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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

(DECEMBER 2006)

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Report No.: ENA60923

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EXECUTIVE SUMMARY

This monthly EM&A report (No.20) has been prepared to document the impact monitoring works conducted for the Contract of the Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No: TP 37/03) during the reporting period from 01 to 31 December 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 nad parapet walls at the proposed Landscape Nodes P1, P2 and P3;*
- *Shelter fabrication for the proposed Public Landing Steps;*
- *Compaction of surcharge mound formed under VO/146; and*
- *Filling of soil mix at planter wall.*

Environmental Monitoring Progress

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

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

Site Inspection

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

Concerned Parties	*Dates of Audit / Inspection*
Weekly site inspection (ET)	*01, 09, 16, 21, 28*
Monthly site inspection (IEC/LWKJV/RE)	*21*

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	Black smoke was emitted from an excavator (TW95/02 F1-E-509) was observed during site inspection on 09/12/06	LWKJV replied to repair the defective excavator to avoid black smoke emission.	During the subsequent site inspection on 16/12/06, the defective excavator was found removed for repairing.
2	Air	Tarpaulin sheet on fence at SA-3 was found torn apart during site inspection on 21/12/06	LWKJV replied to replace the broken tarpaulin sheet by a new one.	During the subsequent site inspection on 28/12/06, the broken tarpaulin sheet was found replaced.
3	Water	Follow up action to previous site inspection finding item 7 on 24/11/06, no water pond at node 1 was observed during site inspection on 01/12/06.	No further action was requited to be taken by LWKJV since the finding was completed.	No further verification was required to be taken by LEKJV since the finding was completed, no further actions were required.
4	Water	Follow up action to previous site inspection finding item 8 on 24/11/06, mud and sand were still observed in U-channel at Node 2 during site inspections on 01/12/06, 09/12/06 and16/12/06.	LWKJV replied to clean up the mud and sand accumulated at U-channel immediately.	During the site inspection on 21/12/06, the mud and sand accumulated were cleaned up and no further actions were required.
5	Water	Mud and sand were found accumulated in the main drainage channel at Node 1 during site inspection on 01/12/06.	LWKJV replied to clean up the mud and sand accumulated immediately.	During the subsequent site inspection on 09/12/06, the mud and sand accumulated were cleaned up and no further actions were required.
6	Water	Wastewater was found directly discharged to the drainage channel at SA-3 during site inspections on 01/12/06, 09/12/06 and 16/12/06.	LWKJV replied to divert the wastewater to sedimentation facilities before discharge.	During site inspection on 21/12/06, no wastewater was found directly discharged to the drainage channel. Since the finding was improved, no further actions were required.
7	Chemical	Oil container at Workshop was found without appropriate label during site inspections on 01/12/06 and 09/12/06.	LWKJV replied to provide appropriate label for every oil container.	During the site inspection on 16/12/06, chemical labels were found to be provided for all oil containers at Workshop.
8	Chemical	Oil leakage from a generator at SA-3 was observed during site inspections on 01/12/06 and 09/12/06.	LWKJV replied to repair the defective generator and clean up the contaminated soil as chemical waste.	During the site inspection on 16/12/06, no oil was observed leaked from the generator and the contaminated soil had been cleaned up.
9	Chemical	Two 20L oil drums were found placed outside Workshop and near Subway during site inspection on 21/12/06.	LWKJV replied to relocate these two oil drums to appropriate storage area.	During the subsequent site inspection on 28/12/06, these two oil drums were removed.
10	Chemical	The drain outlet of the drip trays at Workshop and SA-3 were found opened during site inspection on 28/12/06.	LWKJV replied to close the outlet immediately after drainage.	Since the finding was observed at the last site inspection, it will be verified at the next site inspection in the coming month.
11	Site Practice	Rubbish was found full in the skip at Node 1 during site inspection on 09/12/06.	LWKJV replied to clean up the rubbish skip regularly.	During the subsequent site inspection on 16/12/06, the skip at Node 1 were removed and hence no further actions were required.
12	Site Practice	Sand and mud was observed at cycle track near the entrance of Node 1 during site inspection on 21/12/06.	LWKJV replied to clean up the sand and mud observed at cycle track immediately.	During the subsequent site inspection on 28/12/06, no mud and sand were observed at the cycle track.

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. 2000m^3 inert C&D materials and 36920kg general refuse were generated in this reporting month. All inert C&D materials were reused in the Contract and other wastes were handling under the instruction and procedure stated in the WMP in this reporting month.

Environmental Complaints

No environmental complaints were received in this monitoring month.

Notification of summons and successful prosecutions

No notification of summons and prosecutions with respect to environmental issues were registered in this reporting month.

Future Key Issues

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

- Noise and air quality impact due to construction works;
- Maintain wheel washing facilities properly;
- Cleanup the access road regularly;
- Watering, hydro-seeding or covering all stockpiles with tarpaulin to avoid wind and water erosion;
- Diverting the silty runoff to sedimentation trap or sedimentation tanks;
- Use and maintenance of silt curtain properly during marine works;
- Maintain good site practice and waste management to minimize environmental impacts at the site;
- Follow-up improvements on waste management issues.

1.0 INTRODUCTION

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

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

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

This monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 01 to 31 December 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 1and 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

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

Table 3.2 Implementation of Environmental Mitigation Measures

General construction works	• *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.*

4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

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

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

4.2 Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. One portable dust meter was used to carry out the 1-hour TSP monitoring. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and portable dust meter are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	*Model and Make*
HVS	*Greasby GMWS2310*
Calibrator	*Tisch TE-5025A*
1-hour TSP Dust Meter	*TSI Model 8520 Dust Trak™ Aerosol Monitor*

4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequencies of impact air quality monitoring

Parameter	*Duration*	*Frequency*
24-hr TSP	*24 hr (0000-2400)*	*Once every six days*
1-hr TSP	*1 hr (0700-1900)*	*Three times every six days*

4.4 Monitoring Locations and Schedule

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

Table 4.3 Air quality monitoring locations

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

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

Table 4.4 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
		Date	Time	Date	Time			
AM1	HKIB Staff Accommodation					02/12/06	11:04	12:04
						05/12/06	09:00	10:00
						07/12/06	09:35	10:35
						09/12/06	18:00	19:00
						12/12/06	11:00	12:00
						14/12/06	09:02	10:02
						16/12/06	10:30	11:30
						19/12/06	08:47	09:47
						21/12/06	09:05	10:05
						23/12/06	10:30	11:30
						28/12/06	08:30	09:30
						30/12/06	09:41	10:41
AM3	Cheung Shue Tan Village (Near the outer building, temple)					02/12/06	13:02	14:02
						05/12/06	10:20	11:20
						07/12/06	10:50	11:50
						09/12/06	15:00	16:00
						12/12/06	13:00	14:00
		—				14/12/06	10:34	11:34
						16/12/06	13:00	14:00
						19/12/06	13:02	14:02
						21/12/06	10:18	11:18
						23/12/06	15:30	16:30
						28/12/06	08:47	09:47
						30/12/06	10:52	11:52
AM5	Near Wen Chih Tang at the CUHK					02/12/06	14:15	15:15
						05/12/06	16:30	17:30
						07/12/06	14:31	15:31
						09/12/06	16:30	17:30
						12/12/06	14:20	15:20
		—				14/12/06	15:28	16:28
						16/12/06	16:30	17:30
						19/12/06	14:14	15:14
						21/12/06	13:09	14:09
						23/12/06	16:50	17:50
						28/12/06	10:14	11:14
						30/12/06	15:42	16:42
AM1	HKIB Staff Accommodation	02/12/06	11:00	03/12/06	10:44	—		
		08/12/06	16:45	09/12/06	16:35			
		14/12/06	09:10	15/12/06	09:41			
		20/12/06	08:30	21/12/06	08:26			
		27/12/06	09:00	28/12/06	09:08			
AM3A	Cheung Shue Tan (in front of Man Kee Store)	02/12/06	13:00	03/12/06	13:27	—		
		08/12/06	17:15	09/12/06	17:29			
		14/12/06	09:30	15/12/06	09:39			
		20/12/06	09:45	21/12/06	10:35			
		27/12/06	09:35	28/12/06	09:49			
AM5	Near Wen Chih Tang at the CUHK	02/12/06	10:50	03/12/06	10:43	—		
		08/12/06	16:55	09/12/06	16:52			
		14/12/06	09:45	15/12/06	09:35			
		20/12/06	09:00	21/12/06	08:46			
		27/12/06	09:15	28/12/06	08:58			

4.5 Monitoring Methodology

4.5.1 24-hour TSP Monitoring

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

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

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

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

- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C $\pm$ 3°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 ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	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 (Lx). 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 Leq, L10 and L90 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 $L_{eq(5\text{-}min)}$);*
- *One set of measurements between 1900-2300 hours (3 consecutive $L_{eq(5\text{-}min)}$)*;*
- *One set of measurements between 2300-0700 hours of next day (3 consecutive $L_{eq(5\text{-}min)}$)*;*
- *One set of measurements between 0700-1900 hours on holidays (3 consecutive $L_{eq(5\text{-}min)}$)*.*

(*): 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	*05/12/06*	*09:02*	---	---	---	---	---	---
	12/12/06	*11:02*	---	---	---	---	---	---
	19/12/06	*08:50*	---	---	---	---	---	---
	28/12/06	*08:45*	---	---	---	---	---	---
NM2	*05/12/06*	*08:45*	---	---	---	---	---	---
	12/12/06	*15:35*	---	---	---	---	---	---
	19/12/06	*17:02*	---	---	---	---	---	---
	28/12/06	*09:31*	---	---	---	---	---	---
NM3	*05/12/06*	*10:22*	---	---	---	---	---	---
	12/12/06	*13:02*	---	---	---	---	---	---
	19/12/06	*13:11*	---	---	---	---	---	---
	28/12/06	*10:18*	---	---	---	---	---	---
NM8	*05/12/06*	*16:32*	---	---	---	---	---	---
	12/12/06	*14:22*	---	---	---	---	---	---
	19/12/06	*15:22*	---	---	---	---	---	---
	28/12/06	*11:03*	---	---	---	---	---	---

5.5 Monitoring Procedures and Calibration Details

Operation/Analysis Procedures

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

Maintenance and Calibration

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

5.6 Action and Limit Levels

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

Table 5.5 Action and Limit Levels for noise monitoring

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

* = *Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.*
** = *Area Sensitivity Rating (ASR) C is selected from the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling".*

5.7 Event-Action Plans

Please refer to the Appendix E for details.

5.8 Results

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

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

6.0 WASTEWATER MONITORING

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

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

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

7.0 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of environmental monitoring

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

No day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

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

7.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

7.3 Summary of Notification of Summons and Prosecution

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

8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET in this reporting month (04,11,19, 23 November 2006). Monthly joint site inspection at 23 November 2006 was carried out by Engineer's Representative, IEC and LWKJV. The implementation status of the mitigation measures on site inspections in this reporting month is presented in Appendix H.

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

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

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

Item	*Aspects*	*Findings*	*Action(s) taken by LWKJV*	*ET Verification*
1	*Air*	*Black smoke was emitted from an excavator (TW95/02 F1-E-509) was observed during site inspection on 09/12/06*	*LWKJV replied to repair the defective excavator to avoid black smoke emission.*	*During the subsequent site inspection on 16/12/06, the defective excavator was found removed for repairing.*
2	*Air*	*Tarpaulin sheet on fence at SA-3 was found torn apart during site inspection on 21/12/06*	*LWKJV replied to replace the broken tarpaulin sheet by a new one.*	*During the subsequent site inspection on 28/12/06, the broken tarpaulin sheet was found replaced.*
3	*Water*	*Follow up action to previous site inspection finding item 7 on 24/11/06, no water pond at node 1 was observed during site inspection on 01/12/06.*	*No further action was requited to be taken by LWKJV since the finding was completed.*	*No further verification was required to be taken by LEKJV since the finding was completed, no further actions were required.*
4	*Water*	*Follow up action to previous site inspection finding item 8 on 24/11/06, mud and sand were still observed in U-channel at Node 2 during site inspections on 01/12/06, 09/12/06 and16/12/06.*	*LWKJV replied to clean up the mud and sand accumulated at U-channel immediately.*	*During the site inspection on 21/12/06, the mud and sand accumulated were cleaned up and no further actions were required.*
5	*Water*	*Mud and sand were found accumulated in the main drainage channel at Node 1 during site inspection on 01/12/06.*	*LWKJV replied to clean up the mud and sand accumulated immediately.*	*During the subsequent site inspection on 09/12/06, the mud and sand accumulated were cleaned up and no further actions were required.*
6	*Water*	*Wastewater was found directly discharged to the drainage channel at SA-3 during site inspections on 01/12/06, 09/12/06 and 16/12/06.*	*LWKJV replied to divert the wastewater to sedimentation facilities before discharge.*	*During site inspection on 21/12/06, no wastewater was found directly discharged to the drainage channel. Since the finding was improved, no further actions were required.*

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
7	Chemical	Oil container at Workshop was found without appropriate label during site inspections on 01/12/06 and 09/12/06.	LWKJV replied to provide appropriate label for every oil container.	During the site inspection on 16/12/06, chemical labels were found to be provided for all oil containers at Workshop.
8	Chemical	Oil leakage from a generator at SA-3 was observed during site inspections on 01/12/06 and 09/12/06.	LWKJV replied to repair the defective generator and clean up the contaminated soil as chemical waste.	During the site inspection on 16/12/06, no oil was observed leaked from the generator and the contaminated soil had been cleaned up.
9	Chemical	Two 20L oil drums were found placed outside Workshop and near Subway during site inspection on 21/12/06.	LWKJV replied to relocate these two oil drums to appropriate storage area.	During the subsequent site inspection on 28/12/06, these two oil drums were removed.
10	Chemical	The drain outlet of the drip trays at Workshop and SA-3 were found opened during site inspection on 28/12/06.	LWKJV replied to close the outlet immediately after drainage.	Since the finding was observed at the last site inspection, it will be verified at the next site inspection in the coming month.
11	Site Practice	Rubbish was found full in the skip at Node 1 during site inspection on 09/12/06.	LWKJV replied to clean up the rubbish skip regularly.	During the subsequent site inspection on 16/12/06, the skip at Node 1 were removed and hence no further actions were required.
12	Site Practice	Sand and mud was observed at cycle track near the entrance of Node 1 during site inspection on 21/12/06.	LWKJV replied to clean up the sand and mud observed at cycle track immediately.	During the subsequent site inspection on 28/12/06, no mud and sand were observed at the cycle track.

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	Group A Two Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101) Group B Two Excavator, tracked (CNP081) Two Dump truck (CNP067) One Generator, standard (CNP101)
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	Group A Two Poker, vibrator, hand-held (CNP170) Two Concrete pump, lorry mounted (CNP047) Two Concrete lorry mixer (CNP044) Group B One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Roller, vibratory Group C One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067) Group D One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane

Description	Permit No.	Valid Period		Section
		From	To	
Construction Noise Permit for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po	GW-RN0388-06	27/07/06	26/01/07	Group A Two Poker, vibratory, hand-held (CNP170) Two Concrete lorry mixer (CNP044) One Excavator, tracked (CNP081) Group B One Dump Truck (CNP067) One Excavator, tracked (CNP081) Group C One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067) Group D One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane
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	Group A One Derrick Barge (CNP061) Four Dump truck, 5.5 tonne < gross vehicle weight < 38 tonne One Excavator, tracked (CNP081) One Generator, standard (CNP101) Group B One Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101)
Wastewater Discharge License	3246 – Part A	01/11/06	31/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank to Coastal water or communal drain for the carriage of surface drainage water.
Wastewater Discharge License	3246 – Part B	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and on-site aerobic waste water treatment system to soak-away pit.
Chemical Waste Producer	5113-729-LL 1113-01	24/09/04	---	Spent lubricating oil, spent battery parts containing heavy metals

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

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

- *All stockpiles should be covered with clean tarpaulin sheets, spraying with water or hydro-seeding to avoid wind and water erosion;*
- *Size of tarpaulin sheet should be larger than surface size of stockpile in order to resume normal function of tarpaulin sheet;*
- *The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading or provide a canvas with larger surface area;*
- *Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off;*
- *Checking and maintaining all the site machines to prevent dust emission;*
- *Bigger sumpit for increasing wastewater input should provide for any necessary;*
- *Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;*
- *Use and maintenance of silt curtain properly during marine works;*
- *Regular maintenance of excavator or any diesel cater machines should be provided in order to avoid any possible smoke nuisance;*
- *Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;*
- *Maintain good waste management at the site.*

9.0 WASTE MANAGEMENT

9.1 Waste Management Audit

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

9.2 Records of Waste Quantities

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

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

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

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

Type of Waste		*Quantity*	*Disposal Location*	*Cumulative Quantity*
Inert C&D Materials	*Total Quantity Generated (m^3)*	*2000*	*Reused in the Contract*	*123365*
	Broken Concrete (m^3)	*0*	*N/A*	*865*
	Reused in the Contract (m^3)	*2000*	*N/A*	*122500*
	Reused in other Projects (m^3)	*0*	*N/A*	*0*
	Disposal as Public Fill (m^3)	*0*	*N/A*	*0*
C&D Waste	*Metals (1000kg)*	*0.00*	*N/A*	*37.705*
	Paper/Cardboard Packaging (1000kg)	*0.00*	*N/A*	*2.616*
	Plastics (1000kg)	*0.00*	*N/A*	*0.083*
	Chemical Waste (1000kg)	*0.00*	*N/A*	*3.000*
	Other, e.g. General Refuse (1000kg)	*36.92*	*SENT*	*436.16*

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

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

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

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

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

Waste Management
LWKJV has been implementing most mitigation measures on waste management.

10.2 Implementation Status of Event and Action Plan

There were no exceedances in air quality and noise monitoring parameters recorded in this monitoring month. No further mitigation measures were required.

10.3 Implementation Status of Environmental Complaint Handling

No complaints had been received during this monitoring month.

11.0 CONCLUSION

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

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

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

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

12.0 FUTURE KEY ISSUES

12.1 Upcoming EM&A Schedule in coming two months

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

Table 12.1 Upcoming EM&A Schedule in coming two months

Type of Monitoring	*January 2007*	*February 2007*
Noise Monitoring (Day-time)	*02, 09, 16, 23, 30*	*06, 13, 22, 27*
1-hour TSP	*02, 04, 06, 09, 11, 13, 16, 18, 20, 23, 25, 27, 30*	*01, 03, 06, 08, 10, 13, 15, 16, 21, 22, 24, 27*
24-hour TSP	*02, 08, 13, 19, 25, 31*	*06, 12, 16, 22, 28*
Site Inspection	*06, 12, 20, 25*	*03, 10, 16, 24*

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.

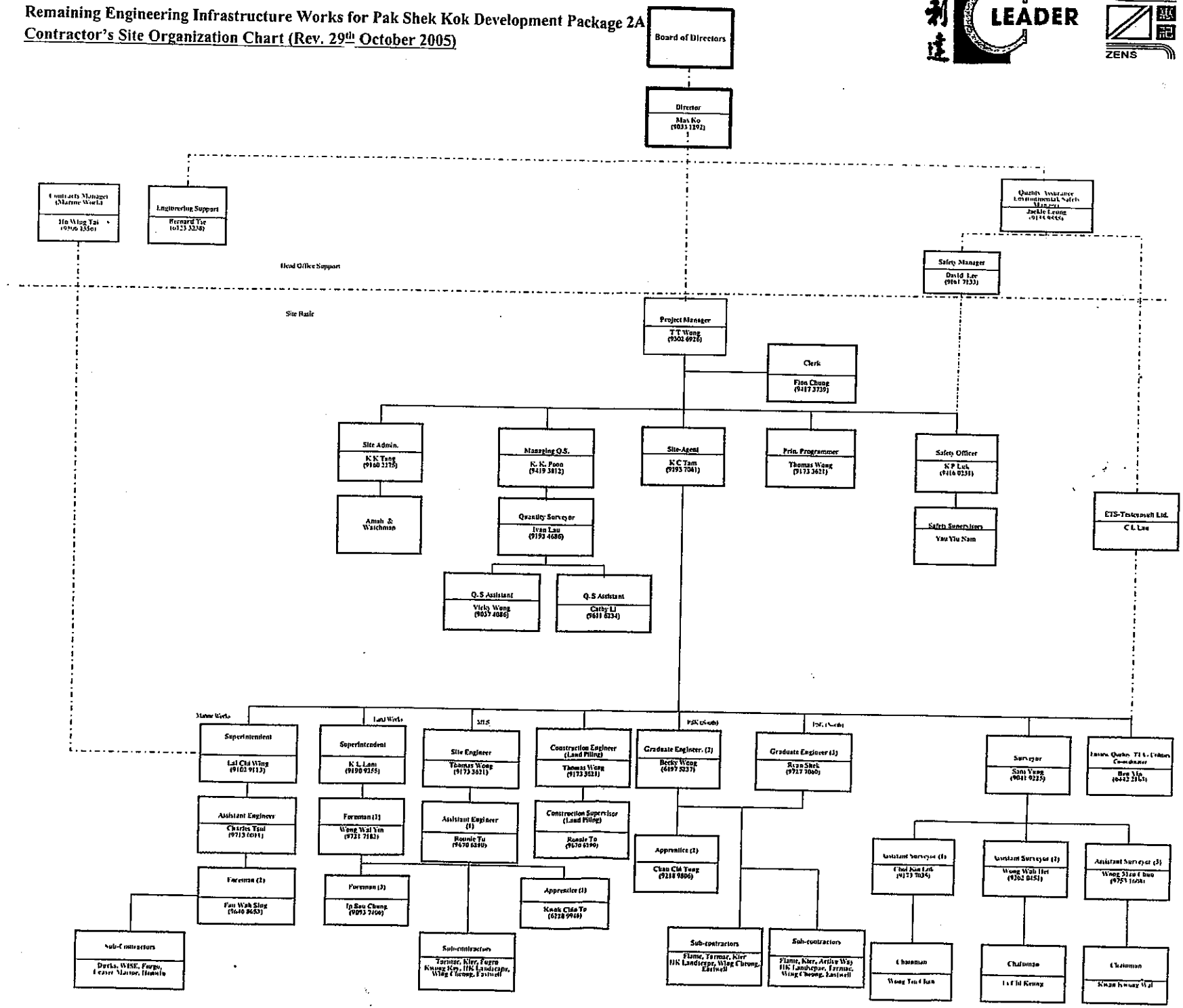
Table 12.2 Construction Plan in the coming months

Month	*Works Planned to be Carried Out*
Between January and February 2007	▪ *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*

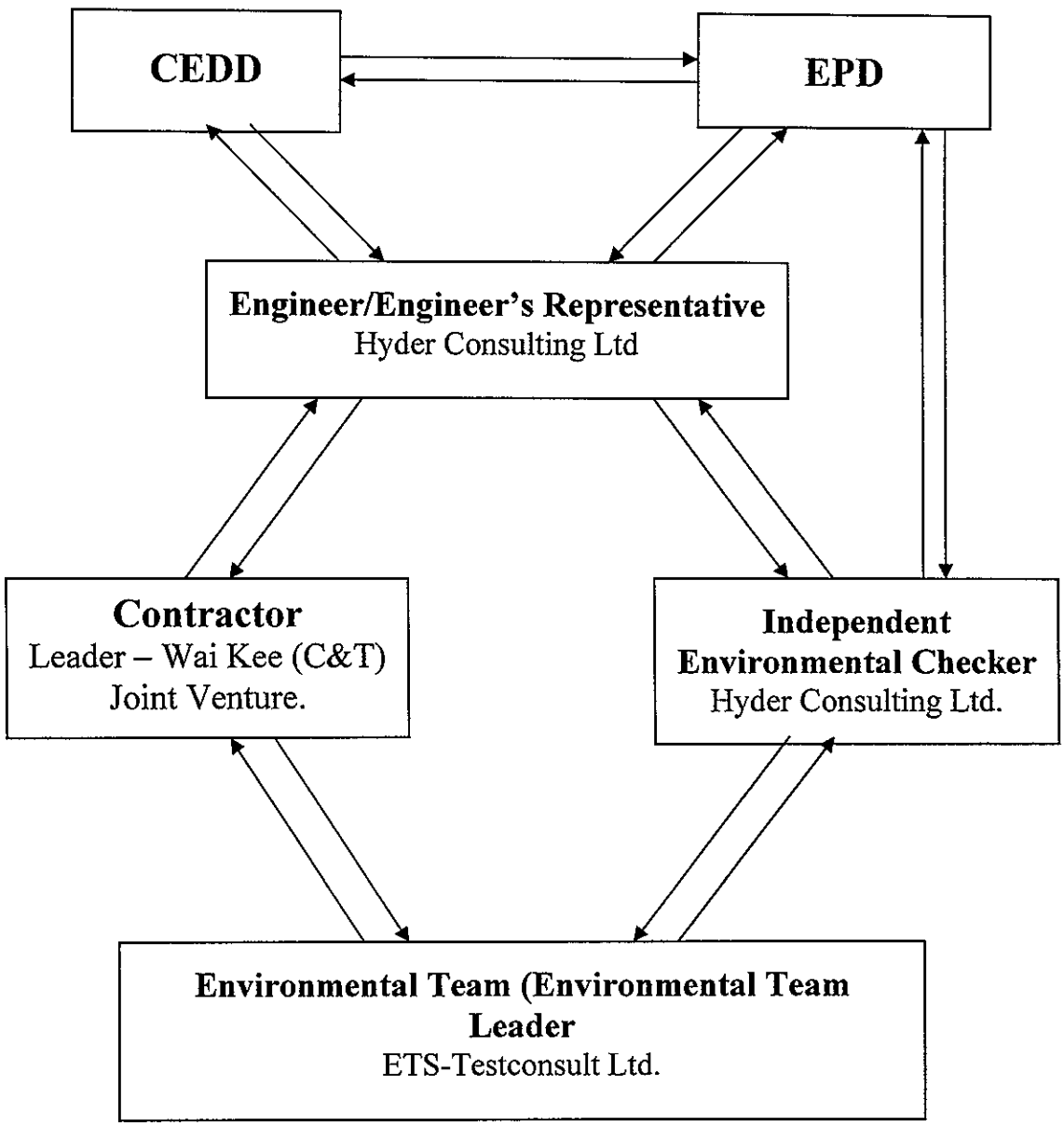
Appendix A

Organization Chart and Lines of Communication

Leader - Wai Kee (C&T) Joint Venture
Contract No. TP 37/03
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A
Contractor's Site Organization Chart (Rev. 29th October 2005)



Lines of Communication



Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 14 November 2006

Serial No. : 1172 (ET / EA / 003 / 11)

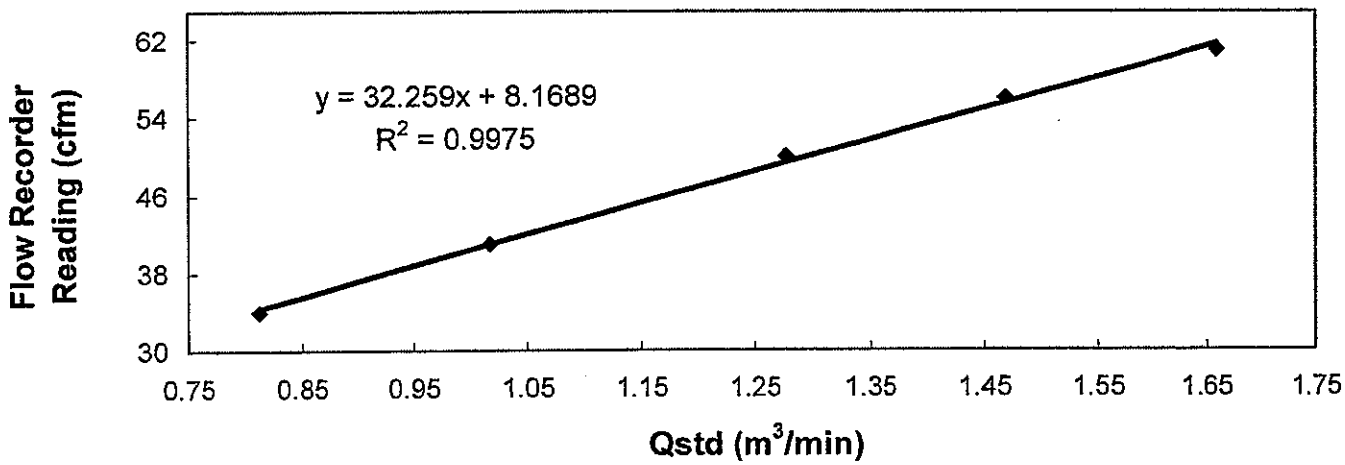
Calibration Due Date : 13 January 2007

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
(Technician)

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

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Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 14 November 2006

Serial No. : 7179 (ET / EA / 003 / 16)

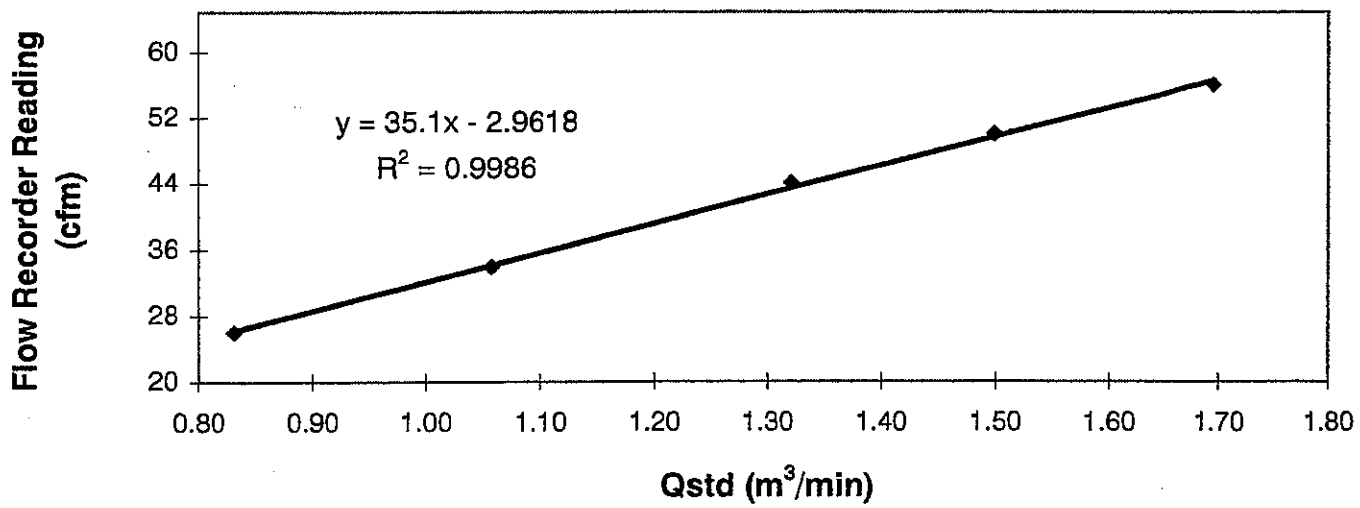
Calibration Due Date : 13 January 2007

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

Results :

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

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



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

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

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

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

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TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Graseby GMW

Date of Calibration : 14 November 2006

Serial No. : 1178 (ET / EA / 003 / 01)

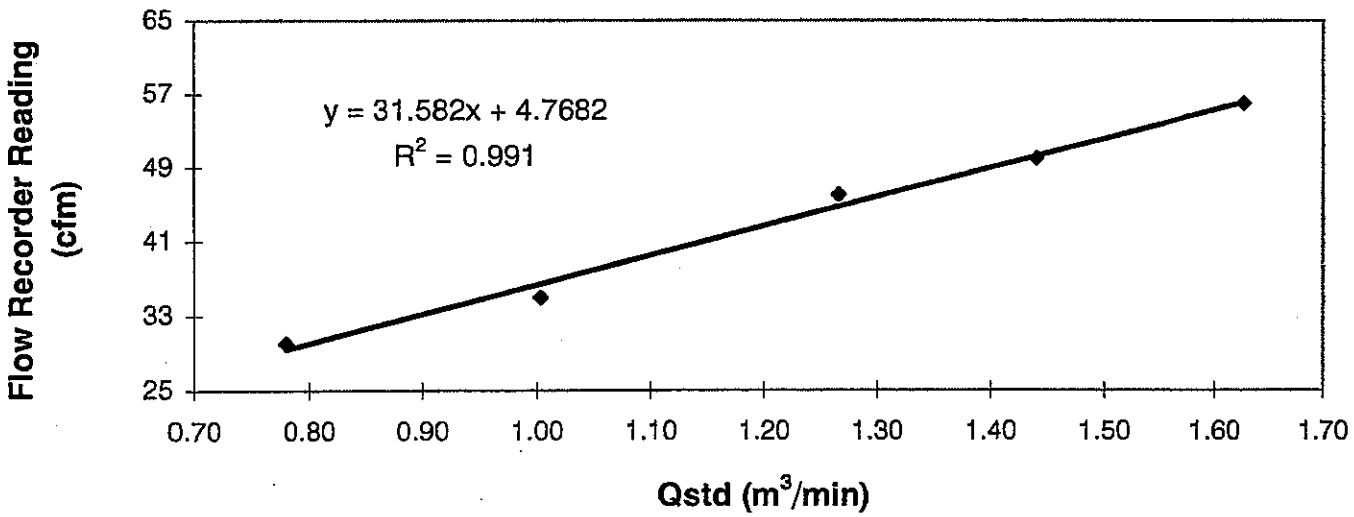
Calibration Due Date : 13 January 2007

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

Results :

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

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



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

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

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

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

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Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Internal Calibration Report of Dust Trak Monitor

Manufacturer : TSI - 8520 Dust Trak

Date of Calibration : 21 July 2006

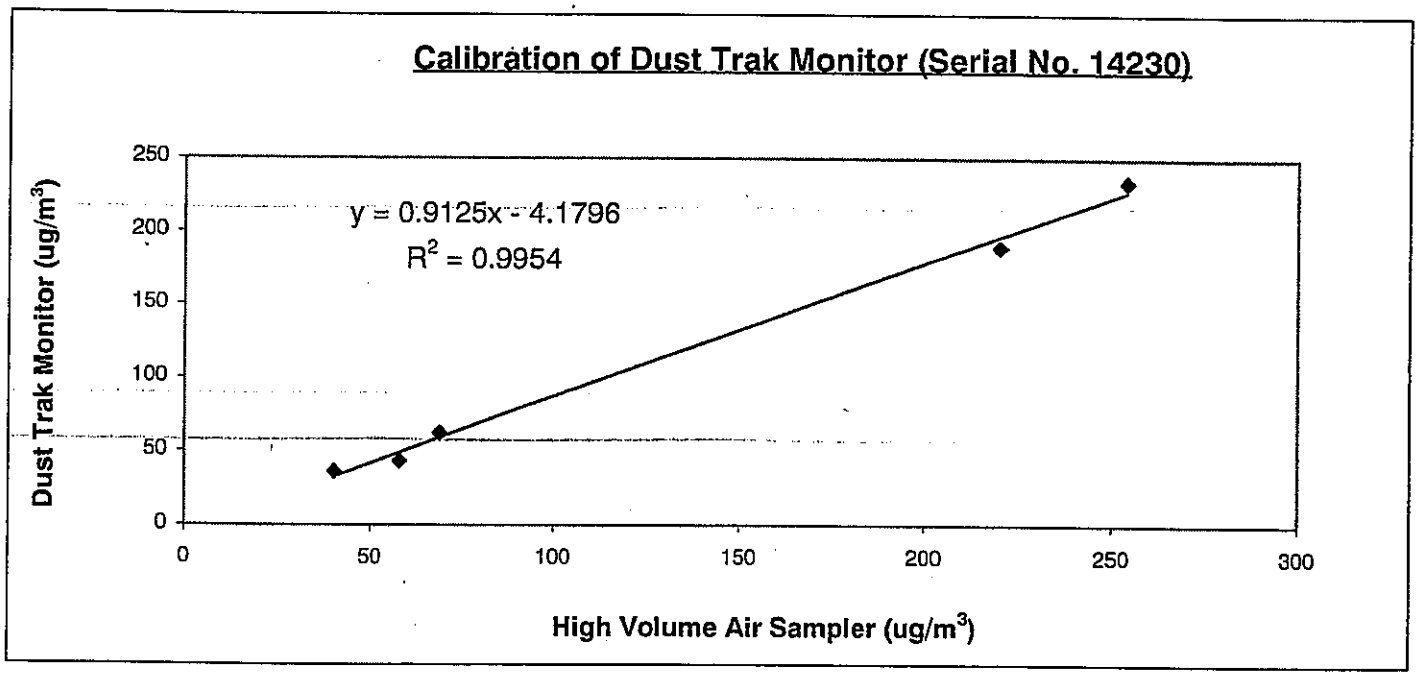
Serial No. : 14230 (ET / EA / 001 / 04)

Due Date : 20 January 2007

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

Results :

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



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

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

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

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

Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1
Location : HKIB Staff Accommodation

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/12/06	11:00	03/12/06	10:44	10845.71	10869.45	23.74	1.1156	1.1156	1.1156	2.8865	3.0258	88	Cloudy
08/12/06	16:45	09/12/06	16:35	10869.45	10893.28	23.83	0.9572	0.9572	0.9572	2.9171	3.0728	114	Cloudy
14/12/06	09:10	15/12/06	09:41	10893.28	10917.79	24.51	1.1156	1.1156	1.1156	2.9042	2.9538	30	Cloudy
20/12/06	08:30	21/12/06	08:26	10917.79	10941.73	23.94	1.1798	1.1798	1.1798	2.7796	2.8886	64	Cloudy
27/12/06	09:00	28/12/06	09:08	10941.73	10965.86	24.13	1.1798	1.1798	1.1798	2.8029	2.8987	56	Cloudy

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

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/12/06	13:00	03/12/06	13:27	16220.55	16245.00	24.45	1.0530	1.0530	1.0530	2.9150	2.9975	53	Cloudy
08/12/06	17:15	09/12/06	17:29	16245.00	16269.24	24.24	1.0530	1.0530	1.0530	2.9143	3.0067	60	Cloudy
14/12/06	09:30	15/12/06	09:39	16269.24	16293.39	24.15	1.1100	1.1100	1.1100	2.9186	2.9571	24	Cloudy
20/12/06	09:45	21/12/06	10:35	16293.39	16318.22	24.83	1.1100	1.1100	1.1100	2.7824	2.8305	29	Cloudy
27/12/06	09:35	28/12/06	09:49	16318.22	16342.45	24.23	1.110	1.1100	1.1100	2.7635	2.8314	42	Cloudy

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

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/12/06	10:50	03/12/06	10:43	16247.16	16271.05	23.89	0.8627	0.8627	0.8627	2.8824	3.0630	146	Cloudy
08/12/06	16:55	09/12/06	16:52	16271.05	16295.00	23.95	0.9247	0.9247	0.9247	2.8934	3.0079	86	Cloudy
14/12/06	09:45	15/12/06	09:35	16295.00	16318.84	23.84	0.9867	0.9867	0.9867	2.9153	2.9407	18	Cloudy
20/12/06	09:00	21/12/06	08:46	16318.84	16342.60	23.76	0.8627	0.8627	0.8627	2.7934	2.8211	23	Cloudy
27/12/06	09:15	28/12/06	08:58	16342.60	16366.32	23.72	0.8627	0.8627	0.8627	2.7927	2.8647	59	Cloudy

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

Date	Monitoring Period		1-hr TSP (μg/m^3)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/12/06	11:04	12:04	92	384	178	Sunny
05/12/06	09:00	10:00	92	394	144	Sunny
07/12/06	09:35	10:35	96	398	148	Cloudy
09/12/06	18:00	19:00	84	522	228	Sunny
12/12/06	11:00	12:00	98	389	145	Cloudy
14/12/06	09:02	10:02	102	387	189	Rainy
16/12/06	10:30	11:30	87	371	121	Cloudy
19/12/06	08:47	09:47	91	378	140	Sunny
21/12/06	09:05	10:05	84	376	142	Sunny
23/12/06	10:30	11:30	72	317	205	Sunny
28/12/06	08:30	09:30	84	376	138	Sunny
30/12/06	09:41	10:41	106	391	151	Sunny

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

Date	Monitoring Period		1-hr TSP (μg/m^3)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/12/06	13:02	14:02	88	371	149	Sunny
05/12/06	10:20	11:20	60	315	100	Sunny
07/12/06	10:50	11:50	72	327	102	Cloudy
09/12/06	15:00	16:00	65	423	163	Sunny
12/12/06	13:00	14:00	70	323	110	Cloudy
14/12/06	10:34	11:34	84	342	139	Rainy
16/12/06	13:00	14:00	62	302	100	Cloudy
19/12/06	13:02	14:02	84	361	132	Sunny
21/12/06	10:18	11:18	69	313	110	Sunny
23/12/06	15:30	16:30	64	465	165	Sunny
28/12/06	08:47	09:47	75	313	104	Sunny
30/12/06	10:52	11:52	91	356	130	Sunny

Summary of 1-hr TSP Monitoring Results

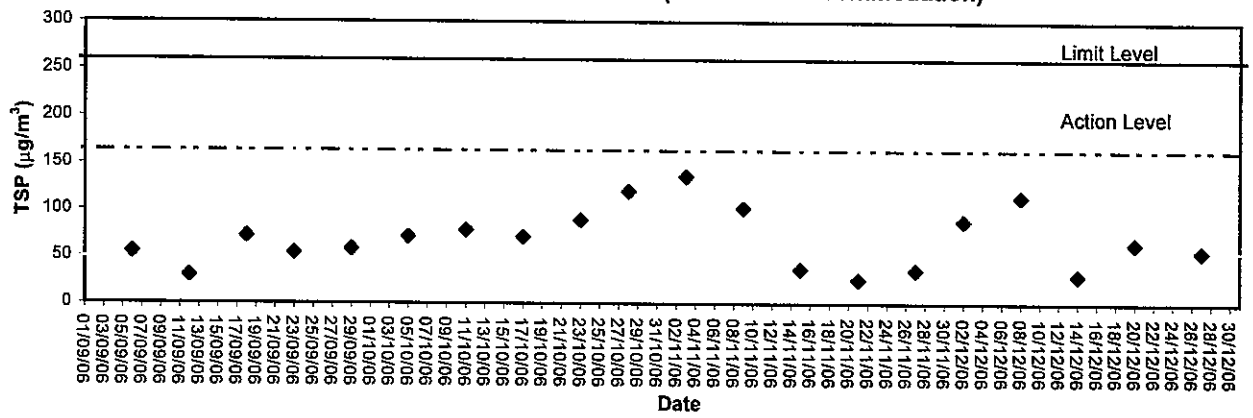
Monitoring Station : AM5 - Near Wen Chih Tang at the CUHK

Date	Monitoring Period		1-hr TSP (μg/m^3)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/12/06	14:15	15:15	85	368	143	Sunny
05/12/06	16:30	17:30	75	346	116	Sunny
07/12/06	14:31	15:31	81	358	127	Cloudy
09/12/06	16:30	17:30	69	490	211	Sunny
12/12/06	14:20	15:20	82	345	117	Cloudy
14/12/06	15:28	16:28	89	365	144	Rainy
16/12/06	16:30	17:30	71	315	103	Cloudy
19/12/06	14:14	15:14	86	372	135	Sunny
21/12/06	13:09	14:09	89	342	122	Sunny
23/12/06	16:50	17:50	80	387	122	Sunny
28/12/06	10:14	11:14	71	342	111	Sunny
30/12/06	15:42	16:42	86	322	120	Sunny

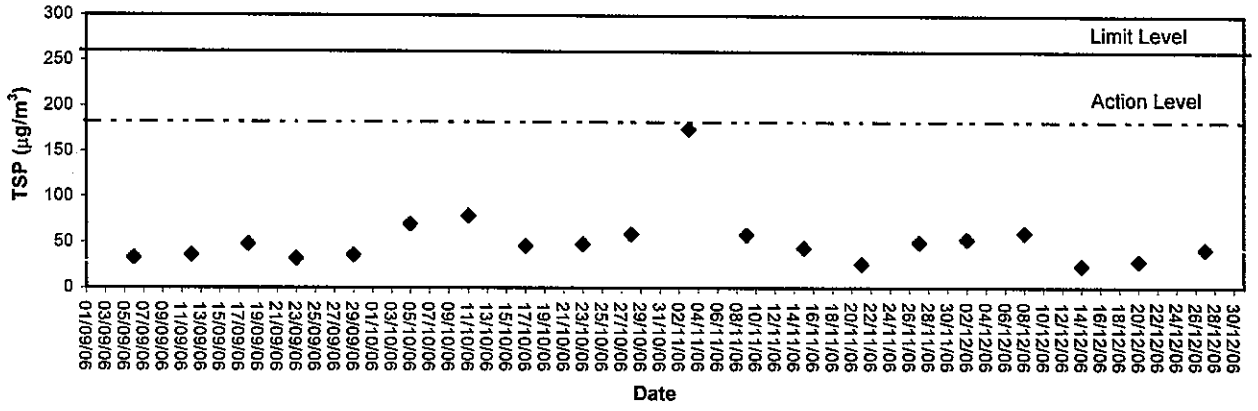
Appendix B3

Graphical Plots of Air Quality Monitoring Data

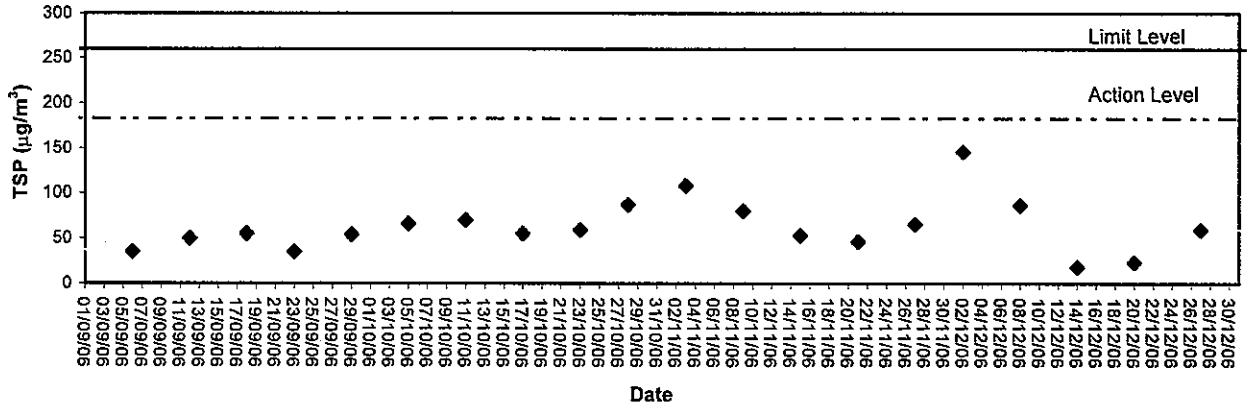
24-hour TSP level at AM1 (HKIB Staff Accommodation)



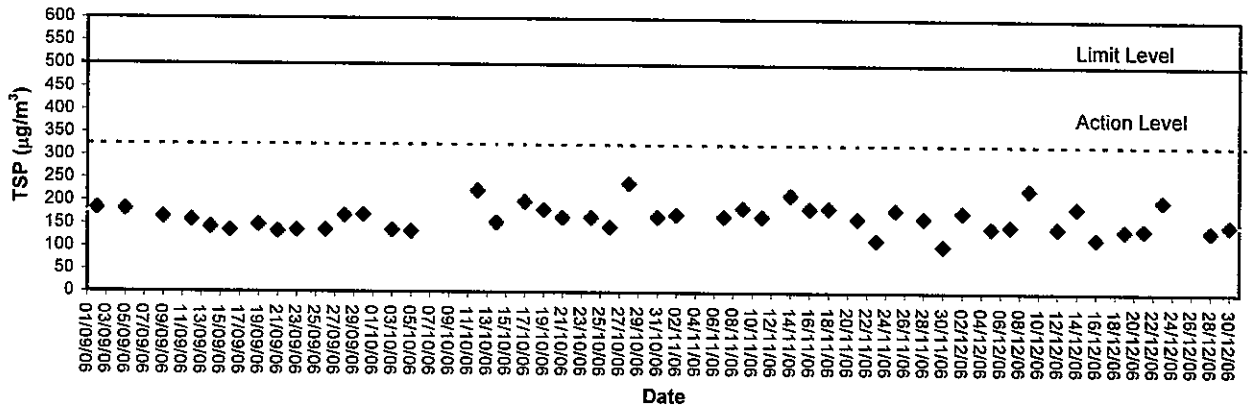
24-hour TSP level at AM3A (Cheung Shue Tan in front of Man Kee Store)



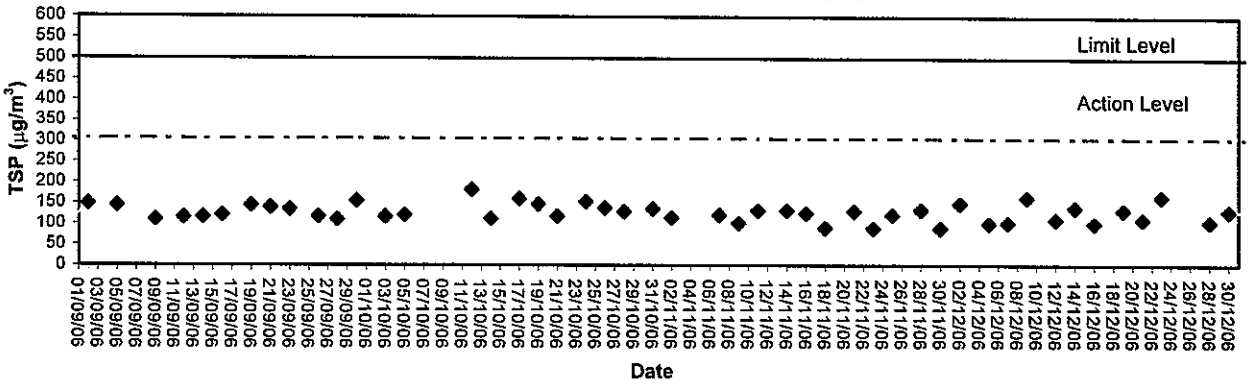
24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)



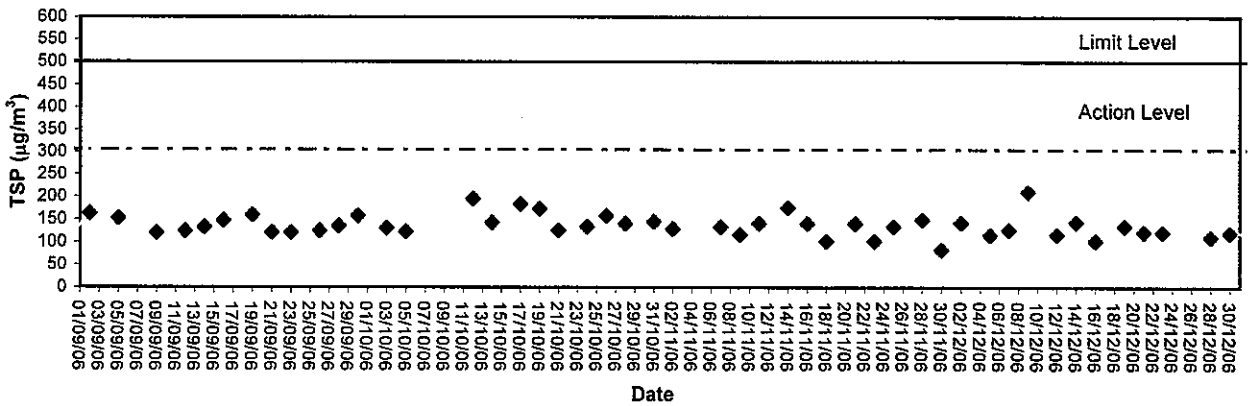
1-hour TSP level at AM1, HKIB Staff Accommodation



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



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



Appendix C1

Calibration Certificates for Noise Monitoring Equipments

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **61398**

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:

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

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

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

Calibrated by : P.F.Wong

Approved by : Dorothy Cheuk

Date: 4-Apr-06

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

Calibration Certificate

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
	Lp	Fast		93.8
30 – 120	L_A	Fast	94.0	93.8
		Slow		93.7
	L_C	Fast		93.8
	Lp	Fast		93.8
30 – 120	L_A	Fast	113.9	113.8
		Slow		113.7
	L_C	Fast		113.8
	Lp	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

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 ----------

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 61399 Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

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

Order No. : Q60555 **Date of receipt :** 29-Mar-06

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion

Model : NC-73 **Serial No. :** 10644871

Test Conditions

Date of Test : 4-Apr-06 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

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

Test equipment used:

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

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

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

Calibrated by : P.F.Wong

Approved by : Dorothy Cheuk

Date: 4-Apr-06

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

Calibration Certificate

Certificate No. 61399

Results :

1. Level Accuracy (at 1 kHz)

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

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

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

Uncertainty : ± 0.1 %

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

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

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

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

Appendix C2

Noise Monitoring Results

Day-time Noise Monitoring

Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L10	L90		
05/12/06	09:02	58.1	60.3	56.2	0.8	Sunny
12/12/06	11:02	59.4	61.3	55.6	0.8	Cloudy
19/12/06	08:50	56.1	59.6	53.7	1.3	Sunny
28/12/06	08:45	54.9	57.8	52.1	1.4	Sunny

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L10	L90		
05/12/06	08:45	56.5	58.8	54.0	1.0	Sunny
12/12/06	15:35	56.2	58.2	52.5	1.0	Cloudy
19/12/06	17:02	53.2	56.4	50.4	1.1	Sunny
28/12/06	09:31	52.3	55.7	49.6	1.1	Sunny

Mon Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L10	L90		
05/12/06	10:22	52.3	54.9	49.1	0.6	Sunny
12/12/06	13:02	53.8	56.3	49.8	1.0	Cloudy
19/12/06	13:11	51.3	54.5	48.3	1.2	Sunny
28/12/06	10:18	51.1	54.5	48.6	1.2	Sunny

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

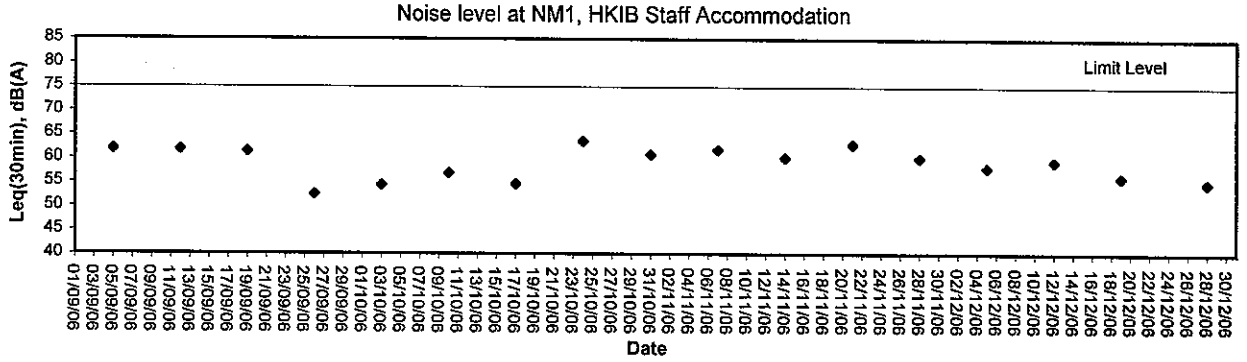
Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L10	L90		
05/12/06	16:32	55.0	57.0	52.8	1.0	Sunny
12/12/06	14:22	56.8	59.0	54.2	1.1	Cloudy
19/12/06	15:22	51.4	53.8	48.0	1.2	Sunny
28/12/06	11:03	50.8	53.4	48.5	1.0	Sunny

Appendix C3

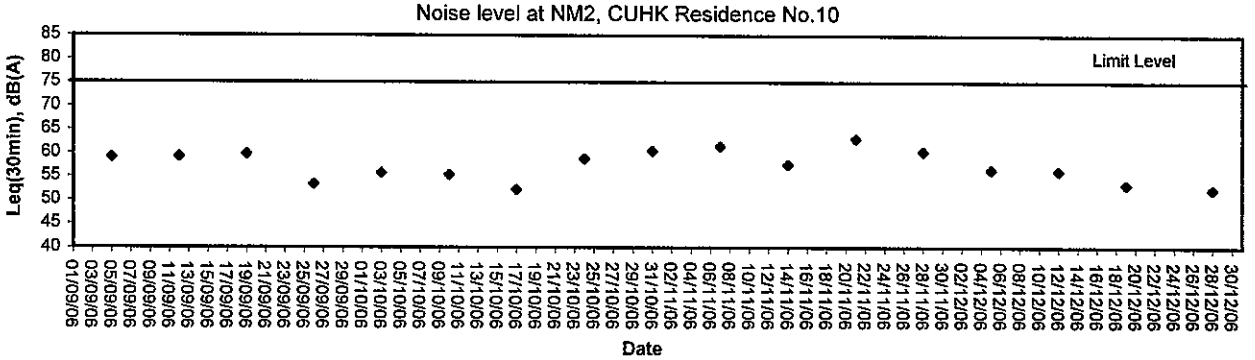
Graphical Plots of Noise Monitoring Data

Noise Monitoring (Day-time)

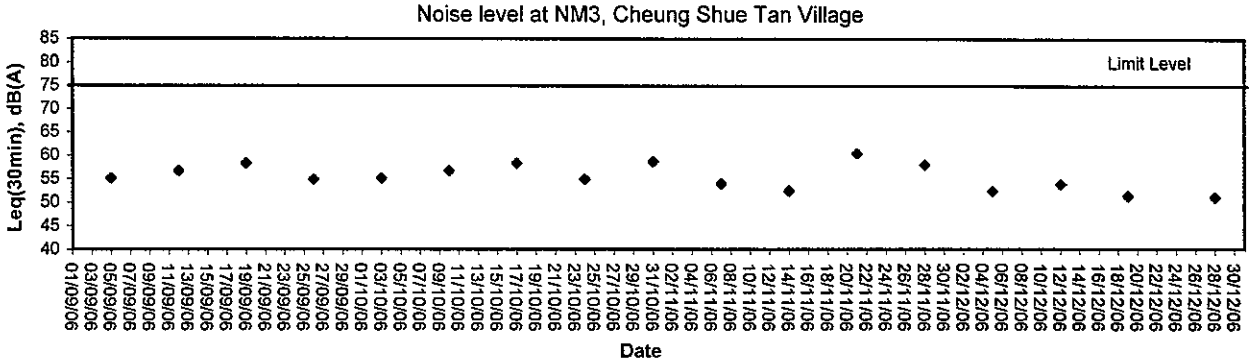
Noise level at NM1, HKIB Staff Accommodation



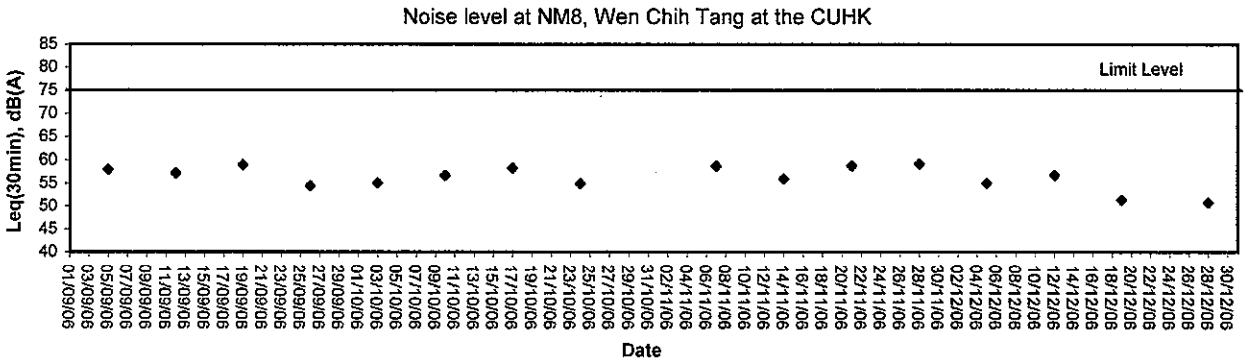
Noise level at NM2, CUHK Residence No.10



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)
01/12/06	-	21.7	16.8	68	N	<5
02/12/06	-	21.5	16.1	71	N	<5
03/12/06	-	21.1	17.1	73	NNE	<5
04/12/06	-	20.8	16.5	73	NEE	<5
05/12/06	-	23.1	17.5	78	NEE	<5
06/12/06	-	22.4	19.6	80	E	<5
07/12/06	0.3	24.7	19.8	83	NNE	<5
08/12/06	-	25.6	21.5	81	NEE	<5
09/12/06	-	22.4	19.2	77	N	<5
10/12/06	-	20.2	17.3	71	N	<5
11/12/06	Trace	21.7	17.7	72	NNE	<5
12/12/06	Trace	23.5	19.4	73	NNE	<5
13/12/06	13.0	22.4	17.8	87	N	<5
14/12/06	5.8	18.4	15.7	89	N	<5
15/12/06	9.3	16.7	14.7	92	N	<5
16/12/06	1.5	17.4	14.5	60	N	<5
17/12/06	-	17.3	12.6	41	N	<5
18/12/06	-	17.6	12.0	54	NNE	<5
19/12/06	Trace	18.9	13.1	60	N	<5
20/12/06	-	19.9	14.8	58	N	<5
21/12/06	-	19.6	14.4	56	N	<5
22/12/06	-	20.0	14.6	55	N	<5
23/12/06	-	19.0	14.8	69	NEE	<5
24/12/06	-	20.9	16.6	70	NEE	<5
25/12/06	-	21.5	16.1	50	N	<5
26/12/06	-	20.1	15.9	77	NEE	<5
27/12/06	-	20.5	15.9	77	NEE	<5
28/12/06	-	19.8	15.5	67	NEE	<5
29/12/06	-	16.7	13.4	71	NEE	<5
30/12/06	-	18.3	13.6	71	NEE	<5
31/12/06	-	19.7	15.4	76	NEE	<5

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

Appendix E

Event-Action Plans

Event / Action Plan for Air Quality

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

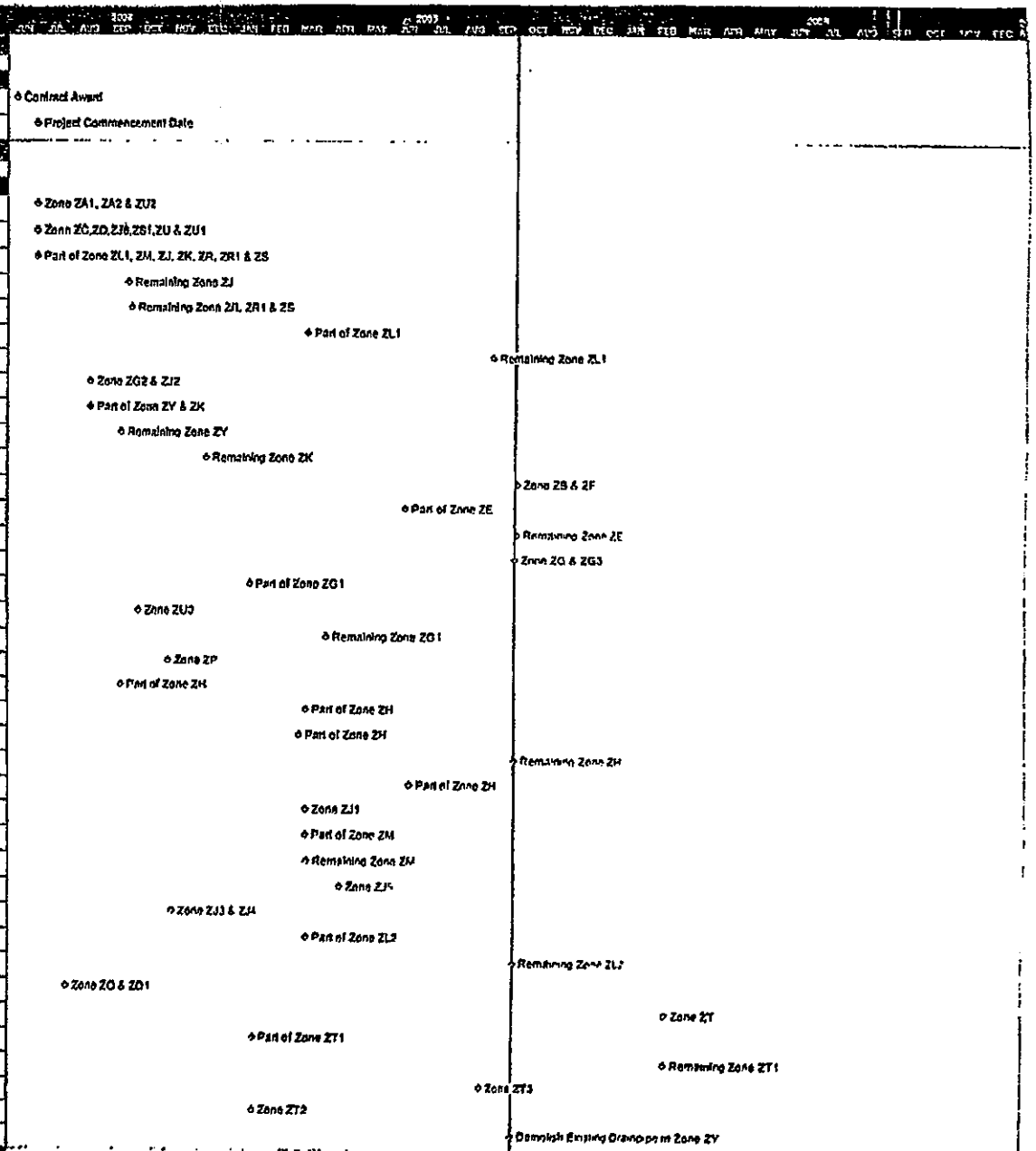
Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET Leader	IC(E)	ER	CNOTRACTOR
Action Level	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	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	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	1. Submit noise mitigation proposal to IC(E) 2. Implement noise mitigation proposals
Limit Level	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	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 advice the ER accordingly 3. Supervise the implementation of remedial measures	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 protion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further 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

ID	Description	Dur.	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Project Commencement								
PC0100	Contract Award	0		100	10JUN04 A		10JUN04 A	
PC0200	Project Commencement Date	0		100	28JUN04 A		28JUN04 A	
Possession Date								
PD0100	Zone ZA1, ZA2 & ZU2	0		100	28JUN04 A		28JUN04 A	
PD0200	Zone ZC,ZD,ZJ6,ZS1,ZU & ZU1	0		100	28JUN04 A		28JUN04 A	
PD0210	Part of Zone ZL1, ZM, ZJ, ZK, ZR, ZR1 & ZS	0		100	28JUN04 A		28JUN04 A	
PD0220	Remaining Zone ZJ	0		100	24SEP04 A		24SEP04 A	
PD0230	Remaining Zone ZR, ZR1 & ZS	0		100	27SEP04 A		27SEP04 A	
PD0240	Part of Zone ZL1	0		100	15MAR05 A		15MAR05 A	
PD0250	Remaining Zone ZL1	0		100	06SEP05 A		06SEP05 A	
PD0300	Zone ZG2 & ZJ2	0		100	18AUG04 A		18AUG04 A	
PD0310	Part of Zone ZY & ZK	0		100	18AUG04 A		18AUG04 A	
PD0320	Remaining Zone ZY	0		100	17SEP04 A		17SEP04 A	
PD0330	Remaining Zone ZK	0		100	06DEC04 A		06DEC04 A	
PD0400	Zone ZS & ZF	0	7d	0	30SEP05*		07OCT05	
PD0410	Part of Zone ZE	0		100	18JUN05 A		18JUN05 A	
PD0420	Remaining Zone ZE	0	20d	0	30SEP05*		20OCT05	
PD0500	Zone ZG & ZG3	0	820d	0	20SEP05*		27DEC07	
PD0600	Part of Zone ZG1	0		100	20JAN05 A		20JAN05 A	
PD0610	Zone ZU3	0		100	04OCT04 A		04OCT04 A	
PD0620	Remaining Zone ZG1	0		100	02APR05 A		02APR05 A	
PD0700	Zone ZP	0		100	02NOV04 A		02NOV04 A	
PD0710	Part of Zone ZH	0		100	17SEP04 A		17SEP04 A	
PD0720	Part of Zone ZH	0		100	14MAR05 A		14MAR05 A	
PD0730	Part of Zone ZH	0		100	08MAR05 A		08MAR05 A	
PD0740	Remaining Zone ZH	0	820d	0	28SEP05*		27DEC07	
PD0750	Part of Zone ZH	0		100	20JUN05 A		20JUN05 A	
PD0800	Zone ZJ1	0		100	14MAR05 A		14MAR05 A	
PD0810	Part of Zone ZM	0		100	14MAR05 A		14MAR05 A	
PD0820	Remaining Zone ZM	0		100	15MAR05 A		15MAR05 A	
PD0830	Zone ZJ5	0		100	18APR05 A		18APR05 A	
PD0900	Zone ZJ3 & ZJ4	0		100	08NOV04 A		08NOV04 A	
PD1000	Part of Zone ZL2	0		100	15MAR05 A		15MAR05 A	
PD1010	Remaining Zone ZL2	0	820d	0	28SEP05*		27DEC07	
PD1100	Zone ZC & ZD1	0		100	28JUL04 A		28JUL04 A	
PD1200	Zone ZT	0	100d	0	10FEB06*		25JUN08	
PD1210	Part of Zone ZT1	0		100	25JAN05 A		25JAN05 A	
PD1220	Remaining Zone ZT1	0	1428	0	19FEB08*		11JUL06	
PD1250	Zone ZT3	0		100	26AUG05 A		26AUG05 A	
PD1300	Zone ZT2	0		100	25JAN05 A		25JAN05 A	
PD1400	Demolish Existing Overpass in Zone ZY	0	45d	0	28SEP05*		21DEC05	



Activity Completion

Start date	10JUN04
Finish date	27DEC07
Data date	28SEP05
Run date	17OCT05
View number	1A

Primavera Systems, Inc.

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

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

ID	Description	Dur.	Float	% Complete	Early Start	Early Finish	Late Start	Late Finish
CD0100	Section 1	0	41d	0		06JUN06		19JUL06 *
CD0200	Section 2	0	1d	0		25DEC06		26DEC06 *
CD0300	Section 3	0	2d	0		02DEC06		26DEC06 *
CD0400	Section 4	0	39d	0		17NOV06		26DEC06 *
CD0500	Section 5	0	-198d	0		10MAY06		24OCT06 *
CD0600	Section 6	0	-158d	0		29DEC05		24JUL06 *
CD0700	Section 7	0	-112d	0		13JUN06		21FEB06 *
CD0800	Section 8	0	30d	0		09OCT06		06NOV06 *
CD0900	Section 9	0	66d	0		23OCT06		26DEC06 *
CD1000	Section 10	0	132d	0		18AUG06		26DEC06 *
CD1100	Section 11	0	-156d	0		27JUL06		16FEB06 *
CD1200	Section 12	0	20d	0		17OCT06		06NOV06 *
CD1300	Section 13	0	102d	0		15SEP06		20DEC06 *
CD1400	Section 14	0	-152d	0		21JUL07		16FEB07 *
CD1500	Section 15	0	25d	0		12OCT07		06NOV07 *
CD1600	Section 16	0	67d	0		26OCT07		26DEC07 *

Submissions

General Submissions

SUGS0100	Drafted Safety Plan	10		100	10JUN04 A	24JUN04 A	10JUN04 A	24JUN04 A
SUGS0200	Safety Plan	12		100	26JUN04 A	14JUL04 A	26JUN04 A	14JUL04 A
SUGS0300	Sub-Contractor Management Plan (SCMP)	24		100	10JUN04 A	12JUL04 A	10JUN04 A	12JUL04 A
SUGS0400	Draft Waste Management Plan (WMP)	18		100	10JUN04 A	05JUL04 A	10JUN04 A	05JUL04 A
SUGS0500	Waste Management Plan	18		100	26JUN04 A	02AUG04 A	26JUN04 A	02AUG04 A
SUGS0600	Engineer Approval of WMP	18		100	03AUG04 A	06SEP04 A	03AUG04 A	06SEP04 A
SUGS0700	Layout Plan & Location of Site Office	14		100	10JUN04 A	06JUL04 A	10JUN04 A	06JUL04 A
SUGS0800	Engineer Approval of Site Layout Plan	6		100	07JUL04 A	20AUG04 A	07JUL04 A	20AUG04 A
SUGS0900	Project Signboard Location & Details	18		100	28JUN04 A	12JUL04 A	28JUN04 A	12JUL04 A
SUGS1000	Engineer Approval of Project Signboard Details	6		100	13JUL04 A	19AUG04 A	13JUL04 A	19AUG04 A
SUGS1100	EM&A and EMIS with Baseline Monitoring Record	12		100	29JUN04 A	12JUL04 A	29JUN04 A	12JUL04 A
SUGS1200	Engineer & EPD Consent of EM&A and EMIS	80		100	13JUL04 A	09SEP04 A	13JUL04 A	09SEP04 A
SUGS1300	Initial Works Programme	7		100	10JUN04 A	16JUN04 A	10JUN04 A	16JUN04 A
SUGS1400	Engineer Approval of Initial Works Programme	12		100	16JUN04 A	28JAN05 A	16JUN04 A	28JAN05 A
SUGS1700	Detailed Works Programme	50		100	27JAN05 A	18MAR05 A	27JAN05 A	18MAR05 A
SUGS1800	First Three Month Rolling Programme	12		100	10JUN04 A	15JUN04 A	10JUN04 A	15JUN04 A
SUGS1900	Executive Summary Programme	50		100	02MAR05 A	18MAR05 A	02MAR05 A	18MAR05 A
SUGS2000	Particulars of Environmental Team Leader	12		100	10JUN04 A	24JUN04 A	10JUN04 A	24JUN04 A
SUGS2100	EPD & Engineer Approval of ET Leader	0		100	25JUN04 A	12JUL04 A	25JUN04 A	12JUL04 A
SUGS2200	Overall TTA Scheme & Traffic Management Design	24		100	10JUN04 A	28JUL04 A	10JUN04 A	28JUL04 A
SUGS2300	Comments on Overall TTA Scheme & TMD	18		100	29JUL04 A	30SEP04 A	29JUL04 A	30SEP04 A
SUGS2100	Revised Overall TTA Scheme & TMD	24		100	30SEP04 A	30SEP04 A	30SEP04 A	30SEP04 A

General Submission

SUMA0100	Particulars of DI Pipes & Fittings	54		100	10JUN04 A	28JUL04 A	10JUN04 A	28JUL04 A
SUMA0200	Engineer Approval of DI Pipes & Fittings	24		100	29JUL04 A	04FEB05 A	29JUL04 A	04FEB05 A

Section 1
Section 5
Section 6
Section 7
Section 8
Section 9
Section 10
Section 11
Section 12
Section 13

Drafted Safety Plan
Safety Plan
Sub-Contractor Management Plan (SCMP)
Draft Waste Management Plan (WMP)
Waste Management Plan
Engineer Approval of WMP
Layout Plan & Location of Site Office
Engineer Approval of Site Layout Plan
Project Signboard Location & Details
Engineer Approval of Project Signboard Details
EM&A and EMIS with Baseline Monitoring Record
Engineer & EPD Consent of EM&A and EMIS
Initial Works Programme
Engineer Approval of Initial Works Programme
Detailed Works Programme
First Three Month Rolling Programme
Executive Summary Programme
Particulars of Environmental Team Leader
EPD & Engineer Approval of ET Leader
Overall TTA Scheme & Traffic Management Design
Comments on Overall TTA Scheme & TMD
Revised Overall TTA Scheme & TMD
Particulars of DI Pipes & Fittings
Engineer Approval of DI Pipes & Fittings

Data date 10JUN04
Finish date 20OCT07
Data date 26SEP05
Project number 2A
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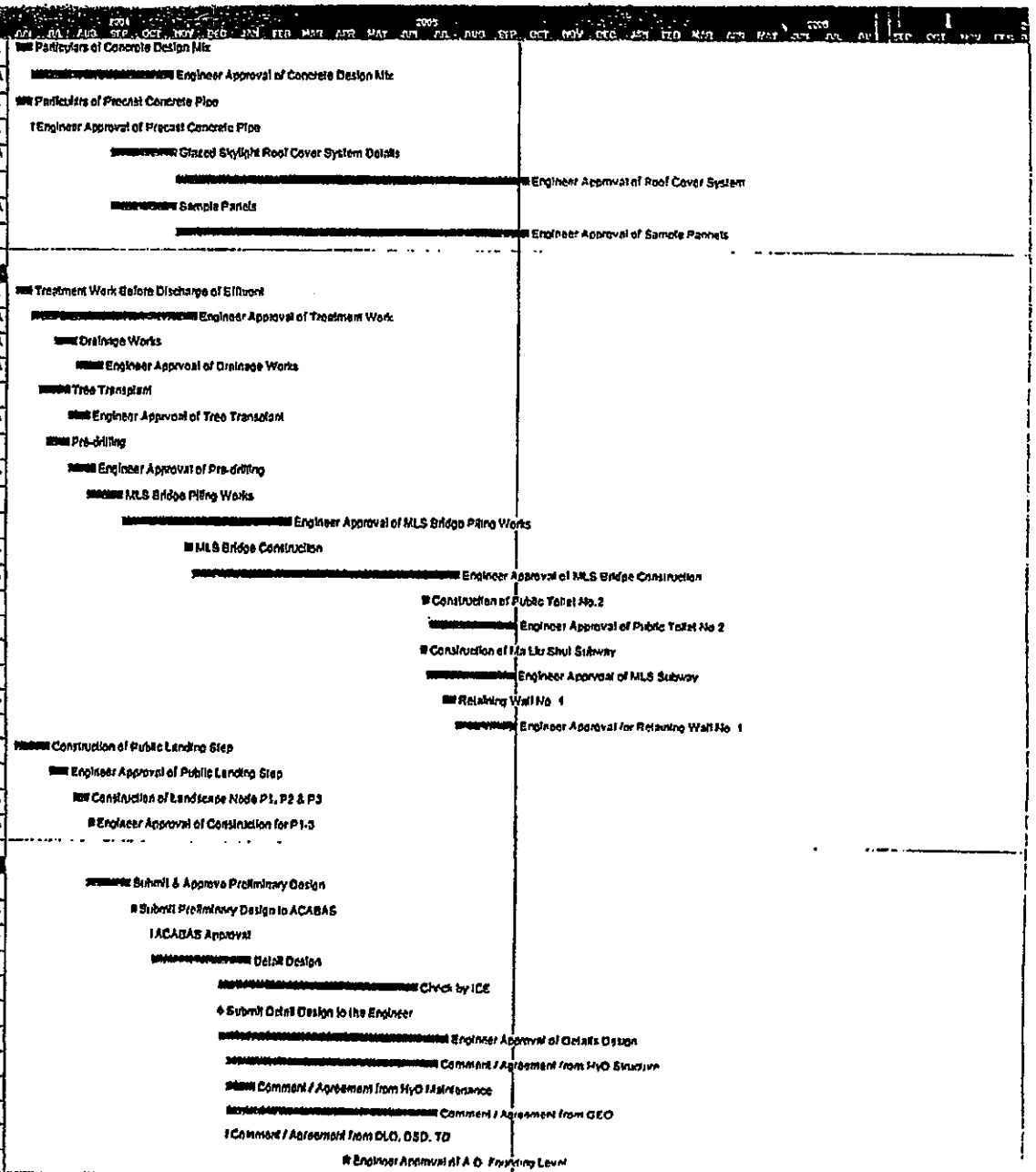
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

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

Activity ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Later Start	Later Finish
SUMA0000	Particulars of Concrete Design Mix	18		100	10JUN04 A	24JUN04 A	10JUN04 A	24JUN04 A
SUMA0100	Engineer Approval of Concrete Design Mix	25		100	25JUN04 A	05NOV04 A	25JUN04 A	05NOV04 A
SUMA0200	Particulars of Precast Concrete Pipe	12		100	10JUN04 A	24JUN04 A	10JUN04 A	24JUN04 A
SUMA0300	Engineer Approval of Precast Concrete Pipe	12		100	25JUN04 A	25JUN04 A	25JUN04 A	25JUN04 A
SUMA0400	Glazed Skylight Roof Cover System Details	50		100	09SEP04 A	09NOV04 A	09SEP04 A	09NOV04 A
SUMA0500	Engineer Approval of Roof Cover System	72	35d	60	09NOV04 A	09OCT05	09NOV04 A	12DEC05
SUMA0600	Sample Panels	50		100	09SEP04 A	09NOV04 A	09SEP04 A	09NOV04 A
SUMA1000	Engineer Approval of Sample Panels	72	35d	60	09NOV04 A	09OCT05	09NOV04 A	12DEC05
Method Statement Submissions								
SUME0100	Treatment Work Before Discharge of Effluent	24		100	10JUN04 A	24JUN04 A	10JUN04 A	24JUN04 A
SUME0200	Engineer Approval of Treatment Work	18		100	25JUN04 A	27NOV04 A	25JUN04 A	27NOV04 A
SUME0300	Drainage Works	18		100	17JUL04 A	06AUG04 A	17JUL04 A	06AUG04 A
SUME0400	Engineer Approval of Drainage Works	12		100	07AUG04 A	31AUG04 A	07AUG04 A	31AUG04 A
SUME0500	Tree Transplant	24		100	02JUL04 A	30JUL04 A	02JUL04 A	30JUL04 A
SUME0600	Engineer Approval of Tree Transplant	18		100	31JUL04 A	19AUG04 A	31JUL04 A	19AUG04 A
SUME0700	Pre-drilling	18		100	10JUL04 A	30JUL04 A	10JUL04 A	30JUL04 A
SUME0800	Engineer Approval of Pre-drilling	12		100	31JUL04 A	25AUG04 A	31JUL04 A	25AUG04 A
SUME0900	MLS Bridge Piling Works	18		100	19AUG04 A	20SEP04 A	19AUG04 A	20SEP04 A
SUME1000	Engineer Approval of MLS Bridge Piling Works	12		100	21SEP04 A	28FEB05 A	21SEP04 A	28FEB05 A
SUME1100	MLS Bridge Construction	48		100	19NOV04 A	25NOV04 A	19NOV04 A	25NOV04 A
SUME1200	Engineer Approval of MLS Bridge Construction	12		100	26NOV04 A	04AUG05 A	26NOV04 A	04AUG05 A
SUME1300	Construction of Public Toilet No.2	18		100	02JUL05 A	07JUL05 A	02JUL05 A	07JUL05 A
SUME1400	Engineer Approval of Public Toilet No.2	12	35d	90	08JUL05 A	28SEP05	08JUL05 A	11NOV05
SUME1500	Construction of Ma Liu Shui Subway	48		100	30JUN05 A	05JUL05 A	30JUN05 A	05JUL05 A
SUME1600	Engineer Approval of MLS Subway	12		100	06JUL05 A	28SEP05 A	06JUL05 A	28SEP05 A
SUME1700	Retaining Wall No. 1	24		100	21JUL05 A	01AUG05 A	21JUL05 A	01AUG05 A
SUME1800	Engineer Approval for Retaining Wall No. 1	12	66d	90	02AUG05 A	28SEP05	02AUG05 A	11JAN06
SUME1900	Construction of Public Landing Step	60		100	16JUN04 A	12JUL04 A	16JUN04 A	12JUL04 A
SUME2000	Engineer Approval of Public Landing Step	12		100	13JUL04 A	30JUL04 A	13JUL04 A	30JUL04 A
SUME2100	Construction of Landscape Node P1, P2 & P3	60		100	05AUG04 A	19AUG04 A	05AUG04 A	19AUG04 A
SUME2200	Engineer Approval of Construction for P1-3	12		100	20AUG04 A	24AUG04 A	20AUG04 A	24AUG04 A
Alternative Design Submission								
Ma Liu Shui Bridge								
SUASUB0100	Submit & Approve Preliminary Design	36		100	19AUG04 A	28SEP04 A	19AUG04 A	28SEP04 A
SUASUB0200	Submit Preliminary Design to ACABAS	3		100	30SEP04 A	04OCT04 A	30SEP04 A	04OCT04 A
SUASUB0300	ACABAS Approval	1		100	19OCT04 A	19OCT04 A	19OCT04 A	19OCT04 A
SUASUB0400	Detail Design	60		100	20OCT04 A	20JAN05 A	20OCT04 A	20JAN05 A
SUASUB0500	Check by ICE	29		100	22DEC04 A	28JUN05 A	22DEC04 A	28JUN05 A
SUASUB0600	Submit Detail Design to the Engineer	0		100		23DEC04 A		23DEC04 A
SUASUB0700	Engineer Approval of Details Design	29		100	23DEC04 A	28JUL05 A	23DEC04 A	28JUL05 A
SUASUB0800	Comment / Agreement from HyD Structure	23		100	31DEC04 A	18JUL05 A	31DEC04 A	18JUL05 A
SUASUB0900	Comment / Agreement from HyD Maintenance	11		100	31DEC04 A	25JAN05 A	31DEC04 A	25JAN05 A
SUASUB1000	Comment / Agreement from GEO	17		100	31DEC04 A	18JUL05 A	31DEC04 A	18JUL05 A
SUASUB1100	Comment / Agreement from DLO, DSD, TD	11		100	31DEC04 A	31DEC04 A	31DEC04 A	31DEC04 A
SUASUB1200	Engineer Approval of A.D. Founding Level	12		100	21APR05 A	28APR05 A	21APR05 A	28APR05 A



Data date 10JUN04
Finish date 20OCT07
Start date 28SEP05
Data date 17OCT05
Page number 3A

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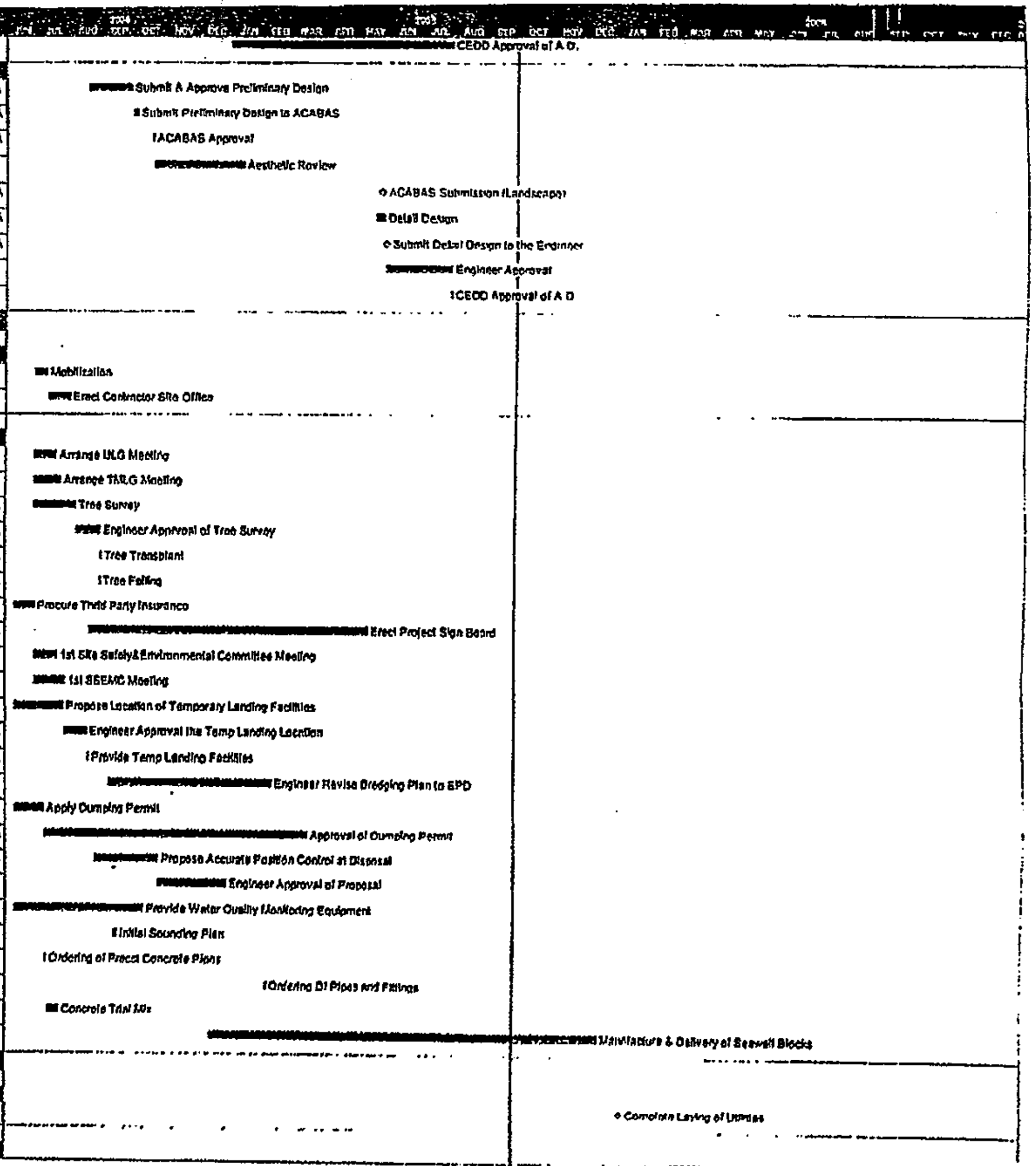
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

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

ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
SUASSU81300	CEDO Approval of A.D.	29		100	31DEC04 A	28JUL05 A	31DEC04 A	28JUL05 A
Au Shui Survey								
SUASSU0100	Submit & Approve Preliminary Design	38		100	18AUG04 A	28SEP04 A	18AUG04 A	28SEP04 A
SUASSU0200	Submit Preliminary Design to ACABAS	3		100	30SEP04 A	04OCT04 A	30SEP04 A	04OCT04 A
SUASSU0300	ACABAS Approval	1		100	19OCT04 A	19OCT04 A	19OCT04 A	19OCT04 A
SUASSU0400	Aesthetic Review	59		100	20OCT04 A	12JAN05 A	20OCT04 A	12JAN05 A
SUASSU0500	ACABAS Submission (Landscape)	0		100		23MAY05 A		23MAY05 A
SUASSU0600	Detail Design	101		100	18MAY05 A	26MAY05 A	18MAY05 A	26MAY05 A
SUASSU0700	Submit Detail Design to the Engineer	0		100		27MAY05 A		27MAY05 A
SUASSU0800	Engineer Approval	24		100	28MAY05 A	28JUL05 A	28MAY05 A	28JUL05 A
SUASSU0900	CEDO Approval of A.D.	30		100	28JUL05 A	28JUL05 A	28JUL05 A	28JUL05 A
Preliminaries								
Contractor's Site Accommodation								
PRCS0100	Mobilization	12		100	28JUN04 A	10JUL04 A	28JUN04 A	10JUL04 A
PRCS0200	Erect Contractor Site Office	28		100	12JUL04 A	31JUL04 A	12JUL04 A	31JUL04 A
Preliminary Works								
PRPR0300	Arrange ULG Meeting	60		100	29JUN04 A	19JUL04 A	29JUN04 A	19JUL04 A
PRPR0400	Arrange TMLG Meeting	48		100	29JUN04 A	23JUL04 A	29JUN04 A	23JUL04 A
PRPR0500	Tree Survey	6		100	29JUN04 A	06AUG04 A	29JUN04 A	06AUG04 A
PRPR0600	Engineer Approval of Tree Survey	12		100	07AUG04 A	30AUG04 A	07AUG04 A	30AUG04 A
PRPR0900	Tree Transplant	24		100	31AUG04 A	31AUG04 A	31AUG04 A	31AUG04 A
PRPR1000	Tree Felling	12		100	30AUG04 A	30AUG04 A	30AUG04 A	30AUG04 A
PRPR1100	Procure Third Party Insurance	12		100	10JUN04 A	29JUN04 A	10JUN04 A	29JUN04 A
PRPR1300	Erect Project Sign Board	18		100	20AUG04 A	12MAY05 A	20AUG04 A	12MAY05 A
PRPR1400	1st Site Safety&Environmental Committee Meeting	24		100	29JUN04 A	20JUL04 A	29JUN04 A	20JUL04 A
PRPR1500	1st SSEMC Meeting	24		100	29JUN04 A	27JUL04 A	29JUN04 A	27JUL04 A
PRPR1600	Propose Location of Temporary Landing Facilities	24		100	10JUN04 A	26JUL04 A	10JUN04 A	26JUL04 A
PRPR1700	Engineer Approval the Temp Landing Location	12		100	27JUL04 A	17AUG04 A	27JUL04 A	17AUG04 A
PRPR1800	Provide Temp Landing Facilities	15		100	18AUG04 A	19AUG04 A	18AUG04 A	19AUG04 A
PRPR1810	Engineer Revise Dredging Plan to EPD	1		100	08SEP04 A	09FEB05 A	08SEP04 A	09FEB05 A
PRPR1900	Apply Dumping Permit	18		100	10JUN04 A	08JUL04 A	10JUN04 A	08JUL04 A
PRPR2000	Approval of Dumping Permit	42		100	09JUL04 A	15MAR05 A	09JUL04 A	15MAR05 A
PRPR2100	Propose Accurate Position Control at Disposal	8		100	23AUG04 A	25OCT04 A	23AUG04 A	25OCT04 A
PRPR2200	Engineer Approval of Proposal	12		100	26OCT04 A	28DEC04 A	26OCT04 A	28DEC04 A
PRPR2300	Provide Water Quality Monitoring Equipment	21		100	10JUN04 A	11OCT04 A	10JUN04 A	11OCT04 A
PRPR2400	Initial Sounding Plan	12		100	13SEP04 A	16SEP04 A	13SEP04 A	16SEP04 A
PRPR2500	Ordering of Precast Concrete Pipes	700		100	10JUL04 A	10JUL04 A	10JUL04 A	10JUL04 A
PRPR2600	Ordering DI Pipes and Fittings	1		100	05FEB05 A	05FEB05 A	05FEB05 A	05FEB05 A
PRPR2700	Concrete Trial Mix	6		100	13JUL04 A	22JUL04 A	13JUL04 A	22JUL04 A
PRPR2800	Manufacture & Delivery of Seawall Blocks	230	-97d	70	15DEC04 A	15DEC05	15DEC04 A	20AUG05
Milestone								
Section 5								
MSS50100	Complete Laying of Utilities	0	-159d	0		06JAN06		31JUL05 *
Section 7								



...date	10JUL04
...date	20OCT07
...date	28SEP05
...date	17OCT05
...number	4A

Primavera Systems, Inc.

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

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

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
MSS70100	Complete Connection for ArchSD's Works	0	-173d	0		20JAN06		31JUL05 *
MSS70200	Commence Toilet & Pavilion by ASD's Contractor	0		100	28DEC04 A		28DEC04 A	
MSS70300	Complete Toilet & Pavilion by ASD's Contractor	0	3d	0		02NOV05		05NOV05 *
ection 8								
MSS80100	Complete Connection of Utilities	0	-21d	0		11MAY06		20APR06 *
MSS80200	Commence ASD's Works	0	-88d	0	28SEP05 *		22JUL05	
MSS80300	Complete ASD's Works	0	-87d	0		27SEP06		22JUL06 *
ariation Order / Instruction								
VO0010	Issue VO/047A (Section 8)	0		100	22MAR05 A		22MAR05 A	
VO0020	Issue VO/051 (Section 8)	0		100	12APR05 A		12APR05 A	
VO0030	Issue VO/048 (Section 7)	0		100	03JUN05 A		03JUN05 A	
VO0040	Issue VO/055A (Section 7 & 11)	0		100	07JUN05 A		07JUN05 A	
VO0050	Issue VO/065 (Section 8 & 12)	0		100	07JUN05 A		07JUN05 A	
VO0060	Issue VO/073 (Section 7)	0		100	23JUN05 A		23JUN05 A	
VO0070	Issue VO/057 (Section 7 & 8)	0		100	27JUN05 A		27JUN05 A	
VO0080	Issue VO/053B (Section 2)	0		100	27JUN05 A		27JUN05 A	
VO0090	Issue VO/070 (Section 7)	0		100	05JUL05 A		05JUL05 A	
VO0100	Issue VO/030E (Section 7)	0		100	11JUL05 A		11JUL05 A	
VO0110	Issue VO/058A (Section 7)	0		100	21JUL05 A		21JUL05 A	
VO0120	Issue VO/083A (Section 7)	0		100	28JUL05 A		28JUL05 A	
VO0130	Issue VO/088 (Section 7 & 8)	0		100	28JUL05 A		28JUL05 A	
VO0140	Issue VO/093 (Section 7)	0		100	29AUG05 A		29AUG05 A	
VO0150	Issue VO/094 (Section 5)	0		100	30AUG05 A		30AUG05 A	
VO0160	Issue VO/093 - Supplement Ref. 2506 (Section 7)	0		100	05SEP05 A		05SEP05 A	
VO0170	Issue VO/099 (Section 8)	0		100	13SEP05 A		13SEP05 A	
ection 1								
mently Area								
Earthworks								
A1AMEA0100	Remove Ext. Surcharge Mound	22	34d	0	21OCT05	17NOV05	02DEC05	29DEC05
Drainage Works								
A1AMDW0100	Decide Exact Location of Manholes & Catchpits	1	56d	0	30SEP05	30SEP05	09DEC05	09DEC05
A1AMDW0200	S555 - Existing Box Culvert	43	58d	0	12OCT05	09NOV05	19DEC05	10FEB06
A1AMDW0300	S579 - Existing Box Culvert	43	58d	0	01DEC05	21JAN06	11FEB06	01APR06
A1AMDW0400	S570 - Existing Box Culvert	38	34d	0	29DEC05	13FEB06	09FEB06	24MAR06
A1AMDW0500	S578 - Existing Box Culvert	33	34d	0	18NOV05	28DEC05	30DEC05	09FEB06
A1AMDW0600	300UC at Planting Area (South Section)	36	72d	0	18MAR06	22APR06	14JUN06	18JUL06
A1AMDW0700	300UC at Planting Area (North Section)	24	67d	0	31MAR06	28APR06	21JUN06	18JUL06
A1AMDW0800	375UC at Paving Area (South Section)	27	58d	0	20FEB06	22MAR06	26APR06	01JUN06
A1AMDW0900	375UC at Landing Block Area	45	82d	0	23JAN06	17MAR06	08APR06	01JUN06
A1AMDW1000	375UC at Paving Area (North Section)	21	84d	0	07MAR06	03APR06	17APR06	15MAY06
Utility Works								
A1AMUT0100	Watermain - WP9-4 to M9 (South Section)	18	87d	0	18MAR06	08APR06	03JUL06	18JUL06
A1AMUT0200	Watermain - WP7-3 to M7 (North Section)	18	76d	0	31MAR06	18APR06	05JUL06	19JUL06
A1AMUT0300	Install Public Lighting Post	8	94d	0	18MAR06	27MAR06	11JUL06	19JUL06
Public Lighting Duct and Hub								

rt date	10JUN04
in date	20OCT07
a date	28SEP05
n date	17OCT05
ge number	8A

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

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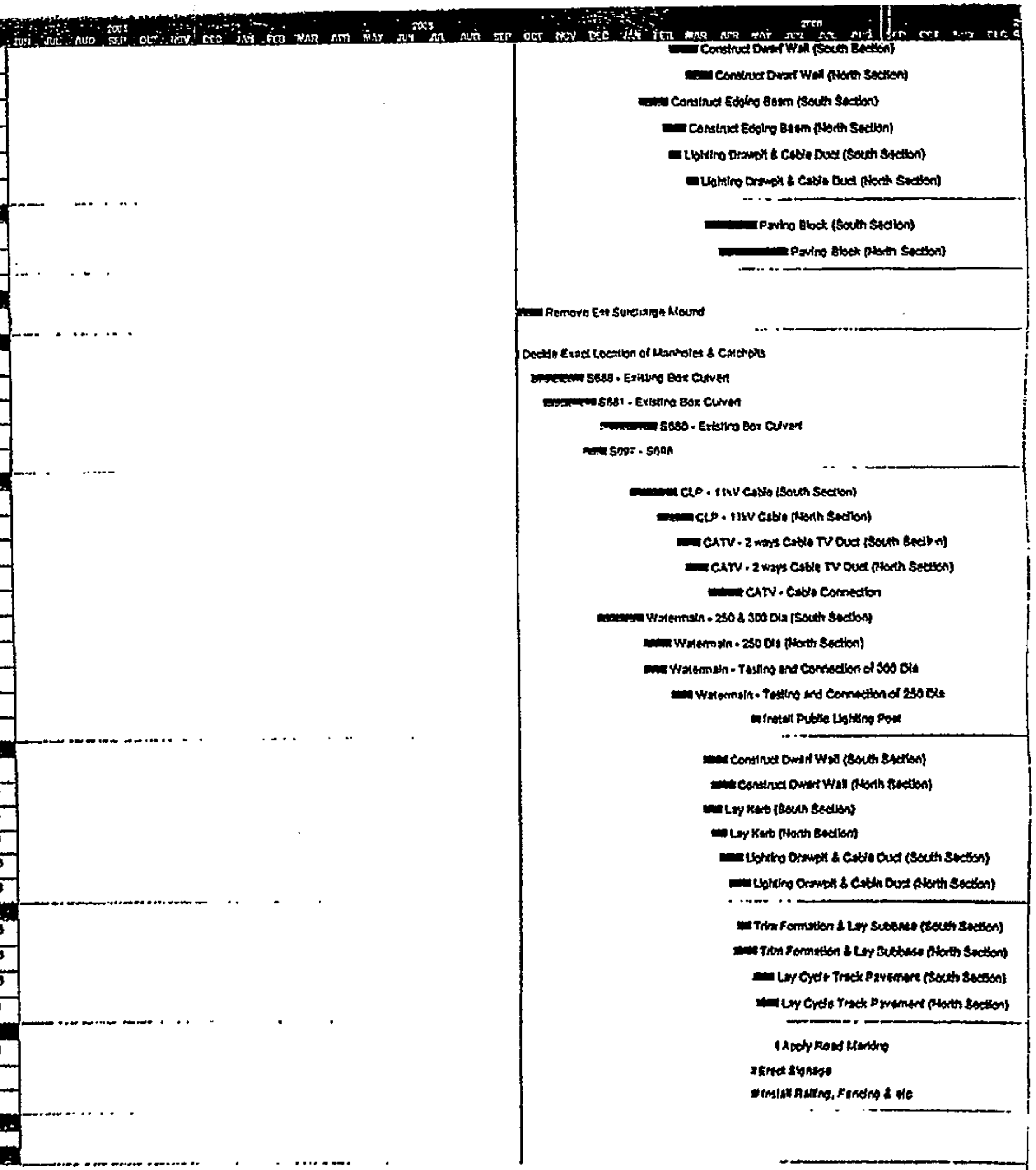
Leader - Wai Kee (C&T) Joint Venture
TP37/03 - Revised Works Programme - RP04

Activity ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A1AMPK0100	Construct Dwarf Wall (South Section)	23	72d	0	20FEB06	17MAR06	17MAY06	13JUN06
A1AMPK0200	Construct Dwarf Wall (North Section)	21	67d	0	07MAR06	30MAR06	26MAY06	20JUN06
A1AMPK0300	Construct Edging Beam (South Section)	22	58d	0	23JAN06	18FEB06	03APR06	26APR06
A1AMPK0400	Construct Edging Beam (North Section)	18	34d	0	14FEB06	06MAR06	25MAR06	15APR06
A1AMPK0500	Lighting Drawpit & Cable Duct (South Section)	10	75d	0	20FEB06	02MAR06	20MAY06	01JUN06
A1AMPK0600	Lighting Drawpit & Cable Duct (North Section)	10	48d	0	07MAR06	17MAR06	04MAY06	16MAY06
Roads and Paving								
A1AMRP0100	Paving Block (South Section)	40	58d	0	23MAR06	10MAY06	02JUN06	10JUL06
A1AMRP0200	Paving Block (North Section)	54	34d	0	05APR06	08JUN06	16MAY06	19JUL06
Cycle Track								
Earthworks								
A1CTEA0100	Remove Ext Surcharge Mound	18	7d	0	30SEP05	22OCT05	10OCT05	31OCT05
Drainage Works								
A1CTDW0100	Decide Exact Location of Manholes & Catchpits	1	17d	0	05SEP05	30SEP05	22OCT05	22OCT05
A1CTDW0200	S688 - Existing Box Culvert	42	32d	0	12OCT05	29NOV05	18NOV05	07JAN06
A1CTDW0300	S681 - Existing Box Culvert	42	7d	0	24OCT05	10DEC05	01NOV05	19DEC05
A1CTDW0400	S680 - Existing Box Culvert	41	5d	0	16DEC05	06FEB06	22DEC05	11FEB06
A1CTDW0500	S697 - S698	18	32d	0	30NOV05	20DEC05	09JAN06	28JAN06
Utility Works								
A1CTUT0300	CLP - 11kV Cable (South Section)	38	7d	0	12JAN06	24FEB06	20JAN06	04MAR06
A1CTUT0400	CLP - 11kV Cable (North Section)	29	5d	0	07FEB06	10MAR06	13FEB06	18MAR06
A1CTUT0900	CATV - 2 ways Cable TV Duct (South Section)	18	7d	0	25FEB06	17MAR06	06MAR06	25MAR06
A1CTUT1000	CATV - 2 ways Cable TV Duct (North Section)	18	5d	0	04MAR06	24MAR06	10MAR06	30MAR06
A1CTUT1010	CATV - Cable Connection	28	11d	0	25MAR06	25APR06	06APR06	08MAY06
A1CTUT1100	Watermain - 250 & 300 Dia (South Section)	35	7d	0	12DEC05	23JAN06	20DEC05	02FEB06
A1CTUT1200	Watermain - 250 Dia (North Section)	20	3d	0	24JAN06	17FEB06	01FEB06	23FEB06
A1CTUT1300	Watermain - Testing and Connection of 300 Dia	18	50d	0	24JAN06	13FEB06	08APR06	24APR06
A1CTUT1400	Watermain - Testing and Connection of 250 Dia	18	35d	0	18FEB06	08MAR06	31MAR06	19APR06
A1CTUT1500	Install Public Lighting Post	8	58d	0	02MAY06	10MAY06	11JUL06	19JUL06
Public Lighting, Duct and Kerb								
A1CTPK0100	Construct Dwarf Wall (South Section)	18	7d	0	18MAR06	08APR06	27MAR06	17APR06
A1CTPK0200	Construct Dwarf Wall (North Section)	18	5d	0	25MAR06	15APR06	31MAR06	21APR06
A1CTPK0300	Lay Kerb (South Section)	14	17d	0	18MAR06	03APR06	08APR06	24APR06
A1CTPK0400	Lay Kerb (North Section)	11	10d	0	28MAR06	07APR06	07APR06	19APR06
A1CTPK0500	Lighting Drawpit & Cable Duct (South Section)	18	7d	0	01APR06	22APR06	11APR06	02MAY06
A1CTPK0600	Lighting Drawpit & Cable Duct (North Section)	18	5d	0	10APR06	29APR06	18APR06	08MAY06
Roads and Paving								
A1CTRP0100	Trim Formation & Lay Subbase (South Section)	12	7d	0	17APR06	29APR06	25APR06	09MAY06
A1CTRP0200	Trim Formation & Lay Subbase (North Section)	16	5d	0	14APR06	05MAY06	20APR06	11MAY06
A1CTRP0500	Lay Cycle Track Pavement (South Section)	16	7d	0	02MAY06	22MAY06	10MAY06	30MAY06
A1CTRP0600	Lay Cycle Track Pavement (North Section)	18	5d	0	06MAY06	26MAY06	12MAY06	02JUN06
Road Marking, Traffic Sign and Fencing								
A1CTRM0100	Apply Road Marking	3	5d	0	25MAY06	27MAY06	01JUN06	03JUN06
A1CTRM0200	Erect Signage	4	62d	0	02MAY06	05MAY06	15JUL06	19JUL06
A1CTRM0300	Install Railing, Fencing & etc	5	60d	0	02MAY06	08MAY06	13JUL06	19JUL06
Section 2								
Temporary Traffic Management Scheme								
TTA Implementation								



Start date	10JUN04
Finish date	20OCT07
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Early bar
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Critical bar
Summary bar
Start milestone point
Finish milestone point

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

ID	Activity Description	Orig Dur	Total Float	% Complete	Early Start	Early Finish	Actual Start	Actual Finish
A2TTMS0100	TTA No. 01 - Sui Cheung St. (S/B Slow Lane)	1	19d	0	13FEB06	13FEB06	07MAR06	07MAR06
A2TTMS0200	TTA No. 02 - Sui Cheung St. (S/B Fast Lane)	1	19d	0	24APR06	24APR06	17MAY06	17MAY06
A2TTMS0300	TTA No. 03 - Existing Ma Liu Shui Bridge	1	48d	0	27MAY06	27MAY06	22JUL06	22JUL06
A2TTMS0400	TTA No. 04 - Cycle Track	1	5d	0	29MAY06	29MAY06	05JUN06	05JUN06
A2TTMS0500	TTA No. 05 - Sui Cheung St. Roundabout	1	101d	0	27MAY06	27MAY06	25SEP06	25SEP06
A2TTMS0600	TTA No. 06 - Sui Cheung St. Roundabout	1	101d	0	22JUN06	22JUN06	20OCT06	20OCT06
A2TTMS0700	TTA No. 07 - Sui Cheung St. Roundabout	1	101d	0	13JUL06	13JUL06	10NOV06	10NOV06
A2TTMS0800	TTA No. 08 - Sui Cheung St. & EMLSB	1	5d	0	21AUG06	21AUG06	28AUG06	28AUG06
A2TTMS0900	TTA No. 09 - Road D1 & Sui Cheung St. R/A	1	1d	0	01DEC06	01DEC06	04DEC06	04DEC06
A2TTMS1000	Implement Permanent Traffic Scheme	1	1d	0	25DEC06	25DEC06	26DEC06	26DEC06
Proposed Ma Liu Shui Bridge								
Utility Diversion at Sui Cheung Street								
A2MBUD0100	Trial Pits	12		100	18AUG04 A	06SEP04 A	18AUG04 A	06SEP04 A
A2MBUD0200	Liaison with CLP & WSD for Diversion Works	30		100	23AUG04 A	17SEP04 A	23AUG04 A	17SEP04 A
A2MBUD0300	Submit TTA for Approval	24		100	18SEP04 A	23SEP04 A	18SEP04 A	23SEP04 A
A2MBUD0400	Implement TTA	1		100	03NOV04 A	03NOV04 A	03NOV04 A	03NOV04 A
A2MBUD0500	CLP 11kV Cables Diversion	21		100	10JAN05 A	10JAN05 A	10JAN05 A	10JAN05 A
A2MBUD0510	CLP 132kV Cable Ducts Diversion	11		100	28DEC04 A	06JAN05 A	28DEC04 A	06JAN05 A
A2MBUD0600	Watermain Diversion & Advance Notice to WSD	30		100	09NOV04 A	11JAN05 A	09NOV04 A	11JAN05 A
A2MBUD0610	Watermain Connection by WSD	18		100	22JAN05 A	22JAN05 A	22JAN05 A	22JAN05 A
A2MBUD0700	Diversion of Ext. Drainage at VA (VO/0538)	24	13d	0	06DEC05	06JAN06	25DEC05	21JAN06
Existing Structure Survey								
A2MBES0100	Existing Bridge & Road Survey	12		100	07JUL04 A	20JUL04 A	07JUL04 A	20JUL04 A
A2MBES0200	Submit Monitoring Proposal	12		100	16AUG04 A	23AUG04 A	16AUG04 A	23AUG04 A
A2MBES0300	Engineer Approval of Monitoring Proposal	12		100	24AUG04 A	30AUG04 A	24AUG04 A	30AUG04 A
Pre-Drilling Works								
A2MBPR0100	Submit the Coordinates of Culvert	1		100	26AUG04 A	26AUG04 A	26AUG04 A	26AUG04 A
A2MBPR0200	Predrilling (Voided Abutment)	46		100	25SEP04 A	11NOV04 A	25SEP04 A	11NOV04 A
A2MBPR0400	Predrilling (Pier)	30		100	25SEP04 A	23OCT04 A	25SEP04 A	23OCT04 A
A2MBPR0600	Predrilling (North Abutment)	24		100	27AUG04 A	24SEP04 A	27AUG04 A	24SEP04 A
A2MBPR0700	Submit Proposed Founding Level (Voided Abut.)	12		100	01APR05 A	20APR05 A	01APR05 A	20APR05 A
A2MBPR0800	Engineer Approve Founding Level (Voided Abut.)	12		100	21APR05 A	28APR05 A	21APR05 A	28APR05 A
A2MBPR1100	Submit Proposed Founding Level (Pier)	8		100	01APR05 A	20APR05 A	01APR05 A	20APR05 A
A2MBPR1200	Engineer Approval of Founding Level (Pier)	12		100	21APR05 A	28APR05 A	21APR05 A	28APR05 A
A2MBPR1300	Submit Proposed Founding Level (N-Abutment)	8		100	01APR05 A	20APR05 A	01APR05 A	20APR05 A
A2MBPR1400	Engineer Approval of Founding Level (N-Abutment)	12		100	21APR05 A	28APR05 A	21APR05 A	28APR05 A
A2MBPR1500	Preloading at North Abutment & Up Ramp	100	16d	67	27JUN05 A	15OCT05	27JUN05 A	06DEC05
Piling Works								
A2MBPW0100	Mobilization of Piling Plants	8		100	06AUG05 A	22AUG05 A	06AUG05 A	22AUG05 A
A2MBPW0200	Construct Pile AV1~AV17	66	1d	12	23AUG05 A	07DEC05	23AUG05 A	06DEC05
A2MBPW1300	Construct Pier Pile P1~P12	36	24d	0	28SEP05	10NOV05	26OCT05	06DEC05
A2MBPW1500	Construct N-Abutment Pile AN1~AN16	24	24d	0	11NOV05	08DEC05	06DEC05	07JAN06
A2MBPW1510	Load Test at Voided Abutment & Pier (Optional)	24	1d	0	09DEC05	06JAN06	06DEC05	07JAN06
A2MBPW1505	Load Test at North Abutment (Optional)	24	24d	0	09DEC05	07JAN06	06JAN06	07FEB06
Viaduct Abutment								
A2MBVA0100	Construct Ground Beams (Stage 1)	12	15d	0	07JAN06	26JAN06	23JAN06	07FEB06
A2MBVA0200	Construct Ground Beams (Stage 2)	12	15d	0	21JAN06	06FEB06	06FEB06	21FEB06

Start date 10JAN06
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Data date 23JUN06
Run date 17OCT06
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Early bar
Progress bar
Critical bar
Summary bar
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Loader - Wai Kee (C&T) Joint Venture
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ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A2MBVA0300	Construct Ground Beams (Stage 3)	12	1d	0	07JAN06	20JAN06	06JAN06	21JAN06
A2MBVA0400	Construct Ground Beams (Stage 4)	12	1d	0	21JAN06	06FEB06	20JAN06	07FEB06
A2MBVA0500	Construct Ground Beams (Stage 5)	12	21d	0	07FEB06	20FEB06	03MAR06	16MAR06
A2MBVA0600	Construct Wall (Stage 1)	18	13d	0	07FEB06	27FEB06	22FEB06	14MAR06
A2MBVA0700	Construct Wall (Stage 2)	18	13d	0	28FEB06	20MAR06	15MAR06	05APR06
A2MBVA0800	Construct Wall (Stage 3)	18	1d	0	07FEB06	24FEB06	06FEB06	25FEB06
A2MBVA0900	Construct Wall (Stage 4)	18	1d	0	25FEB06	15MAR06	27FEB06	16MAR06
A2MBVA1000	Construct Wall (Stage 5)	18	1d	0	16MAR06	03APR06	17MAR06	05APR06
A2MBVA1100	Construct Slab	38	87d	0	05APR06	17MAY06	24JUN06	05AUG06
Pier								
A2MBPA0100	Construct Pile Cap	12	40d	0	07JAN06	20JAN06	26FEB06	10MAR06
A2MBPA0200	Construct Columns	21	40d	0	21JAN06	16FEB06	11MAR06	05APR06
North Abutment								
A2MBNA0100	Construct RE Wall to Formation of Abutment	18	24d	0	09JAN06	26JAN06	06FEB06	28FEB06
A2MBNA0200	Construct RE Wall to Formation of RC Wall Type A	36	33d	0	01FEB06	14MAR06	11MAR06	22APR06
A2MBNA0300	Fix RE Wall to Face of Abutment & RC Wall	36	27d	0	13APR06	25MAY06	16MAY06	27JUN06
A2MBNA1100	Construct Pile Cap	18	24d	0	01FEB06	21FEB06	01MAR06	21MAR06
A2MBNA1200	Construct Abutment Walls	24	24d	0	22FEB06	21MAR06	22MAR06	19APR06
A2MBNA1300	Construct RC Wall Type A	36	27d	0	22MAR06	04MAY06	24APR06	06JUN06
A2MBNA1400	Construct RC Wall Type B	36	33d	0	01FEB06	14MAR06	11MAR06	22APR06
A2MBNA1500	Construct RC Wall Type C	18	33d	0	16MAR06	05APR06	24APR06	16MAY06
Double Deck - Viaduct Abutment to Pier								
A2MBDA0100	Erect Scaffolding	18	1d	0	05APR06	25APR06	06APR06	26APR06
A2MBDA0200	Erect Formwork (Bottom Slab)	12	1d	0	26APR06	10MAY06	27APR06	11MAY06
A2MBDA0300	Steel Fixing	8	13d	0	11MAY06	19MAY06	26MAY06	05JUN06
A2MBDA0400	Erect Formwork (Kicker)	8	13d	0	20MAY06	29MAY06	06JUN06	14JUN06
A2MBDA0500	Concreting	1	13d	0	30MAY06	30MAY06	15JUN06	15JUN06
A2MBDA0600	Erect Formwork (Diaphragm & Top Slab)	10	13d	0	01JUN06	12JUN06	16JUN06	27JUN06
A2MBDA0700	Steel Fixing	8	13d	0	13JUN06	21JUN06	28JUN06	07JUL06
A2MBDA0800	Concreting	1	13d	0	22JUN06	22JUN06	06JUL06	06JUL06
A2MBDA0900	Instal. Stress Tendons & Grouting	24	1d	0	06JUL06	04AUG06	10JUL06	05AUG06
A2MBDA1000	Remove Formwork & Scaffolding	8	45d	0	12AUG06	21AUG06	04OCT06	13OCT06
A2MBDA1100	Construct Parapet	70	1d	0	05AUG06	26OCT06	07AUG06	27OCT06
A2MBDA1200	Construct Centre Barrier	38	1d	0	21SEP06	03NOV06	22SEP06	04NOV06
Bridge Deck - Pier to North Abutment								
A2MBDC0100	Erect Scaffolding	18	24d	0	22MAR06	12APR06	26APR06	11MAY06
A2MBDC0200	Erect Formwork (Bottom Slab)	12	1d	0	11MAY06	24MAY06	12MAY06	25MAY06
A2MBDC0300	Steel Fixing	8	1d	0	25MAY06	03JUN06	26MAY06	05JUN06
A2MBDC0400	Erect Formwork (Kicker)	8	1d	0	05JUN06	13JUN06	06JUN06	14JUN06
A2MBDC0500	Concreting	1	1d	0	14JUN06	14JUN06	15JUN06	15JUN06
A2MBDC0600	Erect Formwork (Diaphragm & Top Slab)	10	1d	0	15JUN06	26JUN06	16JUN06	27JUN06
A2MBDC0700	Steel Fixing	8	1d	0	27JUN06	06JUL06	28JUN06	07JUL06
A2MBDC0800	Concreting	1	1d	0	07JUL06	07JUL06	06JUL06	06JUL06
A2MBDC0900	Instal. Stress Tendons & Grouting	24	1d	0	06JUL06	04AUG06	10JUL06	05AUG06
A2MBDC1000	Remove Formwork & Scaffolding	8	39d	0	10AUG06	25AUG06	04OCT06	13OCT06
A2MBDC1100	Construct Parapet	70	1d	0	05AUG06	26OCT06	07AUG06	27OCT06

2006: JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Construct Ground Beams (Stage 3)
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 Pile Cap
Construct Columns
Construct RE Wall to Formation of Abutment
Construct RE Wall to Formation of RC Wall Type A
Fix RE Wall to Face of Abutment & RC Wall
Construct Pile Cap
Construct Abutment Walls
Construct RC Wall Type A
Construct RC Wall Type B
Construct RC Wall Type C
Erect Scaffolding
Erect Formwork (Bottom Slab)
Steel Fixing
Erect Formwork (Kicker)
Concreting
Erect Formwork (Diaphragm & Top Slab)
Steel Fixing
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Start date 16JUN04
Finish date 20OCT06
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Early bar
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Leader - Wai Kee (C&T) Joint Venture
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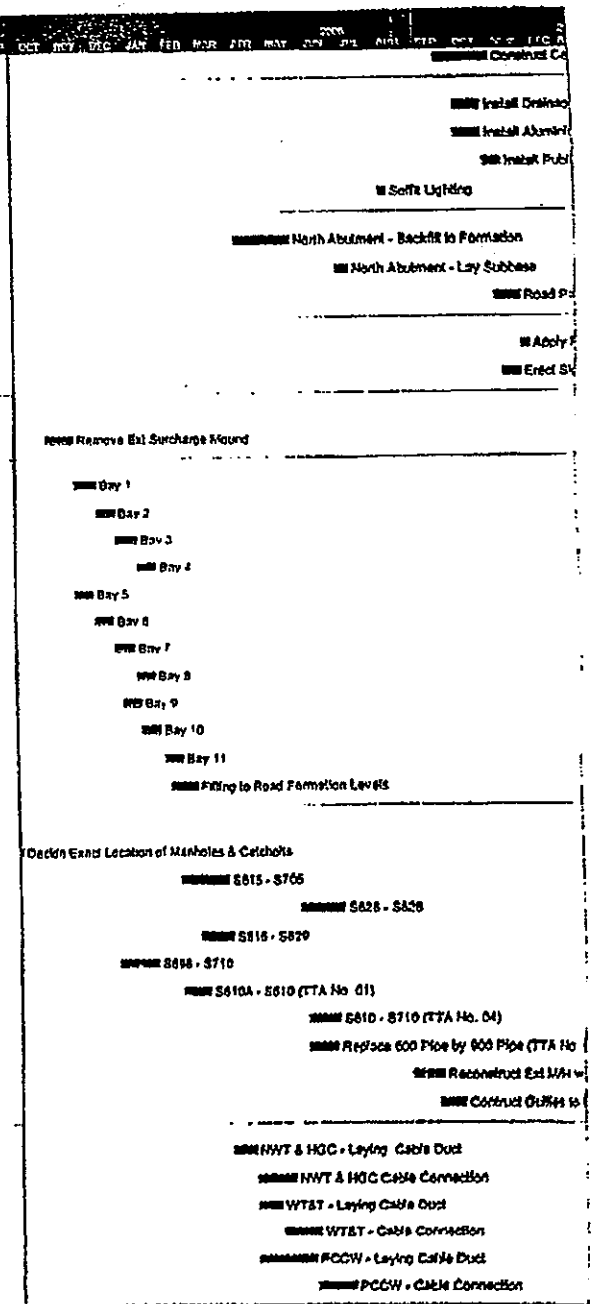
Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A2MBDC1200	Construct Centre Barrier	36	1d	0	21SEP05	03NOV05	22SEP05	04NOV05
Road Furniture Works								
A2MBMW0100	Install Drainage System	16	7d	0	03OCT05	25OCT05	14OCT05	04NOV05
A2MBMW0200	Install Aluminium Rail	16	7d	0	05OCT05	25OCT05	14OCT05	04NOV05
A2MBMW0300	Install Public Lighting Post	12	13d	0	27OCT05	10NOV05	15NOV05	25NOV05
A2MBMW0400	Soffit Lighting	5	45d	0	05AUG05	11AUG05	27SEP05	03OCT05
Road Base Pavem								
A2MBRP0100	North Abutment - Backfill to Formation	40	90d	0	06APR05	23MAY05	03AUG05	16SEP05
A2MBRP0200	North Abutment - Lay Subbase	8	99d	0	30JUN05	10JUL05	26OCT05	04NOV05
A2MBRP0300	Road Pavement	18	1d	0	04NOV05	24NOV05	08NOV05	25NOV05
Road Marking - Traffic Sign and Fencing								
A2MBRM0100	Apply Road Marking	5	1d	0	25NOV05	01DEC05	27NOV05	02DEC05
A2MBSM0200	Erect Signage	12	1d	0	11NOV05	24NOV05	13NOV05	25NOV05
Existing Wall Embankm								
A2REEA0100	Remove Ext Surcharge Mound	22	45d	0	24OCT05	17NOV05	15DEC05	11JAN06
Bay 1								
A2REWA0100	Bay 1	18	45d	0	18NOV05	06DEC05	12JAN06	01FEB06
A2REWA0200	Bay 2	14	45d	0	07DEC05	22DEC05	02FEB06	17FEB06
A2REWA0300	Bay 3	14	45d	0	23DEC05	10JAN06	18FEB06	06MAR06
A2REWA0400	Bay 4	14	45d	0	11JAN06	26JAN06	07MAR06	22MAR06
A2REWA0500	Bay 5	14	47d	0	18NOV05	03DEC05	14JAN06	01FEB06
A2REWA0600	Bay 6	14	47d	0	05DEC05	20DEC05	02FEB06	17FEB06
A2REWA0700	Bay 7	14	47d	0	21DEC05	07JAN06	18FEB06	05MAR06
A2REWA0800	Bay 8	14	47d	0	09JAN06	24JAN06	07MAR06	22MAR06
A2REWA0900	Bay 9	14	20d	0	28DEC05	12JAN06	02FEB06	17FEB06
A2REWA1000	Bay 10	14	29d	0	13JAN06	26JAN06	18FEB06	06MAR06
A2REWA1100	Bay 11	14	29d	0	01FEB06	16FEB06	07MAR06	22MAR06
A2REWA1200	Filling to Road Formation Levels	20	26d	0	06FEB06	28FEB06	15MAR06	03APR06
Road DI								
Drainage Works								
A2RDDW0100	Decide Exact Location of Manholes & Catchpits	1	123d	0	30SEP05	30SEP05	28FEB06	28FEB06
A2RDDW0200	S615 - S705	38	6d	0	15FEB05	25MAR06	15FEB06	31MAR06
A2RDDW0300	S626 - S626	31	66d	0	24MAY05	29JUN06	19SEP05	25OCT05
A2RDDW0350	S616 - S629	23	85d	0	01MAR06	28MAR06	12JUN06	10JUL06
A2RDDW0400	S606 - S710	27	66d	0	21DEC05	23JAN06	01MAR06	31MAR06
A2RDDW0500	S610A - S610 (TTA No. 01)	20	19d	0	14FEB06	06MAR06	06MAR06	30MAR06
A2RDDW0600	S610 - S710 (TTA No. 04)	22	25d	0	30MAY06	24JUN06	30JUN06	26JUL06
A2RDDW0700	Replace 600 Pipe by 900 Pipe (TTA No. 04)	20	20d	0	30MAY06	22JUN06	23JUN06	17JUL06
A2RDDW0800	Reconstruct Ext MH w 1800 Chamber (TTA No. 05)	22	31d	0	22AUG06	18SEP06	27SEP06	23OCT06
A2RDDW0900	Construct Outfall to Existing Pipe (TTA No. 06)	18	5d	0	12SEP06	02OCT06	18SEP06	09OCT06
Utility Works								
A2RDUT0300	NWT & HGC - Laying Cable Duct	17	5d	0	27MAR06	18APR06	01APR06	21APR06
A2RDUT0310	NWT & HGC Cable Connection	27	13d	0	17APR06	18MAY06	03MAY06	06JUN06
A2RDUT0400	WT&T - Laying Cable Duct	17	5d	0	17APR06	08MAY06	22APR06	12MAY06
A2RDUT0410	WT&T - Cable Connection	28	176d	0	08MAY06	07JUN07	27NOV06	28DEC06
A2RDUT0500	PCCW - Laying Cable Duct	40	5d	0	17APR06	09JUN06	22APR06	09JUN06
A2RDUT0510	PCCW - Cable Connection	28	147d	0	05JUN06	05JUL06	27NOV06	28DEC06



Data date 10JUN04
Run date 20OCT07
Start date 26SEP05
Run date 17OCT05
Page number 6A

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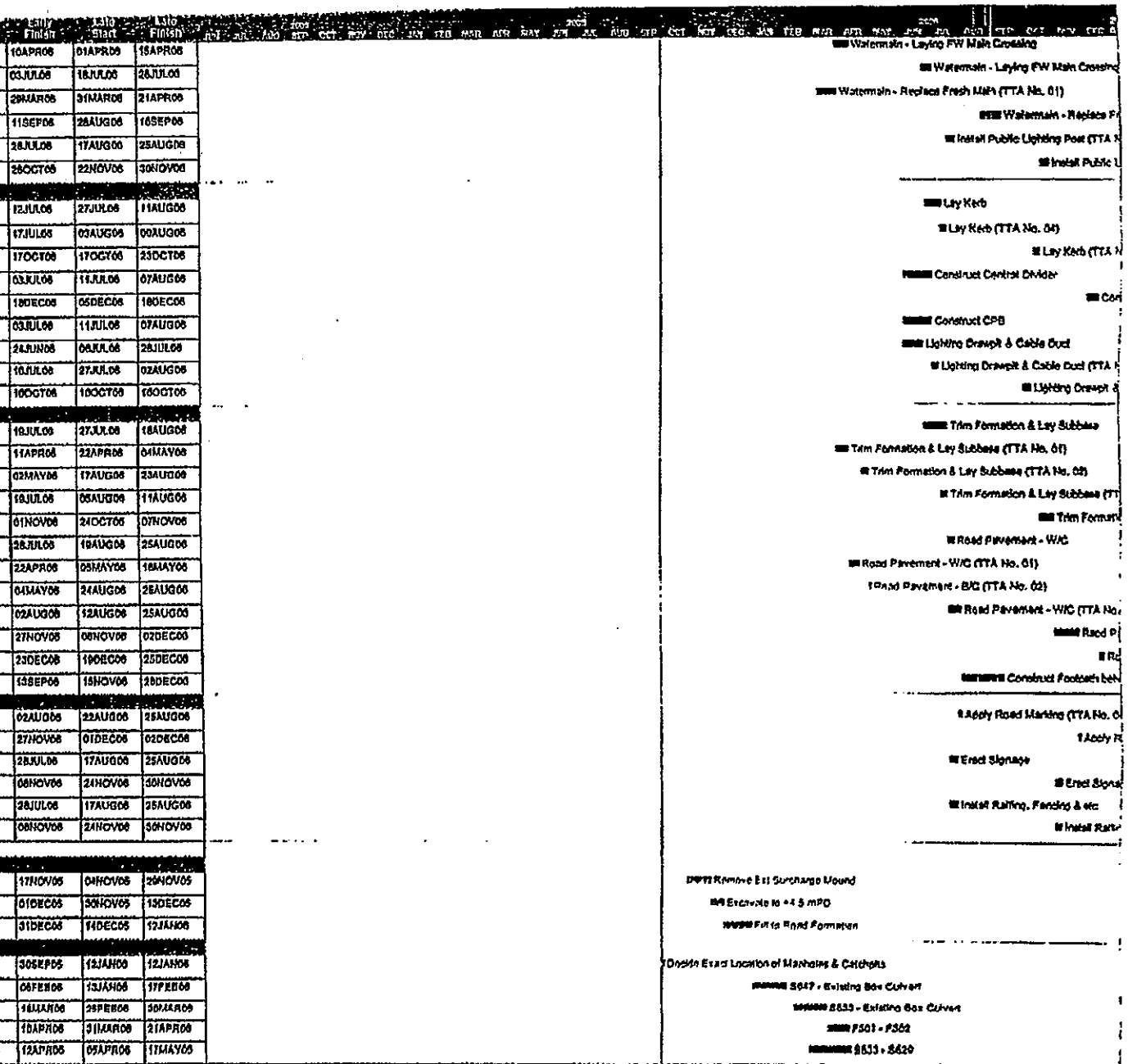
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

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

ID	Description	Dur.	Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A2RDUT0650	Watermain - Laying FW Main Crossing	92	5d	0	27MAR06	10APR06	01APR06	15APR06
A2RDUT0700	Watermain - Laying FW Main Crossing (TTA No. 04)	8	20d	0	23JUN06	03JUL06	18JUL06	28JUL06
A2RDUT0800	Watermain - Replace Fresh Main (TTA No. 01)	18	15d	0	06MAR06	29MAR06	31MAR06	21APR06
A2RDUT0900	Watermain - Replace Fresh Main (TTA No. 06)	18	5d	0	22AUG06	11SEP06	28AUG06	16SEP06
A2RDUT1000	Install Public Lighting Post (TTA No. 04)	8	25d	0	16JUL06	28JUL06	17AUG06	25AUG06
A2RDUT1100	Install Public Lighting Post (TTA No. 06)	8	26d	0	18OCT06	25OCT06	22NOV06	30NOV06
Public Lighting, Duct and Kerb								
A2RDPK0100	Lay Kerb	14	26d	0	26JUN06	12JUL06	27JUL06	11AUG06
A2RDPK0200	Lay Kerb (TTA No. 04)	6	20d	0	11JUL06	17JUL06	03AUG06	09AUG06
A2RDPK0300	Lay Kerb (TTA No. 06)	6	5d	0	11OCT06	17OCT06	17OCT06	23OCT06
A2RDPK0400	Construct Central Divider	24	30d	0	05JUN06	03JUL06	11JUL06	07AUG06
A2RDPK0500	Construct Central Divider (TTA No. 06)	12	1d	0	04DEC06	19DEC06	05DEC06	18DEC06
A2RDPK0600	Construct CPB	24	30d	0	05JUN06	03JUL06	11JUL06	07AUG06
A2RDPK0700	Lighting Draught & Cable Duct	18	26d	0	05JUN06	24JUN06	06JUL06	28JUL06
A2RDPK0800	Lighting Draught & Cable Duct (TTA No. 04)	6	20d	0	04JUL06	10JUL06	27JUL06	02AUG06
A2RDPK0900	Lighting Draught & Cable Duct (TTA No. 06)	8	5d	0	03OCT06	10OCT06	16OCT06	19OCT06
Roads and Paving								
A2RDRP0100	Trim Formation & Lay Subbase	20	26d	0	26JUN06	19JUL06	27JUL06	18AUG06
A2RDRP0200	Trim Formation & Lay Subbase (TTA No. 01)	10	15d	0	30MAR06	11APR06	22APR06	04MAY06
A2RDRP0300	Trim Formation & Lay Subbase (TTA No. 02)	6	95d	0	25APR06	02MAY06	17AUG06	23AUG06
A2RDRP0400	Trim Formation & Lay Subbase (TTA No. 04)	6	20d	0	13JUL06	19JUL06	05AUG06	11AUG06
A2RDRP0500	Trim Formation & Lay Subbase (TTA No. 06)	12	5d	0	18OCT06	01NOV06	24OCT06	07NOV06
A2RDRP0700	Road Pavement - WC	6	26d	0	20JUL06	26JUL06	19AUG06	25AUG06
A2RDRP0800	Road Pavement - WC (TTA No. 01)	10	10d	0	12APR06	22APR06	05MAY06	16MAY06
A2RDRP0900	Road Pavement - BC (TTA No. 02)	2	95d	0	03MAY06	04MAY06	24AUG06	25AUG06
A2RDRP1000	Road Pavement - WC (TTA No. 04)	12	20d	0	20JUL06	02AUG06	12AUG06	25AUG06
A2RDRP1100	Road Pavement - WC (TTA No. 06)	22	5d	0	02NOV06	27NOV06	06NOV06	02DEC06
A2RDRP1200	Road Pavement - WC (TTA No. 09)	6	1d	0	18DEC06	23DEC06	19DEC06	25DEC06
A2RDRP1300	Construct Footpath between D/T & D1	36	575	0	03AUG06	13SEP06	15NOV06	28DEC06
Road Markers, Traffic Signs and Fencing								
A2RDRM0100	Apply Road Marking (TTA No. 04)	4	20d	0	28JUL06	02AUG06	22AUG06	25AUG06
A2RDRM0200	Apply Road Marking (TTA No. 06)	2	5d	0	25NOV06	27NOV06	01DEC06	02DEC06
A2RDRM0400	Erect Signage	8	24d	0	20JUL06	28JUL06	17AUG06	25AUG06
A2RDRM0500	Erect Signage (TTA No. 06)	8	10d	0	02NOV06	08NOV06	24NOV06	30NOV06
A2RDRM0600	Install Railing, Fencing & etc	8	24d	0	20JUL06	28JUL06	17AUG06	25AUG06
A2RDRM0700	Install Railing, Fencing & etc (TTA No. 06)	8	10d	0	02NOV06	08NOV06	24NOV06	30NOV06
Road SLS								
Earthworks								
A2RSEA0050	Remove Ext Surcharge Mound	22	10d	0	21OCT05	17NOV05	04NOV05	29NOV05
A2RSEA0100	Excavate to +4.5 mPD	12	10d	0	18NOV05	01DEC05	30NOV05	13DEC05
A2RSEA0200	Fill to Road Formation	21	10d	0	02DEC05	31DEC05	14DEC05	12JAN06
Dirt Angle Works								
A2RSDW0100	Decide Exact Location of Manholes & Catchpits	1	85d	0	30SEP05	30SEP05	12JAN06	12JAN06
A2RSDW0200	S647 - Existing Box Culvert	20	15d	0	02JAN06	06FEB06	13JAN06	17FEB06
A2RSDW0550	S633 - Existing Box Culvert	20	10d	0	14FEB06	16JUN06	28FEB06	30MAR06
A2RSDW0400	F501 - F502	18	10d	0	20MAR06	10APR06	31MAR06	21APR06
A2RSDW0500	S633 - S629	36	20d	0	01MAR06	12APR06	05APR06	17MAY06



Last data 10JUN04
Finish data 20OCT67
Start data 26SEP05
Run data 17OCT05
Page number 10A

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

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

LEADER

ID	Description	Dur	Start	Complete	Early Start	Early Finish	Late Start	Late Finish
A2RSDW0000	S805 - S835	21	10d	0	11APR06	05MAY06	22APR06	17MAY06
Drainage Works								
A2RSUT0200	NWT & HGC - Laying Cable Duct	18	30d	0	01MAR06	21MAR06	06APR06	26APR06
A2RSUT0210	NWT & HGC - Cable Connection	27	44d	0	17APR06	18MAY06	09JUN06	11JUL06
A2RSUT0300	WT&T - Laying Cable Duct	18	30d	0	22MAR06	12APR06	27APR06	18MAY06
A2RSUT0310	WT&T - Cable Connection	28	28d	0	06MAY06	07JUN06	10JUN06	11JUL06
A2RSUT0400	PCCW - Laying Cable Duct	36	30d	0	22MAR06	04MAY06	27APR06	09JUN06
A2RSUT0410	PCCW - Cable Connection	26	5d	0	05JUN06	09JUL06	10JUN06	11JUL06
A2RSUT0800	Install Public Lighting Post	8	20d	0	21JUL06	28JUL06	14AUG06	22AUG06
Public Railway, Duct and Kerb								
A2RSPK0100	Construct Dwarf Wall	34	10d	0	08MAY06	15JUN06	18MAY06	27JUN06
A2RSPK0200	Lay Kerb	9	10d	0	11JUL06	20JUL06	22JUL06	01AUG06
A2RSPK0300	Lighting Draw pit & Cable Duct	20	10d	0	18JUN06	10JUL06	28JUN06	21JUL06
Roads and Paving								
A2RSRP0100	Trim Formation & Lay Subbase	18	21d	0	16JUN06	07JUL06	12JUL06	01AUG06
A2RSRP0200	Road Pavement	18	10d	0	21JUL06	10AUG06	02AUG06	22AUG06
A2RSRP0300	Construct Footpath between C/T and RW no. 1	24	8d	0	08JUL06	02AUG06	12JUL06	08AUG06
Road Marking, Traffic Sign and Fencing								
A2RSRM0100	Apply Road Marking	3	5d	0	17AUG06	18AUG06	23AUG06	25AUG06
A2RSRM0200	Erect Signage	12	5d	0	03AUG06	16AUG06	09AUG06	22AUG06
A2RSRM0300	Install Railing, Fencing & etc	12	5d	0	03AUG06	16AUG06	09AUG06	22AUG06
Existing Sai Cheung Street								
Drainage Works								
A2SCDW0100	Decide Exact Location of Manholes & Catchpits	1	185d	0	30SEP05	30SEP05	15MAY06	15MAY06
A2SCDW0200	S851 - S847 (TTA No. 04)	42	5d	0	09MAY06	27JUN06	15MAY06	04JUL06
A2SCDW0300	Construct Gullies (TTA No. 06)	4	38d	0	22AUG06	25AUG06	03OCT06	06OCT06
Utilities Works								
A2SCUT0600	Watermain - Replace SWM (TTA No. 04)	24	5d	0	14JUN06	12JUL06	20JUN06	18JUL06
A2SCUT0700	Watermain - Lay FWM Crossing (TTA No. 04)	18	5d	0	21JUN06	12JUL06	27JUN06	18JUL06
A2SCUT0800	Watermain - Lay FWM Crossing (TTA No. 06)	24	30d	0	26AUG06	22SEP06	09OCT06	06NOV06
A2SCUT0900	Install Public Lighting Post (TTA No. 04)	8	14d	0	01AUG06	09AUG06	17AUG06	25AUG06
A2SCUT1000	Install Public Lighting Post (TTA No. 06)	8	30d	0	09OCT06	17OCT06	21NOV06	29NOV06
Private Railway, Duct and Kerb								
A2SCPK0100	Lay Kerb (TTA No. 04)	8	5d	0	22JUL06	31JUL06	28JUL06	05AUG06
A2SCPK0200	Lay Kerb (TTA No. 06)	8	30d	0	30SEP06	06OCT06	14NOV06	20NOV06
A2SCPK0300	Lighting Draw pit & Cable Duct (TTA No. 04)	8	5d	0	15JUL06	21JUL06	19JUL06	27JUL06
A2SCPK0400	Lighting Draw pit & Cable Duct (TTA No. 06)	8	30d	0	23SEP06	29SEP06	07NOV06	13NOV06
Roads and Paving								
A2SCRP0100	Trim Formation & Lay Subbase (TTA No. 04)	12	5d	0	22JUL06	04AUG06	28JUL06	10AUG06
A2SCRP0200	Road Pavement (TTA No. 04)	12	5d	0	05AUG06	18AUG06	11AUG06	24AUG06
A2SCRP0300	Road Pavement (TTA No. 06)	8	30d	0	09OCT06	17OCT06	21NOV06	29NOV06
A2SCRP0400	Remove Existing Traffic Island (TTA No. 02)	8	19d	0	25APR06	02MAY06	16MAY06	24MAY06
A2SCRP0500	Road Pavement (TTA No. 02)	8	19d	0	03MAY06	11MAY06	25MAY06	03JUN06
Road Marking, Traffic Sign and Fencing								
A2SCRM0000	Apply Road Marking (TTA No. 04)	1	5d	0	18AUG06	18AUG06	25AUG06	25AUG06
A2SCRM0100	Apply Road Marking (TTA No. 06)	2	30d	0	18OCT06	20OCT06	06NOV06	02DEC06
A2SCRM0200	Erect Signage	12	74d	0	19AUG06	01SEP06	15NOV06	29NOV06
A2SCRM0300	Install Railing, Fencing & etc	12	74d	0	19AUG06	01SEP06	15NOV06	29NOV06

2006 2007 2008

S805 - S835

NWT & HGC - Laying Cable Duct

NWT & HGC - Cable Connection

WT&T - Laying Cable Duct

WT&T - Cable Connection

PCCW - Laying Cable Duct

PCCW - Cable Connection

Install Public Lighting Post

Construct Dwarf Wall

Lay Kerb

Lighting Draw pit & Cable Duct

Trim Formation & Lay Subbase

Road Pavement

Construct Footpath between C/

Apply Road Marking

Erect Signage

Install Railing, Fencing & etc

Decide Exact Location of Manholes & Catchpits

S854 - S847 (TTA No. 04)

Construct Gullies (TTA No.

Watermain - Replace SWM (TTA No

Watermain - Lay FWM Crossing (TT

Watermain - Lay FWM

Install Public Lighting Post (TT

Install Public Lig

Lay Kerb (TTA No. 04)

Lay Kerb (TTA No

Lighting Draw pit & Cable Duct (TT

Lighting Draw pit & C

Trim Formation & Lay Subbase

Road Pavement (TTA No. 0

Road Pavemen

Remove Existing Traffic Island (TTA No. 02)

Road Pavement (TTA No. 02)

Apply Road Marking (TTA No

Apply Road Mar

Erect Signage

Install Railing, Fencing &

Start date 10JUN06
Finish date 20OCT07
Data date 29SEP06
Run date 17OCT06
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Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

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

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Existing Sri Cheong Street Roundabout								
Public Lighting Duct and Pits								
A2SRPK0100	Laying Lighting Cross Road Duct (TTA No. 05)	4	101d	0	08JUN06	12JUN06	05OCT06	10OCT06
A2SRPK0200	Laying Lighting Cross Road Duct (TTA No. 06)	4	101d	0	26JUN06	29JUN06	24OCT06	27OCT06
Roads and Paving								
A2SRRP0100	Demolish Existing Island (TTA No. 05)	6	101d	0	26MAY06	07JUN06	26SEP06	04OCT06
A2SRRP0200	Construct Proposed Island (TTA No. 05)	8	101d	0	13JUN06	21JUN06	11OCT06	19OCT06
A2SRRP0300	Demolish Existing Kerb (TTA No. 05)	2	101d	0	23JUN06	24JUN06	21OCT06	23OCT06
A2SRRP0400	Lay Kerb (TTA No. 05)	8	101d	0	30JUN06	10JUL06	25OCT06	07NOV06
A2SRRP0500	Demolish Existing Roundabout (TTA No. 07)	8	101d	0	14JUL06	22JUL06	11NOV06	20NOV06
A2SRRP0600	Reconstruct Roundabout (TTA No. 07)	8	101d	0	24JUL06	01AUG06	21NOV06	29NOV06
A2SRRP0700	Reinstate Road Pavement (TTA No. 05)	2	101d	0	11JUL06	12JUL06	06NOV06	06NOV06
A2SRRP0800	Resurfacing Wearing Course	8	101d	0	02AUG06	10AUG06	30NOV06	06DEC06
A2SRRP0900	Construct Proposed Island (TTA No. 09)	12	7d	0	04DEC06	16DEC06	12DEC06	23DEC06
Road Marking , Traffic Signs and Fencing								
A2SRRM0100	Apply Road Marking	2	101d	0	25AUG06	28AUG06	23DEC06	26DEC06
A2SRRM0200	Erect Signage	12	101d	0	11AUG06	24AUG06	09DEC06	22DEC06
A2SRRM0300	Install Railing, Fencing & etc	12	101d	0	11AUG06	24AUG06	09DEC06	22DEC06
Existing Ma Liu Shui Bridge								
Utility Works								
A2EBUT0100	Install Public Lighting Post	8	61d	0	03OCT06	12OCT06	18DEC06	29DEC06
Public Lighting Duct and Pits								
A2EBPK0100	Lay Kerb (TTA No. 03)	8	48d	0	13JUN06	21JUN06	07AUG06	15AUG06
A2EBPK0200	Cable Duct Laying on Island (TTA No. 06)	8	75d	0	26AUG06	01SEP06	24NOV06	30NOV06
A2EBPK0300	Cable Duct Laying on Reserve (TTA No. 06)	8	87d	0	05SEP06	11SEP06	13NOV06	18NOV06
Roads and Paving								
A2EBRP0100	Demolish Existing Parapet (TTA No. 03)	12	114d	0	29MAY06	12JUN06	12OCT06	25OCT06
A2EBRP0200	Demolish Island & Paved Area (TTA No. 03)	12	48d	0	29MAY06	12JUN06	24JUL06	05AUG06
A2EBRP0300	Road Pavement (TTA No. 03)	8	48d	0	22JUN06	30JUN06	18AUG06	24AUG06
A2EBRP0400	Construct Roundabout on V-Abutment (TTA No. 03)	8	114d	0	12JUN06	21JUN06	25OCT06	04NOV06
A2EBRP0500	Remove Pavement at Proposed Island (TTA No. 06)	4	75d	0	22AUG06	25AUG06	20NOV06	23NOV06
A2EBRP0600	Construct Traffic Island (TTA No. 06)	8	75d	0	02SEP06	11SEP06	01DEC06	08DEC06
A2EBRP0700	Construct Remaining Roundabout (TTA No. 06)	12	81d	0	22AUG06	04SEP06	27NOV06	09DEC06
A2EBRP0800	Demolish Existing Central Reserve (TTA No. 06)	12	87d	0	22AUG06	04SEP06	28OCT06	11NOV06
A2EBRP0900	Construct New Central Reserve (TTA No. 06)	18	57d	0	12SEP06	02OCT06	20NOV06	06DEC06
Road Marking , Traffic Signs and Fencing								
A2EBRM0100	Apply Road Marking (TTA No. 03)	1	48d	0	03JUL06	03JUL06	25AUG06	28AUG06
A2EBRM0200	Apply Road Marking (TTA No. 06)	1	87d	0	18OCT06	18OCT06	23DEC06	23DEC06
A2EBRM0300	Erect Signage	12	57d	0	03OCT06	17OCT06	11DEC06	23DEC06
A2EBRM0400	Install Railing, Fencing & etc	12	57d	0	03OCT06	17OCT06	11DEC06	23DEC06
Car Park and Access Road								
Drainage Works								
A2CPDW1200	S662 - Existing Culvert	21	88d	0	08MAY06	30MAY06	19AUG06	12SEP06
A2CPDW1300	CP632 - S664	18	66d	0	01JUN06	19JUN06	15SEP06	30SEP06
Utility Works								
A2CPUT0600	Install Public Lighting Post	6	156d	0	14AUG06	22AUG06	18DEC06	26DEC06
Public Lighting Duct and Pits								
A2CPPK0100	Construct Dwarf Wall	23	88d	0	20JUN06	17JUL06	02OCT06	26OCT06
A2CPPK0200	Lay Kerb	8	88d	0	04AUG06	12AUG06	17NOV06	28NOV06

Start date	10JUN06
Finish date	20OCT07
Data date	31SEP05
Run date	11OCT05
Job number	12A
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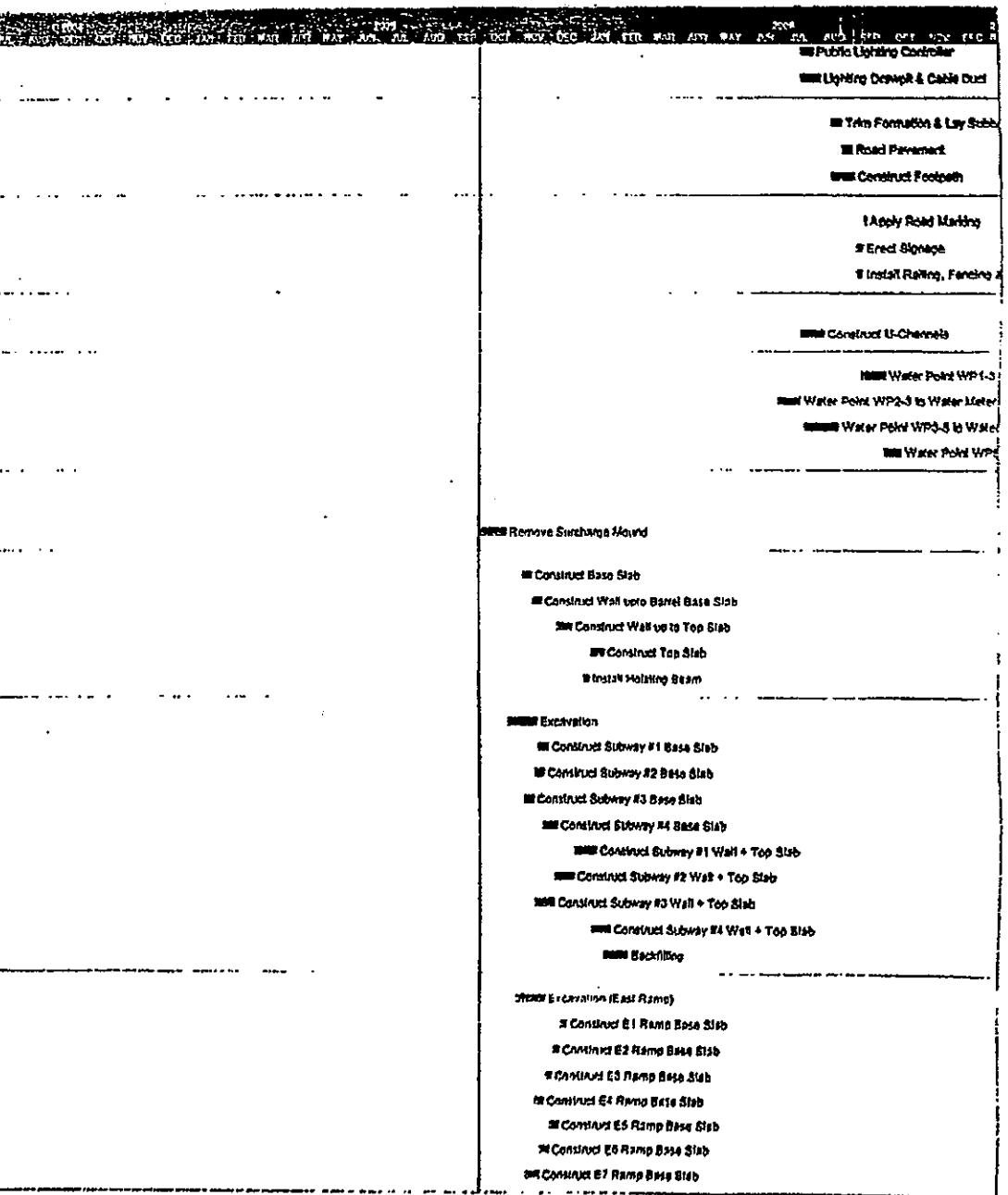
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Activity Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A2CPPK0050	Public Lighting Controller	10	116d	0	18JUL06	28JUL06	06DEC06	16DEC06
A2CPPK0100	Lighting Dewpit & Cable Duct	15	68d	0	18JUL06	03AUG06	31OCT06	16NOV06
Roads and Paving								
A2CPRP0150	Trim Formation & Lay Subbase	8	90d	0	14AUG06	22AUG06	06DEC06	14DEC06
A2CPRP0200	Road Pavement	9	96d	0	23AUG06	31AUG06	15DEC06	23DEC06
A2CPRP0300	Construct Footpath	18	68d	0	14AUG06	01SEP06	27NOV06	18DEC06
Road Marking, Traffic Sign and Fencing								
A2CPRM0100	Apply Road Marking	2	68d	0	11SEP06	12SEP06	25DEC06	26DEC06
A2CPRM0200	Erect Signage	6	68d	0	04SEP06	09SEP06	18DEC06	23DEC06
A2CPRM0300	Install Railing, Fencing & etc	5	68d	0	04SEP06	09SEP06	18DEC06	23DEC06
Amenity Area								
Drainage Works								
A2AMDW0100	Construct U-Channels	18	119d	0	18JUL06	07AUG06	06DEC06	28DEC06
Utility Works								
A2AMUT0100	Water Point WP1-3 to Water Meter No.1	18	81d	0	09SEP06	26SEP06	22NOV06	12DEC06
A2AMUT0200	Water Point WP2-3 to Water Meter No.2	17	136d	0	28JUN06	18JUL06	07DEC06	26DEC06
A2AMUT0300	Water Point WP3-5 to Water Meter No.3	26	107d	0	22JUL06	21AUG06	27NOV06	26DEC06
A2AMUT0400	Water Point WP5-2 to Water Meter No.5	12	81d	0	30SEP06	14OCT06	15DEC06	28DEC06
Section 3								
Ma Liu Shui Subway								
Earthworks								
A3MSEA0100	Remove Surcharge Mound	18	6d	0	30SEP05	22OCT05	07OCT05	28OCT05
Ramp House Construction								
A3MSPH0100	Construct Base Slab	8	6d	0	07NOV05	15NOV05	12NOV05	21NOV05
A3MSPH0200	Construct Wall upto Barrel Base Slab	8	6d	0	16NOV05	24NOV05	22NOV05	30NOV05
A3MSPH0300	Construct Wall up to Top Slab	12	6d	0	09DEC05	22DEC05	15DEC05	30DEC05
A3MSPH0400	Construct Top Slab	12	9d	0	05JAN06	21JAN06	19JAN06	03FEB06
A3MSPH0500	Install Hoisting Beam	6	6d	0	02JAN06	07JAN06	07JAN06	13JAN06
Subway Barrel Construction								
A3MSSB0100	Excavation	24	6d	0	24OCT05	16NOV05	20OCT05	25NOV05
A3MSSB0200	Construct Subway #1 Base Slab	9	30d	0	21NOV05	30NOV05	28DEC05	06JAN06
A3MSSB0300	Construct Subway #2 Base Slab	9	17d	0	17NOV05	28NOV05	07DEC05	16DEC05
A3MSSB0400	Construct Subway #3 Base Slab	9	10d	0	07NOV05	16NOV05	18NOV05	28NOV05
A3MSSB0500	Construct Subway #4 Base Slab	12	6d	0	25NOV05	08DEC05	01DEC05	14DEC05
A3MSSB0600	Construct Subway #1 Wall + Top Slab	16	10d	0	24DEC05	13JAN06	07JAN06	25JAN06
A3MSSB0700	Construct Subway #2 Wall + Top Slab	16	10d	0	06DEC05	23DEC05	17DEC05	05JAN06
A3MSSB0800	Construct Subway #3 Wall + Top Slab	16	10d	0	17NOV05	05DEC05	29NOV05	16DEC05
A3MSSB0900	Construct Subway #4 Wall + Top Slab	16	6d	0	09JAN06	26JAN06	14JAN06	03FEB06
A3MSSB1000	Backfilling	16	6d	0	20JAN06	11FEB06	26JAN06	17FEB06
Subway East Ramp Construction								
A3MSSE0150	Excavation (East Ramp)	24	6d	0	31OCT05	28NOV05	05NOV05	02DEC05
A3MSSE0200	Construct E1 Ramp Base Slab	8	11d	0	12DEC05	17DEC05	14DEC05	02JAN06
A3MSSE0300	Construct E2 Ramp Base Slab	6	11d	0	05DEC05	10DEC05	17DEC05	23DEC05
A3MSSE0400	Construct E3 Ramp Base Slab	6	9d	0	28NOV05	03DEC05	06DEC05	14DEC05
A3MSSE0500	Construct E4 Ramp Base Slab	6	9d	0	18NOV05	28NOV05	29NOV05	07DEC05
A3MSSE0600	Construct E5 Ramp Base Slab	8	11d	0	09DEC05	16DEC05	16DEC05	23DEC05
A3MSSE0700	Construct E6 Ramp Base Slab	8	9d	0	23NOV05	01DEC05	03DEC05	12DEC05
A3MSSE1000	Construct E7 Ramp Base Slab	12	5d	0	09NOV05	23NOV05	15NOV05	28NOV05



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Early bar
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Summary bar
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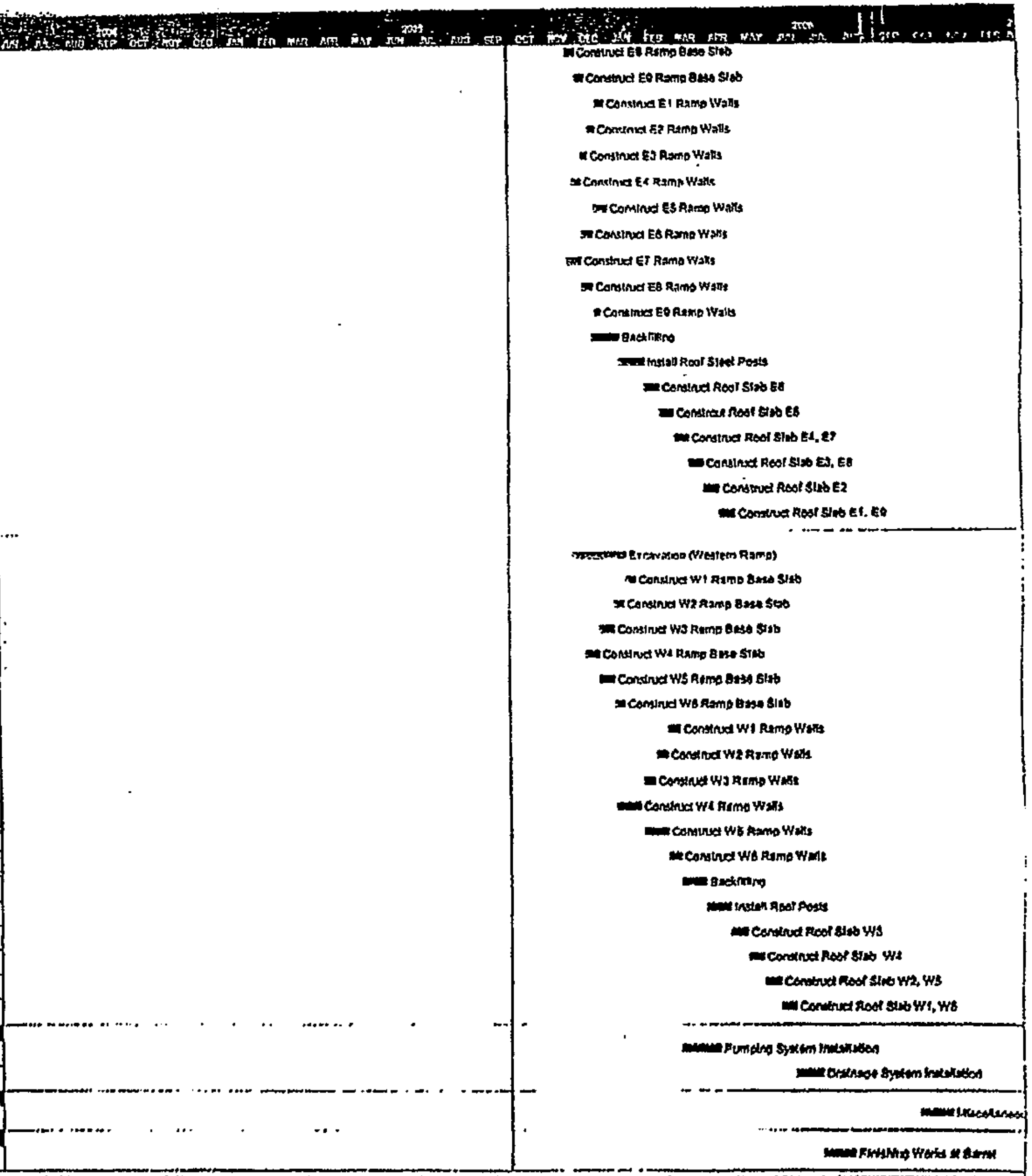
Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A3MSSE1100	Construct E8 Ramp Base Slab	6	13d	0	23NOV05	01DEC05	06DEC05	15DEC05
A3MSSE1300	Construct E0 Ramp Base Slab	8	15d	0	02DEC05	10DEC05	20DEC05	30DEC05
A3MSSE1400	Construct E1 Ramp Walls	6	9d	0	21DEC05	29DEC05	03JAN06	09JAN06
A3MSSE1500	Construct E2 Ramp Walls	6	9d	0	14DEC05	20DEC05	24DEC05	02JAN06
A3MSSE1600	Construct E3 Ramp Walls	6	9d	0	07DEC05	15DEC05	17DEC05	23DEC05
A3MSSE1700	Construct E4 Ramp Walls	8	9d	0	28NOV05	06DEC05	08DEC05	16DEC05
A3MSSE2000	Construct E5 Ramp Walls	10	5d	0	19DEC05	31DEC05	24DEC05	06JAN06
A3MSSE2100	Construct E6 Ramp Walls	10	5d	0	07DEC05	17DEC05	13DEC05	23DEC05
A3MSSE2200	Construct E7 Ramp Walls	12	5d	0	23NOV05	06DEC05	29NOV05	12DEC05
A3MSSE2300	Construct E8 Ramp Walls	10	9d	0	07DEC05	17DEC05	17DEC05	30DEC05
A3MSSE2500	Construct E9 Ramp Walls	8	9d	0	19DEC05	24DEC05	31DEC05	09JAN06
A3MSSE2600	Backfilling	20	5d	0	16DEC05	10JAN06	22DEC05	16JAN06
A3MSSE2700	Install Roof Steel Posts	18	62d	0	11JAN06	02FEB06	27MAR06	17APR06
A3MSSE2800	Construct Roof Slab E6	12	62d	0	03FEB06	16FEB06	18APR06	02MAY06
A3MSSE2900	Construct Roof Slab E5	12	62d	0	17FEB06	02MAR06	03MAY06	16MAY06
A3MSSE3000	Construct Roof Slab E4, E7	12	62d	0	03MAR06	16MAR06	17MAY06	30MAY06
A3MSSE3100	Construct Roof Slab E3, E8	12	62d	0	17MAR06	30MAR06	01JUN06	14JUN06
A3MSSE3200	Construct Roof Slab E2	12	62d	0	31MAR06	14APR06	15JUN06	28JUN06
A3MSSE3300	Construct Roof Slab E1, E9	12	62d	0	18APR06	28APR06	29JUN06	13JUL06
Sytenty West Ramp Construction								
A3MSSW0100	Excavation (Western Ramp)	41	20d	0	28NOV05	18JAN06	21DEC05	10FEB06
A3MSSW0200	Construct W1 Ramp Base Slab	8	43d	0	17JAN06	26JAN06	10MAR06	18MAR06
A3MSSW0300	Construct W2 Ramp Base Slab	8	42d	0	06JAN06	14JAN06	27FEB06	07MAR06
A3MSSW0500	Construct W3 Ramp Base Slab	10	20d	0	23DEC05	05JAN06	18JAN06	28JAN06
A3MSSW0600	Construct W4 Ramp Base Slab	12	20d	0	09DEC05	22DEC05	04JAN06	17JAN06
A3MSSW0700	Construct W5 Ramp Base Slab	10	20d	0	23DEC05	05JAN06	18JAN06	28JAN06
A3MSSW0800	Construct W6 Ramp Base Slab	8	52d	0	06JAN06	14JAN06	10MAR06	18MAR06
A3MSSW0900	Construct W1 Ramp Walls	10	20d	0	24FEB06	07MAR06	20MAR06	30MAR06
A3MSSW1000	Construct W2 Ramp Walls	10	20d	0	13FEB06	23FEB06	08MAR06	18MAR06
A3MSSW1200	Construct W3 Ramp Walls	10	20d	0	01FEB06	11FEB06	24FEB06	07MAR06
A3MSSW1300	Construct W4 Ramp Walls	20	20d	0	06JAN06	28JAN06	01FEB06	23FEB06
A3MSSW1400	Construct W5 Ramp Walls	20	20d	0	01FEB06	23FEB06	24FEB06	18MAR06
A3MSSW1500	Construct W6 Ramp Walls	10	20d	0	24FEB06	07MAR06	20MAR06	30MAR06
A3MSSW1600	Backfilling	20	20d	0	08MAR06	30MAR06	31MAR06	21APR06
A3MSSW1700	Install Roof Posts	18	20d	0	31MAR06	21APR06	25APR06	16MAY06
A3MSSW1800	Construct Roof Slab W3	12	20d	0	22APR06	08MAY06	17MAY06	30MAY06
A3MSSW1900	Construct Roof Slab W4	12	20d	0	08MAY06	20MAY06	01JUN06	14JUN06
A3MSSW2000	Construct Roof Slab W2, W5	12	20d	0	22MAY06	03JUN06	16JUN06	28JUN06
A3MSSW2100	Construct Roof Slab W1, W6	12	20d	0	05JUN06	19JUN06	29JUN06	13JUL06
Pumping and Drainage System								
A3MSPD0100	Pumping System Installation	30	169d	0	08MAR06	12APR06	29SEP06	31OCT06
A3MSPD0200	Drainage System Installation	20	20d	0	20JUN06	13JUL06	14JUL06	05AUG06
Miscellaneous Works								
A3MSMW0100	Miscellaneous Metal Works	21	44d	0	06OCT06	01NOV06	29NOV06	28DEC06
Finishing Works								
A3MSFW0100	Finishing Works at Barrel	21	20d	0	14JUL06	10AUG06	07AUG06	02SEP06



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ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A3AWSFW0200	Finishing Works at East Ramp	24	20d	0	11AUG06	07SEP06	04SEP06	30SEP06
A3AWSFW0300	Finishing Works at West Ramp	24	20d	0	06SEP06	05OCT06	02OCT06	31OCT06
E/M Works								
A3AWSEW0100	Electrical Installation at Barrel & Pump House	24	65d	0	11AUG06	07SEP06	01NOV06	28NOV06
A3AWSEW0200	Electrical Installation at East Ramp	24	44d	0	06SEP06	05OCT06	01NOV06	28NOV06
A3AWSEW0300	Electrical Installation at West Ramp	24	20d	0	06OCT06	04NOV06	01NOV06	28NOV06
Testing and Commissioning								
A3AWSTC0100	Pumping System & Electrical Installation	24	20d	0	06NOV06	02DEC06	29NOV06	28DEC06
Loading and Unloading Area								
Drainage Works								
A3LUDW0100	Decide Location of Manholes & Catchpits	1	172d	0	30SEP05	30SEP05	27APR06	27APR06
A3LUDW0200	F302 - F306	26	23d	0	05JUN06	05JUL06	03JUL06	01AUG06
A3LUDW0300	Trial Pit for F306 - F306A (Deleted)	10		100	28JAN05 A	28JAN05 A	28JAN05 A	28JAN05 A
A3LUDW0400	F306 - F306A	11	316d	0	30SEP05	14OCT05	19OCT06	01NOV06
A3LUDW0500	F306 - F306A (TTA No. 06)	11	81d	0	22AUG06	02SEP06	27NOV06	08DEC06
A3LUDW0600	F306A - Existing Sewer Manhole	21	316d	0	15OCT05	08NOV05	02NOV06	25NOV06
A3LUDW0700	S712 - S622	21	23d	0	31MAR06	25APR06	28APR06	23MAY06
A3LUDW0800	S617 - S618	11	23d	0	26APR06	09MAY06	24MAY06	05JUN06
A3LUDW0900	S676 - S624	21	23d	0	10MAY06	03JUN06	07JUN06	30JUN06
A3LUDW1000	S618 - S623 (TTA no. 04)	26	46d	0	06JUL06	04AUG06	29AUG06	27SEP06
A3LUDW1100	S713 - S634	21	23d	0	06JUL06	29JUL06	02AUG06	25AUG06
Utility Works								
A3LUUT0100	CLP - Laying LV Cable	5	20d	0	07SEP06	07SEP06	29SEP06	04OCT06
A3LUUT0200	CLP - Construct Pillar Box	5	147d	0	31MAR06	06APR06	23SEP06	28SEP06
A3LUUT0300	Install Public Lighting Post	8	87d	0	05SEP06	15SEP06	18DEC06	26DEC06
Public Lighting, Curb and Kerb								
A3LUPK0100	Construct Dwarf Wall	50	23d	0	06JUL06	01SEP06	02AUG06	28SEP06
A3LUPK0200	Construct Dwarf Wall (TTA No. 04)	8	46d	0	05AUG06	11AUG06	28SEP06	04OCT06
A3LUPK0300	Lay Kerb (TTA No. 04)	12	23d	0	20SEP06	13OCT06	27OCT06	10NOV06
A3LUPK0400	Lay Kerb (TTA No. 06)	8	66d	0	22AUG06	29AUG06	02DEC06	08DEC06
A3LUPK0500	Lighting Drawpit & Cable Duct (TTA No. 04)	18	23d	0	06SEP06	28SEP06	05OCT06	25OCT06
A3LUPK0600	Lighting Drawpit & Cable Duct (TTA No. 06)	8	87d	0	29AUG06	04SEP06	11DEC06	18DEC06
Roads and Paving								
A3LURP0100	Trim Formation & Lay Subbase (TTA No. 06)	8	43d	0	14OCT06	23OCT06	05DEC06	13DEC06
A3LURP0200	Road Pavement (TTA No. 06)	8	43d	0	21OCT06	02NOV06	14DEC06	22DEC06
A3LURP0300	Construct Footpath (TTA No. 04)	24	23d	0	14OCT06	16NOV06	11NOV06	08DEC06
A3LURP0400	Construct Footpath (TTA. No. 06)	8	23d	0	13NOV06	16NOV06	09DEC06	15DEC06
Road Marking, Traffic Signs and Fencing								
A3LURM0100	Apply Road Marking	2	23d	0	27NOV06	28NOV06	23DEC06	25DEC06
A3LURM0200	Erect Signage	6	23d	0	20NOV06	23NOV06	15DEC06	22DEC06
A3LURM0300	Install Railing, Fencing & etc	6	23d	0	20NOV06	23NOV06	15DEC06	22DEC06
Amenity Area								
Drainage Works								
A3AWDW0100	Construct U-Channels	38	61d	0	02SEP06	14OCT06	15NOV06	26DEC06
Utility Works								
A3AWUT0100	Water Point WP4-2 to Water Meter No.3	18	61d	0	06SEP06	27SEP06	16NOV06	29NOV06
A3AWUT0200	Water Point WP5-2 to Water Meter No.5	10	61d	0	28SEP06	10OCT06	29NOV06	06DEC06
A3AWUT0300	Water Point WP6-2 to Water Meter No.6	14	61d	0	11OCT06	25OCT06	01DEC06	26DEC06

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Early bar
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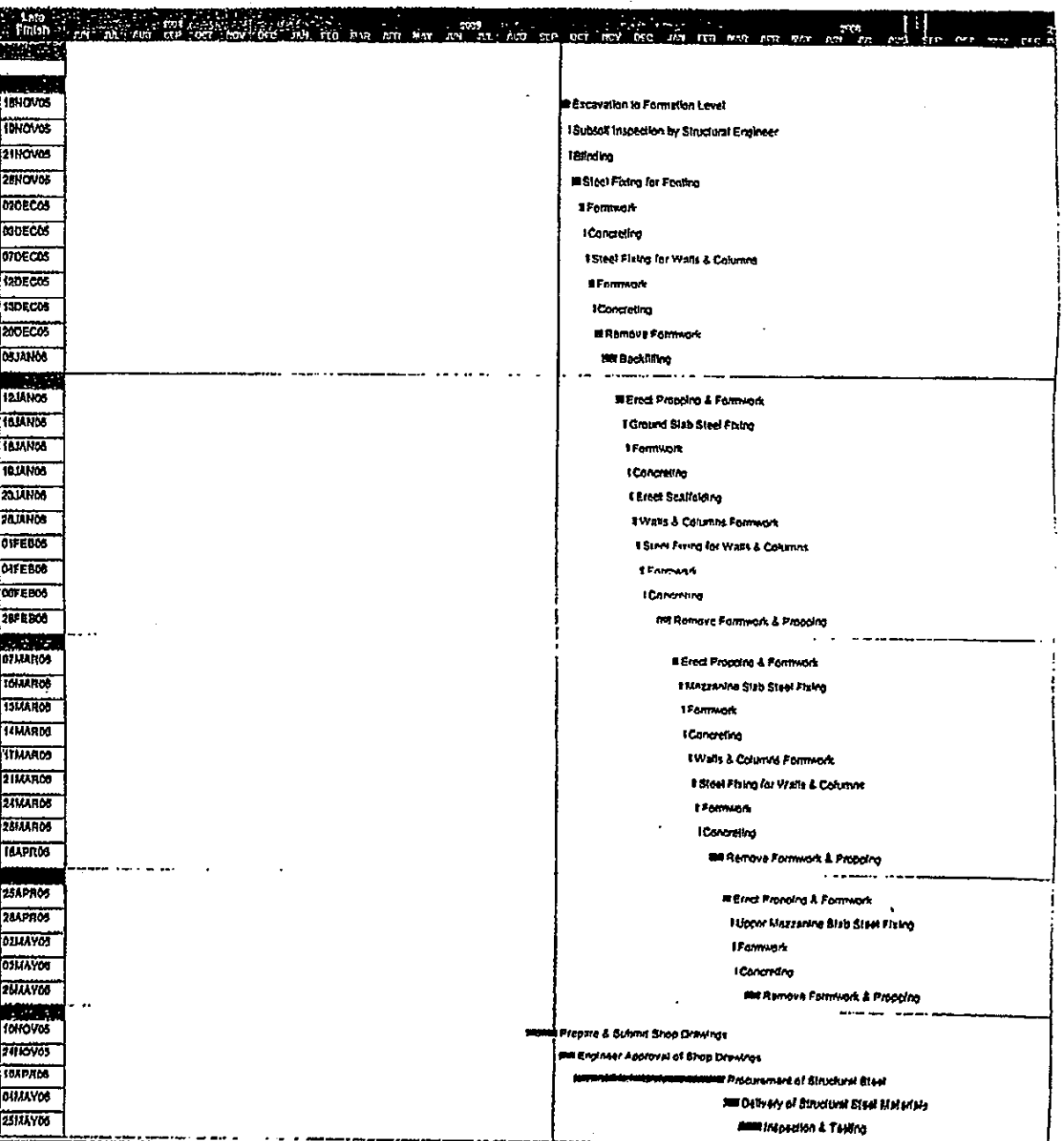
Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Section 4								
Public Toilet No. 2								
Foundation Construction								
A4PTFC0100	Excavation to Formation Level	6	35d	0	26SEP05	06OCT05	12NOV05	18NOV05
A4PTFC0200	Subsoil Inspection by Structural Engineer	1	35d	0	07OCT05	07OCT05	19NOV05	19NOV05
A4PTFC0300	Blinding	1	35d	0	08OCT05	08OCT05	21NOV05	21NOV05
A4PTFC0400	Steel Fixing for Footing	6	35d	0	10OCT05	17OCT05	22NOV05	28NOV05
A4PTFC0500	Formwork	4	35d	0	18OCT05	21OCT05	29NOV05	02DEC05
A4PTFC0600	Concreting	1	35d	0	22OCT05	22OCT05	03DEC05	03DEC05
A4PTFC0700	Steel Fixing for Walls & Columns	3	35d	0	24OCT05	28OCT05	05DEC05	07DEC05
A4PTFC0800	Formwork	4	35d	0	27OCT05	31OCT05	08DEC05	12DEC05
A4PTFC0900	Concreting	1	35d	0	01NOV05	01NOV05	13DEC05	13DEC05
A4PTFC1000	Remove Formwork	6	35d	0	02NOV05	08NOV05	14DEC05	20DEC05
A4PTFC1100	Backfilling	12	35d	0	09NOV05	22NOV05	21DEC05	05JAN06
Ground Floor Slab Construction								
A4PTGF0100	Erect Propping & Formwork	6	35d	0	23NOV05	29NOV05	06JAN06	12JAN06
A4PTGF0200	Ground Slab Steel Fixing	3	35d	0	30NOV05	02DEC05	13JAN06	18JAN06
A4PTGF0300	Formwork	2	35d	0	05DEC05	05DEC05	17JAN06	18JAN06
A4PTGF0400	Concreting	1	35d	0	06DEC05	06DEC05	19JAN06	19JAN06
A4PTGF0500	Erect Scaffolding	3	35d	0	07DEC05	09DEC05	20JAN06	23JAN06
A4PTGF0600	Walls & Columns Formwork	3	35d	0	10DEC05	13DEC05	24JAN06	26JAN06
A4PTGF0700	Steel Fixing for Walls & Columns	3	35d	0	14DEC05	16DEC05	27JAN06	01FEB06
A4PTGF0800	Formwork	3	35d	0	17DEC05	20DEC05	02FEB06	04FEB06
A4PTGF0900	Concreting	1	35d	0	21DEC05	21DEC05	06FEB06	06FEB06
A4PTGF1000	Remove Formwork & Propping	12	35d	0	02JAN06	14JAN06	15FEB06	28FEB06
Mezzanine Floor Slab Construction								
A4PTMF0100	Erect Propping & Formwork	6	35d	0	16JAN06	23JAN06	01MAR06	07MAR06
A4PTMF0200	Mezzanine Slab Steel Fixing	3	35d	0	23JAN06	25JAN06	08MAR06	10MAR06
A4PTMF0300	Formwork	2	35d	0	25JAN06	27JAN06	11MAR06	13MAR06
A4PTMF0400	Concreting	1	35d	0	26JAN06	26JAN06	14MAR06	14MAR06
A4PTMF0500	Walls & Columns Formwork	3	35d	0	01FEB06	03FEB06	15MAR06	17MAR06
A4PTMF0600	Steel Fixing for Walls & Columns	3	35d	0	01FEB06	07FEB06	16MAR06	21MAR06
A4PTMF0700	Formwork	3	35d	0	08FEB06	10FEB06	22MAR06	24MAR06
A4PTMF0800	Concreting	1	35d	0	11FEB06	11FEB06	25MAR06	25MAR06
A4PTMF0900	Remove Formwork & Propping	12	35d	0	21FEB06	06MAR06	05APR06	18APR06
Upper Mezzanine Floor Slab Construction								
A4PTUF0100	Erect Propping & Formwork	6	35d	0	07MAR06	13MAR06	19APR06	25APR06
A4PTUF0200	Upper Mezzanine Slab Steel Fixing	3	35d	0	14MAR06	16MAR06	26APR06	28APR06
A4PTUF0300	Formwork	2	35d	0	17MAR06	19MAR06	29APR06	02MAY06
A4PTUF0400	Concreting	1	35d	0	20MAR06	20MAR06	03MAY06	03MAY06
A4PTUF0500	Remove Formwork & Propping	12	35d	0	29MAR06	12APR06	12MAY06	25MAY06
Structural Steelwork								
A4PTSS0100	Prepare & Submit Shop Drawings	20	35d	50	01SEP05 A	30SEP05	01SEP05 A	10NOV05
A4PTSS0200	Engineer Approval of Shop Drawings	12	35d	0	03OCT05	17OCT05	11NOV05	24NOV05
A4PTSS0300	Procurement of Structural Steel	150	35d	0	18OCT05	16MAR06	25NOV05	10APR06
A4PTSS0400	Delivery of Structural Steel Materials	12	35d	0	11MAR06	24MAR06	20APR06	04MAY06
A4PTSS0500	Inspection & Testing	10	35d	0	25MAR06	15APR06	05MAY06	25MAY06



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Early bar
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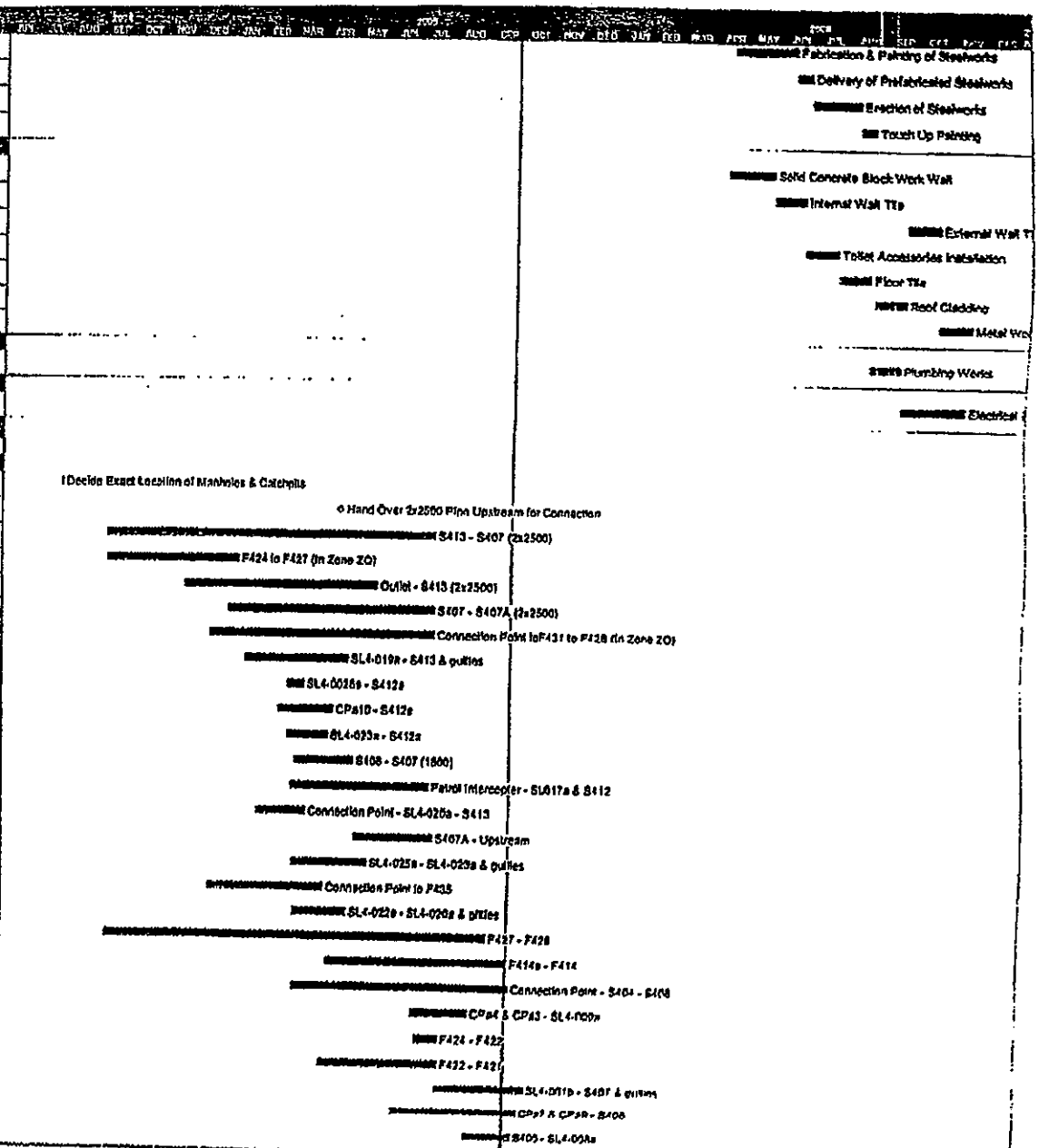
ID	Description	Dur	Float	Complete	Start	Finish	Start	Finish
A4PTSS0600	Fabrication & Painting of Steelworks	48	33d	0	17APR06	13JUN06	26MAY06	22JUL06
A4PTSS0700	Delivery of Prefabricated Steelworks	12	33d	0	14JUN06	27JUN06	24JUL06	05AUG06
A4PTSS0800	Erection of Steelworks	36	33d	0	28JUN06	09AUG06	07AUG06	19SEP06
A4PTSS0900	Touch Up Painting	12	33d	0	10AUG06	23AUG06	16SEP06	30SEP06
Architectural Builder's Works and Finishes								
A4PTAB0100	Solid Concrete Block Work Wall	36	36d	0	13APR06	25MAY06	28MAY06	08JUL06
A4PTAB0200	Internal Wall Tile	24	36d	0	26MAY06	23JUN06	10JUL06	05AUG06
A4PTAB0300	External Wall Tile	24	33d	0	21SEP06	19OCT06	01NOV06	28NOV06
A4PTAB0400	Toilet Accessories Installation	24	36d	0	24JUN06	22JUL06	07AUG06	02SEP06
A4PTAB0500	Floor Tile	24	36d	0	24JUL06	18AUG06	04SEP06	30SEP06
A4PTAB0600	Roof Cladding	24	33d	0	24AUG06	20SEP06	02OCT06	31OCT06
A4PTAB0700	Metal Works & Ironmongery Installation	24	33d	0	20OCT06	17NOV06	29NOV06	28DEC06
Plumbing Works								
A4PTPL0100	Plumbing Works	24	36d	0	21AUG06	18SEP06	02OCT06	31OCT06
E & M Works								
A4PTEM0100	Electrical & Mechanical Installations	48	36d	0	18SEP06	14NOV06	01NOV06	28DEC06
Section 5								
Road L4								
Drainage Works								
A5RLDW0100	Decide Exact Location of Manholes & Catchpits	1		100	26JUL04 A	26JUL04 A	26JUL04 A	26JUL04 A
A5RLDW0150	Hand Over 2x2500 Pipe Upstream for Connection	0		100	26APR05 A		26APR05 A	
A5RLDW1100	S413 - S407 (2x2500)	84		100	10SEP04 A	16JUL05 A	10SEP04 A	16JUL05 A
A5RLDW1200	F424 to F427 (in Zone ZO)	31		100	10SEP04 A	12JAN05 A	10SEP04 A	12JAN05 A
A5RLDW1300	Outlet - S413 (2x2500)	53		100	22NOV04 A	25MAY05 A	22NOV04 A	25MAY05 A
A5RLDW2100	S107 - S407A (2x2500)	30		100	03JAN05 A	16JUL05 A	03JAN05 A	16JUL05 A
A5RLDW2200	Connection Point toF431 to F428 (in Zone ZO)	30		100	16DEC04 A	16JUL05 A	16DEC04 A	16JUL05 A
A5RLDW2300	SL4-019a - S413 & gullies	16		100	19JAN05 A	28APR05 A	19JAN05 A	28APR05 A
A5RLDW2400	SL4-0025a - S412a	12		100	01MAR05 A	17MAR05 A	01MAR05 A	17MAR05 A
A5RLDW2500	CP810 - S412a	12		100	21FEB05 A	14APR05 A	21FEB05 A	14APR05 A
A5RLDW2600	SL4-023a - S412a	12		100	01MAR05 A	06APR05 A	01MAR05 A	06APR05 A
A5RLDW3100	S108 - S407 (1800)	12		100	09MAR05 A	03MAY05 A	09MAR05 A	03MAY05 A
A5RLDW3200	Petrol Interceptor - SL017a & S412	16		100	08MAR05 A	15JUL05 A	08MAR05 A	15JUL05 A
A5RLDW3300	Connection Point - SL4-025a - S413	16		100	31JAN05 A	19MAR05 A	31JAN05 A	19MAR05 A
A5RLDW3400	S407A - Upstream	20		100	06MAY05 A	16JUL05 A	06MAY05 A	16JUL05 A
A5RLDW3500	SL4-025a - SL4-023a & gullies	16		100	07MAR05 A	17MAY05 A	07MAR05 A	17MAY05 A
A5RLDW4100	Connection Point to F435	16		100	16DEC04 A	06APR05 A	16DEC04 A	06APR05 A
A5RLDW4300	SL4-022a - SL4-020a & gullies	16		100	08MAR05 A	28APR05 A	08MAR05 A	28APR05 A
A5RLDW4500	F427 - F428	16		100	10SEP04 A	06SEP05 A	10SEP04 A	06SEP05 A
A5RLDW4400	F414a - F414	0	-34d	80	11APR05 A	26SEP05	11APR05 A	18AUG05
A5RLDW4500	Connection Point - S404 - S408	16	-99d	80	09MAR05 A	30SEP05	09MAR05 A	03JUN05
A5RLDW4600	CP84 & CP83 - SL4-009a	10		100	02JUL05 A	24AUG05 A	02JUL05 A	24AUG05 A
A5RLDW5100	F424 - F422	12		100	06JUL05 A	26JUL05 A	06JUL05 A	26JUL05 A
A5RLDW5110	F422 - F421	8		100	08APR05 A	28JUL05 A	08APR05 A	28JUL05 A
A5RLDW5200	SL4-011b - S407 & gullies	36	-99d	80	27JUL05 A	17OCT05	27JUL05 A	18JUN05
A5RLDW5300	CP87 & CP89 - S408	30	-99d	80	14JUN05 A	10OCT05	14JUN05 A	13JUN05
A5RLDW5400	S408 - SL4-009a	10	-95d	10	23AUG05 A	06OCT05	23AUG05 A	13JUN05



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Early bar
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ID	Description	Orig. Dur.	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASRLDW5300	P428 - Downstream	15		100	18JUL05 A	27AUG05 A	18JUL05 A	27AUG05 A
ASRLDW5400	Connection Point - S410 - S407 (1800)	18		100	06APR05 A	28MAY05 A	06APR05 A	28MAY05 A
ASRLDW6100	SL4-010a - S406 & gullies	18	-118d	0	26SEP05	20OCT05	09MAY05	30MAY05
ASRLDW6200	SL4-011a - S410 & gullies	18	-62d	40	31AUG05 A	10OCT05	31AUG05 A	27JUL05
ASRLDW6300	CPa11 - SL4-011b	10	-21d	0	12OCT05	22OCT05	14SEP05	28SEP05
ASRLDW6400	CPa1 - SL4-015a	10		100	14SEP05 A	21SEP05 A	14SEP05 A	21SEP05 A
ASRLDW6500	SL4-007a - S406 & gullies	18	-99d	0	12OCT05	01NOV05	14JUN05	05JUL05*
ASRLDW6600	SL4-017a - SL4-028a & gullies	18		100	21JUL05 A	15AUG05 A	21JUL05 A	15AUG05 A
ASRLDW6700	SL4-015b - SL4-015a & gullies	10		100	14SEP05 A	28SEP05 A	14SEP05 A	28SEP05 A
ASRLDW6800	SL4-028a - SL4-028b	10	+110d	0	26SEP05	10OCT05	19MAY05	30MAY05
ASRLDW7100	UC - CPa1 & CPa2	22	-27d	0	26SEP05	25OCT05	26AUG05	21SEP05
ASRLDW7200	UC - CPa3	10	-35d	0	26SEP05	10OCT05	17AUG05	27AUG05
ASRLDW7300	UC - CPa4	10	-35d	0	26SEP05	10OCT05	17AUG05	27AUG05
ASRLDW7400	UC - CPa5, CPa6, CPa7 & CPa8	23	+14d	0	12OCT05	09NOV05	23SEP05	24OCT05
ASRLDW7500	UC - CPa9	10	1d	0	12OCT05	22OCT05	13OCT05	24OCT05
ASRLDW7600	UC - CPa11	10	-21d	0	24OCT05	03NOV05	27SEP05	06OCT05
ASRLDW7700	Additional Sub-soil Drain (South) (VO/047A)	12	-132d	0	02NOV05	16NOV05	28MAY05	06JUN05
ASRLDW7800	Additional UC at Footpath (South) (VO/047A)	18	+131d	0	06FEB06	25FEB06	31AUG05	21SEP05
ASRLDW7900	Additional UC at Cycle Track (North) (VO/051)	18	-92d	0	20DEC05	11JAN06	31AUG05	21SEP05
ASRLDW8000	Demolish Existing 825, 825 & 1050 Drainpipe	30	-8d	10	10SEP05 A	31OCT05	10SEP05 A	24OCT05
Utility Works								
ASRLUT0090	D.I. Pipes & Fittings Delivery On Site	33	-184d	0	26SEP05	07NOV05	10MAR05	21APR05
ASRLUT0091	Order Additional Vertical Bends (VO/094)	75	+120d	28	03SEP05 A	01DEC05	03SEP05 A	20JUN05
ASRLUT0100	Watermain - Lay Fresh Main (in Zone 2G)	30	+184d	10	09AUG05 A	01NOV05	09AUG05 A	15APR05
ASRLUT0200	Watermain - Lay Salt Main (in Zone 2G)	30	+184d	10	09AUG05 A	02DEC05	09AUG05 A	19MAY05
ASRLUT0210	Watermain - Lay Fresh & Salt Main (VO/094)	10	+126d	0	02DEC05	13DEC05	30JUN05	12JUL05
ASRLUT0300	Watermain - Lay Fresh Main (in Zone 2P)	18	+184d	0	05DEC05	23DEC05	26MAY05	09JUN05
ASRLUT0400	Watermain - Lay Salt Main (in Zone 2P)	10	+184d	0	24DEC05	06JAN06	10JUN05	22JUN05
ASRLUT0500	CLP - Lay 11kV Cable (South)	46	-84d	50	09MAY05 A	27OCT05	09MAY05 A	10AUG05
ASRLUT0600	CLP - Lay 11kV Cable (North)	38	+118d	50	09SEP05 A	24NOV05	09SEP05 A	06JUL05
ASRLUT0700	HGC - Lay Cable (South)	18	-84d	50	24MAR05 A	03NOV05	24MAR05 A	17AUG05
ASRLUT0800	HGC - Lay Cable (North)	18	+118d	50	18JUL05 A	08DEC05	18JUL05 A	28JUL05
ASRLUT0810	NWT - Lay Cross Road Duct (South)	12	+61d	60	24MAR05 A	31OCT05	24MAR05 A	17AUG05
ASRLUT0820	NWT - Lay Cross Road Duct (North)	6	-71d	0	09DEC05	15DEC05	14SEP05	21SEP05
ASRLUT0900	CATV - Lay Cable (South)	18	-84d	50	24MAR05 A	03NOV05	24MAR05 A	17AUG05
ASRLUT1100	HKCG - Lay 110 Main (Roundabout - Interchange)	18	+118d	50	12JUL05 A	03NOV05	12JUL05 A	14JUN05
ASRLUT1210	HKCG - Gas Governor Kiosk	36	+142d	0	02MAR06	13APR06	09SEP05	24OCT05
ASRLUT1400	PCCW - Lay Cable (South)	42	-84d	50	11APR05 A	28NOV05	11APR05 A	10SEP05
ASRLUT1500	PCCW - Lay Cable (North)	38	+118d	50	20JUL05 A	19DEC05	20JUL05 A	30JUL05
ASRLUT1600	Water Point - WP12-2 to M11	12	+132d	0	01MAR06	14MAR06	21SEP05	05OCT05
ASRLUT1700	Water Point - WP13-2 to M13	6	+132d	0	11MAR06	17MAR06	03OCT05	06OCT05
ASRLUT1800	Water Point - WP14-1 to WP13	12	+132d	0	15MAR06	28MAR06	06OCT05	20OCT05
ASRLUT1900	Water Point - WP16-1 to M15	6	+132d	0	25MAR06	31MAR06	18OCT05	21OCT05
Public Utilities - Portal Work								
ASRLPK0100	Construct Diwall Wall (South)	69	+132d	0	26NOV05	07FEB06	22JUN05	29AUG05

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Early bar
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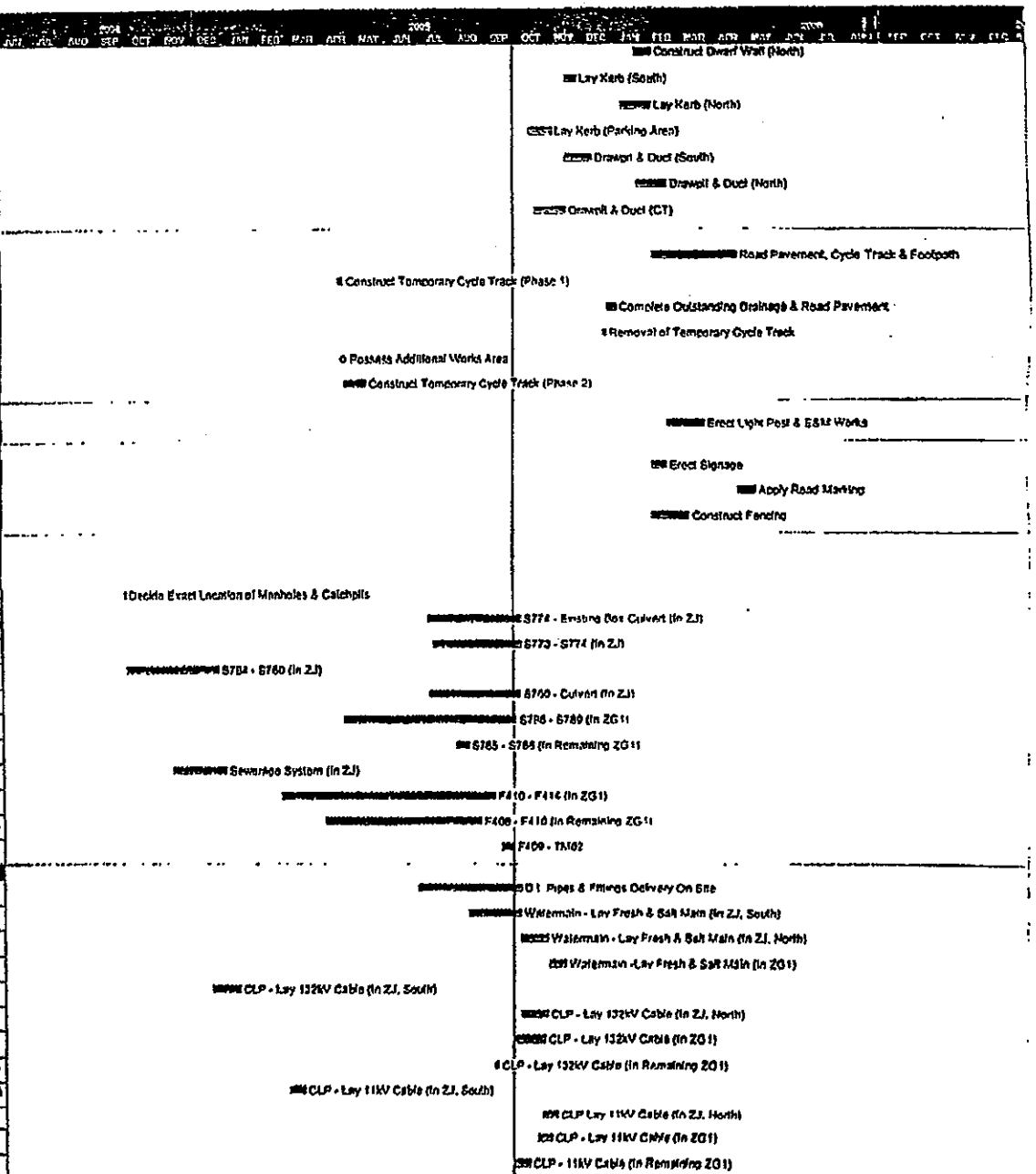
Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASRLPK0200	Construct Dwarf Wall (North)	12	-129d	0	19JAN06	03FEB06	16AUG05	29AUG05
ASRLPK0300	Lay Kerb (South)	10	-132d	0	16NOV05	28NOV05	06JUN05	21JUN05
ASRLPK0400	Lay Kerb (North)	22	-164d	0	07JAN06	03FEB06	23JUN05	19JUL05
ASRLPK0500	Lay Kerb (Parking Area)	20	-35d	0	12OCT05	03NOV05	29AUG05	21SEP05
ASRLPK0600	Drawpit & Duct (South)	22	-71d	0	16NOV05	16DEC05	22AUG05	15SEP05
ASRLPK0700	Drawpit & Duct (North)	22	-126d	0	21JAN06	17FEB06	22AUG05	15SEP05
ASRLPK0800	Drawpit & Duct (CT)	26	-32d	0	18OCT05	16NOV05	07SEP05	06OCT05
Roads and Paving								
ASRLRP0100	Road Pavement, Cycle Track & Footpath	58	-184d	0	04FEB06	22APR06	26JUL05	06OCT05
ASRLRP0200	Construct Temporary Cycle Track (Phase 1)	6		100	18APR05 A	26APR05 A	18APR05 A	26APR05 A
ASRLRP0300	Complete Outstanding Drainage & Road Pavement	8	-58d	0	24DEC05	02JAN06	18OCT05	24OCT05
ASRLRP0400	Removal of Temporary Cycle Track	3	-58d	0	21DEC05	23DEC05	14OCT05	17OCT05
ASRLRP0500	Possess Additional Works Area	0		100	21APR05 A		21APR05 A	
ASRLRP0600	Construct Temporary Cycle Track (Phase 2)	10		100	22APR05 A	11MAY06 A	22APR05 A	11MAY06 A
E&M Works								
ASRLEM0100	Erect Light Post & E&M Works	30	-126d	0	18FEB06	24MAR06	18SEP05	24OCT05
Road Marking, Traffic Sign and Fencing								
ASRLRM0100	Erect Signage	12	-66d	0	04FEB06	17FEB06	10OCT05	24OCT05
ASRLRM0200	Apply Road Marking	14	-164d	0	24APR06	10MAY06	07OCT05	24OCT05
ASRLRM0300	Construct Fencing	30	-114d	0	04FEB06	15MAR06	16SEP05	24OCT05
Section 6								
Cycle Track								
Drainage Works								
A6CTDW0100	Decide Exact Location of Manholes & Catchpits	1		100	27SEP04 A	27SEP04 A	27SEP04 A	27SEP04 A
A6CTDW0200	S774 - Existing Box Culvert (in ZJ)	23	+120d	50	08JUL05 A	04OCT05	08JUL05 A	11MAY05
A6CTDW0210	S773 - S774 (in ZJ)	15	+120d	50	13JUL05 A	04OCT05	13JUL05 A	11MAY05
A6CTDW0300	S764 - S760 (in ZJ)	34		100	28SEP04 A	23DEC04 A	28SEP04 A	23DEC04 A
A6CTDW0310	S760 - Culvert (in ZJ)	16	+110d	50	08JUL05 A	03OCT05	08JUL05 A	11MAY05
A6CTDW0400	S786 - S789 (in ZG1)	25	+121d	50	20APR05 A	29SEP05	20APR05 A	06MAY05
A6CTDW0410	S785 - S786 (in Remaining ZG1)	24		100	03AUG05 A	18AUG05 A	03AUG05 A	15AUG05 A
A6CTDW0500	Sewerage System (in ZJ)	42		100	10NOV04 A	30DEC04 A	10NOV04 A	30DEC04 A
A6CTDW0600	F410 - F414 (in ZG1)	24		100	21FEB05 A	09SEP05 A	21FEB05 A	09SEP05 A
A6CTDW0610	F408 - F410 (in Remaining ZG1)	24		100	02APR05 A	27AUG05 A	02APR05 A	27AUG05 A
A6CTDW0700	F409 - TM02	10		100	16SEP05 A	27SEP05 A	16SEP05 A	27SEP05 A
Utility Works								
A6CTUT0000	D.I. Pipes & Fittings Delivery On Site	33	+131d	85	28JUN05 A	04OCT05	28JUN05 A	27APR05
A6CTUT0100	Watermain - Lay Fresh & Salt Main (in ZJ, South)	22	+131d	80	16AUG05 A	03OCT05	16AUG05 A	26APR05
A6CTUT0110	Watermain - Lay Fresh & Salt Main (in ZJ, North)	22	+131d	0	04OCT05	29OCT05	27APR05	24MAY05
A6CTUT0200	Watermain - Lay Fresh & Salt Main (in ZG1)	14	+131d	0	31OCT05	16NOV05	25MAY05	08JUN05
A6CTUT0300	CLP - Lay 132kV Cable (in ZJ, South)	34		100	17DEC04 A	12JAN06 A	17DEC04 A	12JAN06 A
A6CTUT0310	CLP - Lay 132kV Cable (in ZJ, North)	21	+120d	0	05OCT05	26OCT05	12MAY05	06JUN05
A6CTUT0400	CLP - Lay 132kV Cable (in ZG1)	22	+121d	0	30SEP05	27OCT05	01MAY05	02JUN05
A6CTUT0410	CLP - Lay 132kV Cable (in Remaining ZG1)	22		100	16SEP05 A	13SEP05 A	16SEP05 A	13SEP05 A
A6CTUT0500	CLP - Lay 11kV Cable (in ZJ, South)	17		100	28FEB05 A	14MAR06 A	28FEB05 A	14MAR06 A
A6CTUT0510	CLP Lay 11kV Cable (in ZJ, North)	12	+120d	0	26OCT05	09NOV05	02JUN05	16JUN05
A6CTUT0700	CLP - Lay 11kV Cable (in ZG1)	12	+121d	0	21OCT05	03NOV05	27MAY05	09JUN05
A6CTUT0710	CLP - 11kV Cable (in Remaining ZG1)	12	+103d	0	28SEP05	13OCT05	27MAY05	09JUN05



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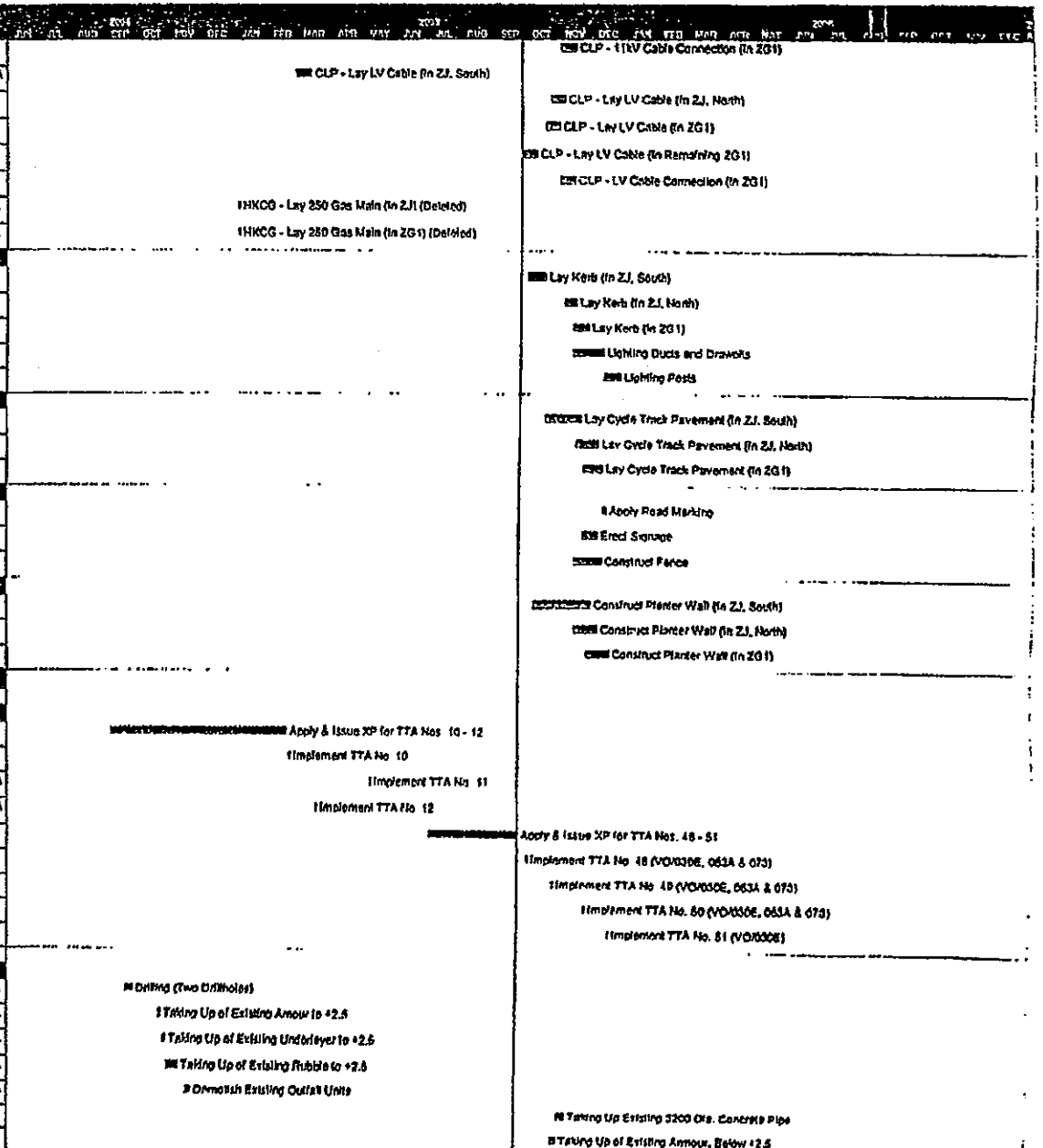
Act Num	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A6CTUT0720	CLP - 11kV Cable Connection (in ZG1)	12	+121d	0	04NOV05	17NOV05	10JUN05	24JUN05
A6CTUT0000	CLP - Lay LV Cable (in ZJ, South)	17		100	28FEB05 A	14MAR05 A	28FEB05 A	14MAR05 A
A6CTUT0010	CLP - Lay LV Cable (in ZJ, North)	11	-120d	0	26OCT05	07NOV05	02JUN05	15JUN05
A6CTUT1000	CLP - Lay LV Cable (in ZG1)	11	-120d	0	21OCT05	02NOV05	26MAY05	08JUN05
A6CTUT1010	CLP - Lay LV Cable (in Remaining ZG1)	11	-102d	0	25SEP05	12OCT05	26MAY05	08JUN05
A6CTUT1020	CLP - LV Cable Connection (in ZG1)	12	-120d	0	03NOV05	16NOV05	10JUN05	24JUN05
A6CTUT1400	HKCG - Lay 250 Gas Main (in ZJ) (Deleted)	35		100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A
A6CTUT1500	HKCG - Lay 250 Gas Main (in ZG1) (Deleted)	14		100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A
Public Lighting, Dual and Kerb								
A6CTPK0100	Lay Kerb (in ZJ, South)	18	+111d	0	04OCT05	21OCT05	23MAY05	06JUN05
A6CTPK0110	Lay Kerb (in ZJ, North)	16	+120d	0	08NOV05	18NOV05	18JUN05	27JUN05
A6CTPK0200	Lay Kerb (in ZG1)	12	+131d	0	16NOV05	29NOV05	10JUN05	24JUN05
A6CTPK0300	Lighting Ducts and Drawpits	24	+131d	0	16NOV05	13DEC05	10JUN05	06JUL05
A6CTPK0400	Lighting Posts	12	+131d	0	14DEC05	29DEC05	11JUL05	23JUL05
Roads and Paving								
A6CTRP0100	Lay Cycle Track Pavement (in ZJ, South)	26	+108d	0	22OCT05	23NOV05	18JUN05	19JUL05
A6CTRP0110	Lay Cycle Track Pavement (in ZJ, North)	18	+120d	0	19NOV05	06DEC05	28JUN05	19JUL05
A6CTRP0200	Lay Cycle Track Pavement (in ZG1)	15	+123d	0	26NOV05	13DEC05	02JUL05	18JUL05
Road Marking, Traffic Signs and Fences								
A6CTRM0100	Apply Road Marking	4	+123d	0	14DEC05	17DEC05	20JUL05	23JUL05
A6CTRM0200	Erect Signage	12	+116d	0	25NOV05	09DEC05	11JUL05	23JUL05
A6CTRM0300	Construct Fence	21	+119d	0	19NOV05	13DEC05	29JUN05	23JUL05
Retaining Structures								
A6CTRL0100	Construct Planter Wall (in ZJ, South)	48	+111d	0	12OCT05	05DEC05	30MAY05	23JUL05
A6CTRL0110	Construct Planter Wall (in ZJ, North)	16	+118d	0	19NOV05	09DEC05	04JUL05	23JUL05
A6CTRL0300	Construct Planter Wall (in ZG1)	18	+125d	0	05NOV05	29DEC05	04JUL05	23JUL05
Section 7								
Temporary Traffic Management Scheme								
TTA Implementation								
A7TTMS0050	Apply & Issue XP for TTA Nos. 10 - 12	1		100	09SEP04 A	21FEB05 A	09SEP04 A	21FEB05 A
A7TTMS0100	Implement TTA No. 10	1		100	24FEB05 A	24FEB05 A	24FEB05 A	24FEB05 A
A7TTMS0200	Implement TTA No. 11	1		100	11MAY05 A	11MAY05 A	11MAY05 A	11MAY05 A
A7TTMS0300	Implement TTA No. 12	1		100	21MAR05 A	21MAR05 A	21MAR05 A	21MAR05 A
A7TTMS0400	Apply & Issue XP for TTA Nos. 48 - 51	71	-144d	96	07JUL05 A	28SEP05	07JUL05 A	07APR05
A7TTMS0500	Implement TTA No. 48 (VO/030E, 063A & 073)	1	-144d	0	07OCT05	07OCT05	15APR05	15APR05
A7TTMS0600	Implement TTA No. 49 (VO/030E, 063A & 073)	1	-144d	0	31OCT05	31OCT05	09MAY05	09MAY05
A7TTMS0700	Implement TTA No. 50 (VO/030E, 063A & 073)	1	-144d	0	25NOV05	25NOV05	03JUN05	03JUN05
A7TTMS0800	Implement TTA No. 51 (VO/030E)	1	-144d	0	21DEC05	21DEC05	02JUL05	02JUL05
Landscape Node No. 3								
Landscape Hard Structure								
A7LCHS0100	Drilling (Two Drillholes)	19		100	23SEP04 A	30SEP04 A	23SEP04 A	30SEP04 A
A7LCHS0200	Taking Up of Existing Armour to +2.5	3		100	25OCT04 A	27OCT04 A	25OCT04 A	27OCT04 A
A7LCHS0250	Taking Up of Existing Underlayer to +2.5	2		100	30OCT04 A	01NOV04 A	30OCT04 A	01NOV04 A
A7LCHS0210	Taking Up of Existing Rubble to +2.5	11		100	02NOV04 A	13NOV04 A	02NOV04 A	13NOV04 A
A7LCHS0500	Demolish Existing Outfall Units	8		100	21NOV04 A	28NOV04 A	21NOV04 A	28NOV04 A
A7LCHS0400	Taking Up Existing 3200 Dia. Concrete Pipe	8	+156d	0	07NOV05	16NOV05	02JUN05	09JUN05
A7LCHS0420	Taking Up of Existing Armour, Below +2.5	8	+156d	0	02NOV05	09NOV05	26MAY05	01JUN05



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Early bar
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ID	Description	Orig Dur.	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ATLCNS0440	Taking Up of Existing Underlayer, Below +2.5	2	-152d	0	07NOV05	08NOV05	08JUN06	09JUN06
ATLCNS0500	Taking Up of Existing Rubble, Below +2.5	18	-158d	0	15NOV05	02DEC05	10JUN06	27JUN06
ATLCNS0530	Placing Leveling Stone	23	-158d	0	03DEC05	25DEC05	28JUN06	28JUL06
ATLCNS0600	Block Wall Construction	31	-158d	0	26DEC05	25JAN06	21JUL06	28AUG06
ATLCNS0700	Backfill Rubble Behind	10	-158d	0	26JAN06	08FEB06	31AUG06	30AUG06
ATLCNS0800	Reinstate 3200 Dia. Concrete Pipe	14	-158d	0	09FEB06	22FEB06	31AUG06	13SEP06
ATLCNS0900	Fabrication of Box Culvert Outfalls	70	-104d	0	11DEC05	22FEB06	29AUG06	06NOV06
ATLCNS1000	Install Box Culvert Outfalls	12	-104d	0	23FEB06	06MAR06	07NOV06	16NOV06
ATLCNS1100	Install Remaining Blocks for Both Side Outfall	4	-104d	0	07MAR06	10MAR06	16NOV06	22NOV06
ATLCNS1200	Reinstate Armour & Underlayer	10	-104d	0	11MAR06	20MAR06	23NOV06	02DEC06
Waterfront Promenade								
Pump House Construction								
ATWPPH0100	Construct Irrigation Pump House	48	+13d	0	22NOV05	18JAN06	07NOV06	03JAN06
Drainage Works								
ATWPDW0100	Decide Exact Location of Manholes & Catchpits	1		100	26JUL04 A	26JUL04 A	26JUL04 A	26JUL04 A
ATWPDW0200	S708 - S714	50	-98d	90	13OCT04 A	04OCT05	13OCT04 A	07JUN06
ATWPDW0300	S701 - S708	46		100	13OCT04 A	14DEC04 A	13OCT04 A	14DEC04 A
ATWPDW0400	S714 - Existing Box Culvert	30	-123d	0	03FEB06	09MAR06	06SEP05	12OCT05
ATWPDW0500	F001 - F002 (TTA No. 10) Partially Aborted	18		100	25FEB05 A	24JUN05 A	25FEB05 A	24JUN05 A
ATWPDW0600	F002 - F003 (TTA No. 11) Aborted	34		100	10MAY05 A	24JUN05 A	10MAY05 A	24JUN05 A
ATWPDW0700	F003 - F004 (TTA No. 12)	18		100	08APR05 A	09MAY05 A	08APR05 A	09MAY05 A
ATWPDW0725	F001 - F002 (TTA No. 46) (VO/030E)	6	-144d	0	08OCT05	15OCT05	18APR06	22APR06
ATWPDW0740	F001 - F002 (TTA No. 49) (VO/030E)	12	-144d	0	01NOV05	14NOV05	10MAY06	24MAY06
ATWPDW0760	F001 - F002 (TTA No. 50) (VO/030E)	18	-144d	0	30NOV05	20DEC05	06JUN06	30JUN06
ATWPDW0780	F002 - F003 (TTA No. 51) (VO/030E)	24	-144d	0	22DEC05	20JAN06	04JUL06	28JUL06
ATWPDW0800	F004 - Existing Manhole	26		100	04APR05 A	18JUN05 A	04APR05 A	18JUN05 A
ATWPDW0900	S770 - S773 - S771 (VO/073)	25	-13d	0	26SEP05	28OCT05	12SEP05	13OCT05
ATWPDW0920	S773 - Ext. Manhole (TTA No. 46) (VO/073)	18	-144d	0	06OCT05	29OCT05	18APR06	07MAY06
ATWPDW0940	S773 - Ext. Manhole (TTA No. 49) (VO/073)	18	-158d	0	01NOV05	21NOV05	18MAY06	07JUN06
ATWPDW0960	S773 - Ext. Manhole (TTA No. 50) (VO/073)	24	-125d	0	30NOV05	29DEC05	04JUL06	30JUL06
ATWPDW1000	CP102 - CP104 (In ZU)	20	-13d	0	29OCT05	21NOV05	15OCT05	09NOV05
ATWPDW1050	Ext MH - MH-3d - F001 (VO/058A)	20	-78d	0	09DEC05	03JAN06	08SEP05	29SEP05
ATWPDW1100	S718 - Existing Box Culvert	22	-132d	0	23FEB06	20MAR06	14SEP05	12OCT05
ATWPDW1200	225 Dia. Perforated Drain (in ZS S. End - 200m)	28	-98d	0	03NOV05	02DEC05	27JUL05	23AUG05
ATWPDW1250	225 Dia. Perforated Drain (in ZS 200m - 400m)	28	-98d	0	22NOV05	21DEC05	27JUL05	23AUG05
ATWPDW1280	225 Dia. Perforated Drain (in ZS 400m - N. End)	12	-132d	0	11APR06	27APR06	05NOV05	18NOV05
ATWPDW1300	225HR & Catchpit with 2000L/L along Parapet Wall	50	-93d	0	01MAR06	03MAY06	11NOV05	10JAN06
ATWPDW1500	225UC (In ZU)	24	-47d	0	23NOV05	22DEC05	26SEP05	25OCT05
ATWPDW1600	300UC (In ZU)	25	-47d	0	23DEC05	23JAN06	29OCT05	28NOV05
ATWPDW1700	225Dia. Perforated Drain (in ZU)	21	-16d	0	22NOV05	15DEC05	27SEP05	21OCT05
ATWPDW1800	300 CUC (In ZU3)	18	35d	0	29OCT05	18NOV05	09DEC05	31DEC05
ATWPDW1900	225 Dia. Perforated Drain (In ZU3)	18	+76d	0	04JAN06	24JAN06	30SEP05	22OCT05
Water Works								
ATWPUT0040	DI, Pipes & Fittings Delivery On Site	30	-65d	45	27APR05 A	16OCT05	27APR05 A	30JUL05
ATWPUT0041	Order Additional Valve & Bend (VO/003)	78	+120d	22	06SEP05 A	07DEC05	06SEP05 A	16JUL06
ATWPUT0100	Watermain - Lay Salt Main (TTA No. 10) Aborted	10		100	18APR05 A	24JUN05 A	18APR05 A	24JUN05 A

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ATWPUT0200	Watermain - Lay Salt Main (TTA No. 11) Aborted	31		100	10MAY05 A	24JUN05 A	10MAY05 A	24JUN05 A
ATWPUT0300	Watermain - S/W Main (TTA No. 48) (VO/063A)	12	-184d	0	17OCT05	29OCT05	23APR05	07MAY05
ATWPUT0350	Watermain - S/W Main (TTA No. 46) (VO/063A)	12	-144d	0	15NOV05	28NOV05	29MAY05	07JUN05
ATWPUT0400	Watermain - S/W Main (TTA No. 50) (VO/063A)	24	-125d	0	30NOV05	29DEC05	04JUL05	30JUL05
ATWPUT0500	CLP - Lay LV Cable	12	-50d	90	08AUG05 A	28SEP05	08AUG05 A	30JUL05
ATWPUT0600	PCCW - Lay Cable	53	-68d	0	22NOV05	26JAN06	31AUG05	05NOV05
ATWPUT0610	PCCW - Lay Cable (Landscape Node P3)	12	-76d	0	14APR06	27APR06	06JAN06	21JAN06
ATWPUT0700	Watermain (in ZU3)	18	-93d	0	31OCT05	18NOV05	11JUL05	30JUL05
ATWPUT0800	Issue Allocation Warrant to WSD (VO/068)	22	-78d	0	28SEP05	27OCT05	27JUN05	25JUL05
ATWPUT0900	Relocation of Fire Hydrant in ZU by WSD (VO/068)	24	-78d	0	28OCT05	24NOV05	25JUL05	22AUG05
ATWPUT1000	HKCG - 315MP Diversion at SP Road (Additional)	15		100	11JUL05 A	27JUL05 A	11JUL05 A	27JUL05 A
ATWPUT1100	CLP - 132kV Diversion at SP Road (Additional)	58		100	08AUG05 A	18AUG05 A	08AUG05 A	18AUG05 A
Public Lighting, Duct and Kerb								
ATWPPK0100	Public Lighting (in ZU)	60	-42d	0	09DEC05	21FEB06	21OCT05	31DEC05
ATWPPK0200	Public Lighting (in ZS)	60	-88d	0	15FEB06	28APR06	31OCT05	10JAN06
Road and Paving								
ATWPRP0100	Lay Paving Block (in ZU)	30	-42d	0	22FEB06	29MAR06	02JAN06	07FEB06
ATWPRP0200	Lay Paving Block (in ZS)	60	-93d	0	29MAR06	08JUN06	05DEC05	15FEB06
Finishing Works								
ATWPFW0100	Finishing Works (in ZU)	30	-17d	0	07FEB06	18MAR06	16JAN06	21FEB06
ATWPFW0200	Finishing Works (in ZS)	53	-59d	0	27FEB06	09MAY06	18DEC05	21FEB06
E & M Works								
ATWPEM0500	Irrigation System (in ZU)	30	-78d	0	06APR06	15MAY06	04JAN06	09FEB06
ATWPEM0600	Irrigation System (in ZS)	32	-92d	0	22APR06	30MAY06	02JAN06	09FEB06
ATWPEM0700	E&M Works	30	-78d	0	16APR06	15MAY06	04JAN06	09FEB06
Testing and Commissioning								
ATWPTC0100	Testing & Commissioning	30	-92d	0	06MAY06	12JUN06	16JAN06	21FEB06
Road Marking, Traffic Signs and Railings								
ATWPRM0300	Erect Signage	30	-89d	0	04MAY06	09JUN06	16JAN06	21FEB06
ATWPRM0400	Apply Road Marking	12	-93d	0	30MAY06	13JUN06	06FEB06	21FEB06
Soft Scape Hardworks								
ATWPHR0100	Planter Wall (in ZS, South End - 100m)	20	-82d	0	10OCT05	02NOV05	04JUL05	28JUL05
ATWPHR0300	Planter Wall (in ZS, 100 - 200m)	20	-82d	55	18APR05 A	06OCT05	18APR05 A	02JUL05
ATWPHR0350	Planter Wall (in ZS, 200 - 300m)	20	-56d	0	25OCT05	21NOV05	04JUL05	28JUL05
ATWPHR0450	Planter Wall (in ZS, 300 - 400m)	20	-56d	0	05OCT05	28OCT05	08JUN05	02JUL05
ATWPHR0500	Planter Wall (in ZS, 400 - North End)	20	-132d	0	21MAR06	13APR06	13OCT05	04NOV05
ATWPHR0600	Planter Wall (in ZU)	58	-78d	50	21MAY05 A	08DEC05	21MAY05 A	09SEP05
ATWPHR0650	Fill Rock to Parapet Wall Formation (VO/068)	30	-92d	75	16JUN05 A	06OCT05	16JUN05 A	16JUN05
ATWPHR0700	Parapet Wall along Seawall (500m)	120	-93d	0	10OCT05	03MAR06	26JUN05	10NOV05
ATWPHR0750	Parapet Wall along Landscape Node P3 (100m)	24	-66d	0	21MAR06	18APR06	03DEC05	02JAN06
ATWPHR0800	Construct Curve Trellis (in ZU)	60	-17d	0	25SEP05	06DEC05	07SEP05	19NOV05
ATWPHR0900	Construct Pergola (in ZU)	47	-17d	0	09DEC05	06FEB06	19NOV05	14JAN06
ATWPHR1000	Construct Pergola (in ZS)	21	-66d	0	27JAN06	25FEB06	07NOV05	03DEC05
ATWPHR1100	Water Point WP28-4 to 28-5 (in ZU)	30	-78d	0	03MAR06	07APR06	28NOV05	03JAN06
ATWPHR1200	Water Point WP27-2 to 27-4 (in ZS)	15	-66d	0	22DEC05	10JAN06	26AUG05	12SEP05
ATWPHR1300	Water Point WP26-1 to 26-2 (in ZS)	15	-73d	0	11JAN06	27JAN06	15OCT05	01NOV05
ATWPHR1400	Water Point WP25-2 to 25-4 (in ZS)	15	-132d	0	28APR06	18MAY06	19NOV05	09DEC05

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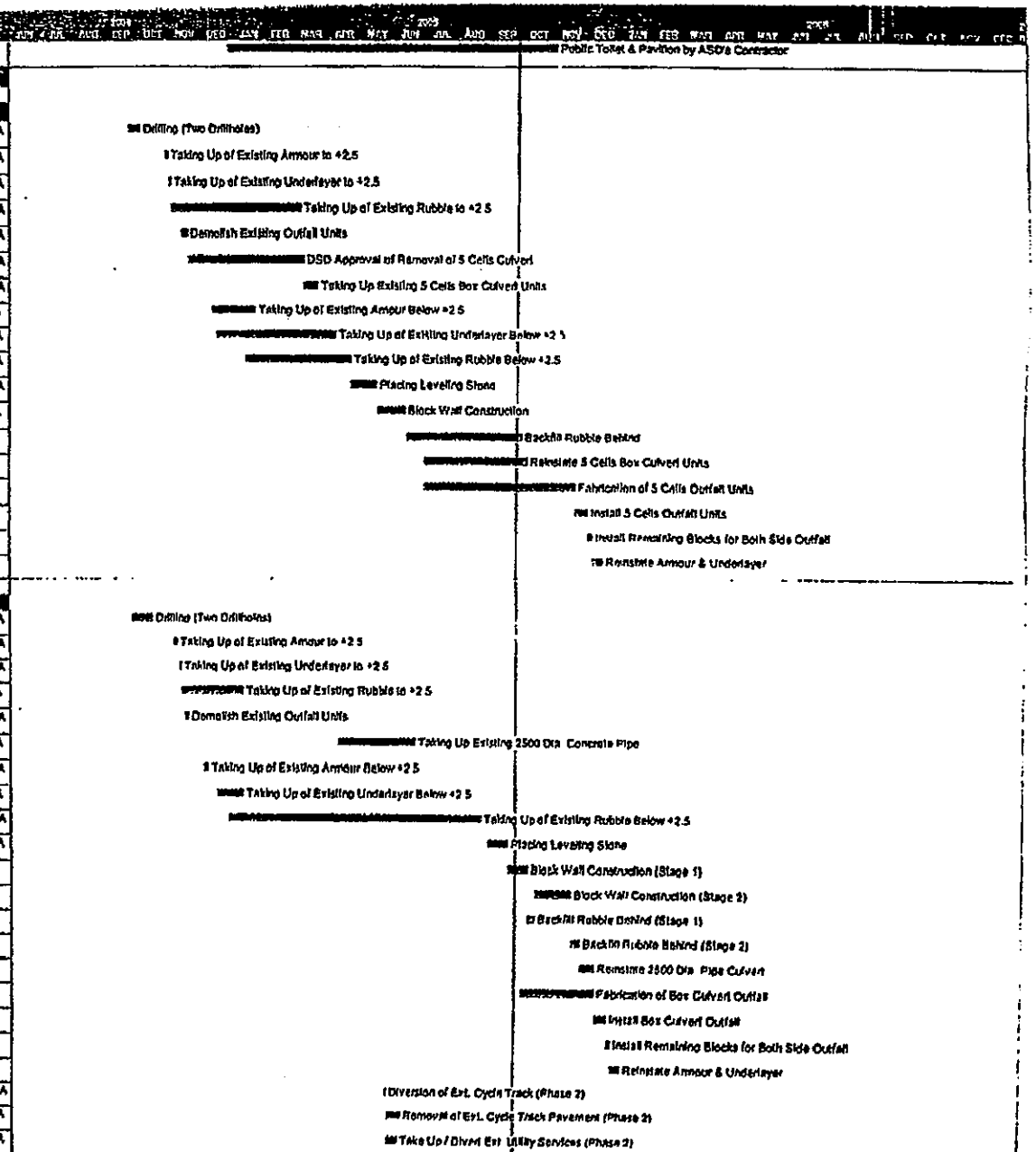
ATWPHL1600	Public Toilet & Pavilion by ASD's Contractor	297	9d	90	28DEC04 A	01NOV05	28DEC04 A	05NOV05
Section 8								
Landscape Node No. 1								
Landscape Node Structure								
ABLANS0100	Drilling (Two Drillholes)	18		100	23SEP04 A	04OCT04 A	23SEP04 A	04OCT04 A
ABLANS0200	Taking Up of Existing Armour to +2.5	3		100	28OCT04 A	30OCT04 A	28OCT04 A	30OCT04 A
ABLANS0220	Taking Up of Existing Underlayer to +2.5	4		100	01NOV04 A	02NOV04 A	01NOV04 A	02NOV04 A
ABLANS0210	Taking Up of Existing Rubble to +2.5	38		100	03NOV04 A	06MAR05 A	03NOV04 A	06MAR05 A
ABLANS0300	Demolish Existing Outfall Units	5		100	15NOV04 A	18NOV04 A	15NOV04 A	18NOV04 A
ABLANS0310	DSD Approval of Removal of 5 Cells Culvert	1		100	20NOV04 A	06MAR05 A	20NOV04 A	06MAR05 A
ABLANS0400	Taking Up Existing 5 Cells Box Culvert Units	12		100	10MAR05 A	22MAR05 A	10MAR05 A	22MAR05 A
ABLANS0420	Taking Up of Existing Armour Below +2.5	6		100	13DEC04 A	22JAN05 A	13DEC04 A	22JAN05 A
ABLANS0440	Taking Up of Existing Underlayer Below +2.5	3		100	17DEC04 A	06APR05 A	17DEC04 A	06APR05 A
ABLANS0500	Taking Up of Existing Rubble Below +2.5	23		100	14JAN05 A	22APR05 A	14JAN05 A	22APR05 A
ABLANS0640	Placing Leveling Stone	25		100	23APR05 A	16MAY05 A	23APR05 A	16MAY05 A
ABLANS0650	Block Wall Construction	51		100	16MAY05 A	12JUN05 A	16MAY05 A	12JUN05 A
ABLANS0700	Backfill Rubble Behind	14	+146d	59	15JUN05 A	02OCT05	15JUN05 A	06MAY06
ABLANS0660	Reinstate 5 Cells Box Culvert Units	18	+146d	71	02JUL05 A	07OCT05	02JUL05 A	14MAY06
ABLANS0000	Fabrication of 5 Cells Outfall Units	70	23d	20	02JUL05 A	22NOV05	02JUL05 A	16DEC05
ABLANS1000	Install 5 Cells Outfall Units	12	23d	0	23NOV05	04DEC05	16DEC05	27DEC05
ABLANS1100	Install Remaining Blocks for Both Side Outfall	4	23d	0	05DEC05	08DEC05	28DEC05	31DEC05
ABLANS1200	Reinstate Armour & Underlayer	10	23d	0	09DEC05	16DEC05	01JAN06	10JAN06
Landscape Node No. 2								
Landscape Node Structure								
ABLBNS0100	Drilling (Two Drillholes)	18		100	27SEP04 A	18OCT04 A	27SEP04 A	18OCT04 A
ABLBNS0200	Taking Up of Existing Armour to +2.5	3		100	08NOV04 A	09NOV04 A	08NOV04 A	09NOV04 A
ABLBNS0210	Taking Up of Existing Underlayer to +2.5	2		100	12NOV04 A	13NOV04 A	12NOV04 A	13NOV04 A
ABLBNS0220	Taking Up of Existing Rubble to +2.5	20		100	14NOV04 A	11JAN05 A	14NOV04 A	11JAN05 A
ABLBNS0300	Demolish Existing Outfall Units	5		100	17NOV04 A	20NOV04 A	17NOV04 A	20NOV04 A
ABLBNS0400	Taking Up Existing 2500 Dia. Concrete Pipe	10		100	12APR05 A	23JUN05 A	12APR05 A	23JUN05 A
ABLBNS0410	Taking Up of Existing Armour Below +2.5	4		100	06DEC04 A	09DEC04 A	06DEC04 A	09DEC04 A
ABLBNS0420	Taking Up of Existing Underlayer Below +2.5	3		100	10DEC04 A	11JAN05 A	10DEC04 A	11JAN05 A
ABLBNS0430	Taking Up of Existing Rubble Below +2.5	20		100	30DEC04 A	25AUG05 A	30DEC04 A	25AUG05 A
ABLBNS0650	Placing Leveling Stone	10		100	01SEP05 A	20SEP05 A	01SEP05 A	20SEP05 A
ABLBNS0600	Block Wall Construction (Stage 1)	30	+59d	50	21SEP05 A	09OCT05	21SEP05 A	11AUG06
ABLBNS0610	Block Wall Construction (Stage 2)	30	24d	0	17OCT05	10NOV05	14NOV05	17DEC05
ABLBNS0700	Backfill Rubble Behind (Stage 1)	7	+59d	0	10OCT05	16OCT05	12AUG06	18AUG06
ABLBNS0710	Backfill Rubble Behind (Stage 2)	7	24d	0	21NOV05	28NOV05	19DEC05	28DEC05
ABLBNS0800	Reinstate 2500 Dia. Pipe Culvert	14	30d	0	29NOV05	12DEC05	29DEC05	11JAN06
ABLBNS0000	Fabrication of Box Culvert Outfall	70	30d	0	04OCT05	12DEC05	03NOV05	11JAN06
ABLBNS1000	Install Box Culvert Outfall	12	30d	0	13DEC05	24DEC05	12JAN06	23JAN06
ABLBNS1100	Install Remaining Blocks for Both Side Outfall	4	32d	0	25DEC05	28DEC05	26JAN06	02FEB06
ABLBNS1200	Reinstate Armour & Underlayer	10	32d	0	29DEC05	07JAN06	03FEB06	12FEB06
ABLBNS1210	Diversion of Ext. Cycle Track (Phase 2)	1		100	26MAY06 A	26MAY06 A	26MAY06 A	26MAY06 A
ABLBNS1300	Removal of Ext. Cycle Track Pavement (Phase 2)	4		100	30MAY06 A	11JUN06 A	30MAY06 A	11JUN06 A
ABLBNS1400	Take Up / Divert Ext. Utility Services (Phase 2)	12		100	30MAY06 A	08JUN06 A	30MAY06 A	08JUN06 A



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A8LBNS1500	Reinstate Ext. Utility Services	24	-47d	0	27OCT05	23NOV05	30AUG05	27SEP05
A8LBNS1600	Reinstate Ext. Cycle Track	12	-58d	0	07DEC05	20DEC05	29SEP05	13OCT05
A8LBNS1700	Resume Ext. Cycle Track	1	-58d	0	21DEC05	21DEC05	14OCT05	14OCT05
Tunnel Adjacent to Landing Step								
Marine Works								
A8ALMAB100	Taking Up of Armour to +2.5(South Section)	2		100	10NOV04 A	11NOV04 A	10NOV04 A	11NOV04 A
A8ALMAB110	Taking Up of Underlayer to +2.5 (South Section)	2		100	15NOV04 A	16NOV04 A	15NOV04 A	16NOV04 A
A8ALMAB200	Taking Up of Rubble to +2.5 (South Section)	8		100	01DEC04 A	17JAN05 A	01DEC04 A	17JAN05 A
A8ALMAB210	Taking Up of Armour Below +2.5 (South Section)	3		100	27NOV04 A	01DEC04 A	27NOV04 A	01DEC04 A
A8ALMAB220	Taking Up Underlayer Below +2.5 (South Section)	3		100	06DEC04 A	12DEC04 A	06DEC04 A	12DEC04 A
A8ALMAB230	Taking Up of Rubble Below +2.5 (South Section)	12		100	13DEC04 A	11JUL05 A	13DEC04 A	11JUL05 A
A8ALMAB240	Placing Leveling Stone (South Section)	10		100	12JUL05 A	30JUL05 A	12JUL05 A	30JUL05 A
A8ALMAB400	Block Wall Construction (South Section)	25		100	02AUG05 A	17AUG05 A	02AUG05 A	17AUG05 A
A8ALMAB500	Backfill the Rubble Behind (South Section)	6	-16d	80	18AUG05 A	26SEP05	18AUG05 A	19AUG05
A8ALMAB600	Backfill G200 Rockfill Behind (South Section)	5	-46d	0	29SEP05	03OCT05	14AUG05	18AUG05
A8ALMAC610	Diversion of Ext. Cycle Track (Phase 1)	1		100	26MAY05 A	26MAY05 A	26MAY05 A	26MAY05 A
A8ALMAC620	Removal of Ext. Cycle Track PAvement (Pahse 1)	2		100	30MAY05 A	31JUN05 A	30MAY05 A	31JUN05 A
A8ALMAC630	Take Up / Divert Ext. Utility Services (Phase 1)	18		100	30MAY05 A	08JUN05 A	30MAY05 A	08JUN05 A
A8ALMAC700	Taking Up of Armour to +2.5 (North Section)	2		100	08NOV04 A	10NOV04 A	08NOV04 A	10NOV04 A
A8ALMAC710	Taking Up of Underlayer to +2.5 (North Section)	2		100	15NOV04 A	16NOV04 A	15NOV04 A	16NOV04 A
A8ALMAC800	Taking Up of Rubble to +2.5 (North Section)	8		100	17NOV04 A	17NOV04 A	17NOV04 A	17NOV04 A
A8ALMAC820	Taking Up of Armour Below +2.5 (North Section)	3		100	21NOV04 A	23NOV04 A	21NOV04 A	23NOV04 A
A8ALMAC830	Taking Up Underlayer Below +2.5 (North Section)	2		100	01DEC04 A	04DEC04 A	01DEC04 A	04DEC04 A
A8ALMAC840	Taking Up of Rubble Below +2.5 (North Section)	30		100	19DEC04 A	18FEB05 A	19DEC04 A	18FEB05 A
A8ALMAC910	Placing Leveling Stone (North Section)	10		100	20FEB05 A	13MAY05 A	20FEB05 A	13MAY05 A
A8ALMAA1000	Block Wall Construction (North Section)	25		100	01MAR05 A	24MAY05 A	01MAR05 A	24MAY05 A
A8ALMAA1100	Backfill the Rubble Behind (North Section)	8		100	15MAR05 A	25JUN05 A	15MAR05 A	25JUN05 A
A8ALMAA1200	Backfill G200 Rockfill Behind (North Section)	5	-93d	0	26SEP05	02OCT05	27JUN05	01JUL05
A8ALMAA1300	Reinstatement of Armour & Underlayer	14	116d	0	03OCT05	18OCT05	28JAN06	12FEB06
Waterfront Promenade								
Drainage Works								
A8WPDW0100	Decide Exact Location of Manholes & Catchpits	1		100	27SEP04 A	27SEP04 A	27SEP04 A	27SEP04 A
A8WPDW0200	S745 - S739	65		100	21OCT04 A	09MAY05 A	21OCT04 A	09MAY05 A
A8WPDW0300	S717 - S729	78		100	22DEC04 A	25AUG05 A	22DEC04 A	25AUG05 A
A8WPDW0400	S729 - S730	14	26d	0	06JAN06	21JAN06	10FEB06	25FEB06
A8WPDW0500	S739 - S732	36	27d	0	23NOV05	21JAN06	24DEC05	24FEB06
A8WPDW0550	F421 - TIA05	18	-47d	5	23JUL05 A	04NOV05	23JUL05 A	07SEP05
A8WPDW0560	F414 - F421 (TIA 2X)	12	-36d	0	26SEP05	13OCT05	15AUG05	29AUG05
A8WPDW0600	S745 - Existing Box Culvert	27	26d	80	06JUL05 A	09DEC05	06JUL05 A	18JAN06
A8WPDW0700	S755 - S747	75		100	05NOV04 A	16DEC04 A	05NOV04 A	16DEC04 A
A8WPDW0710	S747 - Existing Box Culvert	18	18d	30	07JUL05 A	17DEC05	07JUL05 A	10JAN06
A8WPDW0800	225HR & Catchpit/2000.L along Parapet Wall (ZR)	45	26d	0	15MAR06	08MAY06	11APR06	07JUN06
A8WPDW0900	225HR & Catchpit/2000.L along Parapet Wall (ZK)	24	26d	0	30MAY06	27JUN06	29JUN06	27JUL06
A8WPDW1000	225HR & Catchpit/2000.L along Parapet Wall (ZJ6)	12	26d	0	15MAY06	29MAY06	15JUN06	28JUN06
A8WPDW1100	225HR & Catchpit/2000.L along Parapet Wall (ZJ5)	6	26d	0	09MAY06	15MAY06	08JUN06	14JUN06
A8WPDW1200	225HR & Catchpit/2000.L Parapet Wall (J,M,L1)	80	26d	0	02DEC05	09MAR06	04JAN06	18APR06

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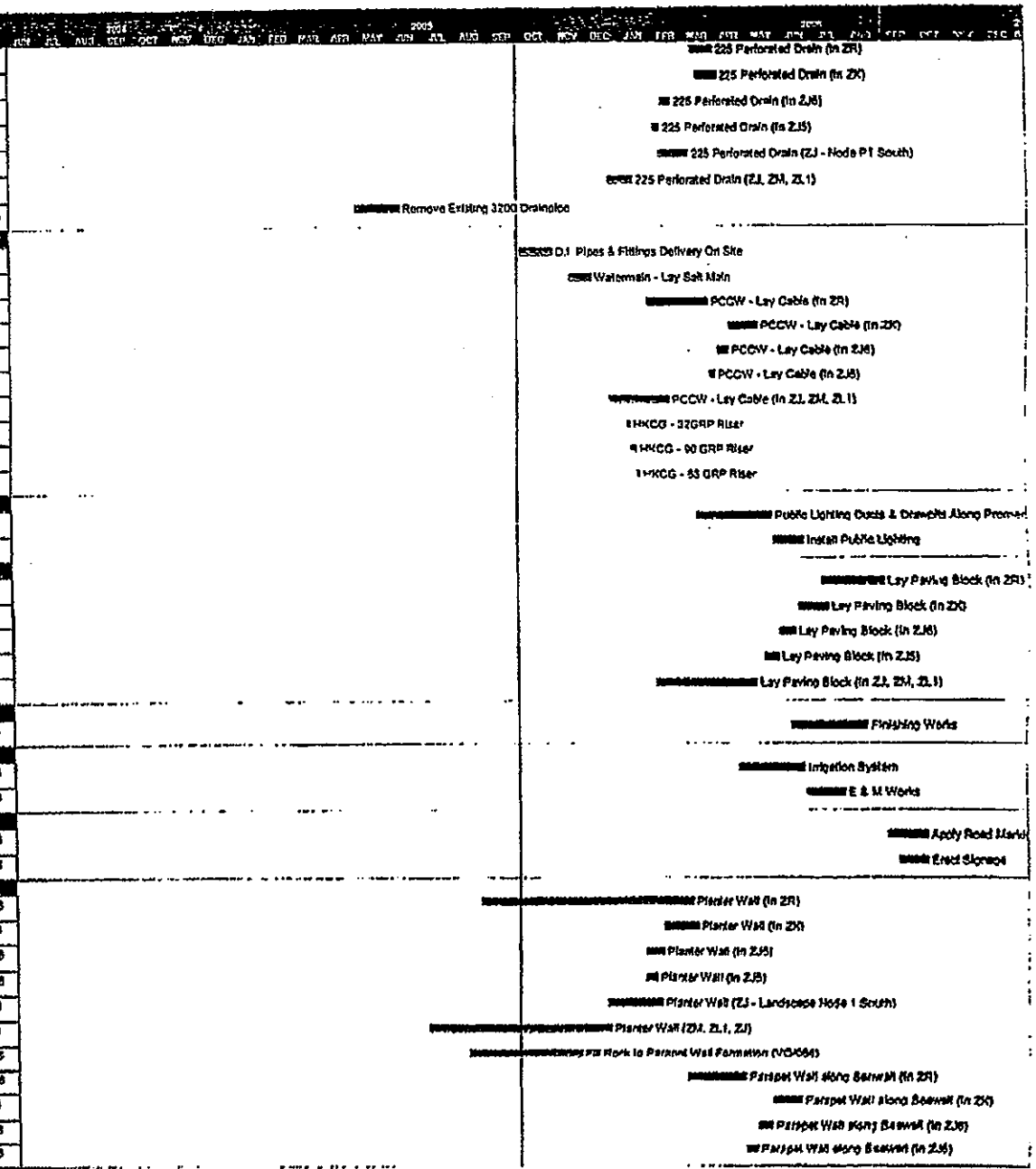
Activity ID	Activity Description	Original Duration	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A8WPDW1000	225 Perforated Drain (In ZR)	19	18d	0	09MAR06	30MAR06	30MAR06	21APR06
A8WPDW2000	225 Perforated Drain (In ZK)	18	28d	0	14MAR06	03APR06	17APR06	08MAY06
A8WPDW2100	225 Perforated Drain (In ZJ6)	9	37d	0	09FEB06	16FEB06	24MAR06	03APR06
A8WPDW2200	225 Perforated Drain (In ZJ5)	5	46d	0	03FEB06	06FEB06	28MAR06	05APR06
A8WPDW2300	225 Perforated Drain (ZJ - Node P1 South)	24	18d	0	06FEB06	07MAR06	01MAR06	28MAR06
A8WPDW2350	225 Perforated Drain (ZJ, ZM, ZL1)	18	18d	0	23DEC05	14JAN06	13JAN06	04FEB06
A8WPDW2400	Remove Existing 3200 Drainpipe	30		100	28APR05 A	09JUN05 A	28APR05 A	09JUN05 A
Utility Works								
A8WPUT0000	D.I. Pipes & Fittings Delivery On Site	30	-25d	0	01OCT05	30OCT05	05SEP05	04OCT05
A8WPUT0100	Watermain - Lay Salt Main	18	-56d	0	16NOV05	06DEC05	06SEP05	27SEP05
A8WPUT0700	PCCW - Lay Cable (In ZR)	48	-17d	0	27JAN06	28MAR06	07JAN06	09MAR06
A8WPUT0800	PCCW - Lay Cable (In ZK)	22	-17d	0	15APR06	11MAY06	23MAR06	20APR06
A8WPUT0900	PCCW - Lay Cable (In ZJ6)	10	-17d	0	03APR06	14APR06	14MAR06	24MAR06
A8WPUT1000	PCCW - Lay Cable (In ZJ5)	8	-17d	0	27MAR06	01APR06	07MAR06	13MAR06
A8WPUT1100	PCCW - Lay Cable (In ZJ, ZM, ZL1)	44	32d	0	23DEC05	16FEB06	03FEB06	25MAR06
A8WPUT1200	HKCG - 32GRP Riser	3	28d	0	09JAN06	11JAN06	13FEB06	15FEB06
A8WPUT1300	HKCG - 90 GRP Riser	5	28d	0	12JAN06	17JAN06	16FEB06	21FEB06
A8WPUT1400	HKCG - 63 GRP Riser	3	28d	0	18JAN06	20JAN06	22FEB06	24FEB06
Public Lighting Ducts and Kerb								
A8WPPK0300	Public Lighting Ducts & Drawpits Along Promenade	60	85d	0	14MAR06	24MAY06	26JUN06	04SEP06
A8WPPK0400	Install Public Lighting	24	85d	0	25MAY06	22JUN06	05SEP06	02OCT06
Roads and Paving								
A8WPRP0100	Lay Paving Block (In ZR)	49	25d	0	06JUL06	02SEP06	07AUG06	01OCT06
A8WPRP0200	Lay Paving Block (In ZK)	24	25d	0	18JUN06	14JUL06	17JUL06	12AUG06
A8WPRP0300	Lay Paving Block (In ZJ6)	12	27d	0	30MAY06	15JUN06	05JUL06	15JUL06
A8WPRP0400	Lay Paving Block (In ZJ5)	12	27d	0	16MAY06	29MAY06	17JUN06	30JUN06
A8WPRP0500	Lay Paving Block (In ZJ, ZM, ZL1)	80	32d	0	03FEB06	09MAY06	13MAR06	16JUN06
Finishing Works								
A8WPFW0100	Finishing Works	80	66d	0	06JUN06	18AUG06	20AUG06	08NOV06
E & M Works								
A8WPEM0000	Irrigation System	50	117d	0	22APR06	21JUN06	09SEP06	08NOV06
A8WPEM1000	E & M Works	90	66d	0	23JUN06	26JUL06	03OCT06	08NOV06
Road Marking, Traffic Sign and Fencing								
A8WPRM0100	Apply Road Marking	30	25d	0	04SEP06	09OCT06	03OCT06	08NOV06
A8WPRM0200	Erect Signage	21	25d	0	14SEP06	09OCT06	14OCT06	08NOV06
Landscape Elements								
A8WPPK0100	Planter Wall (In ZR)	83	0	20	22AUG05 A	08MAR06	22AUG05 A	09MAR06
A8WPPK0200	Planter Wall (In ZK)	26	26d	0	09FEB06	15MAR06	14MAR06	18APR06
A8WPPK0300	Planter Wall (In ZJ6)	13	26d	0	23JAN06	06FEB06	27FEB06	13MAR06
A8WPPK0400	Planter Wall (In ZJ5)	6	27d	0	23JAN06	02FEB06	28FEB06	06MAR06
A8WPPK0500	Planter Wall (ZJ - Landscape Node 1 South)	40	18d	0	19DEC05	07FEB06	11JAN06	28FEB06
A8WPPK0600	Planter Wall (ZM, ZL1, ZJ)	90	16d	20	02JUL05 A	22DEC06	02JUL05 A	12JAN06
A8WPPK0650	Fill Rock to Parapet Wall Formation (VO/066)	56	25d	20	16AUG05 A	24NOV06	16AUG05 A	23DEC06
A8WPPK0700	Parapet Wall along Seawall (In ZR)	47	25d	0	03MAR06	27APR06	03APR06	23MAY06
A8WPPK0800	Parapet Wall along Seawall (In ZK)	22	25d	0	25MAY06	17JUN06	22JUN06	18JUL06
A8WPPK0900	Parapet Wall along Seawall (In ZJ6)	12	25d	0	09MAY06	22MAY06	08JUN06	21JUN06
A8WPPK1000	Parapet Wall along Seawall (In ZJ5)	6	25d	0	28APR06	09MAY06	26MAY06	07JUN06



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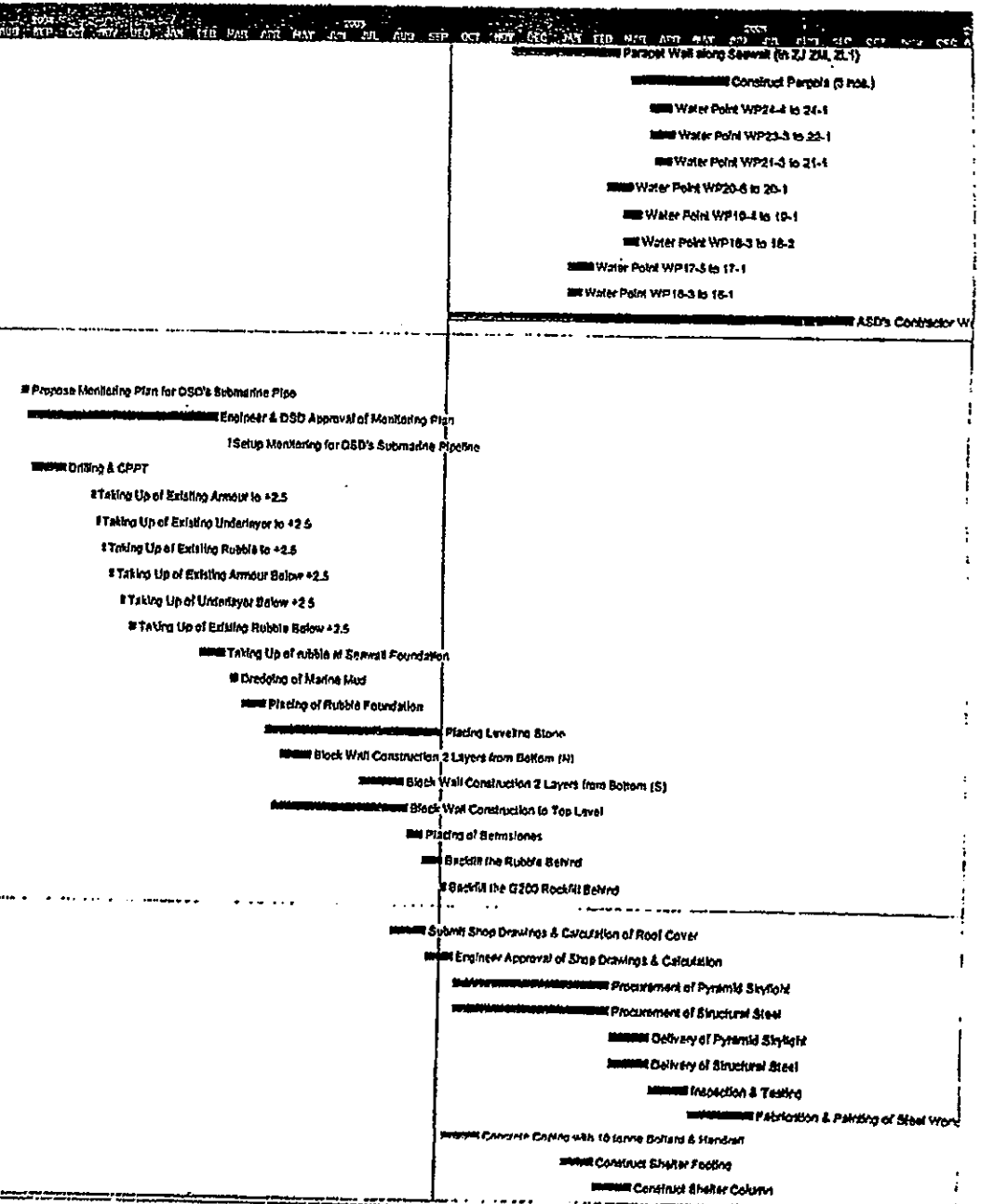
Activity ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASWPHL1100	Parapet Wall along Seawall (in ZJ ZM, ZL1)	86	25d	0	25NOV05	02MAR06	24DEC05	31MAR06
ASWPHL1200	Construct Parpets (3 nos.)	72	66d	0	14MAR06	06JUN06	05JUN06	25AUG06
ASWPHL1300	Water Point WP24-4 to 24-1	15	21d	0	31MAR06	18APR06	26APR06	13MAY06
ASWPHL1400	Water Point WP23-3 to 23-1	18	18d	0	31MAR06	21APR06	22APR06	15MAY06
ASWPHL1500	Water Point WP21-3 to 21-1	12	26d	0	05APR06	18APR06	09MAY06	23MAY06
ASWPHL1600	Water Point WP20-6 to 20-1	21	37d	0	20FEB06	15MAR06	05APR06	28APR06
ASWPHL1700	Water Point WP19-4 to 19-1	15	16d	0	06MAR06	24MAR06	20MAR06	10APR06
ASWPHL1800	Water Point WP18-3 to 18-2	12	21d	0	06MAR06	21MAR06	01APR06	15APR06
ASWPHL1900	Water Point WP17-5 to 17-1	16	16d	0	16JAN06	07FEB06	06FEB06	25FEB06
ASWPHL2000	Water Point WP16-3 to 16-1	12	22d	0	16JAN06	26JAN06	13FEB06	25FEB06
ASWPHL2200	ASD's Contractor Works	303	-57d	0	26SEP05	27SEP06	22JUL05	22JUL06
Section 9								
Public Landing Step -								
Marine Works								
ASLSMA0100	Propose Monitoring Plan for DSD's Submarine Pipe	30		100	01SEP04 A	06SEP04 A	01SEP04 A	06SEP04 A
ASLSMA0200	Engineer & DSD Approval of Monitoring Plan	36		100	07SEP04 A	01MAR05 A	07SEP04 A	01MAR05 A
ASLSMA0300	Setup Monitoring for DSD's Submarine Pipeline	30		100	14MAR05 A	14MAR05 A	14MAR05 A	14MAR05 A
ASLSMA0400	Drilling & CPPT	30		100	11SEP04 A	11OCT04 A	11SEP04 A	11OCT04 A
ASLSMA0500	Taking Up of Existing Armour to +2.5	2		100	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A
ASLSMA0510	Taking Up of Existing Underlayer to +2.5	3		100	11NOV04 A	11NOV04 A	11NOV04 A	11NOV04 A
ASLSMA0600	Taking Up of Existing Rubble to +2.5	3		100	17NOV04 A	17NOV04 A	17NOV04 A	17NOV04 A
ASLSMA0510	Taking Up of Existing Armour Below +2.5	3		100	24NOV04 A	27NOV04 A	24NOV04 A	27NOV04 A
ASLSMA0520	Taking Up of Underlayer Below +2.5	3		100	09DEC04 A	09DEC04 A	09DEC04 A	09DEC04 A
ASLSMA0530	Taking Up of Existing Rubble Below +2.5	5		100	13DEC04 A	16DEC04 A	13DEC04 A	16DEC04 A
ASLSMA0540	Taking Up of rubble at Seawall Foundation	13		100	16FEB05 A	11MAR05 A	16FEB05 A	11MAR05 A
ASLSMA0700	Dredging of Marine Mud	20		100	16MAR05 A	24MAR05 A	16MAR05 A	24MAR05 A
ASLSMA0800	Placing of Rubble Foundation	15		100	29MAR05 A	19APR05 A	29MAR05 A	19APR05 A
ASLSMA0850	Placing Leveling Stone	23		100	20APR05 A	26SEP05	20APR05 A	26SEP05
ASLSMA0860	Block Wall Construction 2 Layers from Bottom (N)	5		100	04MAY05 A	31MAY05 A	04MAY05 A	31MAY05 A
ASLSMA0900	Block Wall Construction 2 Layers from Bottom (S)	5		100	17JUL05 A	24AUG05 A	17JUL05 A	24AUG05 A
ASLSMA0910	Block Wall Construction to Top Level	50		100	26APR05 A	26AUG05 A	26APR05 A	26AUG05 A
ASLSMA0920	Placing of Bernstones	3		100	29AUG05 A	11SEP05 A	29AUG05 A	11SEP05 A
ASLSMA1000	Backfill the Rubble Behind	14	201d	50	12SEP05 A	29SEP05	12SEP05 A	22APR09
ASLSMA1100	Backfill the G200 Rockfill Behind	4	201d	0	30SEP05	05OCT05	23APR06	26APR06
Steel Works								
ASLSLW0100	Submit Shop Drawings & Calculation of Roof Cover	30		100	15AUG05 A	15SEP05 A	15AUG05 A	15SEP05 A
ASLSLW0200	Engineer Approval of Shop Drawings & Calculation	35	55d	90	15SEP05 A	10OCT05	15SEP05 A	15DEC05
ASLSLW0400	Procurement of Pyramid Skylight	120	66d	0	12OCT05	04MAR06	23JAN06	18JUN06
ASLSLW0500	Procurement of Structural Steel	120	55d	0	12OCT05	04MAR06	16DEC05	11MAY06
ASLSLW0600	Delivery of Pyramid Skylight	30	66d	0	06MAR06	10APR06	17JUN06	23JUL06
ASLSLW0700	Delivery of Structural Steel	30	55d	0	06MAR06	10APR06	12MAY06	16JUN06
ASLSLW0800	Inspection & Testing	50	55d	0	11APR06	16MAY06	17JUN06	22JUL06
ASLSLW0900	Fabrication & Painting of Steel Works	45	55d	0	17MAY06	13JUL06	24JUL06	18SEP06
ASLSLW1000	Concrete Coping with 10 tonne Bollard & Handrail	30	170d	0	04OCT06	08NOV06	27APR06	07JUN06
ASLSLW1100	Construct Shelter Footing	21	108d	0	23JAN06	21FEB06	03JUN06	30JUN06
ASLSLW1200	Construct Shelter Column	30	144d	0	22FEB06	28MAR06	14AUG06	18SEP06



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Activity ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A0LSLW1300	Construct Shelter Roof	24	56d	0	14JUL06	18AUG06	16SEP06	18OCT06
A0LSLW1400	Public Lighting	8	56d	0	11AUG06	18AUG06	17OCT06	25OCT06
A0LSLW1500	Rubber, Step & land Step Fender	18	56d	0	21AUG06	08SEP06	25OCT06	16NOV06
A0LSLW1600	Surface Mounted Seats	18	56d	0	11SEP06	30SEP06	17NOV06	07DEC06
A0LSLW1700	Construct Insitu Concrete Paving	18	56d	0	02OCT06	23OCT06	08DEC06	28DEC06
Section 10								
Remainder Works								
Miscellaneous Works								
B0RWAWW0100	El to Demolish HY/98/02 CRE Office	1	167d	0	03MAR06	03MAR06	11JUL06	11JUL06
B0RWAWW0200	Demolish HY/98/02 CRE Office (PI)	30	107d	0	23MAR06	28APR06	02AUG06	08SEP06
B0RWAWW0300	El to Demolish HY/98/02 Contractor's Office	1		100	22NOV04 A	22NOV04 A	22NOV04 A	22NOV04 A
B0RWAWW0400	Demolish HY/98/02 Contractor's Office (PI)	30		100	21MAY05 A	27MAY05 A	21MAY05 A	27MAY05 A
B0RWAWW0500	El to Remove Run-in & Reinstate FP/CT	1	126d	0	02MAY06	02MAY06	02OCT06	02OCT06
B0RWAWW0600	Remove Run-in & Reinstate FP/CT(PI)	18	111d	0	18JUN06	08JUL06	23OCT06	15NOV06
B0RWAWW0700	El to Demolish Existing Paving	1	107d	0	02MAY06	02MAY06	06SEP06	06SEP06
B0RWAWW0800	Demolish Existing Paving (PI)	18	107d	0	24MAY06	14JUN06	28SEP06	19OCT06
B0RWAWW0900	El to Fencing Around LO Site	1	111d	0	07JUL06	07JUL06	16NOV06	16NOV06
B0RWAWW1000	Fencing Around LO Site (PI)	18	111d	0	29JUL06	18AUG06	06DEC06	28DEC06
Section 11								
Area SA6, SA11B & SA11								
Landscape Subworks								
B1AASL0100	Soil Mix (Section 5)	24	-132d	0	06FEB06	07MAR06	30AUG05	27SEP05
B1AASL0200	Soil Mix (in ZS, South End - 100m)	10	-67d	0	03DEC05	14DEC05	13SEP05	24SEP05
B1AASL0300	Soil Mix (in ZS, 100 - 200m)	10	-66d	0	11JAN06	21JAN06	13SEP05	24SEP05
B1AASL0400	Soil Mix (in ZS, 200 - 300m)	10	-88d	0	11JAN06	21JAN06	02NOV05	12NOV05
B1AASL0500	Soil Mix (in ZS, 300 - 400m)	10	-75d	0	28JAN06	10FEB06	02NOV05	12NOV05
B1AASL0600	Soil Mix (in ZS, 400 - North End)	10	-132d	0	17MAY06	27MAY06	07DEC05	17DEC05
B1AASL0700	Soil Mix (in ZU, 300m)	30	-78d	0	25JAN06	02MAR06	24OCT05	29NOV05
B1AASL0800	Planting Works	90	-132d	0	09MAR06	21JUN06	28SEP05	12JAN06
B1AASL0900	Groundcovers Works	50	-132d	0	29MAY06	27JUL06	19DEC05	16FEB06
B1AASL1000	Root Barrier (ZS, 100m - 200m) (VO/055A)	12	-76d	0	03DEC05	15DEC05	30AUG05	12SEP05
B1AASL1100	Root Barrier (ZS, 200m - 300m) (VO/055A)	12	-55d	0	22DEC05	06JAN06	19OCT05	01NOV05
B1AASL1200	Root Barrier (ZS, 300m - 400m) (VO/055A)	12	-55d	0	22DEC05	06JAN06	19OCT05	01NOV05
B1AASL1300	Root Barrier (ZS, 400m - N. End) (VO/055A)	2	-110d	0	28APR06	29APR06	06DEC05	06DEC06
Section 12								
Area SA7, SA10, SA11A, SA12 & SA15								
Landscape Subworks								
B2ABSL0100	Soil Mix (in ZR, 395m)	47	16d	0	22APR06	17JUN06	16MAY06	10JUL06
B2ABSL0200	Soil Mix (in ZK, 180m)	24	26d	0	19APR06	17MAY06	23MAY06	20JUN06
B2ABSL0300	Soil Mix (in ZJ6, 85m)	12	37d	0	24MAR06	07APR06	09MAY06	23MAY06
B2ABSL0400	Soil Mix (in ZJ5, 50m)	7	37d	0	15MAR06	23MAR06	29APR06	08MAY06
B2ABSL0500	Soil Mix (ZJ - Landscape Node 1 South, 250m)	30	16d	0	25MAR06	29APR06	17APR06	22MAY06
B2ABSL0600	Soil Mix (ZH, ZL1, ZJ)	71	16d	0	06FEB06	03MAY06	27FEB06	23MAY06
B2ABSL0700	Planting Works	93	16d	0	04MAY06	18AUG06	23MAY06	06SEP06
B2ABSL0800	Groundcovers Works	50	16d	0	19AUG06	17OCT06	07SEP06	09NOV06
B2ABSL0900	Root Barrier (in ZH) (VO/055)	12	22d	0	16JAN06	28JAN06	13FEB06	25FEB06
B2ABSL1000	Root Barrier (in ZR) (VO/055)	2	34d	0	31MAR06	01APR06	12MAY06	15MAY06

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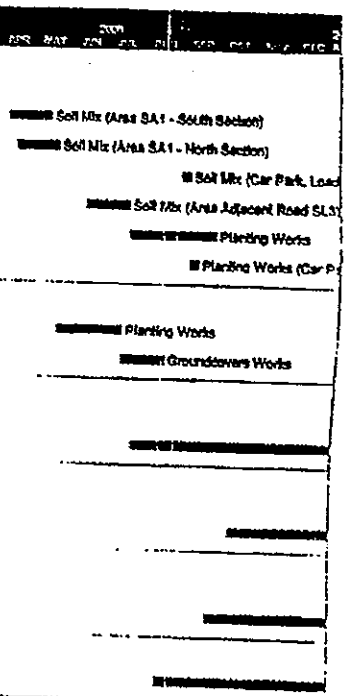
ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Section 13								
Area SA1, SA2, SA3, SA4 & SA5								
Landscape Softworks								
B3ACSL0100	Soil Mix (Area SA1 - South Section)	30	113d	0	10APR06	18MAY06	23AUG06	26SEP06
B3ACSL0200	Soil Mix (Area SA1 - North Section)	30	107d	0	17APR06	22MAY06	23AUG06	26SEP06
B3ACSL0300	Soil Mix (Car Park, Loading & Unloading Area)	6	51d	0	02SEP06	08SEP06	03NOV06	09NOV06
B3ACSL0400	Soil Mix (Area Adjacent Road SL3)	30	57d	0	16JUN06	21JUL06	23AUG06	26SEP06
B3ACSL0500	Planting Works	80	57d	0	22JUL06	29SEP06	27SEP06	07DEC06
B3ACSL0600	Planting Works (Car Park,Loading/Unloading Area)	6	65d	0	09SEP06	15SEP06	20DEC06	28DEC06
Area SA8, SA9, SA15, SA16, SA17 & SA18								
Landscape Softworks								
B3ADSL0100	Planting Works	45	107d	0	24MAY06	17JUL06	28SEP06	21NOV06
B3ADSL0200	Groundcovers Works	30	107d	0	18JUL06	21AUG06	22NOV06	28DEC06
Section 14								
Area SA6, SA11B & SA14								
Establishment Works								
B4AAEW0100	Establishment Works	300	+127d	0	28JUL06	21JUL07	28FEB06	17FEB07
Section 15								
Area SA7, SA10, SA11A, SA12 & SA13								
Establishment Works								
B5ABEW0100	Establishment Works	300	20d	0	16OCT06	12OCT07	11NOV06	08NOV07
Section 10								
Area SA1, SA2, SA3, SA4 & SA5								
Establishment Works								
B8ACEW0200	Establishment Works	320	57d	0	30SEP06	20OCT07	06DEC06	28DEC07
Area SA8, SA9, SA15, SA16, SA17 & SA18								
Establishment Works								
B8ADEW0100	Establishment Works	360	111d	0	22AUG06	15AUG07	02JAN07	28DEC07



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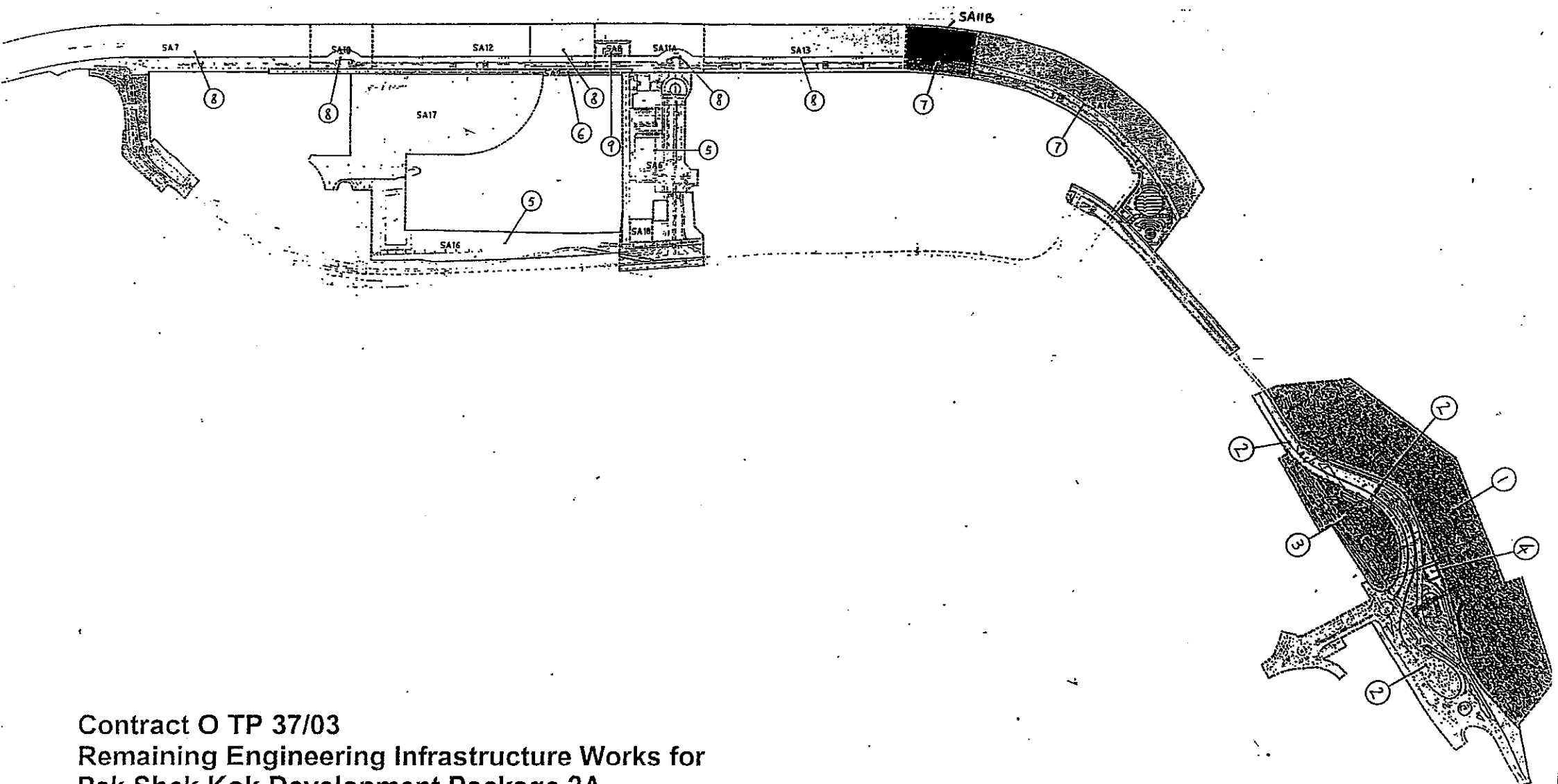
Appendix G

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Inspection Date : 1 December 2016 Inspected by Name : (RSS) Eric Leung (LWKJV) [illegible] (ET) H. T. Chow
Time : 09:40 Signature :

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

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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.		✓		Item (3)
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.		✓		Item (1)
▪ 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 MEASRUES

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

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

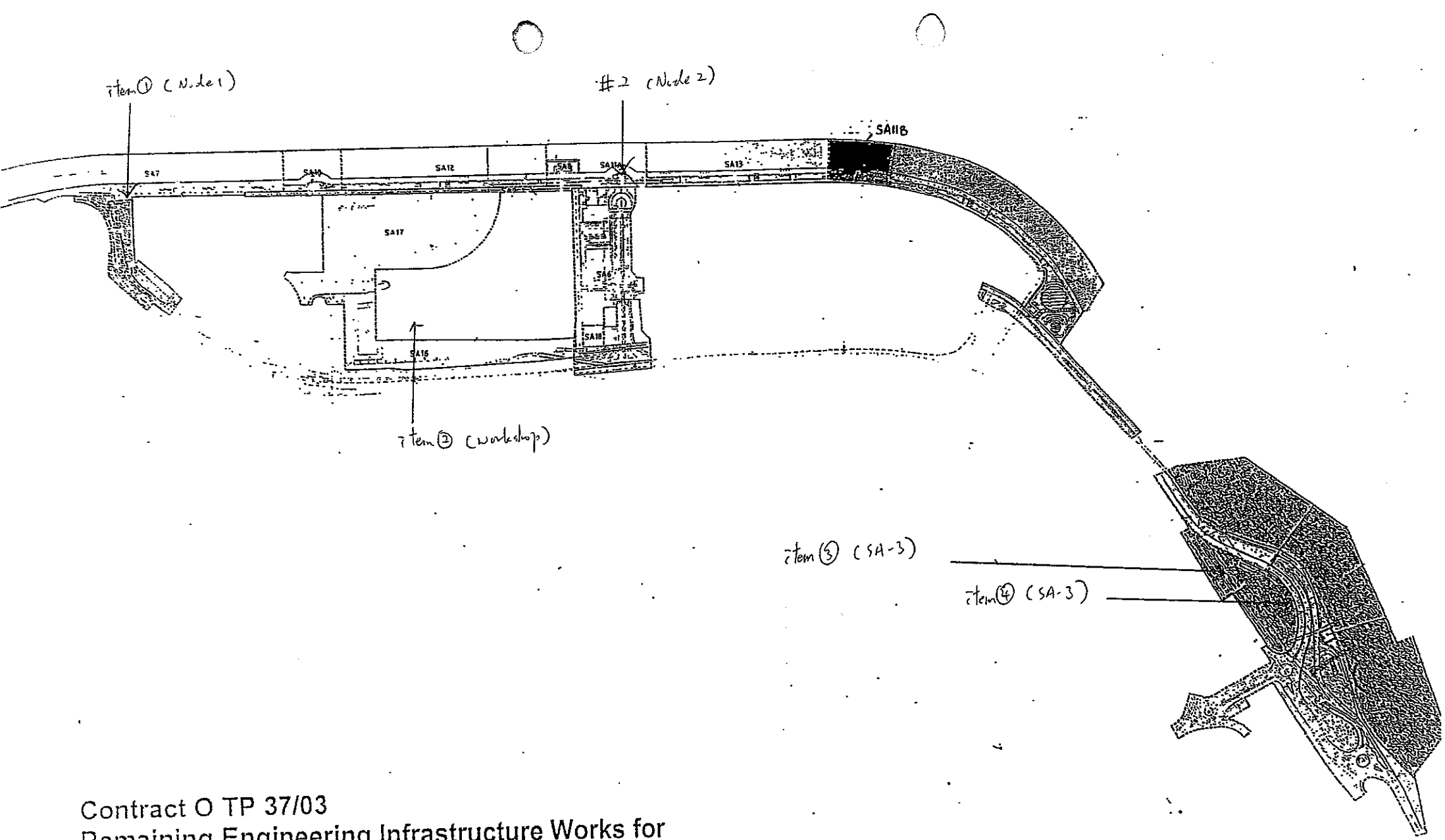
SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item 7 on 24 Nov 2006, no water pond at Node 1 was observed.	Node 1	Follow up action was completed, no further action to be taken.	~~9-12-06~~ N/A
#2	Follow up action to previous site inspection item 8 on 24 Nov 2006, mud and sand were still found setting in U channel.	Node 2	The Contractor should apply clean up action asap.	9-12-06
①	Mud and sand were accumulated in the main drainage channel at Node 1.	Node 1	The Contractor was reminded clean up the channel regularly.	9-12-06
②	The oil container without clearly labeled and used solely for the storage.	Workshop	An appropriate label should provide for every container, which would contain the particulars details.	9-12-06
③	~~Water~~ Waste water was found direct discharge to the channel.	SA-3	The Contractor should be adopt sedimentation tank before discharge.	9-12-06
④	Oil leakage was found from generator at SA-3	SA-3	The Contractor should clean up contaminated soil by absorbent materials as soon as possible.	9-12-06

	RSS	LWKJV	ET
Signature:			
Name:	Eric Leung	Winson Cotton	H. T. Chow
Date:	01-12-2006	1-12-2006	1-12-2006



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

Location and Key Pan

東業檢動測試顧問有限公司
ETS-TESTCONSULT LIMITED

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Inspection Date : 9 December 2006 Inspected by Name : (RSS) Eric Leung (LWKJV) [illegible] (ET) H.T. Chow
Time : 10:30 Signature :

Weather Condition : (Sunny) / Fine / Overcast / Drizzle / Rain / Storm / Hazy
Wind : Calm / (Light) / Breeze / Strong
Temperature : 23°C
Humidity : High / Moderate / (Low)

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
Air Quality				
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓			
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓			
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓			
▪ The haul road should be either paved or regular watering.	✓			
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓			
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle speed should be limited to 20 km/hr.	✓			
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓			
▪ The enclosures should be around the main dust-generating activities.	✓			
▪ Dusty materials should be sprayed prior to loading.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.		✓		item (2)
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ Open burning should be prohibited.	✓			
Noise				
▪ The constructions works should be scheduled to minimize noise nuisance.	✓			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Plant known to emit noise strongly in on direction, should, where possible, should be orientated so that the noise is directed away from nearby NSRs.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.		✓		
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Construction Noise Permits should be available for inspection.	✓			

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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.		✓		#4
▪ 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 (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 MEASRUES

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

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.		✓		#3
• 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	✓			

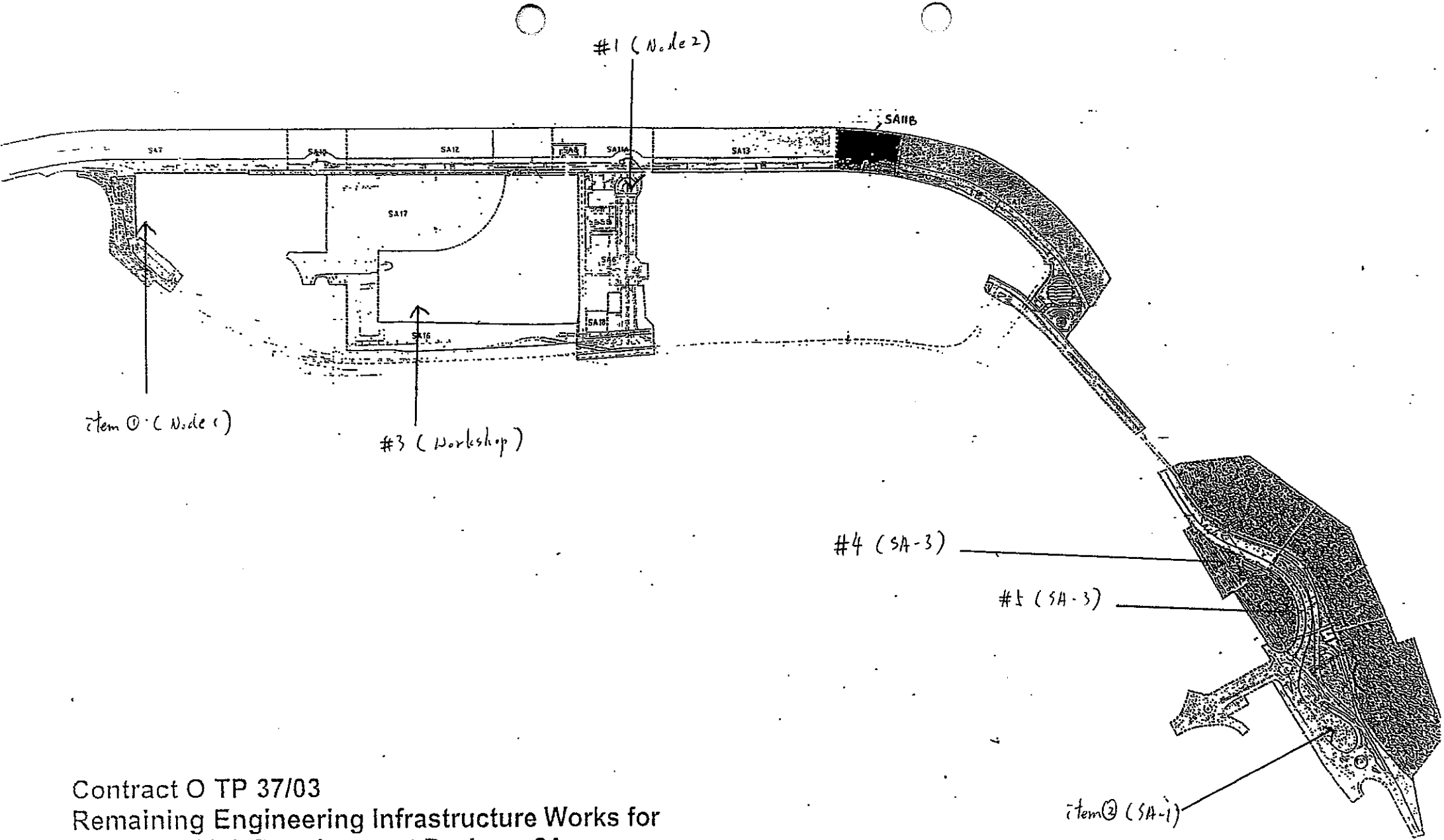
SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• **Spillage**				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			✓	
• Commencing at the source of the spill, establish all current and potential impacted areas			✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary			✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials			✓	
• Dispose of materials as chemical wastes			✓	
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.		✓		item ①
• 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.		✓		#5
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item #2 on 1-12-06 and item 8 on 24-11-06, mud and sand were still found setting in the drainage channel.	Node 2	The Contractor should apply clean up action asap.	16-12-06
#2	Follow up action to previous site inspection item ① on 1-12-06, the main drainage channel at Node 1 was cleaned up.	Node 1	Follow up action was completed, no further action to be taken.	N/A
#3	Follow up action to previous site inspection item ② on 1-12-06, the oil container without clearly labeled and used solely for the storage.	Workshop	An appropriate label should provide for every container, which would contain the particulars details.	16-12-06
#4	Follow up action to previous site inspection item ③ on 1-12-06, waste water was still found direct discharge to the channel.	SA-3	The Contractor should be adopt any treatment processes before discharge.	16-12-06
#5	Follow up action to previous site inspection item ④ on 1-12-06, oil leakage was still found from generator at SA-3.	SA-3	The Contractor should clean up the contaminated soil by absorbent materials as soon as possible.	16-12-06
①	Rubbish was found overfill in the skip at Node 1. (TW98/02 F1-E-509)	Node 1	The Contractor was reminded to remove the skip more frequently.	16-12-06
②	Black smoke emission from excavator was observed.	SA-1	The excavator have to be constantly maintained in good condition.	16-12-06

	RSS	LWKJV	ET
Signature:			
Name:	Eric Leung	WARREN CHOW	H.T. Chow
Date:	09-12-06	9-12-2006	9-12-2006



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

Location and Key Pan

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Inspection Date : 16 December 2006 Inspected by Name : (RSS) Sunny Yeung (LWKJV) Walton Chan (ET) H.T. Chow

Time : 10:30 Signature : [signature] [signature] [signature]

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

Temperature : 14°C
Humidity : High / Moderate / (Low)

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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.		✓		#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 (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 MEASRUES

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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

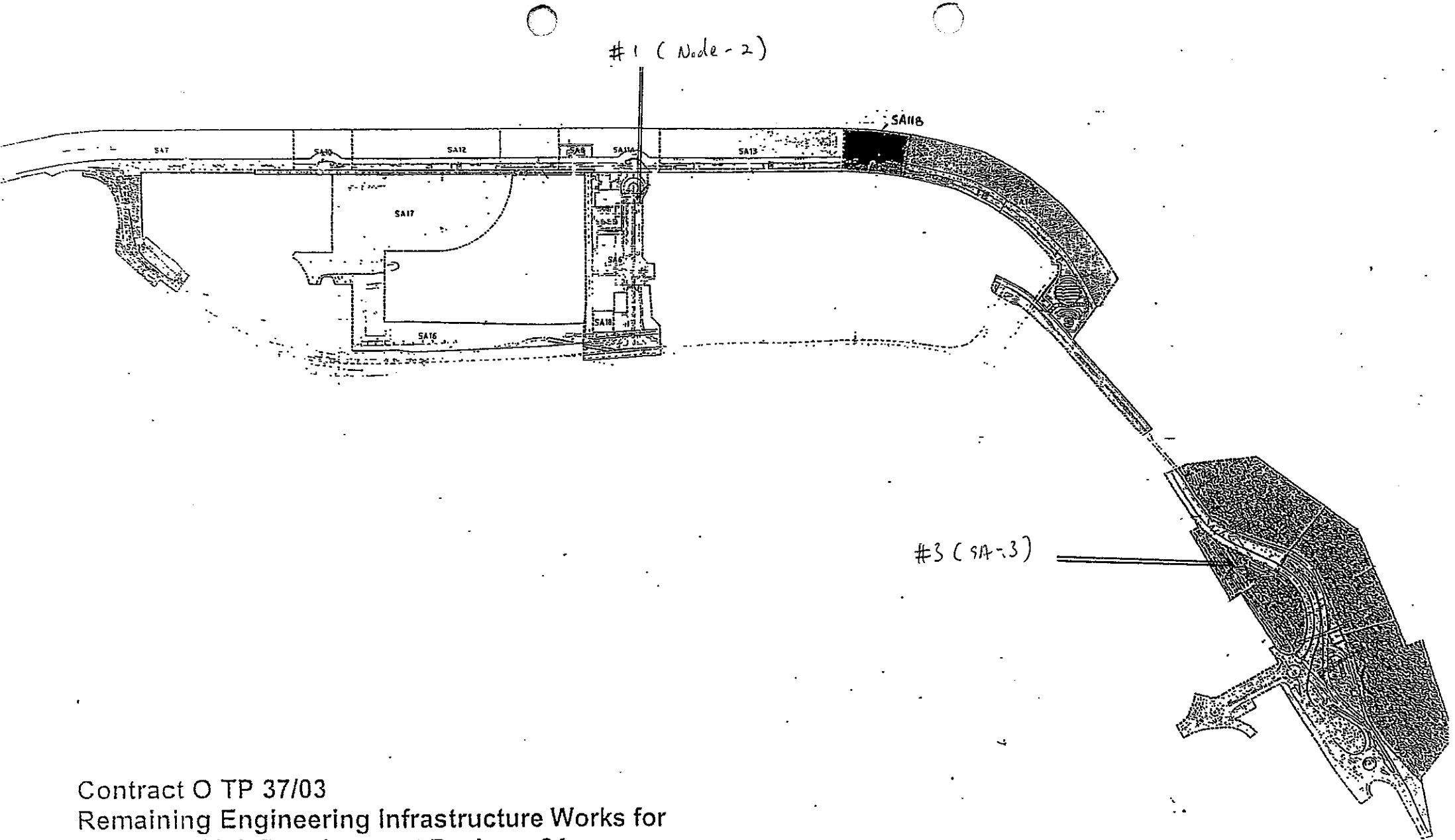
SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item ⑧(24-11-06), item #2(1-12-06) and item #1 (9-12-06) mud and sand were still found setting in the drainge channel.	Node 2	The Contractor should apply clean up action asap.	21-12-06
#2	Follow up action to previous site inspection item ②(1-12-06) item #3 (9-12-06), an appropriate labels were provided for each containers.	Workshop	Follow up action was completed, no further action to be taken.	N/A
#3	Follow up action to previous site inspection item ③(1-12-06) and item #4 (9-12-06), waste water was still found direct discharge to the channel.	SA-3	The Contractor should be adopt any treatment ~~proof~~ processes before discharge.	21-12-06
#4	Follow up action to previous site inspection item ④ (1-12-06) and item #5 (9-12-06), no oil leakage was observed from generator and the contaminated soil was cleaned up.	SA-3	Follow up action was completed, no further action to be taken.	N/A
#5	Follow up action to previous site inspection item ① on 9-12-06, the rubbish skip at Node 1 was removed.	Node-1	Follow up action was completed, no further action to be taken.	N/A
#6	Follow up action to previous site inspection item ② on 9-12-06, the excavator (TN 98/01 F1-E-509) was removed to repairs.	SA-1	Follow up action was completed, no further action to be taken.	N/A
others:	pH value checking were carried out at workshop and SA-3 discharge point respectively, there were within the discharge standard (pH 6~9).			

	RSS	LWKJV	ET
Signature:			
Name:	SUNNY TSANG	WILSON CHAN	H. T. CHAN
Date:	16.12.2006	16-12-2006	16-12-2006



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

Location and Key Pan

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Inspection Date : 21 Dec 2006 Inspected by Name : (RSS) Eric Leung (LWKJV) Walton Chan (ET) Louisa Fung
Time : 09:30 Signature :

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

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
Air Quality				
▪ 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, should be orientated so that the noise is directed away from nearby NSRs.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.			√	
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Compressors and generators should operate with door closed.	√			
▪ Construction Noise Permits should be available for inspection.				

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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 MEASRUES

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

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
1	Follow up action to previous item#1 on 16/12/06, item #1 09/12/06, item #2 01/12/06 and item ⑧ 24/11/06, mud and sand in channel were cleared. No more further action is required.	Node 2	----	N/A
2	Follow up action to previous item#2 on 16/12/06, item #4 09/12/06 and item ③ 01/12/06, no direct water runoff to channel was spotted. No more further action is required.	SA-3	----	N/A
3	An abandon 20 L oil drum was spotted sitting outside workshop station. pH : 6.0 (Sumpit Pte	Workshop	LWKJV replied a trip tray will be placed underneath the oil drum.	28/12/06
4	Cycle ~~trek~~ (track) was noted very sandy and muddy.	Node 1 Entrance	LWKJV replied a water lorry will be provided for routine washing in order to maintain tidiness and sand-free on Bitumen cycle trek.	28/12/06
5	An abandon 20 L oil drum was spotted sitting near Subway. ~~pH : 6.5-7.0~~	Subway	LWKJV replied a trip tray will be placed underneath the oil drum.	28/12/06
6	Tarpaulin sheet on fence was torn apart. pH: 6.5-7.0 (Sedimentation tank)	SA-3	LWKJV replied torn Tarpaulin sheet will be replaced by a new sheet.	28/12/06
7	Expiry date of CNP at SA-3 Entrance is on 29/12/06.	SA-3 Entrance	LWKLV replied no plant work on Public Holiday and Sundays after the expiry of CNP until renewal has issued. And application of new CNP is in progress.	28/12/06

	RSS	LWKJV	ET
Signature:			
Name:	Eric Leung	WALTON CHAN	**Louisa Fung**
Date:	**21/12/06**	**21/12/06**	**21/12/06**

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Inspection Date : 28 December 2006 Inspected by Name : (RSS) (LWKJV) Watson Chan (ET) H.T. Chow
Time : 10:15 Signature

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

Temperature : 19 °C
Humidity : High / Moderate / (Low)

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

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

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 MEASRUES

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

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

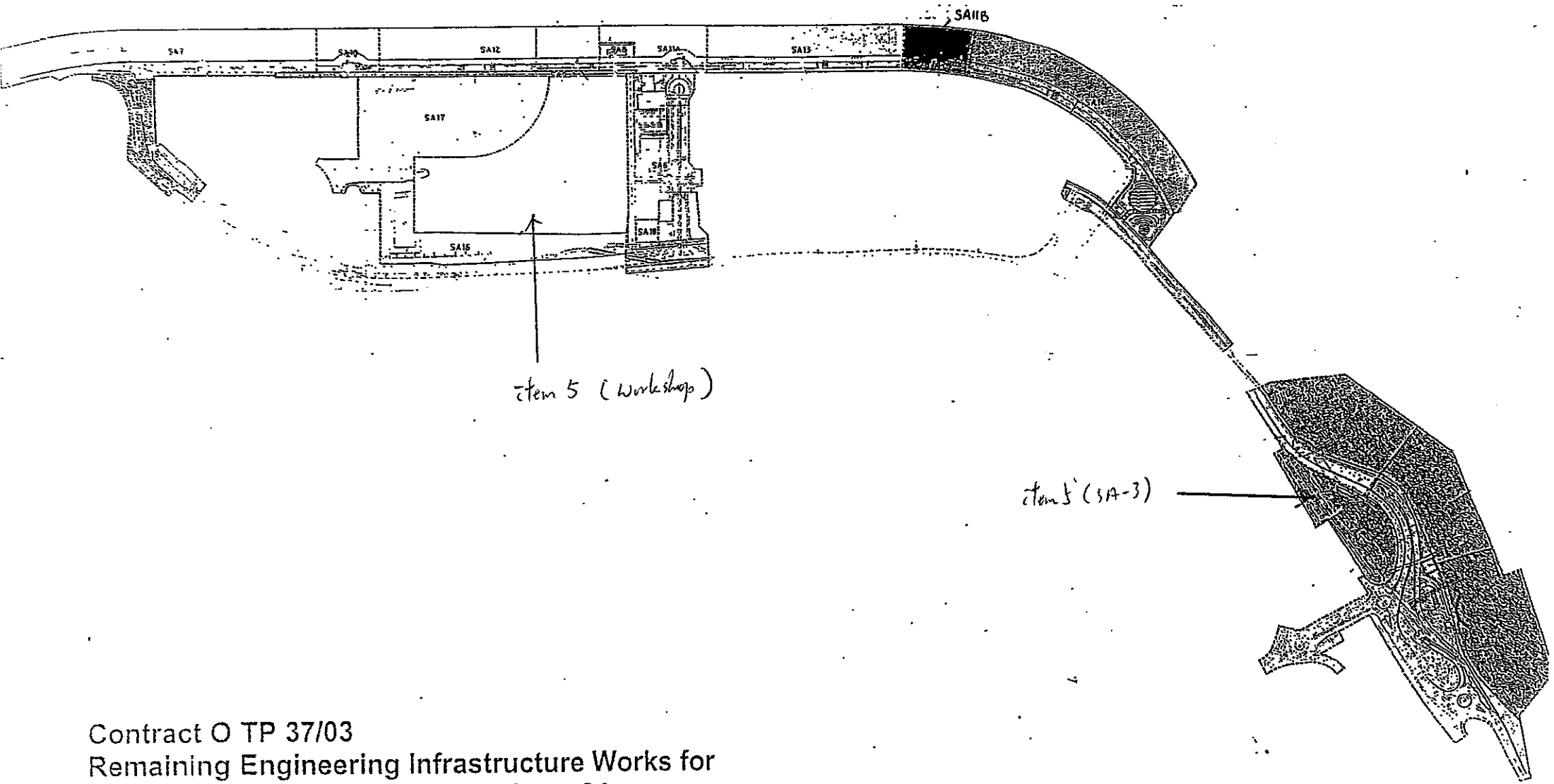
SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASRUES

Mitigation Measures on Waste Management	Implementation Stages*			Remark
	Yes	No	N/A	
• **Spillage**				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			✓	
• Commencing at the source of the spill, establish all current and potential impacted areas			✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary			✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials			✓	
• Dispose of materials as chemical wastes			✓	
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓			
• The Environmental Permit should be displaced conspicuously on site	✓			
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓			
• All generators, fuel and oil storage are within bundle areas.	✓			
• Oil leakage from machinery, vehicle and plant is prevented.		✓		7tem 4
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
1.	Follow up action to previous site inspection item 3 on 21-12-06, an abandon 20 L oil drum was removed.	Workshop	Follow up action was completed, no further action to be taken.	N/A
2.	Follow up action to previous item 4 on 21-12-06, the cycle track at Node 1 was cleaned up.	Node - 1 Entrance	~/	~/
3.	Follow up action to previous item 5 on 21-12-06, all oil containers was removed.	Subway	~/	~/
4.	Follow up action to previous item 6 on 21-12-06, the new tarpaulin sheet was replaced for stockpile.	SA-3	~/	~/
5.	The drain outlet of drip tray was found open.	Workshop & SA-3	The Contractor was reminded ~~to~~ to closed the outlet after drainage.	6-1-07
	Other: pH value checking was carried out at Workshop (pH = 6.0) and SA-3 discharge point (7.0).			

	RSS	LWKJV	ET
Signature:			
Name:	K.K. Lee	Wallace Chan	H. T. Chow
Date:	28.12.2006	28.12.2006	28-12-2006



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

Location and Key Pan

Appendix I

IEC and RE Comments on Monthly EM&A Report
–
November 2006

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

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

Appendix J

Wastewater Monitoring
–
Test Reports of Wastewater Samples from Discharge Points

ENVIRO LABS LIMITED

ENVIRO LABS LTD.

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 – Wai Kee (C&T) Joint Venture
Unit 1001-1005, 10/F., Grand Central Plaza, Tower 1, 138 Shatin 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 good 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) Total Suspended Solids (TSS) Dried at 103-105°C	APHA[1] 17e 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 ----

ENVIRO LABS LIMITED 環境化驗有限公司

APPROVED SIGNATORY : _____
Kenneth Ker Kin LAM
(Laboratory Manager)

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Road, Fanling, N.T., Hong Kong
Tel: (852) 2676 2083 Fax: (852) 2676 2860
http://www.envirolabs.com.hk e-mail: ell@envirolabs.com.hk

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

Customer

Leader – Wai Kee (C&T) Joint Venture
Unit 1001-1005, 10/F., Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Sha Tin, N.T., HK
Attn.: Mr. Walton Chan

Sample Identification

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

Test Method

Parameter	Reference Method	Testing Period
pH	APHA[1] 20e 4500-H+ B	30 Nov 2006 (on-site)
Chemical Oxygen Demand (COD)	APHA[1] 20e 5220 C	30 Nov - 6 Dec 2006

[1] APHA Standard Methods for the Examination of Water and Wastewater

Test Result

Sample Label	Test Parameter	Sample No.	Test Result	Discharge Limit [2]	Unit
Pak Shek Kok Workshop Area Adjacent to Site Office	pH at 23°C	61438-1	8.4	6 – 9	--
	Chemical Oxygen Demand	61438-2	< 50	≤80	mgO_2/L
Discharge Point near Ma Liu Shui Subway	pH at 25°C	61438-3	7.5	6 – 9	--
	Chemical Oxygen Demand	61438-4	< 50	≤80	mgO_2/L

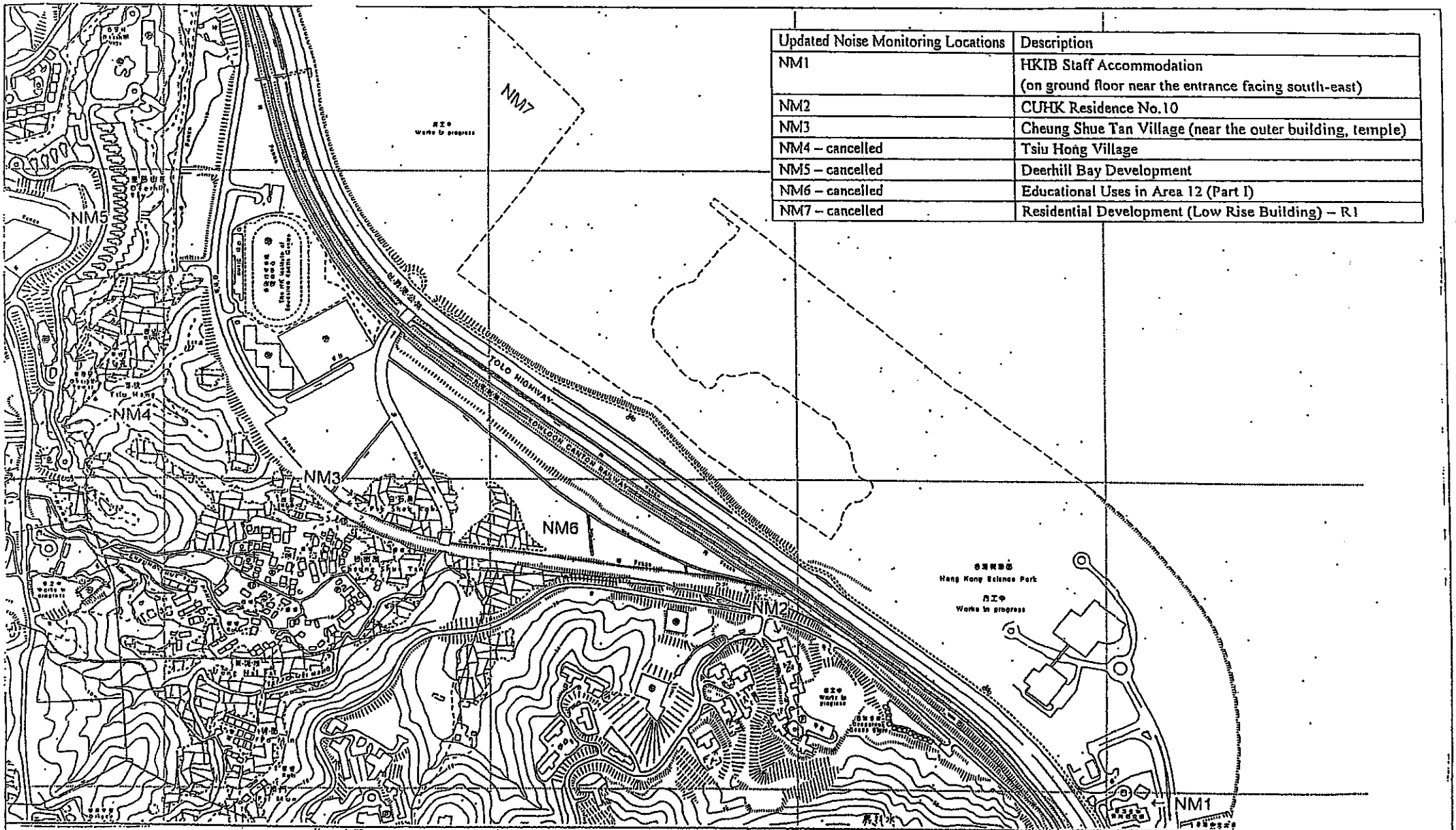
Test results relate only to the items received.
Information provided by the customer *(it is not a test result, information for reference only).*

ENVIRO LABS LIMITED 環境化驗有限公司

— END OF REPORT —

APPROVED SIGNATORY : Kenneth Kar Kin LAM (Laboratory Manager)

Figures



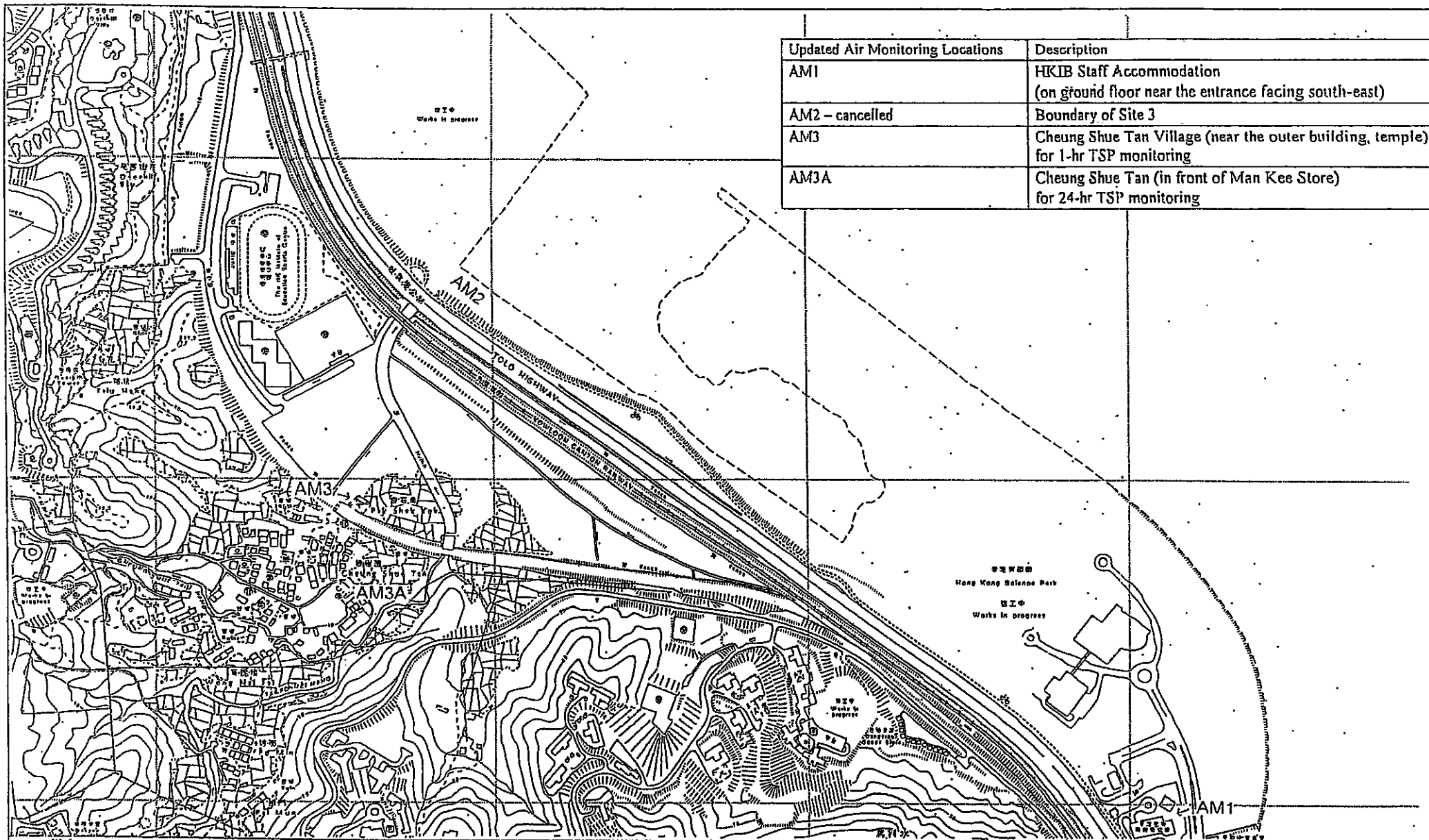
Updated Noise Monitoring Locations	Description
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, temple)
NM4 – cancelled	Tsiu Hong Village
NM5 – cancelled	Deerhill Bay Development
NM6 – cancelled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

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

Scale : ---

Revised Date:
June 2004

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



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

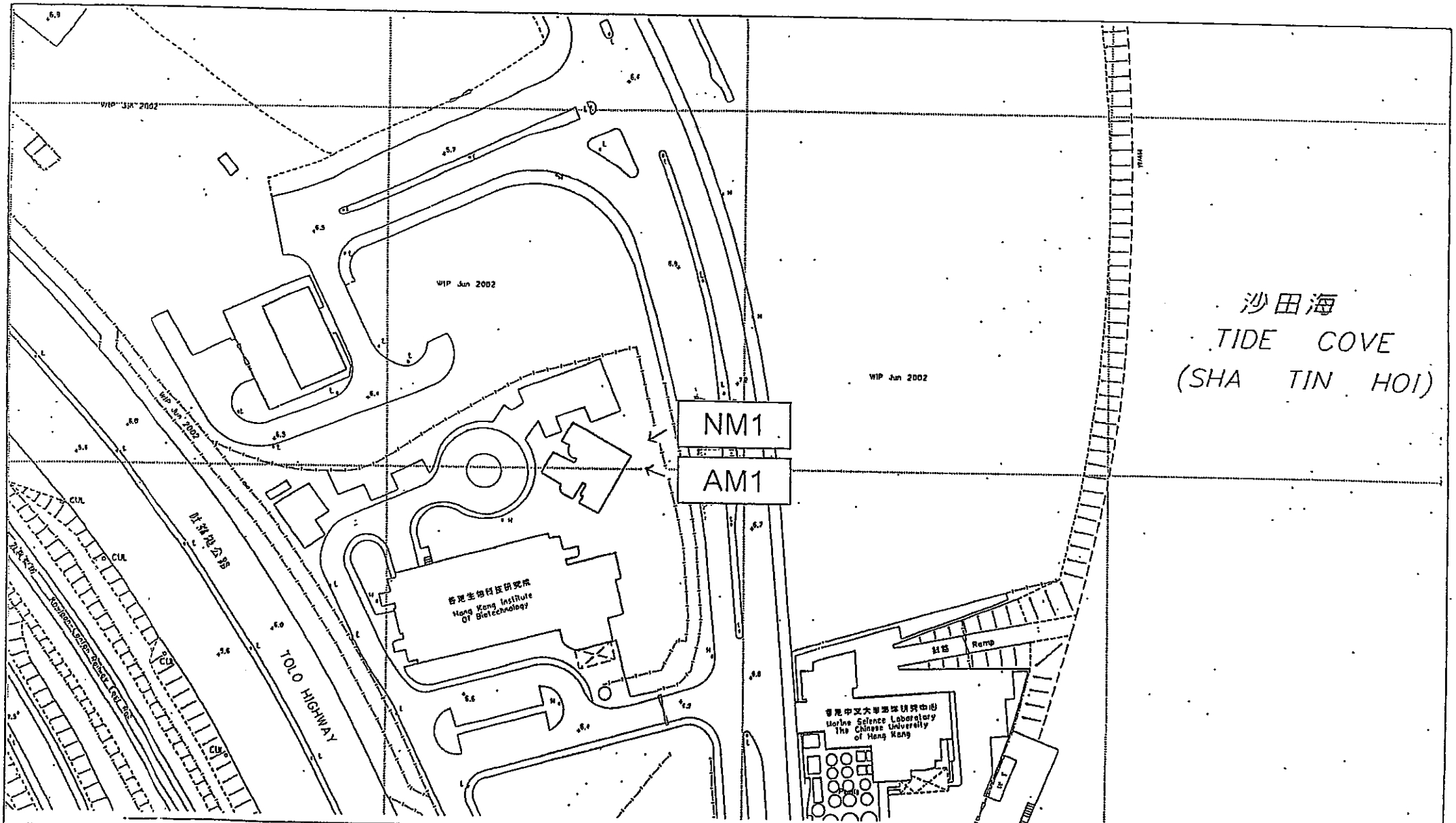
Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2 A
Contract No. TP 37/03

Figure 2 Location of Air Monitoring Stations

Scale : ---

Revised Date:
June 2004

東業德勤測試顧問有限公司
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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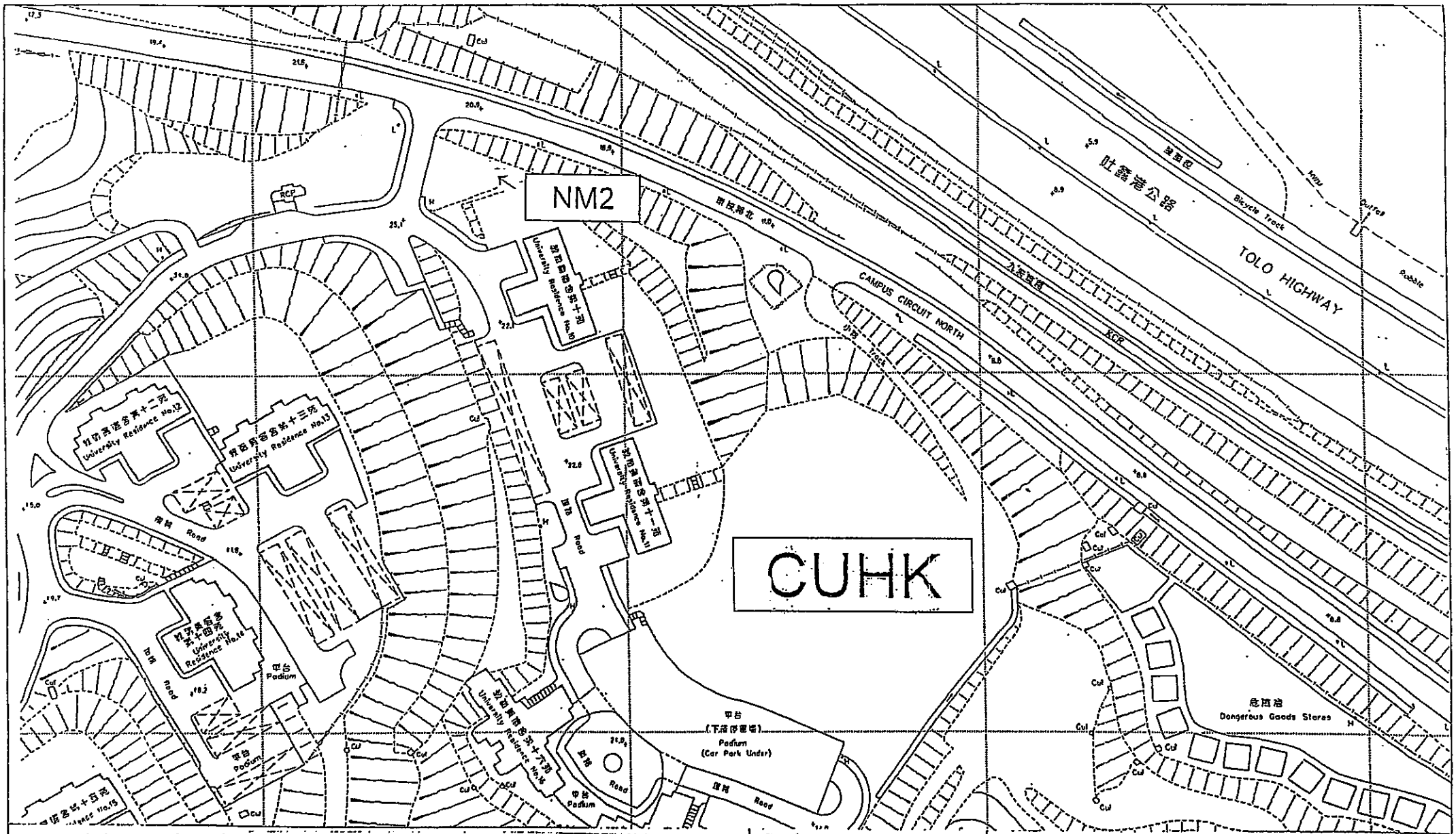
ETS-TESTCONSULT LIMITED



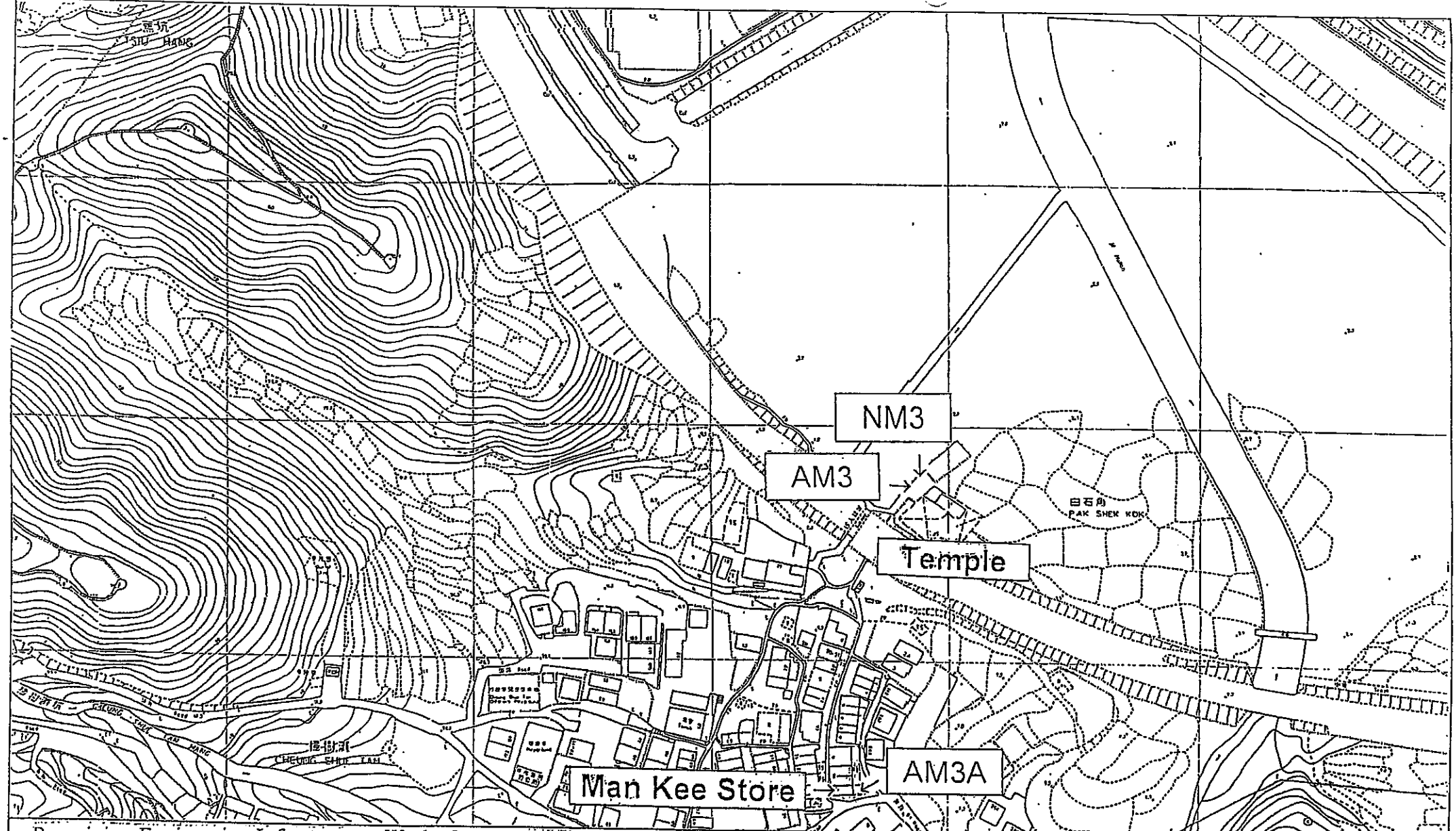
Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2A
Contract No. TP 37/03

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

Scale : ---

Revised Date:
June 2004

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

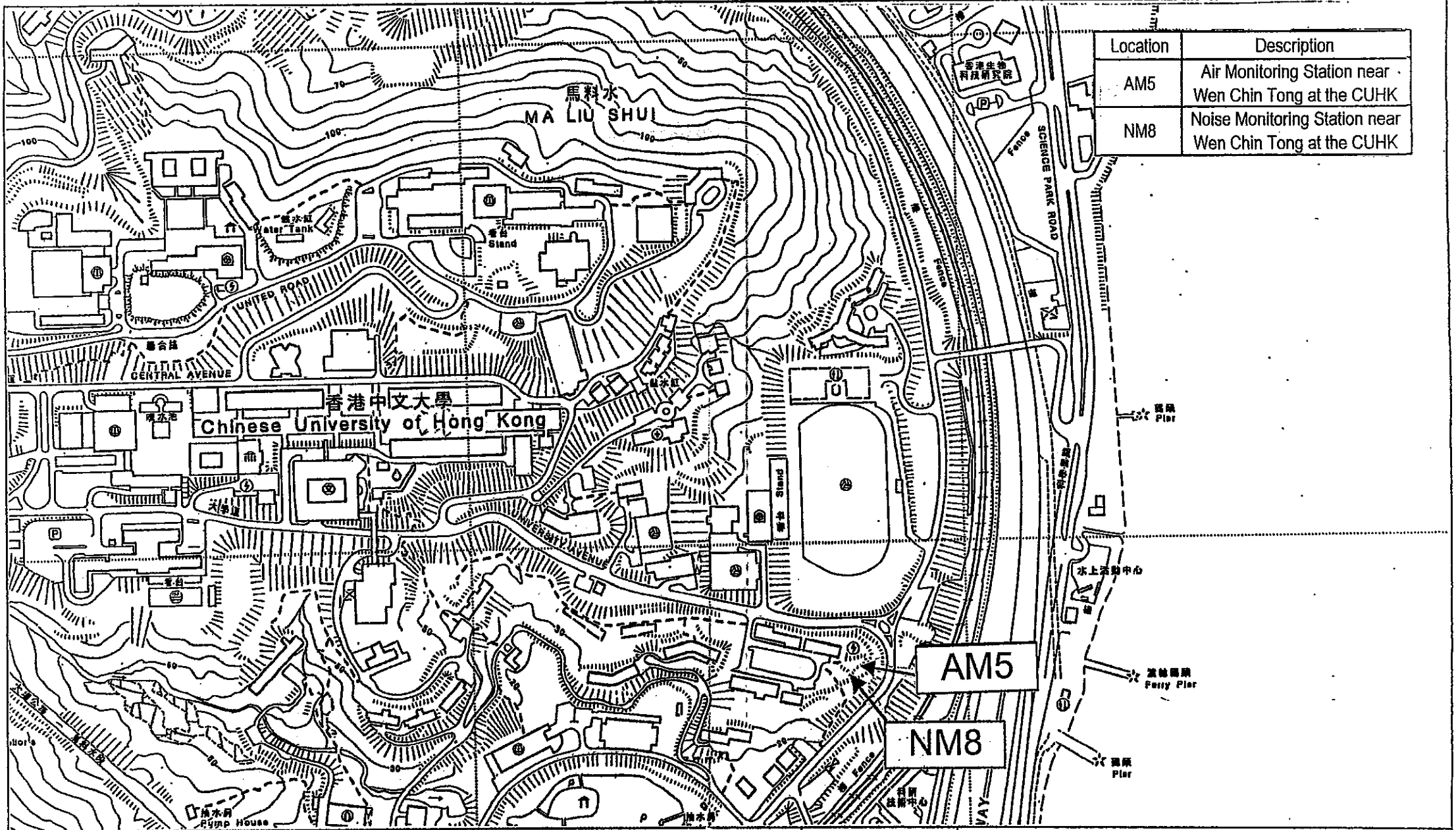


Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2 A
Contract No. TP 37/03
Figure 5 Location of Air and Noise Monitoring Stations
at Cheung Shue Tan Village

Scale : ---

Revised Date:
June 2004

東業德勤測試顧問有限公司
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

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

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

Scale : ---

Revised Date : October 2004

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ETS-TESTCONSULT LIMITED