	

Item ① (Node 2)



Item ② (SA-16)



Item ④ (SA-3)

Item #3 (SA-3)

Item ③ (Ma Lim Sha)

Item #4 (SA-1 Site Entrance)

Item #1 (CSA)

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

Location and Key Plan

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 24/11/2006
Time : 14:30

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

Inspected by : (RSS) Walton Chan
Name : (LWKJV) Walton Chan
Signature :
Temperature :
Humidity : High / Moderate / Low

(ET) Louisa Fung
Signature: *Louisa Fung*

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	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 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.				
▪ 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*			
<i>Filling Activities</i>	Yes	No	N/A	
<ul style="list-style-type: none"> 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. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Waste Management				
Marine Dredged Sediment				
<ul style="list-style-type: none"> 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 750m³ 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. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Construction and Demolition (C&D) Waste				
<ul style="list-style-type: none"> 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 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Mitigation Measures on Waste Management	Implementation Stages*		Remark
	Yes	No	
<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Be via a licensed waste collector To a licensed disposal facility, such as Chemical Waste Treatment Centre Be a reuser of the waste, under approval from the EPD 			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• 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 minimize 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 minimize 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 minimize 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 inspecting item # 1 on 18/11/06, item ① on 19/10/06, item # 3 on 26/10/06, item #2 on 04/11/06 and item #2 on 11/11/06, tarpaulin sheets was big enough to cover the site boundary at SA1. No further action is required.	SA1	No further action is required.	N/A
2	Follow up action to previous inspecting item # 3 on 18/11/06 and item ② on 11/11/06, no oil leakage was spotted from trip tray.	SA3	No further action is required.	N/A
3	Follow up action to previous inspecting item # 4 on 18/11/06 and item ③ on 11/11/06, wastewater was cleared.	SA 1 entrance	No further action is required.	N/A
4	Follow up action to previous inspecting item ④ on 18/11/06 no rubbish was found on the surface of seabody	Node 2	No further action is required.	N/A
5	Follow up action to previous inspecting item ② on 18/11/06, mud and vegetations along main drainage channel at area SA 16 were cleared up	SA 16	No further action is required.	N/A
6	Follow up action to previous inspecting item ③ on 18/11/06 no oil leakage was spotted from trip tray.	SA3	No further action is required.	N/A
7	Water pond at node 1	Node 1	Contractor should cover working pit with tarpaulin sheet or drain out rain water immediately on rainy days and after working hours	30/11/06
8	U channel was flooded with muddy water. Mud and sand were found setting in U channel.	Node 2	Contractor should apply clean up action asap	30/11/06

Signature:	RSS	LWKJV	ET
Name:	<i>Summy Tsang</i>	<i>Kenneth</i>	<i>Kevin</i>
Date:	24.11.06	WATSON CHAN	29.11.06



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



IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – October 06

Item No.	Document Reference	Comment	ET Response
1	Appendix B1	Calibration Certificates for High Volume Air Samplers of Serial Nos. 1178 (ET/EA/003/01), 7179 (ET/EA/003/06) and 1172 (ET/EA/003/11) were overdue.	Upon our understanding, outdated Calibration Certificates for High Volume Air Samplers of Serial Nos. 1178 (ET/EA/003/01), 7179 (ET/EA/003/06) was attached in report by mistake. Those equipments were in fact completed calibration on 16 September 2006 and due date were at 15 November 2006. A set of update calibration certificate were attached in appendix B1 for your reference.
2	Appendix I and Appendix List in Table of Contents	Comments should be made for the previous month by IEC instead of current month and the month before.	Typo error. Commenting month should be September 2006 instead of 'October 2006' and 'August 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 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

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 ¹ 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	61438-1	< 5	≤30	mg/L
Discharge Point near Ma Liu Shui Subway	Total Suspended Solids	61438-3	< 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
Kenneth Kar Kin LAM
(Laboratory Manager)

FROM : Prominent / Enviro Labs

FAX NO. : 2676 2860

Dec. 06 2006 11:37AM P3

ITEM 6



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

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 Chen

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
(I) pH	APHA' 20e 4500-H' B	30 Nov 2006 (on-site)
(II) Chemical Oxygen Demand (COD)	APHA' 20e 5220 C	30 Nov - 5 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	pH at 23°C	61438-1	8.4	6-9	..
	Chemical Oxygen Demand	61438-2	< 60	≤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 —



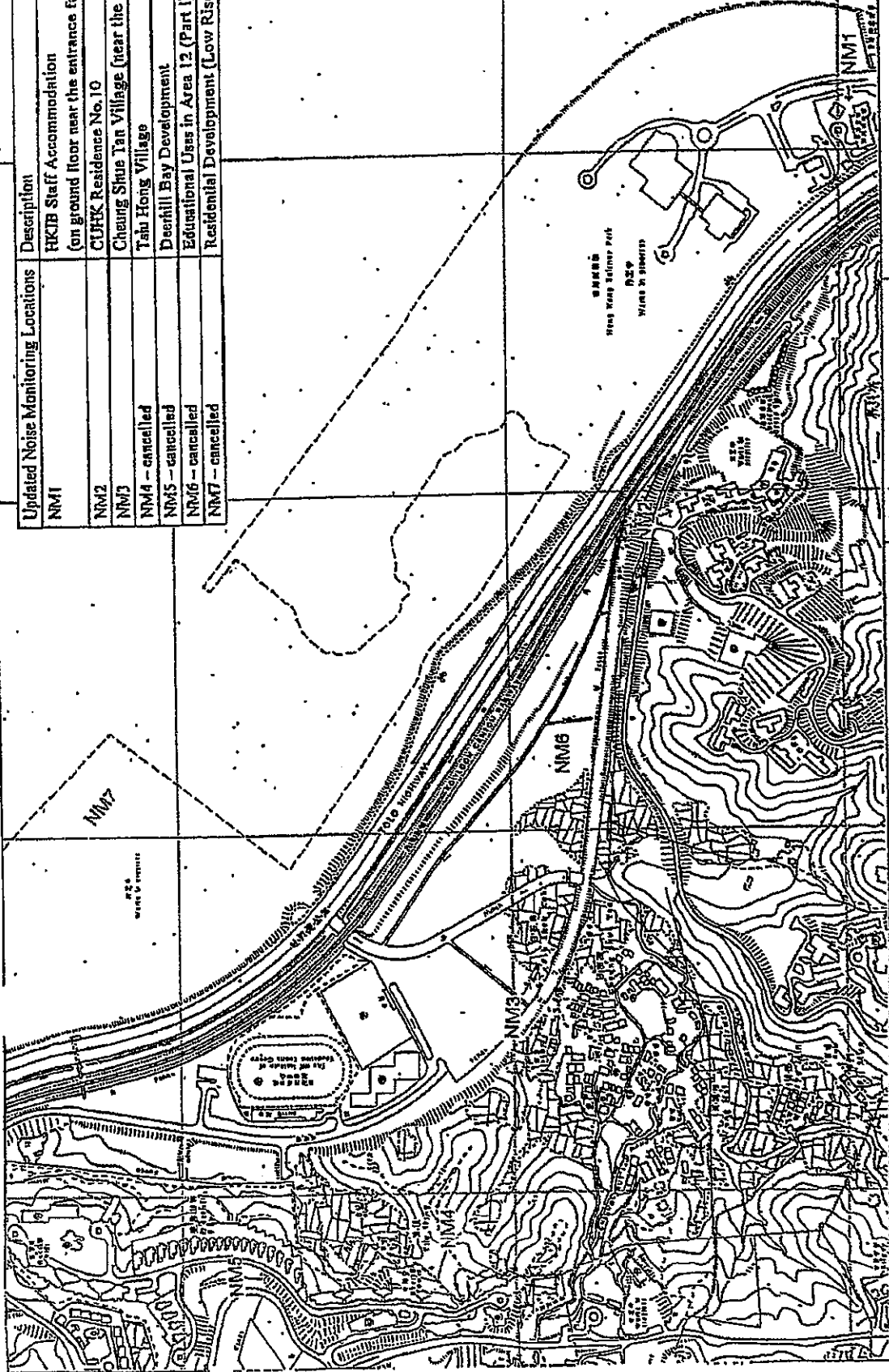
APPROVED SIGNATORY:

Kenith Kar Kin LAM
(Laboratory Manager)



Figures

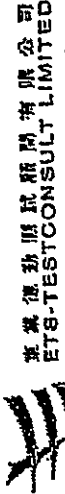
Updated Noise Monitoring Locations	Description
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No. 10
NM3	Cheung Shue Tan Village (near the outer building, temple)
NM4 - cancelled	Tau Hong Village
NM5 - cancelled	Deerhill Bay Development
NM6 - cancelled	Educational Uses in Area 12 (Part 1)
NM7 - cancelled	Residential Development (Low Rise Building) - R1



Scale : ---

Revised Date: ...

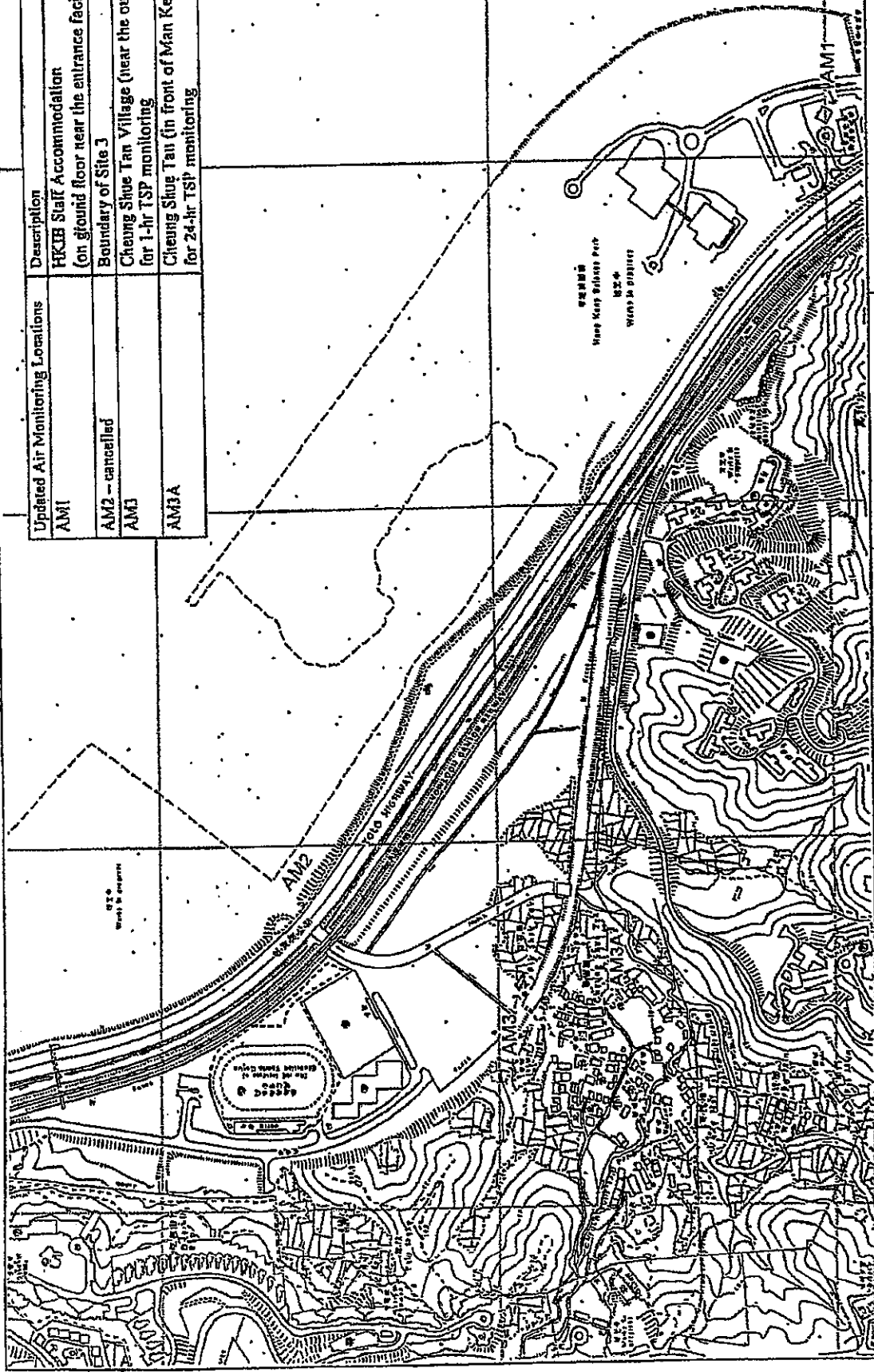
June 2004



英業德測試顧問有限公司
ETS-TESTCONSULT LIMITED

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

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



Scale: ---

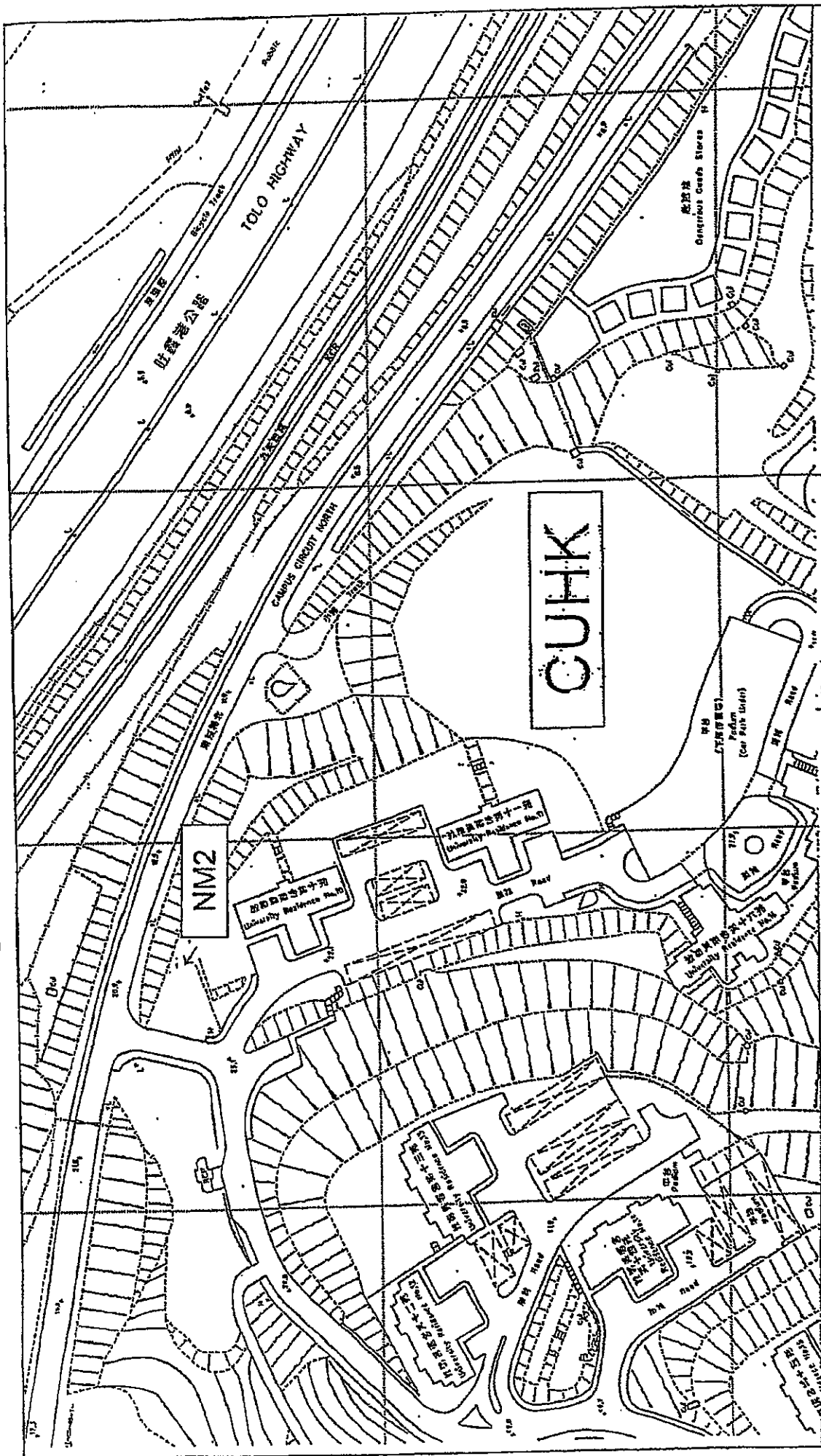
Revised Date:


June 2004

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



英業德劭測試顧問有限公司
ETS-TEST CONSULT LIMITED

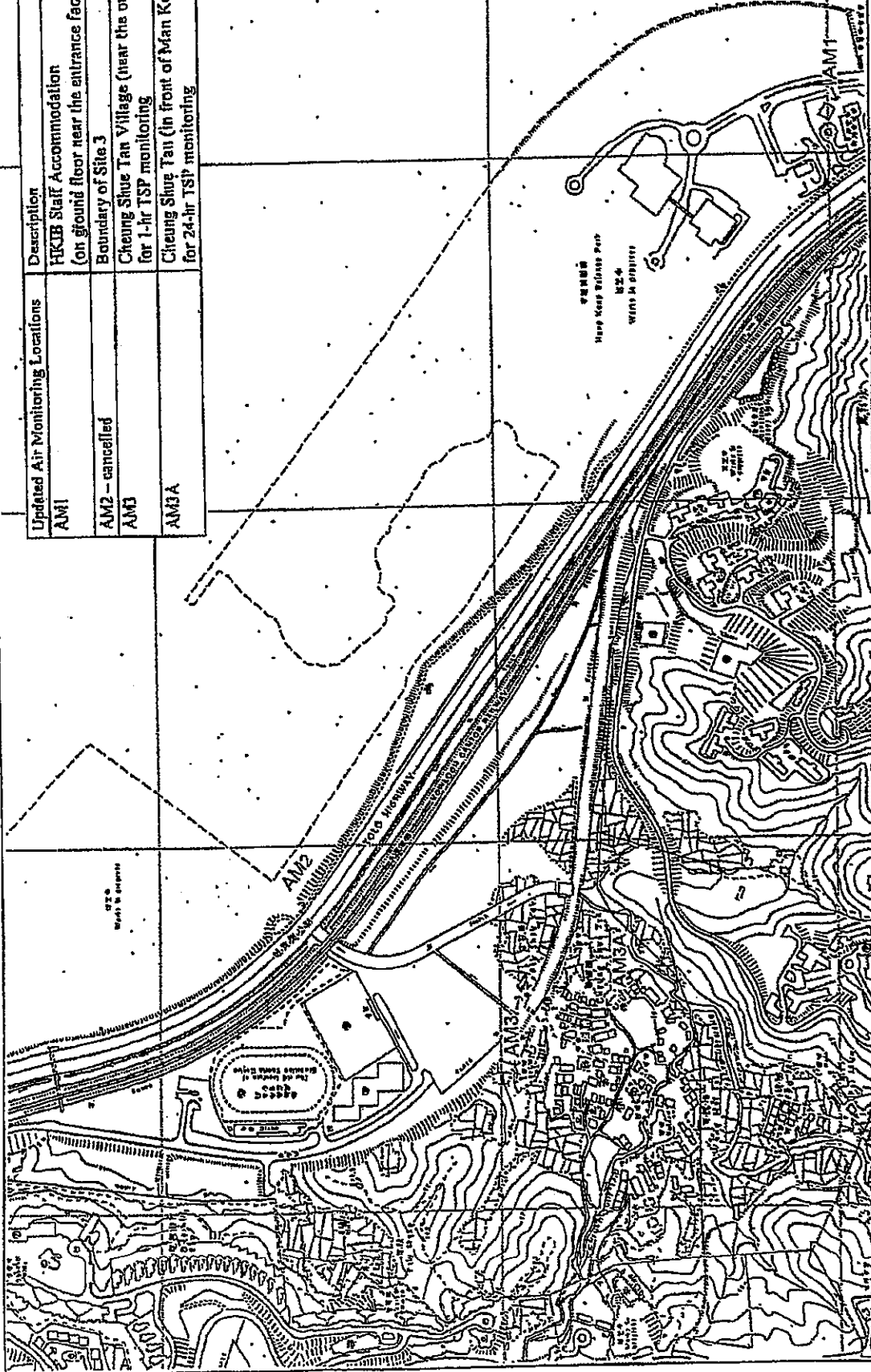



 業業通勤測訊顧問有限公司
 ETS-TEST CONSULT LIMITED

Revised Date: June 2004
 Scale: 1:1000

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

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



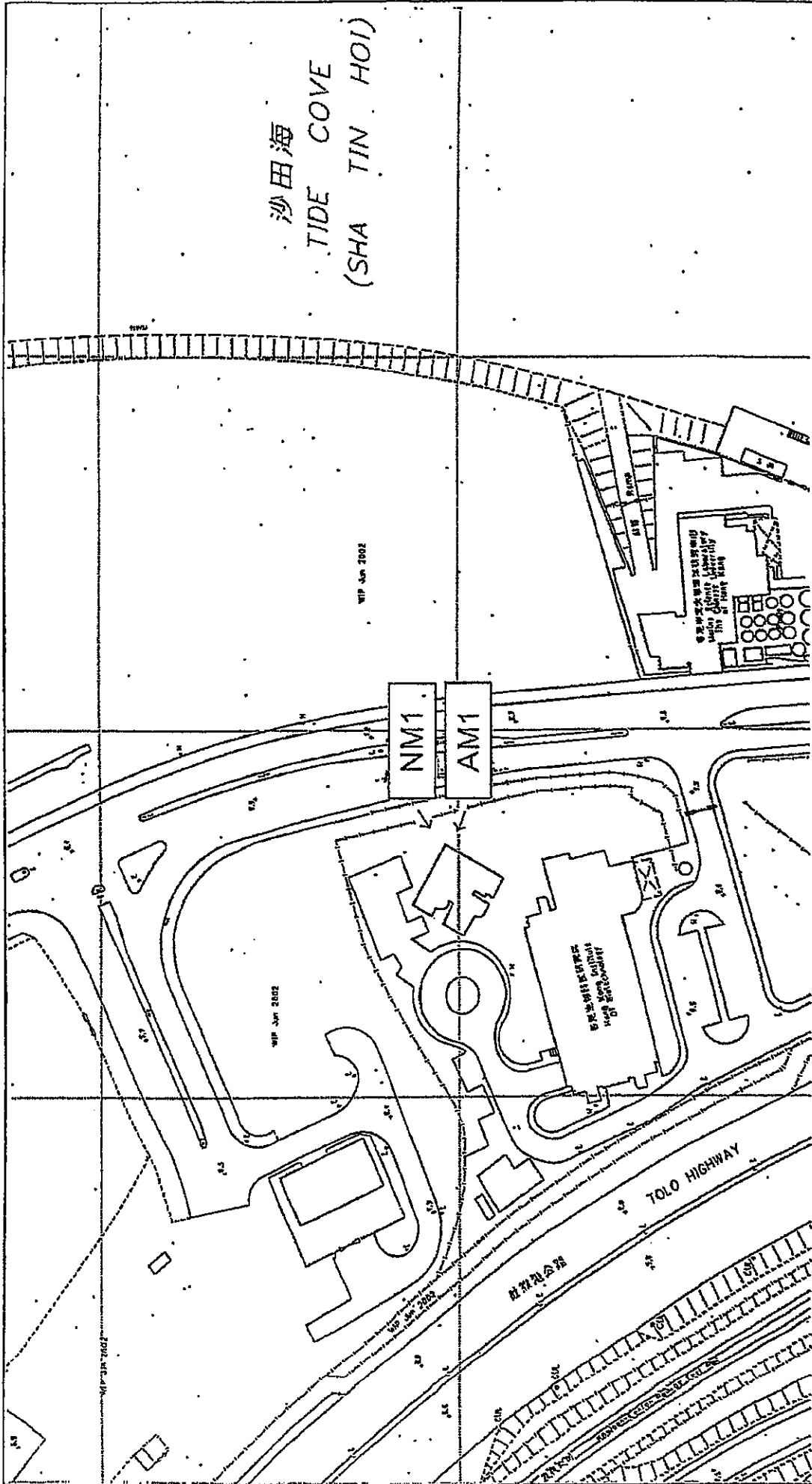
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Revised Date: June 2004

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



英業德動測試顧問有限公司
ETS-TESTCONSULT LIMITED



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

Scale : ---


Revised Date:

June 2004



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 ETS-TESTCONSULTY LIMITED





 傑榮基勁測試顧問有限公司

 ETS-TEST CONSULT LIMITED

Revised Date: June 2004

Remaining Engineering Infrastructure Works for

 Pak Shek Kok Development Package 2A

 Contract No. IP 37/03

 Figure 4 Location of Noise Monitoring Station at CUHK Residence No.10



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

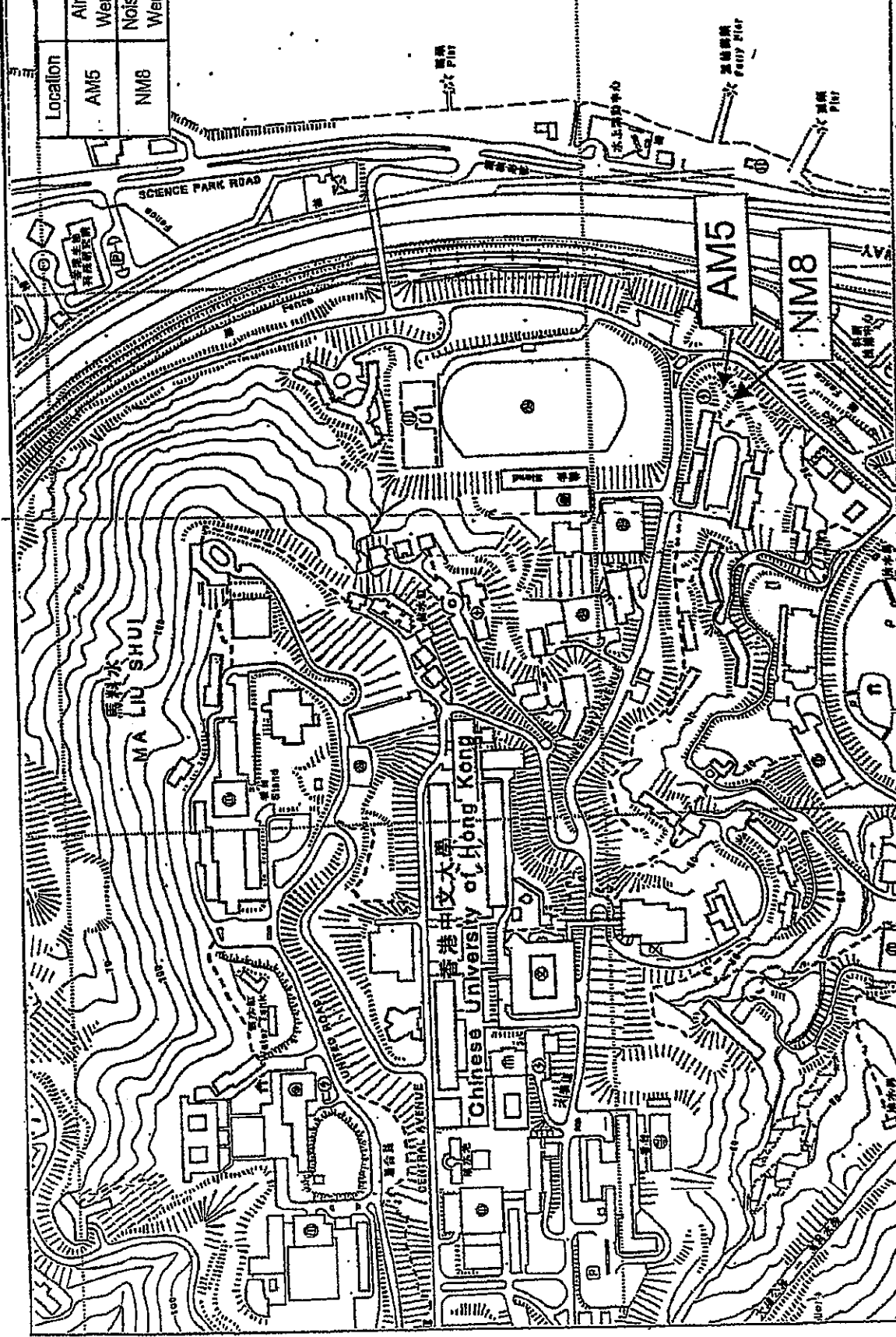
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Revised Date:
June 2004



東區運動場發展顧問有限公司
 ETS-TESTCONSULT LIMITED

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



Scale : ...
 Remaining Engineering Infrastructure Works for Pak Shek Kok Development

Package 2A Contract No. TP 37/03

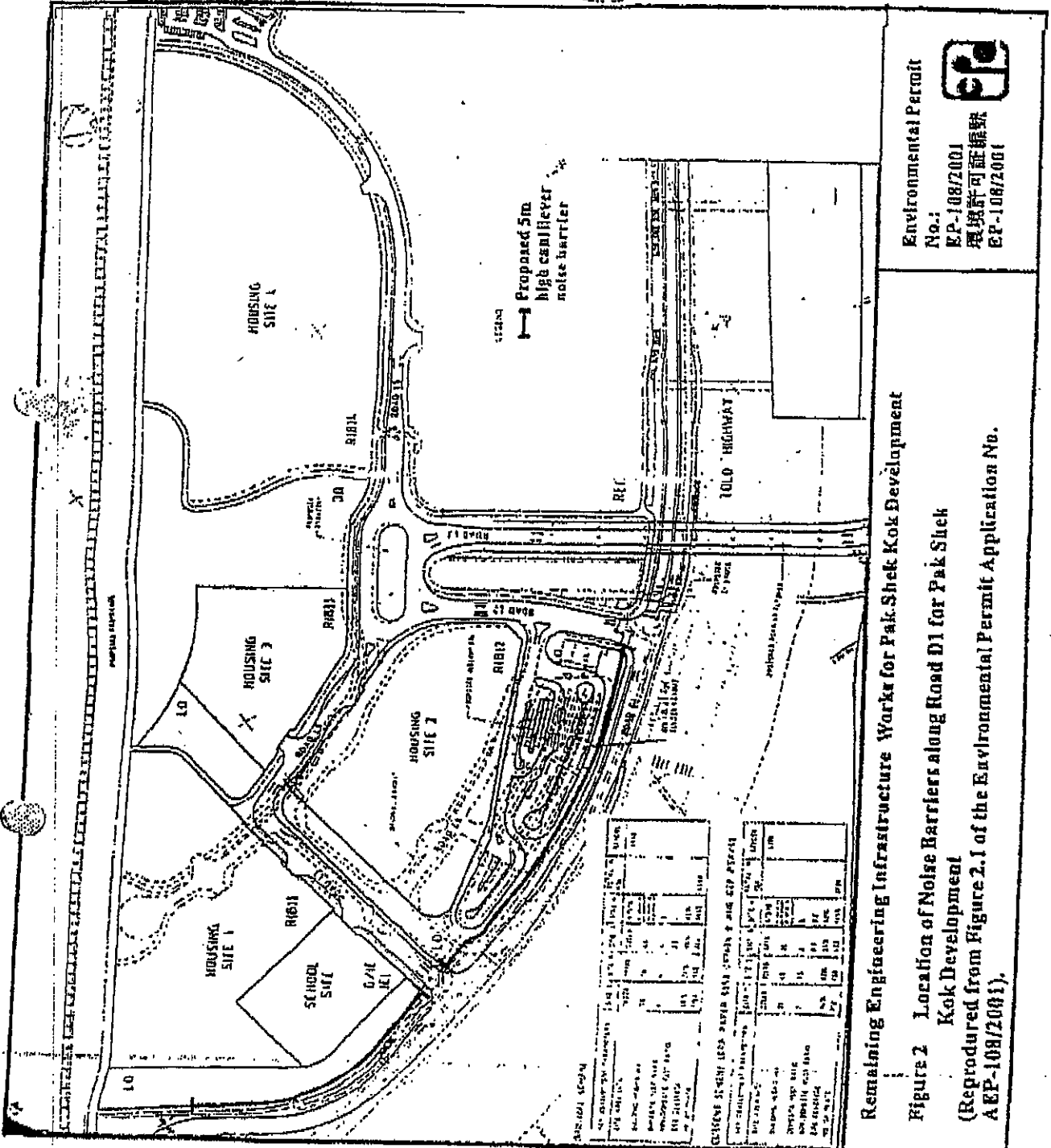
Figure 7 Additional Locations of Air and Noise Monitoring Stations at the Chinese University of Hong Kong

Revised Date :
 October 2004



東業振動測試顧問有限公司
 ETS-TESTCONSULT LIMITED

05-NOV-2001 14:58 FROM EPD EIA REGISTER TO 26932918



Environmental Permit
No.: EP-108/2001
環境許可証編號
EP-108/2001

Remaining Engineering Infrastructure Works for Pak Shek Kok Development
Figure 2 Location of Noise Barriers along Road D1 for Pak Shek Kok Development
(Reproduced from Figure 2.1 of the Environmental Permit Application No. AEP-108/2001).

