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

PENTA-OCEAN CONSTRUCTION COMPANY LIMITED

REMAINING ENGINEERING INFRASTRUCTURE WORKS FOR PAK SHEK KOK DEVELOPMENT PACKAGE 1 (CONTRACT NO.: TP 35/02)

MONTHLY EM&A REPORT

(NOVEMBER 2004)

Prepared by: Linda Law
Linda Law
Environmental Officer

Checked by:
C. L. Lau
Environmental Team Leader

Approved by:
Tony Wong
Operations Manager

INDEPENDENT ENVIRONMENTAL CHECKER

CHECK CERTIFICATE

Verified: _____
Independent Environmental Checker

Name: Ir Coleman Ng
Senior Environmental Consultant
Hyder Consulting Limited

TABLE OF CONTENTS **Page**

APPENDIX

Figure

Tables

EXECUTIVE SUMMARY

This monthly EM&A report (No.23) 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 1 (Contract No: TP 35/02) during the reporting period from 01 to 30 November 2004.

Construction Progress

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

- *Drainage works in Zone P and Area 15*
- *Watermain installation work*
- *Roadworks for Zone P and Area 15*
- *Drainage and Watermain Works under KCRC bridge*
- *Construction of pumping station no.1 and no.2*
- *Construction of Road D1 Bridge*
- *Rectification of jogging track and cross-link fence in HKIED*
- *General landscape works*
- *Construction of footpath and cycle track along area 7A and area 15*

Environmental Monitoring Progress

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

- *Noise Monitoring (Day-time): 5 Occasions at 3 designated locations*
- *Noise Monitoring (Evening-time): 5 Occasions at 3 designated locations*
- *Noise Monitoring (Holiday): 4 Occasions at 3 designated locations*
- *24-hour TSP Monitoring: 6 Occasions at 2 designated locations*
- *1-hour TSP Monitoring: 13 Occasions at 2 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 TSP and 1-hr TSP monitoring in the reporting month.

Site Inspection

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

Concerned Parties	*Dates of Audit / Inspection*
ET (weekly site inspection)	*06, 13, 20, 27*
IEC/POC/ET (Monthly site inspection)	*25*

No observations were raised during 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 before discharge;
- Maintain good site practice and waste management to minimize environmental impacts at the site;
- Follow-up improvements on waste management issues.

1.0 INTRODUCTION

Penta-Ocean Construction Co., Ltd. (POC) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit for Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Contract No.: TP 35/02).

Under the requirements of 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 form 01 to 30 November 2004.

2.0 PROJECT INFORMATION

2.1 Background

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Contract No.: TP 35/02) was planned and designed by the Civil Engineering and Development Department (CEDD).

As the main Contractor of the captioned project: contracted by, POC 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 (from September to November 2004) 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	*Employer*	*Mr. H W Lau*	*2158 5629*	---
Hyder	*Engineer*	*Mr. Herman Fong*	*2911 2233*	*2827 2891*
Hyder	*Independent Environmental Checker*	*Ir. Coleman Ng*	*2911 2233*	*2827 2891*
POC	*Contractor*	*Mr. Roger Lau*	*9870 6390*	*2691 6012*
ETL	*Contractor's Environmental Team*	*Mr C L Lau (Environmental Team Leader)*	*2946 7792*	*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

Location	*Major Construction Activity*
Zone P and Area 15	*Drainage work*
Zone P and Area 15	*Roadworks*
KCRC Bridge	*Drainage and Watermain Works*
Road D1	*Construction of Road Works*
No.1 & No.2	*Construction of pump stations*
HKIED	*Rectification of jogging track and cross-link fence*
Area 7A and area 15	*Construction of footpath and cycle track*
---	*Watermain installation work*
---	*General landscape works*

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 unpaved area;* • *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;* • *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;* • *Keep good waste management.*

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.*

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 certificate for the HVS and portable dust meter are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	*Model and Make*
HVS Sampler	*Greasby GMWS2310*
Calibrator	*G25 A*
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

Two designated air quality monitoring locations – Cheung Shue Tan Village and HKIB Staff Accommodation were selected. Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Air quality 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*

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

Table 4.4 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	*Location*	*Monitoring Period*						
		24-hr TSP				*1-hr TSP*		
		Start		*Finish*		*Date*	*Start*	*Finish*
		Date	*Time*	*Date*	*Time*			
AM1	*HKIB Staff Accommodation*	---				02/11/04	17:10	18:10
						04/11/04	08:10	09:10
						06/11/04	13:32	14:32
						09/11/04	09:07	10:07
						11/11/04	08:10	09:10
						13/11/04	16:15	17:15
						16/11/04	08:32	09:32
						18/11/04	15:00	16:00
						20/11/04	14:00	15:00
						23/11/04	13:38	14:38
						25/11/04	14:25	15:25
						27/11/04	13:50	14:50
						30/11/04	08:47	09:47
AM3	*Cheung Shue Tan Village (near the outer building, temple)*	---				02/11/04	15:40	16:40
						04/11/04	15:06	16:06
						06/11/04	15:48	16:48
						09/11/04	15:13	16:13
						11/11/04	09:23	10:23
						13/11/04	16:35	17:35
						16/11/04	10:35	11:35
						18/11/04	16:12	17:12
						20/11/04	15:15	16:15
						23/11/04	15:40	16:40
						25/11/04	15:40	16:40
						27/11/04	15:02	16:02
						30/11/04	10:42	11:42
AM1	*HKIB Staff Accommodation*	01/11/04	08:55	02/11/04	08:49	---		
		06/11/04	13:35	07/11/04	13:37			
		12/11/04	09:22	13/11/04	09:22			
		18/11/04	09:20	19/11/04	09:13			
		24/11/04	14:15	25/11/04	13:40			
		30/11/04	08:45	01/12/04	08:53			
AM3A	*Cheung Shue Tan (in front of Man Kee Store)*	01/11/04	09:10	02/11/04	09:26	---		
		06/11/04	15:55	07/11/04	16:18			
		12/11/04	09:05	13/11/04	09:30			
		18/11/04	11:15	19/11/04	11:36			
		24/11/04	14:30	25/11/04	13:55			
		30/11/04	10:40	01/12/04	10:56			

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 0.6m³/min and 1.7m³/min.) in accordance withthe manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.

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 (μg/m³)*		*1-hr TSP (μg/m³)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
AM1	*164 **	*260 **	*325 **	*500 **
AM3	---	---	*306*	*500*
AM3A	*183*	*260*	---	---

* = 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

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.*

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-14 Sound Level Meter*
Calibrator	*Quest QC-20 Acoustic 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 accordance with the EM&A Manual, there are three noise monitoring locations: HKIB Staff Accommodation, Cheung Shue Tan Village and CUHK Residence No.10. 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)*

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

Noise monitoring stations	*Monitoring Period*							
	Day-time		*Evening-time*		*Holiday*		*Night-time*	
NM1	02/11/04	17:15	02/11/04	21:05	07/11/04	09:45	---	---
	09/11/04	09:10	09/11/04	19:00	14/11/04	13:35	---	---
	16/11/04	08:35	16/11/04	19:00	21/11/04	13:00	---	---
	23/11/04	13:40	23/11/04	19:10	28/11/04	09:45	---	---
	30/11/04	08:49	30/11/04	20:32	---	---	---	---
NM2	02/11/04	16:22	02/11/04	21:40	07/11/04	10:10	---	---
	09/11/04	10:28	09/11/04	19:28	14/11/04	14:10	---	---
	16/11/04	09:46	16/11/04	19:25	21/11/04	13:35	---	---
	23/11/04	14:52	23/11/04	19:45	28/11/04	10:10	---	---
	30/11/04	09:57	30/11/04	20:58		---	---	---

Noise monitoring stations	*Monitoring Period*							
	Day-time		*Evening-time*		*Holiday*		*Night-time*	
NM3	02/11/04	15:42	02/11/04	22:15	07/11/04	10:40	---	---
	09/11/04	15:15	09/11/04	19:55	14/11/04	14:38	---	---
	16/11/04	10:36	16/11/04	19:55	21/11/04	14:17	---	---
	23/11/04	15:42	23/11/04	20:20	28/11/04	10:40	---	---
	30/11/04	10:44	30/11/04	21:25	---	---	---	---

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

Day-time, Evening-time and Holiday noise monitoring were carried out at monitoring stations, NM1, NM2 and NM3 in this reporting month. No night-time 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 are shown in Appendix C3.

No day-time, evening-time and holiday 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, evening-time and holiday noise monitoring.

During the restricted hours, ET found that the PMEs used complied with the requirements stated in the valid CNP and no PMEs other than ones specified in the CNP to be used in the construction site.

6.0 WASTEWATER MONITORING

6.1 According to the Discharge of Industrial Trade Effluent Licence (Licence No.: 2946), POC is required to carry out wastewater monitoring of suspended solids quarterly at all effluent discharge points within the site.

6.2 POC appointed ET of ETL to sampling the wastewater samples at the effluent discharge points. The collected sample will be transport to the Environmental Laboratory of ETL for suspended solids content analysis. The Environmental Laboratory of ETL is HOKLAS accredited and the test method used for suspended solids analysis is also HOKLAS accredited in accordance with the 2540D of Standard Methods for the Examination of Water and Wastewater (APHA 19th edition).

6.3 Under the Discharge of Industrial Trade Effluent Licence (Licence No.: 2946), the discharge limit of Suspended Solids content of the effluent at this site should be 30mg/L. It means that the suspended solids of wastewater discharged should be less than 30mg/L or otherwise no wastewater can be discharged under this Licence.

6.4 Wastewater monitoring was carried out by ET at 09 September 2004 at discharge point PS1. During this monitoring, one wastewater sample was collected from the effluent discharge point and transport to ETL immediately for analysis. The result of suspended solids content of the wastewater sample was found below 30mg/L and within the discharge limit of the Discharge Licence. The test report for this monitoring was attached in Appendix J.

6.5 Since the effluent discharge licence required to carry out wastewater monitoring of suspended solids quarterly at all effluent discharge points within the site, the next wastewater monitoring should be at December 2004.

7.0 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of air quality, noise and wastewater 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, evening-time and holiday noise levels recorded at all monitoring stations exceeded the Action and Limit Level in the reporting month.

The suspended solids results of wastewater samples from discharge points were found within the discharge limit during monitoring period.

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 were no notification of summons respect to environmental issues registered in this month. Cumulative log of Notification of Summons and Prosecution is tabulated in Table 7.1.

Table 7.1 Cumulative Log of Notification of Summons and Prosecution

Date	*Detail of Notice of Summons or Prosecution*	*Action Taken*	*Environmental Outcome*
16 Oct 2002	*The site main haul road was neither paved with any one of concrete, bituminous materials, hard core or metal plates, nor had the entire road surface maintained wet by the spraying of water or dust suppression chemical.*	• *POC paved the site main haul road with concrete and bituminous materials;* • *The road surface was wet by the spraying of water regularly by POC.*	*It was observed that the problem of dust emission from the site main haul road has been improved. No further complaint or ticket was received during the reporting month.*
11 July 2003	*Three stockpiles of dusty material namely aggregate, were wither covered entirely by impervious sheeting, nor place in an area sheltered on top and three sites, nor sprayed with water or dust suppression chemical so as to maintain entire surface wet.*	*The stockpiles of aggregates / excavated materials were covered with tarpaulin sheet / sprayed with water in order to avoid the dust emission.*	*No further complaints were received during the reporting month.*

8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET. Four site inspections were undertaken in this reporting month (06, 13, 20 and 27 November 2004). Monthly joint site inspection at 25 November 2004 was carried out by Engineer's Representative, IEC, POC and ET. A summary of the implementation status of the mitigation measures on site inspections is presented in Appendix H.

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

No site inspection findings were recorded in this reporting month.

8.2 Status of Environmental Licensing and Permitting

All permits/licenses valid in November 2004 are summarized in Table 8.2.

Table 8.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-108/2001	05/11/02	---	Whole work site
Construction Noise Permit (General / Prescribed construction works)	GW-RN0440-04	15/0904	10/02/05	Group A (For Area B2 or E) • 1 Poker, vibratory, hand-held (CNP 170) • 1 Concrete pump, lorry mounted (CNP 047) • 2 Concrete lorry mixer (CNP 044) Group B (For Area B2 or E) • 1 Poker, vibratory, hand-held (CNP 170) • 2 Concrete lorry mixer (CNP 044) • 1 Crane, mobile (diesel) (CNP 048) Group C (For Area B2 or E): • 2 Generator, silenced, 75dB(A) at 7m (CNP 102) • 1 Excavator, tracked (CNP 081) • 1 Lorry, with crane Group D (For Area B2 or E): • 1 Drill rig Group E (For Area B2 or E): • 2 Generator, silenced, 75dB(A) at 7m (CNP 102) • 2 Drill/Grinder, hand-held (electric) (CNP 065) • 1 Saw, circular, wood (CNP 201) • 2 Water pump, submersible (electric) (CNP 283) • 1 Air Compressor (CNP002) • 1 Bar bender and cutter (electric) (CNP 021) Group F (For Area B, C or D): • 1 Asphalt paver (CNP 004) • 1 Roller, vibratory (CNP 186) • 1 Excavator, tracked (CNP 081) Group G (For Area F): • 1 Excavator, tracked (CNP 081)
Waste Producer	5213 729 P2800 11	03/10/02	---	Generating waste at the work site
Wastewater Discharge License	No. 2946	18/12/02	18/12/07	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank

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

Although no site inspection findings were recorded in this reporting month, some recommendations are still raised for general site practice and indicated as below:

- *All stockpiles with a volume of greater than 50m³ should be covered with clean tarpaulin sheets, watering or hydro-seeding to avoid wind and water erosion;*
- *The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading;*
- *Placing enough sand bags or other protection should be applied to prevent the slity surface runoff onto the drains system;*
- *Checking and maintaining all the site machines to prevent dust emission;*
- *Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;*
- *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. A summary of the implementation status of the mitigation measures on waste management 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*
C&D Material (Inert) (m^3)	*0*	*Nil*
C&D material (Non-inert) (m^3)	*0*	*Nil*
General Refuse (m^3)	*40*	*Disposed at NENT Landfills*
Chemical Waste (L)	*0*	*Nil*

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

POC has been implementing the required environmental mitigation measures according to Implementation of Mitigation Measures (clause 4.2, 5.2 and 6.2) in Environmental Management Plan for Contract No. TP 35/02 Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Revision 2). A summary of the implementation status of the mitigation measures is presented in Appendix H.

Air Quality

The Contractor was reminded to water, hydro-seed 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.

Noise

All mitigation measures stated in Appendix I 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 (e.g. sedimentation trap and U-channels), and remove the sand/rubbish accumulated in the drain / channel regularly.

Waste Management

POC 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, evening-time and holiday noise levels were recorded at all monitoring stations exceeded the Action and Limit Level in this reporting month. No night-time noise monitoring were required since no construction works were processed during the night-time period.

During the restricted hours, ET found that the PMEs used complied with the requirements stated in the valid CNP and no PMEs other than ones specified in the CNP to be used in the site.

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

12.0 FUTURE KEY ISSUES

12.1 Upcoming EM&A Schedule in coming two months

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

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

Type of Monitoring	*December 2004*	*January 2005*
Noise Monitoring (Day-time)	*07, 14, 21, 28*	*04, 11, 18, 25*
Noise Monitoring (Evening-time)	*07, 14, 21, 28*	*04, 11, 18, 25*
Noise Monitoring (Holiday)	*05, 12, 19, 26*	*02, 09, 16, 23, 30*
1-hour TSP	*02, 04, 07, 09, 11, 14, 16, 18, 21, 23, 24, 28, 30*	*04, 06, 08, 11, 13, 15, 18, 20, 22, 25, 27, 29*
24-hour TSP	*06, 11, 17, 23, 29*	*04, 10, 15, 21, 27*
Site Inspection	*04, 11, 18, 24, 31*	*08, 15, 22, 29*

12.2 Upcoming construction works schedule in the coming month

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

Table 12.2 – Construction Plan in the coming month

Month	*Works Planned to be Carried Out*
Between December 2004 and January 2005	▪ *Drainageworks in Zone P and Area 15*
	▪ *Watermain installation works*
	▪ *Roadworks at Zone P and Area 15*
	▪ *Drainage and Watermain under KCRC bridge*
	▪ *Construction of Road D1 Bridge*
	▪ *Construction of pumping station no.1 and no.2*
	▪ *Rectification of jogging track and cross-link fence in HKIED*
	▪ *General landscape works*
	▪ *Construction of footpath and cycle track along area 7A and area 15*

Appendix A

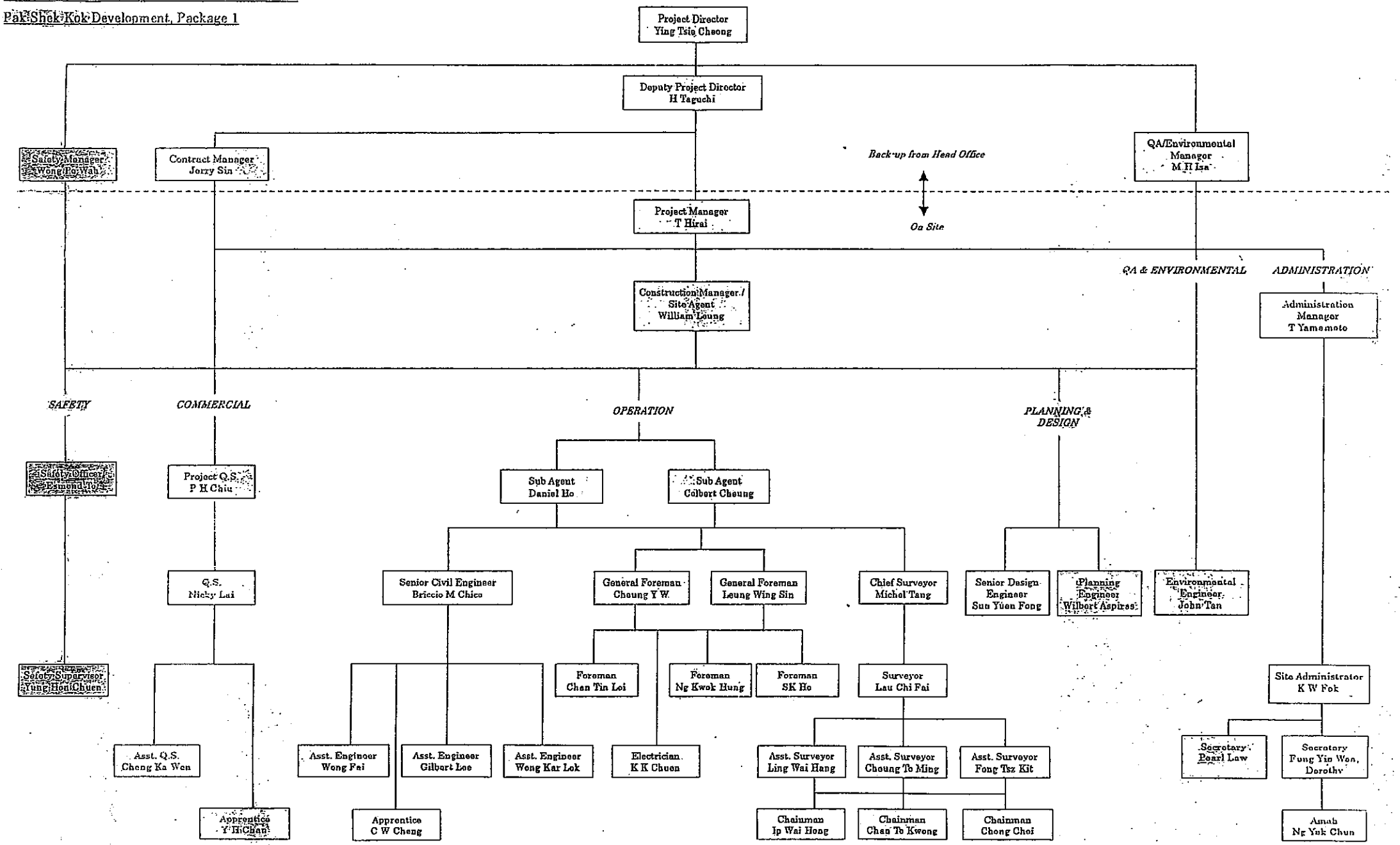
Organization Chart and Lines of Communication

Contract No. TP 35/02
Remaining Engineering Infrastructure Works for
Pak Shek Kok Development, Package 1

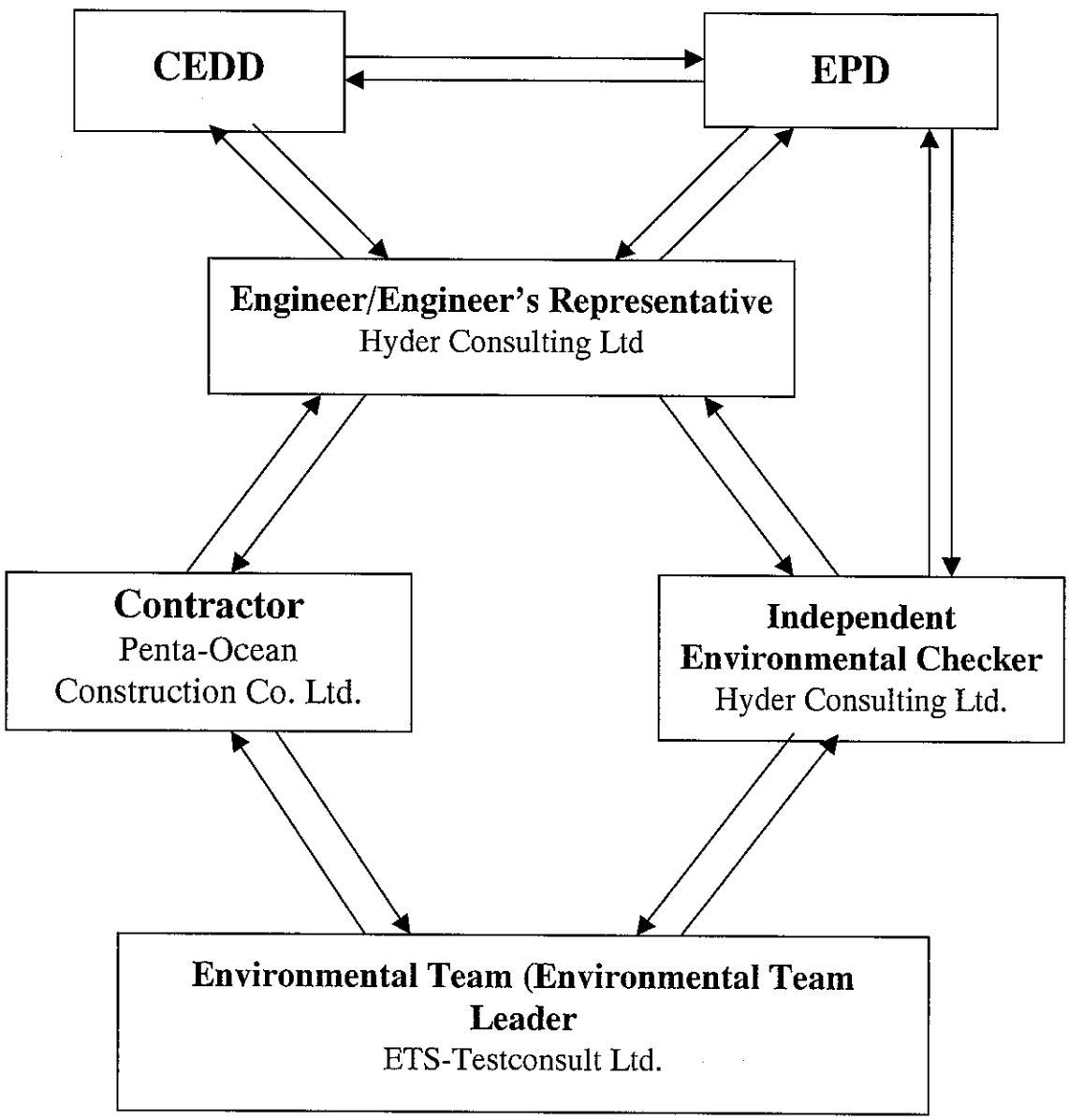
Project Site Organization Chart

Rev. K

Date : 03-Aug-04



Lines of Communication



Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments

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

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Greasby GMW

Date of Calibration : 16 September 2004

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

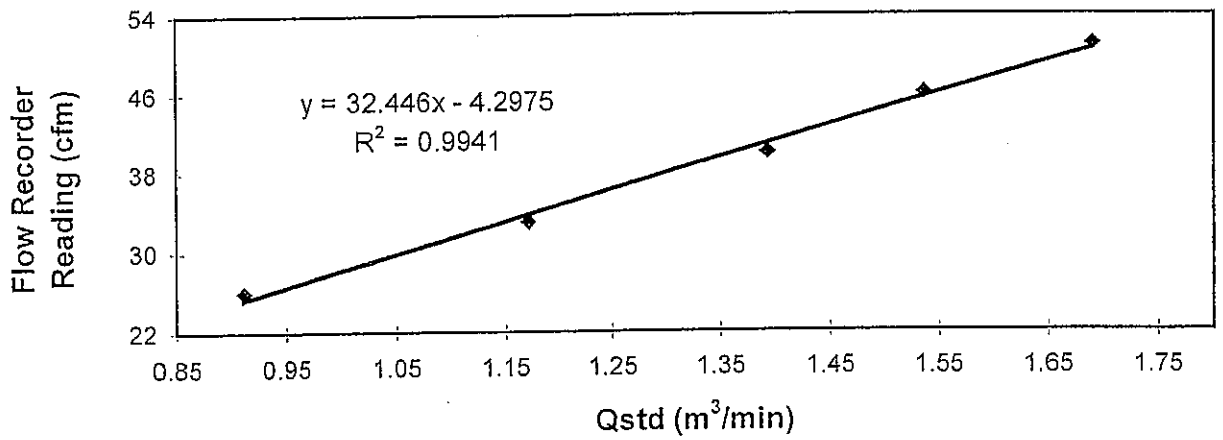
Calibration Due Date : 15 November 2004

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

Results :

Flow recorder reading (cfm)	51	46	40	33	26
Qstd (Actual flow rate, m^3/min)	1.69	1.54	1.39	1.17	0.91
Pressure : 759.06 mm Hg		Temp. : 301 K			

Sampler1178 Calibration Curve
Site: Pak Shek Kok Monitoring Station AM1 (24hr.)
Date of Calibration: 16 September 2004



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)

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

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Greasby GMW

Date of Calibration : 18 November 2004

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

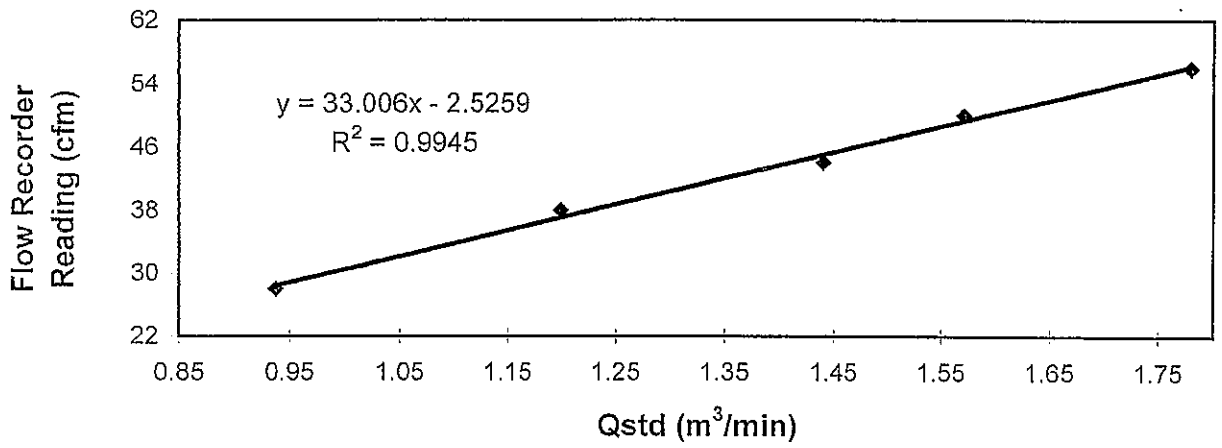
Calibration Due Date : 17 January 2005

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

Results :

Flow recorder reading (cfm)	56	50	44	38	28
Qstd (Actual flow rate, m^3/min)	1.78	1.57	1.44	1.20	0.94
Pressure : 765.44 mm Hg		Temp. : 295 K			

Sampler1178 Calibration Curve
Site: Pak Shek Kok Monitoring Station AM1 (24hr.)
Date of Calibration: 18 November 2004



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

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

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

Approved by : Linda Law
(Environmental Officer)

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

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Greasby GMW

Date of Calibration : 16 September 2004

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

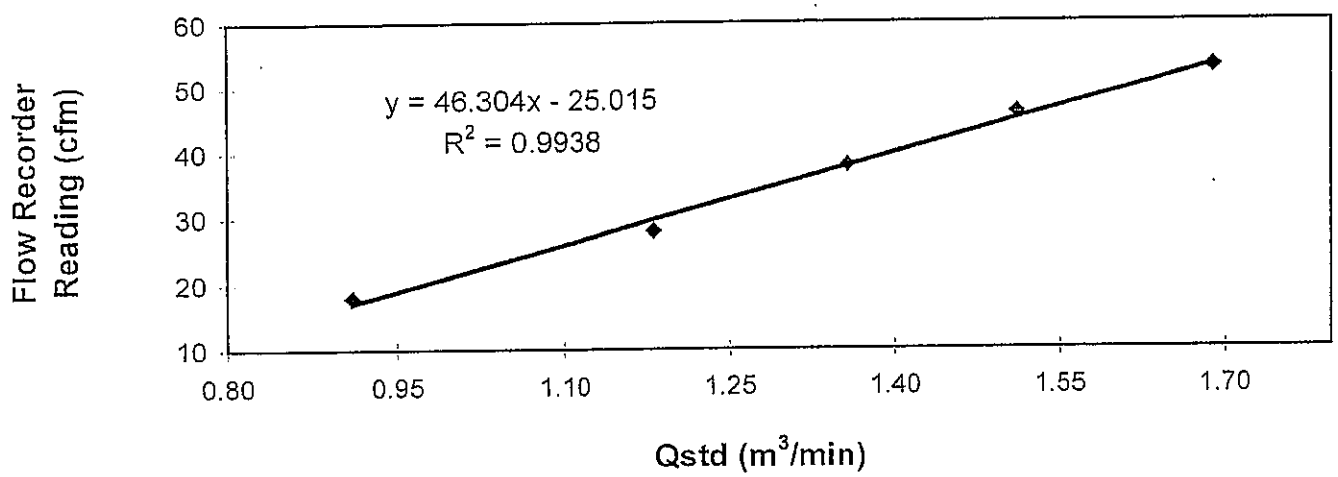
Calibration Due Date : 15 November 2004

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

Results :

Flow recorder reading (cfm)	52	46	38	28	18
Qstd (Actual flow rate, m^3/min)	1.69	1.51	1.38	1.18	0.91
Pressure : 759.06 mm Hg		Temp. : 301 K			

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM3A)
Date of Calibration: 16 September 2004



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 deeme acceptable */ ~~unacceptable~~ * for use.

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

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

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

TEST REPORT

Calibration Report of High Volume Air Sampler

Manufacturer : Greasby GMW

Date of Calibration : 18 November 2004

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

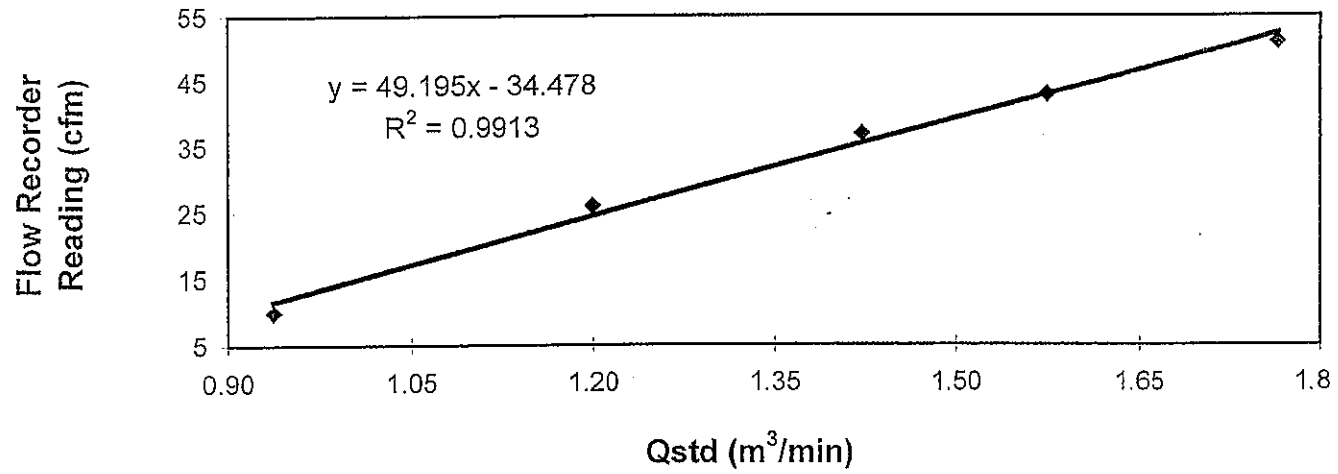
Calibration Due Date : 17 January 2005

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

Results :

Flow recorder reading (cfm)	51	43	37	26	10
Qstd (Actual flow rate, m^3/min)	1.76	1.57	1.42	1.20	0.94
Pressure : 765.44 mm Hg		Temp. : 295 K			

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM3A)
Date of Calibration: 18 November 2004



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 deeme acceptable */ ~~unacceptable~~ * for use.

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

Approved by : Linda Law
Linda Law
(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		
01/11/04	08:55	02/11/04	08:49	6878.90	6902.80	23.90	1.12	1.12	1.12	2.8754	3.0644	118	Cloudy
06/11/04	13:35	07/11/04	13:37	6927.07	6951.10	24.03	1.24	1.24	1.24	2.9567	3.1079	85	Sunny
12/11/04	09:22	13/11/04	09:22	6975.21	6999.21	24.00	1.18	1.18	1.18	2.9379	3.0665	76	Sunny
18/11/04	09:20	19/11/04	09:13	7023.32	7047.20	23.88	1.11	1.11	1.11	2.9540	3.1445	120	Sunny
24/11/04	14:15	25/11/04	13:40	7071.14	7094.56	23:42	1.11	1.11	1.11	2.9097	3.0731	105	Cloudy
30/11/04	08:45	01/12/04	08:53	7142.58	7166.72	24.14	1.05	1.05	1.05	2.9051	3.0352	86	Sunny

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		
01/11/04	09:10	02/11/04	09:26	12217.70	12241.97	24.27	1.14	1.14	1.14	2.8618	2.9467	51	Cloudy
06/11/04	15:55	07/11/04	16:18	12266.39	12290.78	24.39	1.17	1.17	1.17	2.9624	3.1134	88	Sunny
12/11/04	09:05	13/11/04	09:30	12315.09	12339.51	24.42	1.14	1.14	1.14	2.9490	3.0632	68	Sunny
18/11/04	11:15	19/11/04	11:36	12364.10	12388.45	24.35	1.21	1.21	1.21	2.9418	3.0976	88	Sunny
24/11/04	14:30	25/11/04	13:55	12412.53	12436.11	23.58	1.19	1.19	1.19	2.8447	3.0635	71	Cloudy
30/11/04	10:40	01/12/04	10:56	12484.52	12508.79	24.27	1.15	1.15	1.15	2.9188	3.0441	75	Sunny

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1
Location : HKIB Staff Accommodation

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/11/04	17:10	18:10	54	396	117	Cloudy
04/11/04	08:10	09:10	70	467	130	Sunny
06/11/04	13:32	14:32	39	453	105	Sunny
09/11/04	09:07	10:07	47	342	112	Cloudy
11/11/04	08:10	09:10	52	525	125	Sunny
13/11/04	16:15	17:15	87	390	149	Cloudy
16/11/04	08:32	09:32	46	398	103	Cloudy
18/11/04	15:00	16:00	46	501	119	Sunny
20/11/04	14:00	15:00	44	474	121	Sunny
23/11/04	13:38	14:38	66	422	133	Cloudy
25/11/04	14:25	15:25	57	488	123	Sunny
27/11/04	13:50	14:50	47	404	110	Cloudy
30/11/04	08:47	09:47	104	325	187	Sunny

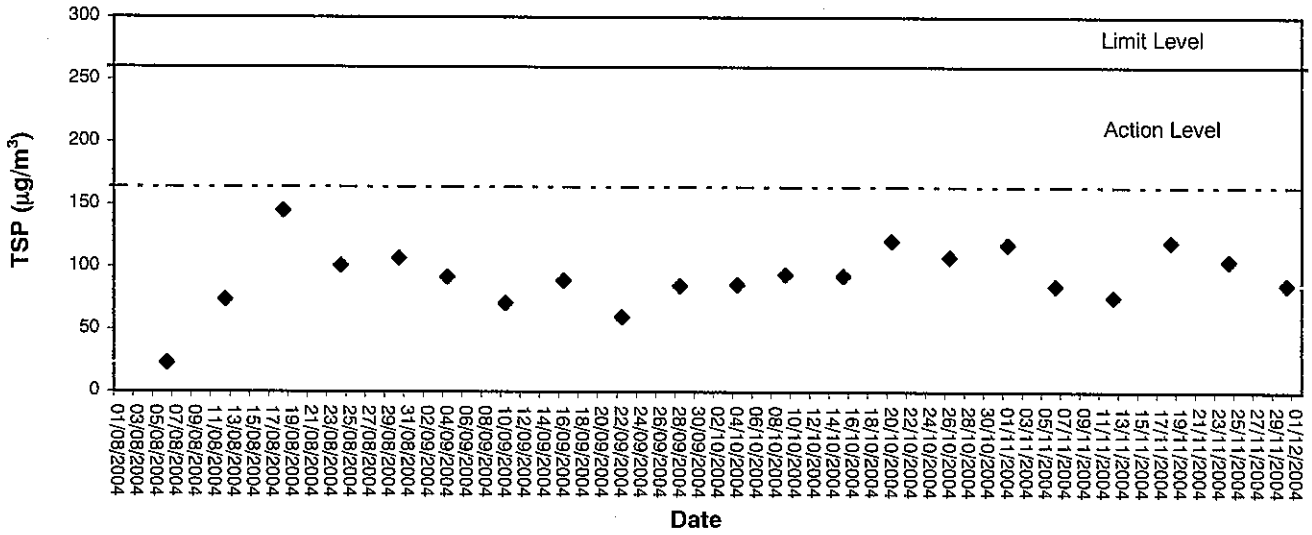
Monitoring Station : AM3
Location : Cheung Shue Tan Village (near the outer building, a temple)

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/11/04	15:40	16:40	45	334	102	Cloudy
04/11/04	15:06	16:06	49	343	107	Sunny
06/11/04	15:48	16:48	27	279	74	Sunny
09/11/04	15:13	16:13	31	295	72	Cloudy
11/11/04	09:23	10:23	39	382	103	Sunny
13/11/04	16:35	17:35	73	276	153	Cloudy
16/11/04	10:35	11:35	27	264	75	Cloudy
18/11/04	16:12	17:12	29	270	80	Sunny
20/11/04	15:15	16:15	35	328	77	Sunny
23/11/04	15:40	16:40	57	369	107	Cloudy
25/11/04	15:40	16:40	48	425	130	Sunny
27/11/04	15:02	16:02	30	287	79	Cloudy
30/11/04	10:42	11:42	74	298	159	Sunny

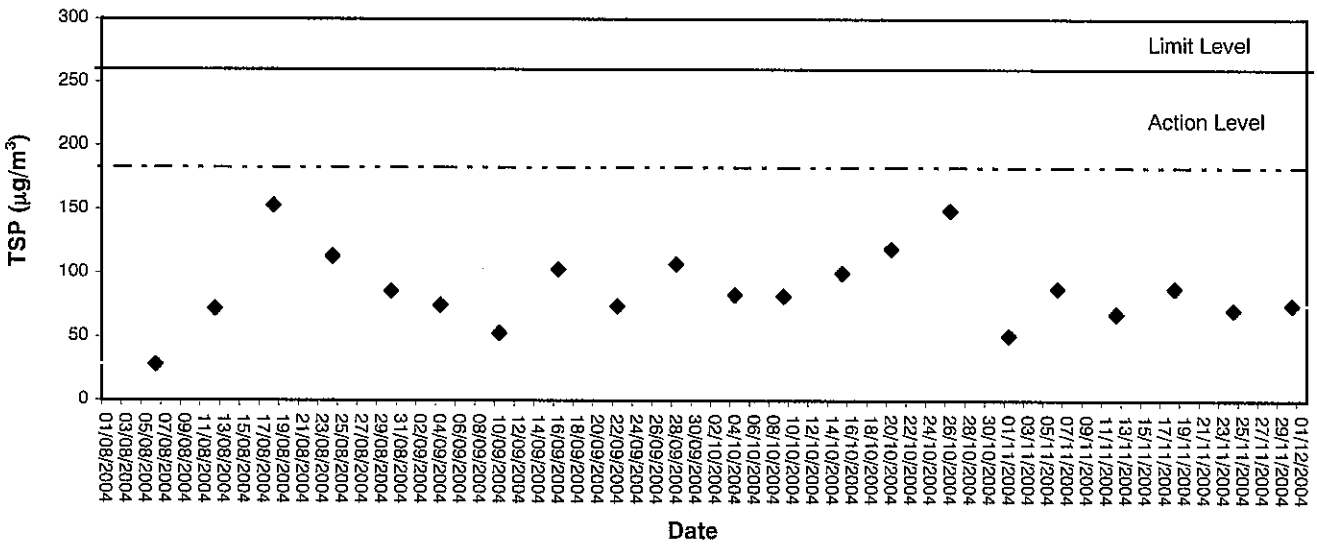
Appendix B3

Graphical Plots of Air Quality Monitoring Data

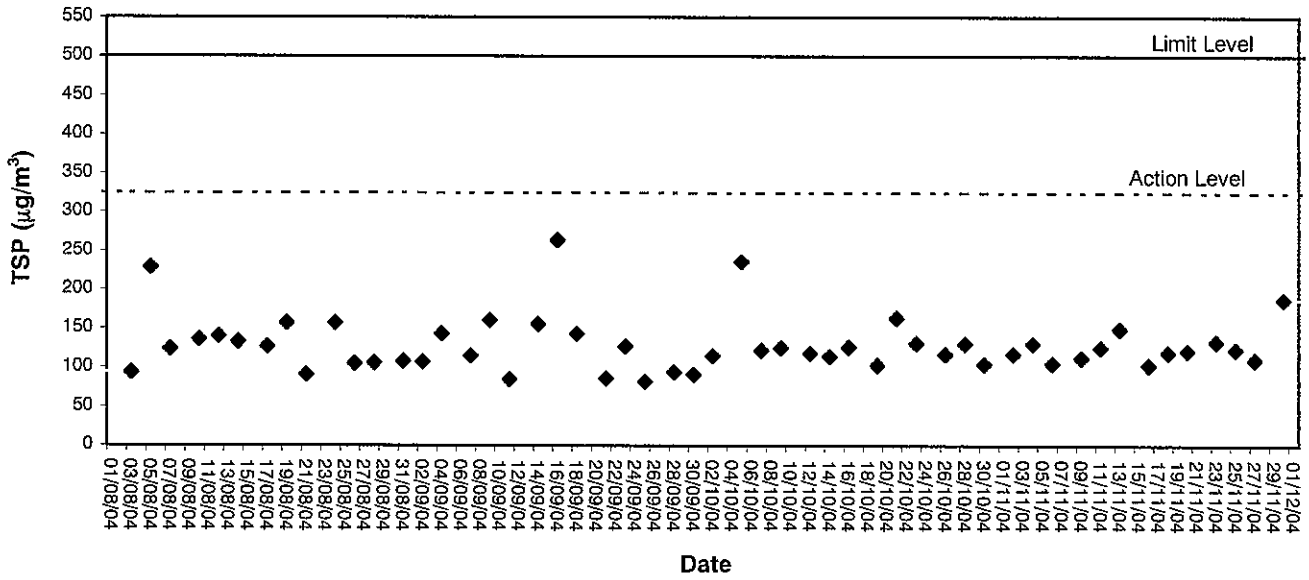
24-hour TSP level at AM1 (HKIB Staff Accommodation)



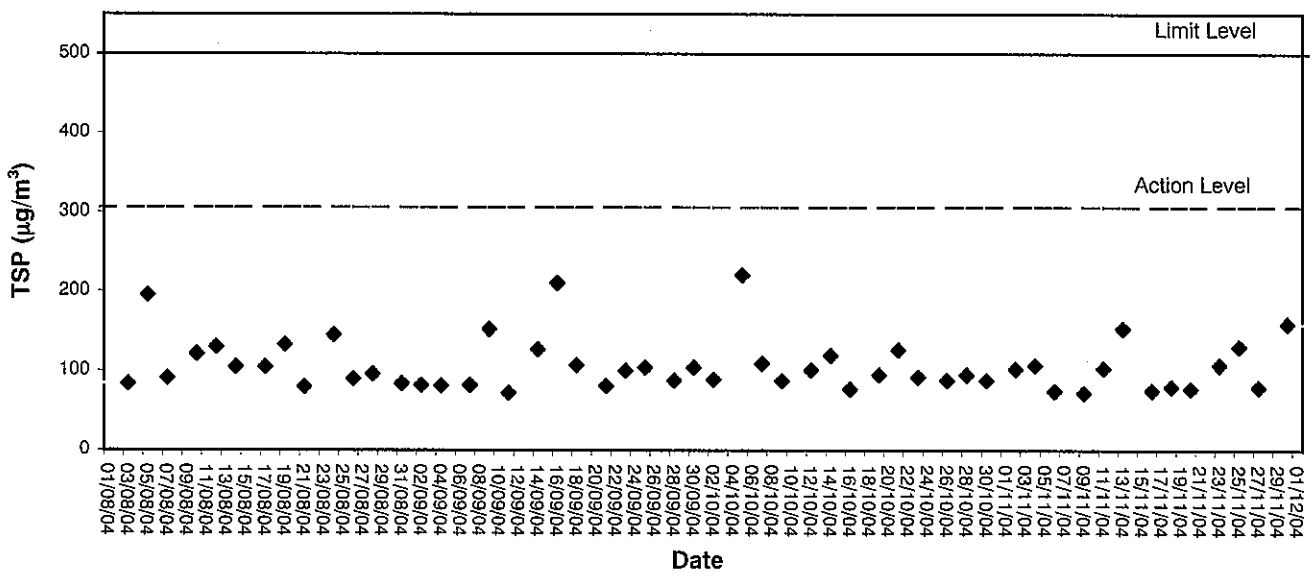
24-hour TSP level at AM3A (Cheung Shue Tan in front of Man Kee Store)



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)



Appendix C1

Calibration Certificates for Noise Monitoring Equipments

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

Calibration Certificate

Certificate No. 41649

Customer : ETS-Testconsult Limited

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

Order No. : Q40536 **Date of receipt :** 6-Apr-04

Item Tested

Description : Sound Level Calibrator (ET/0527/002)

Manufacturer : Rion

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

Test Conditions

Date of Test : 16-Apr-04 **Supply Voltage :** --

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

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

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

Test equipment used:

Equipment No.	Cert. No.	Due Date	Traceable to
S014	30961	1-Jun-04	PRC-NIM
S024	Z02050078	29-May-04	PRC-NIM
S041	35075	2-Dec-04	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 liab for any loss or damage resulting from the use of the equipment.

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

Calibrated by : _____

Approved by : _____
Alan Chu - Manager

Date: 16-Apr-04

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 8601 Fax: 2425 8646

Calibration Certificate

Results :

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

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	- 0.8 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. **Frequency Accuracy**

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.986 kHz	± 2 %

Uncertainty : ± 0.1 %

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

4. **Total Harmonic Distortion** : < 0.2 %
   Mfr's Spec. : < 3 %
   Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 995 hPa
4. The above measured values are the mean of 3 measurement.

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

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

Calibration Certificate

Certificate No. 41648 Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

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

Order No. : Q40536 **Date of receipt :** 6-Apr-04

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

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

Test Conditions

Date of Test : 16-Apr-04 **Supply Voltage :** --

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

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : Z01.

Test Results

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

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

Test equipment used:

Equipment No.	Cert. No.	Due Date	Traceable to
S017	S30857	8-Apr-05	PRC-NIM
S024	Z02050078	29-May-04	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 liabl for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to national standards/International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : _____

Approved by : _____

Alan Chu - Manager

Date: 16-Apr-04

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

Calibration Certificate

Results :

1. SPL Accuracy

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

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

2. **Level Stability** : 0.0 dB
IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.01 dB

Calibration Certificate

3. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.5	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.3	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.3	+ 1.2 dB, ± 1 dB
5 kHz	+ 1.1	+ 1.0 dB ,± 1 dB
8 kHz	- 1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

4. Time Averaging

Applied Burst duty Factor	UUT Reading (dB)	Correction (dB)	IEC 804 Type 1 Spec.
continuous	36.9	--	--
1/10	36.7	+ 0.2	± 0.5 dB
$1/10^2$	36.7	+ 0.2	
$1/10^3$	36.7	+ 0.2	± 1.0 dB
$1/10^4$	36.7	+ 0.2	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. True Value = UUT Reading + Correction.
3. The uncertainty claimed is for a confidence probability of not less than 95%.
4. Atmospheric Pressure : 995 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}(30)	L10	L90		
02/11/04	17:15	60.6	65.0	55.1	1.6	Cloudy
09/11/04	09:10	59.7	62.5	56.3	0.7	Cloudy
16/11/04	08:35	58.5	61.5	53.3	2.1	Cloudy
23/11/04	13:40	58.1	61.8	54.5	1.3	Cloudy
30/11/04	08:49	58.1	60.1	56.3	0.6	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}(30)	L10	L90		
02/11/04	16:22	69.8	73.3	62.8	0.9	Cloudy
09/11/04	10:28	70.9	74.4	63.9	1.4	Cloudy
16/11/04	09:46	58.6	61.3	56.1	1.8	Cloudy
23/11/04	14:52	67.9	72.6	63.0	1.5	Cloudy
30/11/04	09:57	56.1	58.4	52.2	0.5	Sunny

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}(30)	L10	L90		
02/11/04	15:42	49.4	51.4	45.0	1.9	Cloudy
09/11/04	15:15	47.5	49.6	44.2	1.1	Cloudy
16/11/04	10:36	54.9	57.4	46.5	1.8	Cloudy
23/11/04	15:42	49.3	52.5	47.6	2.0	Cloudy
30/11/04	10:44	53.9	56.2	49.0	0.4	Sunny

Evening-time Noise Monitoring

Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
02/11/04	21:05	57.1	56.7	56.3	58.4	57.9	57.8	51.7	52.0	51.3	1.2	Cloudy
09/11/04	19:00	56.7	56.4	57.1	60.2	59.8	60.8	53.8	53.7	54.3	1.3	Cloudy
16/11/04	19:00	57.2	57.0	56.8	59.4	58.9	58.5	54.6	54.2	54.0	0.7	Fine
23/11/04	19:10	57.9	58.6	59.2	59.1	60.2	61.1	54.9	55.3	55.7	1.0	Cloudy
30/11/04	20:32	55.9	56.3	56.0	57.8	59.2	58.9	52.4	54.0	54.6	2.1	Cloudy

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
02/11/04	21:40	56.5	57.2	56.8	57.9	58.6	58.0	50.9	51.1	50.4	1.3	Cloudy
09/11/04	19:28	55.4	55.0	54.8	58.2	57.6	57.3	52.6	52.2	51.9	0.7	Cloudy
16/11/04	19:25	54.2	54.3	54.5	56.8	56.9	57.0	49.9	49.9	50.1	0.5	Fine
23/11/04	19:45	56.7	55.9	58.0	57.9	57.3	59.6	53.1	52.6	53.0	0.9	Cloudy
30/11/04	20:58	56.3	55.8	54.9	59.2	58.6	58.2	53.1	52.7	52.2	1.1	Cloudy

Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
02/11/04	22:15	49.6	48.7	49.9	51.7	52.6	52.2	46.3	45.7	46.0	1.0	Cloudy
09/11/04	19:55	48.3	47.7	48.7	50.0	49.6	50.4	44.9	44.2	45.3	1.0	Cloudy
16/11/04	19:55	52.3	52.7	52.5	54.8	55.0	54.9	48.0	48.4	48.2	0.5	Fine
23/11/04	20:20	55.6	54.1	53.6	56.7	55.9	54.8	50.1	49.6	48.8	0.6	Cloudy
30/11/04	21:25	48.5	49.2	48.8	51.2	52.1	51.6	45.6	46.0	46.3	0.9	Cloudy

Holiday Noise Monitoring

Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
07/11/04	09:45	57.2	57.4	58.0	59.3	59.5	60.4	52.8	52.6	53.3	0.7	Cloudy
14/11/04	13:35	53.9	54.7	54.2	56.6	57.9	57.4	50.8	52.0	51.5	1.3	Cloudy
21/11/04	13:00	59.1	58.6	59.8	61.1	60.1	61.9	56.1	55.9	56.4	1.2	Sunny
28/11/04	09:45	57.9	58.1	57.8	59.8	60.2	59.6	54.2	54.7	53.9	0.6	Cloudy

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
07/11/04	10:10	54.7	54.6	54.3	56.7	56.5	56.1	50.3	50.1	49.7	0.5	Cloudy
14/11/04	14:10	52.4	52.1	52.8	54.6	54.0	55.1	50.6	50.2	51.0	1.7	Cloudy
21/11/04	13:35	57.6	58.1	56.4	59.2	59.9	57.8	53.9	54.1	54.6	1.2	Sunny
28/11/04	10:10	54.1	54.3	54.0	56.4	56.7	56.2	49.8	49.9	48.6	0.3	Cloudy

Monitoring Location: NM3 (Cheung Shue Tan Village)

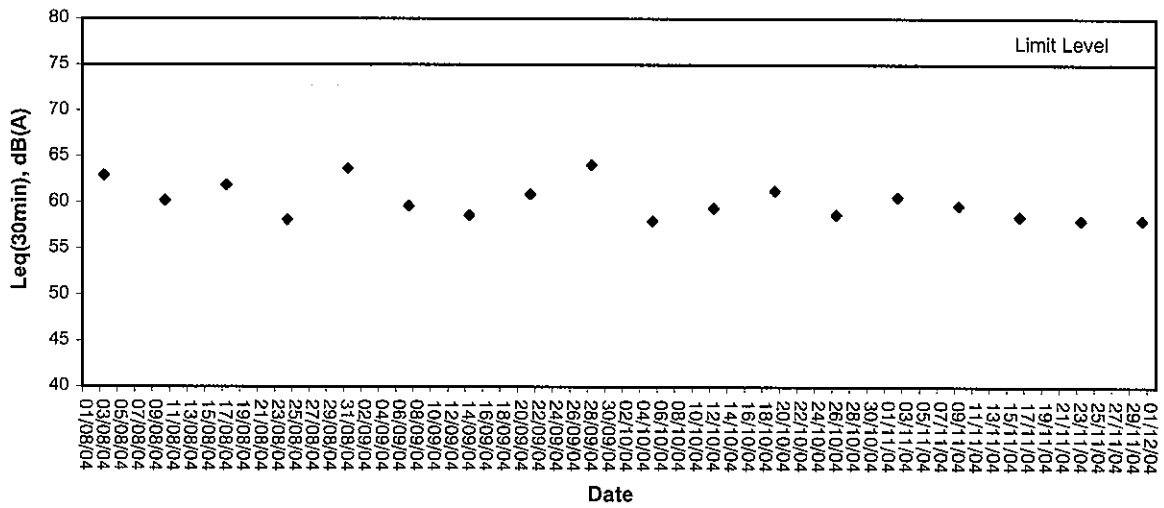
Date	Start Sampling Time	Noise Level dB (A)									Wind Speed (m/s)	Weather Condition
		$L_{eq}(5)$			L10			L90				
07/11/04	10:40	53.2	53.5	53.8	55.7	55.9	56.1	48.9	49.0	49.2	0.4	Cloudy
14/11/04	14:38	49.8	49.3	49.0	52.0	51.4	51.1	47.6	47.2	46.8	0.8	Cloudy
21/11/04	14:17	56.1	55.7	56.6	57.7	57.1	58.2	1.9	52.0	51.7	1.0	Sunny
28/11/04	10:40	52.7	53.0	53.1	54.8	55.1	55.3	47.4	47.6	48.0	0.4	Cloudy

Appendix C3

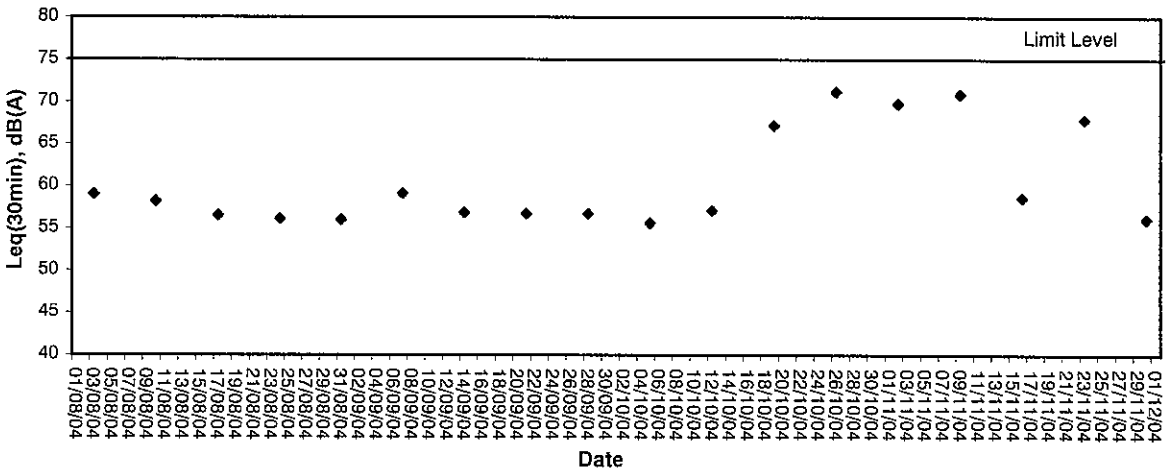
Graphical Plots of Noise Monitoring Data

Noise Monitoring (Day-time)

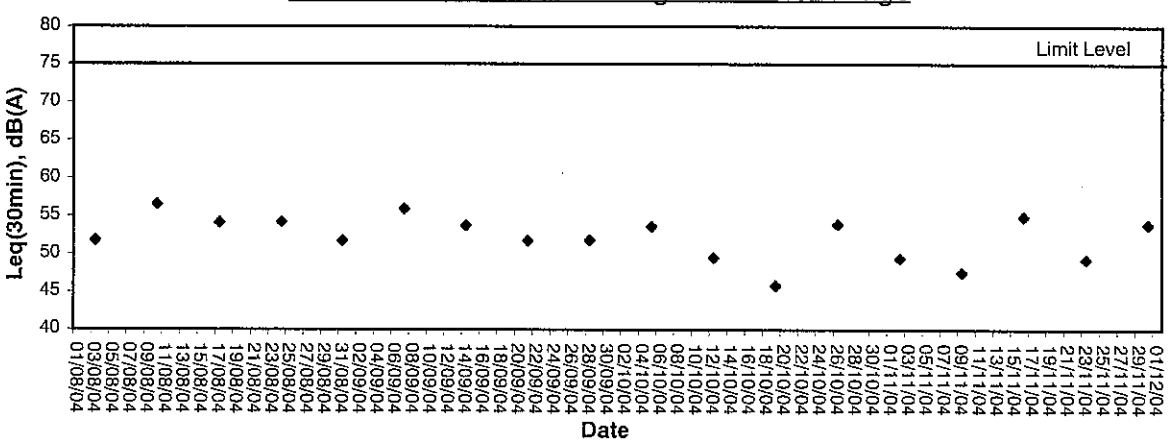
Noise level at NM1, HKIB Staff Accommodation



Noise level at NM2, CUHK Residence No.10

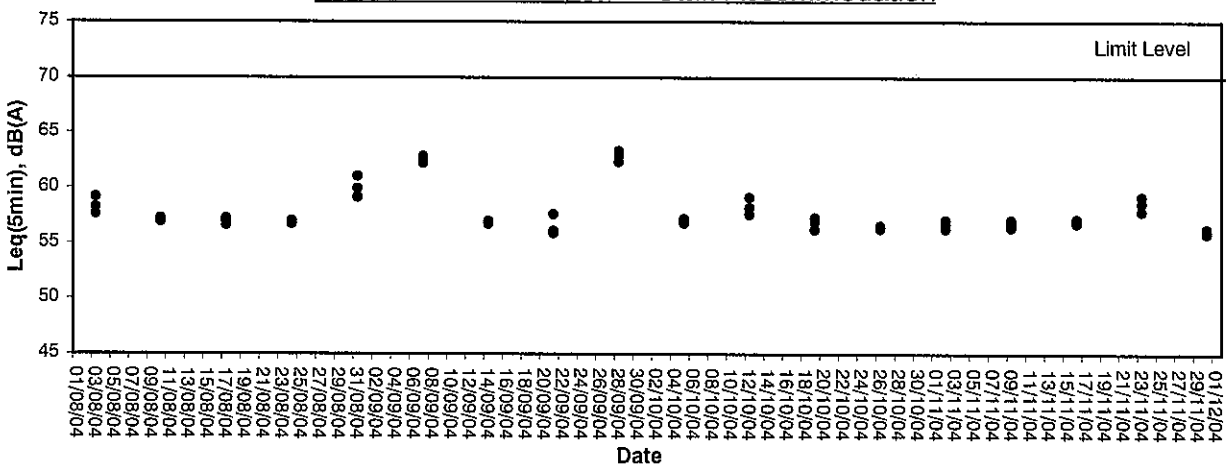


Noise level at NM3, Cheung Shue Tan Village

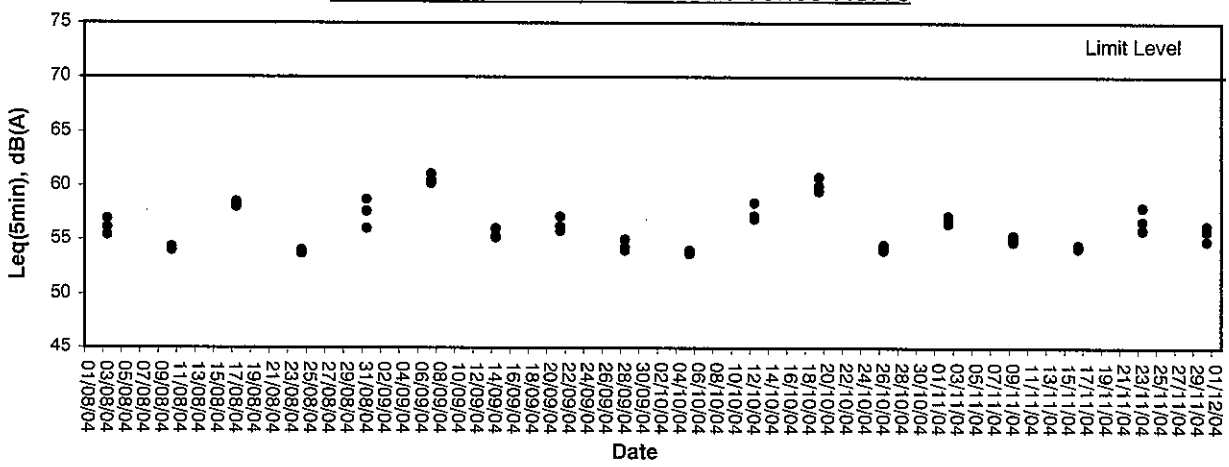


Noise Monitoring (Evening-time)

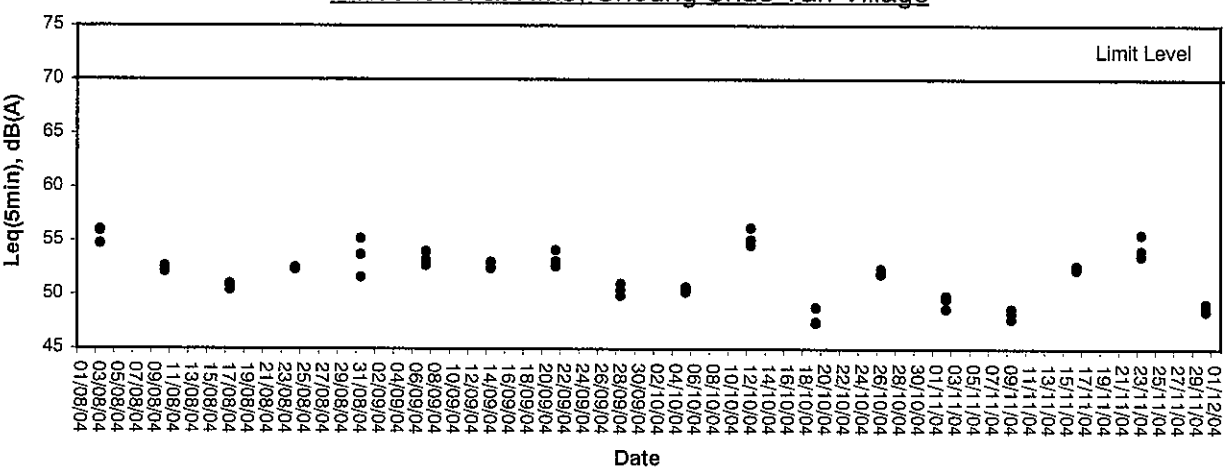
Noise level at NM1, HKIB Staff Accommodation



Noise level at NM2, CUHK Residence No.10

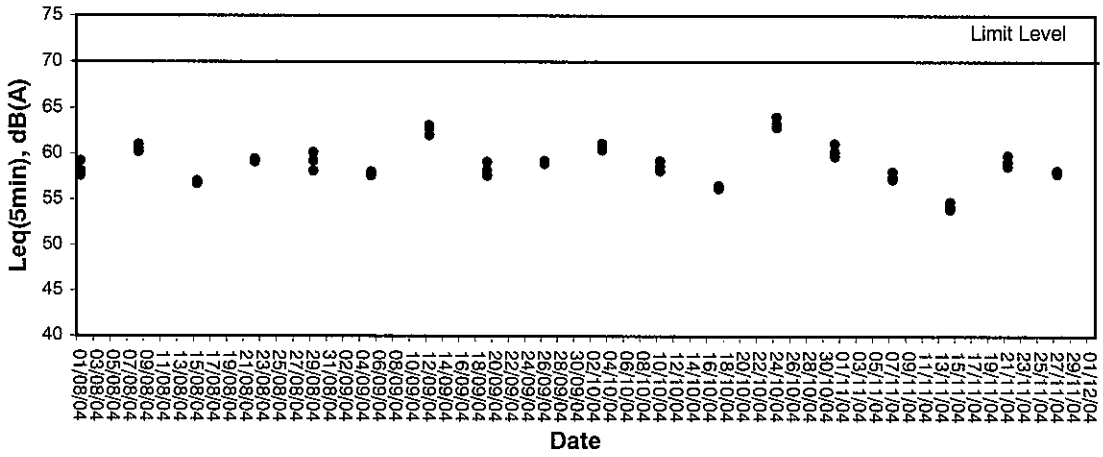


Noise level at NM3, Cheung Shue Tan Village

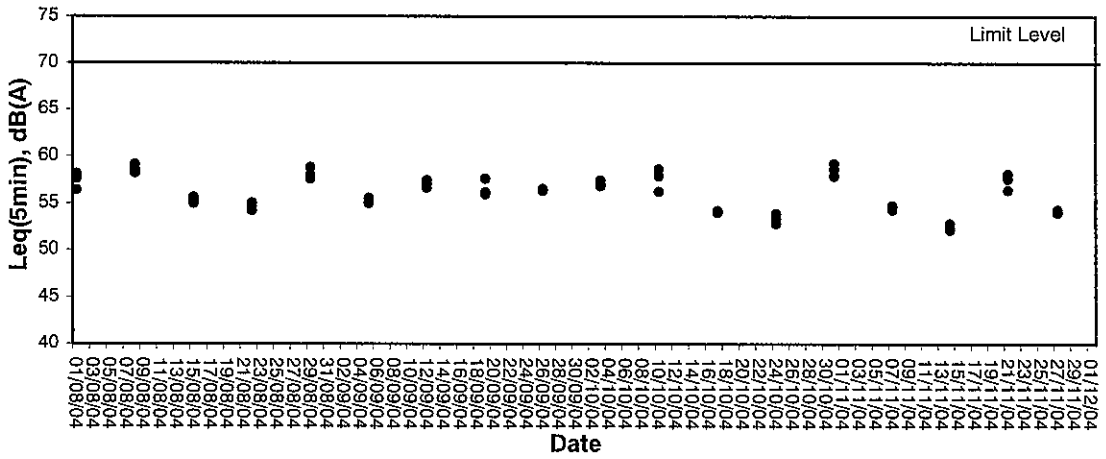


Noise Monitoring (Holiday)

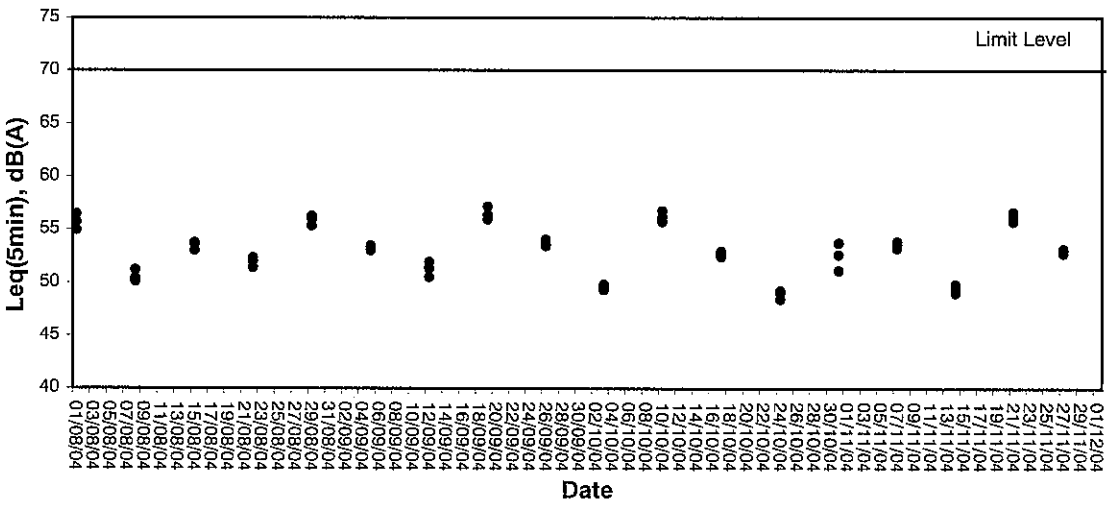
Noise level at NM1, HKIB Staff Accommodation



Noise level at NM2, CUHK Residence No.10



Noise level at NM3, Cheung Shue Tan Village



Appendix D

Weather Condition

Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/11/04	-	27.1	22.6	77	NE	<5
02/11/04	-	26.1	22.2	71	N	<5
03/11/04	-	25.1	22.9	76	SE	<5
04/11/04	-	24.5	22.1	73	NE	<5
05/11/04	-	25.0	22.3	79	N	<5
06/11/04	-	25.4	22.1	77	N	<5
07/11/04	Trace	25.1	22.8	77	E	<5
08/11/04	-	25.1	22.7	78	N	<5
09/11/04	Trace	25.3	23.5	84	SE	<5
10/11/04	Trace	27.0	24.0	87	S	<5
11/11/04	Trace	27.2	24.5	85	NE	<5
12/11/04	Trace	27.5	24.2	80	N	<5
13/11/04	Trace	25.3	23.7	80	E	<5
14/11/04	-	27.2	23.5	82	NE	<5
15/11/04	-	24.5	20.1	73	NE	<5
16/11/04	-	21.7	18.5	70	NE	<5
17/11/04	-	23.9	18.9	65	NE	<5
18/11/04	-	23.0	18.2	48	N	<5
19/11/04	-	22.7	18.3	51	N	<5
20/11/04	-	22.3	18.5	68	N	<5
21/11/04	-	22.6	18.9	70	N	<5
22/11/04	-	23.9	19.4	69	NE	<5
23/11/04	Trace	23.2	20.5	74	N	<5
24/11/04	0.4	24.6	21.3	80	E	<5
25/11/04	-	26.0	21.9	77	N	<5
26/11/04	-	23.9	19.2	66	NE	<5
27/11/04	-	21.1	17.8	65	E	<5
28/11/04	-	22.9	18.4	66	SE	<5
29/11/04	-	23.8	19.3	73	NE	<5
30/11/04	-	22.9	19.5	71	N	<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.

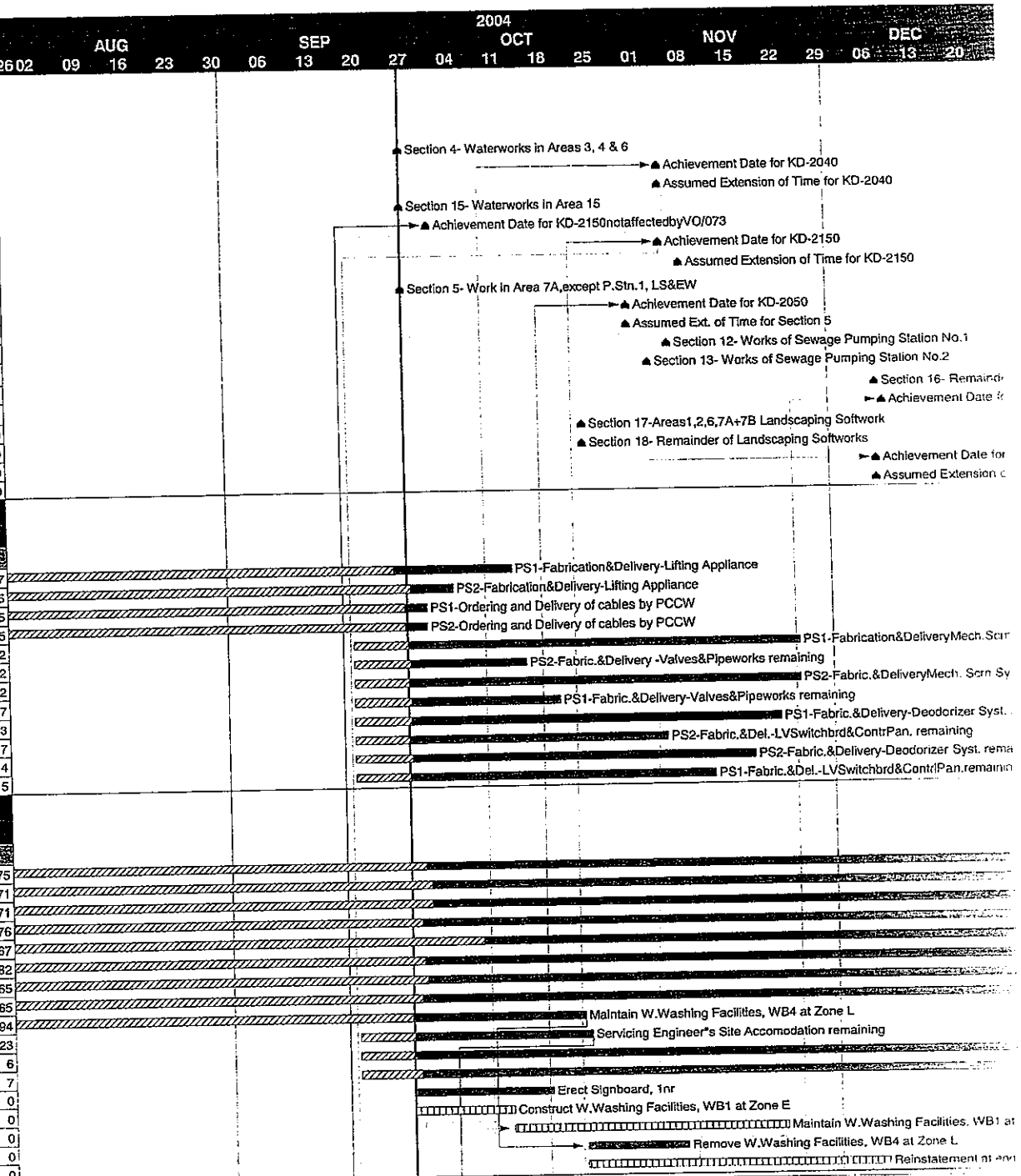
Event / Action Plan for Construction Noise

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

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
Completion Dates					
KD-2040	Section 4- Waterworks in Areas 3, 4 & 6	0		27SEP04 *	0
KD-2040A	Achievement Date for KD-2040	0		05NOV04	0
KD-2040B	Assumed Extension of Time for KD-2040	0		05NOV04 *	0
KD-2150	Section 15- Waterworks in Area 15	0		27SEP04 *	0
KD-2150B10	Achievement Date for KD-2150notaffectedbyVO/073	0		01OCT04	0
KD-2150A	Achievement Date for KD-2150	0		05NOV04	0
KD-2150B	Assumed Extension of Time for KD-2150	0		08NOV04 *	0
KD-2050	Section 5- Work in Area 7A,except P.Stn.1, LS&EW	0		27SEP04 *	0
KD-2050A	Achievement Date for KD-2050	0		31OCT04	0
KD-2050B	Assumed Ext. of Time for Section 5	0		31OCT04 *	0
KD-2120	Section 12- Works of Sewage Pumping Station No.1	0		08NOV04 *	0
KD-2130	Section 13- Works of Sewage Pumping Station No.2	0		03NOV04 *	0
KD-2160	Section 16- Remainder of Works, except LS+EW	0		07DEC04 *	0
KD-2160A	Achievement Date for KD-2160	0		08DEC04	0
KD-2170	Section 17-Areas1,2,6,7A+7B Landscaping Softwork	0		24OCT04 *	0
KD-2180	Section 18- Remainder of Landscaping Softworks	0		24OCT04 *	0
KD-2180A	Achievement Date for KD-2180	0		07DEC04	0
KD-2180B	Assumed Extension of Time for KD-2180	0		07DEC04 *	0
Preliminaries & Procurement					
B0-205760	PS1-Fabrication&Delivery-Lifting Appliance	92	29MAY04 A	13OCT04	87
B0-205815	PS2-Fabrication&Delivery-Lifting Appliance	84	29MAY04 A	04OCT04	95
B0-205830	PS1-Ordering and Delivery of cables by PCCW	60	26JUL04 A	30SEP04	95
B0-205840	PS2-Ordering and Delivery of cables by PCCW	60	26JUL04 A	30SEP04	95
B0-205780	PS1-Fabrication&DeliveryMech.Scm.Syst.remaining	67	20SEP04 A	25NOV04	12
B0-205825	PS2-Fabric.&Delivery -Valves&Pipeworks remaining	27	20SEP04 A	15OCT04	32
B0-205835	PS2-Fabric.&DeliveryMech. Scm.System remaining	67	20SEP04 A	25NOV04	12
B0-205850	PS1-Fabric.&Delivery-Valves&Pipeworks remaining	32	20SEP04 A	20OCT04	27
B0-205860	PS1-Fabric.&Delivery-Deodorizer Syst. remaining	64	20SEP04 A	22NOV04	13
B0-205870	PS2-Fabric.&Del.-LVSwitchbrd&ContrPan. remaining	47	20SEP04 A	05NOV04	17
B0-205880	PS2-Fabric.&Delivery-Deodorizer Syst. remaining	60	20SEP04 A	18NOV04	14
B0-205890	PS1-Fabric.&Del.-LVSwitchbrd&ContrlPan.remaining	54	20SEP04 A	12NOV04	15
Part 1.1 Preliminaries					
B1-0103E1	Operate/ maintain Mobile Phones, 4nr	1020	03SEP02 A	09JUN05	75
B1-0107D0	Update Waste Management Plan	1080	03SEP02 A	06AUG05	71
B1-0107E0	Implement & Monitor Waste Management Plan	1080	03SEP02 A	06AUG05	71
B1-0102B0	Operate & maintain 4-wheel drive vehicle, 2 nr	1001	05SEP02 A	25MAY05	76
B1-0101G0	Maintain/remove measures for traffic flow	1140	10SEP02 A	17OCT05	67
B1-0102D0	Progress Photographs, 30nr	900	01OCT02 A	08MAR05	82
B1-0106N0	Maintain Noise Monitoring	1118	09OCT02 A	23OCT05	65
B1-0106K0	Maintain Air Monitoring	1104	16OCT02 A	18OCT05	65
B1-0103J4	Maintain W.Washing Facilities, WB4 at Zone L	424	15AUG03 A	23OCT04	94
B1-0101B10	Servicing Engineer's Site Accomodation remaining	35	20SEP04 A	24OCT04	23
B1-0101D15	ServicingContractor'sSiteAccommodation remaining	131	20SEP04 A	28JAN05	6
B1-0103E12	Operate/maintain Mobile Phones, 3nr remaining	131	20SEP04 A	27JAN05	7
B1-0103B4	Erect Signboard, 1nr	21	28SEP04	18OCT04	0
B1-0103I1	Construct W.Washing Facilities, WB1 at Zone E	15	28SEP04	12OCT04	0
B1-0103J1	Maintain W.Washing Facilities, WB1 at Zone E	41	13OCT04	22NOV04	0
B1-0103K4	Remove W.Washing Facilities, WB4 at Zone L	15	24OCT04	07NOV04	0
B1-0108Z0	Reinstatement at end of Contract	45	24OCT04	07DEC04	0

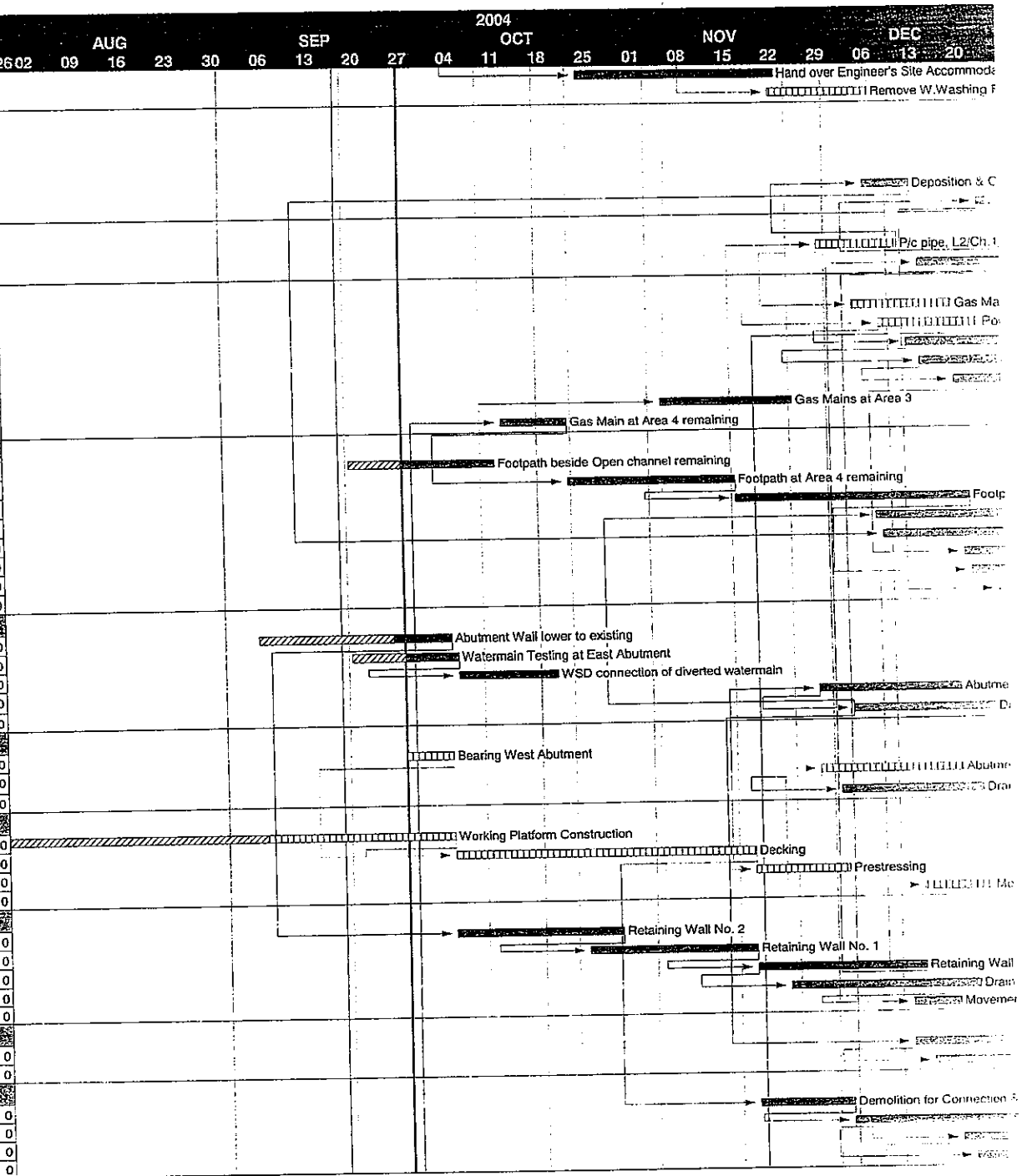


Data date	28SEP04
Page number	1A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
B1-0101C0	Hand over Engineer's Site Accommodation	30	25OCT04	23NOV04	0
B1-0103K1	Remove W.Washing Facilities, WB1 at Zone E	15	23NOV04	07DEC04	0
CONSTRUCTION					
Section 3-Works in Areas3,4+6,except Sec.4+LS&EW					
Part 3-3 Earthworks - Section 3					
B3-0308M1	Deposition & Compaction, L2/Ch.100-200	7	07DEC04	13DEC04	0
B3-0308M2	Deposition & Compaction, D1/Ch.780-920	10	24DEC04	02JAN05	0
Part 4-3 Drainage & Sewerage - Section 3					
B4-0317D31	P/c pipe, L2/Ch.100-200 Gully works	12	30NOV04	11DEC04	0
B4-0317D12	P/c pipe, D1/Ch.780-920 remaining	14	15DEC04	28DEC04	0
Section 3 - Utilities					
UT-0300G1	Gas Mains, L2/Ch.100-200	15	05DEC04	19DEC04	0
UT-0300P1	Powers(11kV), L2/Ch.100-200	15	09DEC04	23DEC04	0
UT-0300T1A	PCCW, L2/Ch.100-200	15	13DEC04	27DEC04	0
UT-0300T1B	HGC-New World, L2/Ch.100-200	15	15DEC04	29DEC04	0
UT-0300T1C	CATV, L2/Ch.100-200	7	20DEC04	26DEC04	0
UT-0300G4	Gas Mains at Area 3	20	06NOV04	25NOV04	0
UT-0300G4C	Gas Main at Area 4 remaining	10	13OCT04	22OCT04	0
Part 5-3 Roadworks - Section 3					
B5-0325C53	Footpath beside Open channel remaining	22	20SEP04 A	11OCT04	35
B5-0325C33	Footpath at Area 4 remaining	25	23OCT04	16NOV04	0
B5-0325C3	Footpath, Area 3	35	17NOV04	21DEC04	0
B5-0326A2	Cycle track & Footpath, D1/Ch.780-920	25	08DEC04	01JAN05	0
B5-0325C1	Roadworks, L2/Ch.100-200	30	09DEC04	07JAN05	0
B5-0326A1	Cycle track & Footpath, L2/Ch.100-200	25	21DEC04	14JAN05	0
B5-0325C23	Footpath at Area 6 under bridge	25	22DEC04	15JAN05	0
B5-0325C2	Roadworks, D1/Ch.780-920	12	26DEC04	06JAN05	0
Part 7-2 Substructure - East Abutment					
B7-032120	Abutment Wall lower to existing	24	06SEP04 A	04OCT04	70
B7-032130	Watermain Testing at East Abutment	15	20SEP04 A	05OCT04	50
B7-032110	WSD connection of diverted watermain	15	06OCT04	20OCT04	0
B7-032050	Abutment Wall, Rest - East Abutment	21	29NOV04	19DEC04	0
B7-032060	Drainage & Backfill - East Abutment	21	04DEC04	24DEC04	0
Part 7-3 Substructure - West Abutment					
B7-033070	Bearing West Abutment	7	28SEP04	04OCT04	0
B7-033050	Abutment Wall, Rest - West Abutment	21	29NOV04	19DEC04	0
B7-033060	Drainage & Backfill - West Abutment	21	02DEC04	22DEC04	0
Part 7-4 Superstructure					
B7-034040	Working Platform Construction	24	03JUL04 A	04OCT04	70
B7-034010	Decking	45	05OCT04	18NOV04	0
B7-034020	Prestressing	14	19NOV04	02DEC04	0
B7-034030	Movement Joint	10	14DEC04	23DEC04	0
Part 7-5 Retaining Walls					
B7-035030	Retaining Wall No. 2	25	05OCT04	29OCT04	0
B7-035020	Retaining Wall No. 1	25	25OCT04	18NOV04	0
B7-035040	Retaining Wall No. 3	25	19NOV04	13DEC04	0
B7-035050	Drainage & Backfill	28	24NOV04	21DEC04	0
B7-035060	Movement Joint	7	12DEC04	18DEC04	0
Part 7-6 Finishing Works					
B7-036030	Road & Drainage Works	25	12DEC04	05JAN05	0
B7-036050	Footway, Cycle Track, Paving	20	15DEC04	03JAN05	0
Part 7-7 Modification of Pak Shek Kok Bridge					
B7-037020	Demolition for Connection & Excavation	14	19NOV04	02DEC04	0
B7-037030	Modification Works	30	03DEC04	01JAN05	0
B7-037040	Drainage Works & Movement Joints	20	19DEC04	07JAN05	0
B7-037050	E&M Works & Finishing	25	21DEC04	14JAN05	0

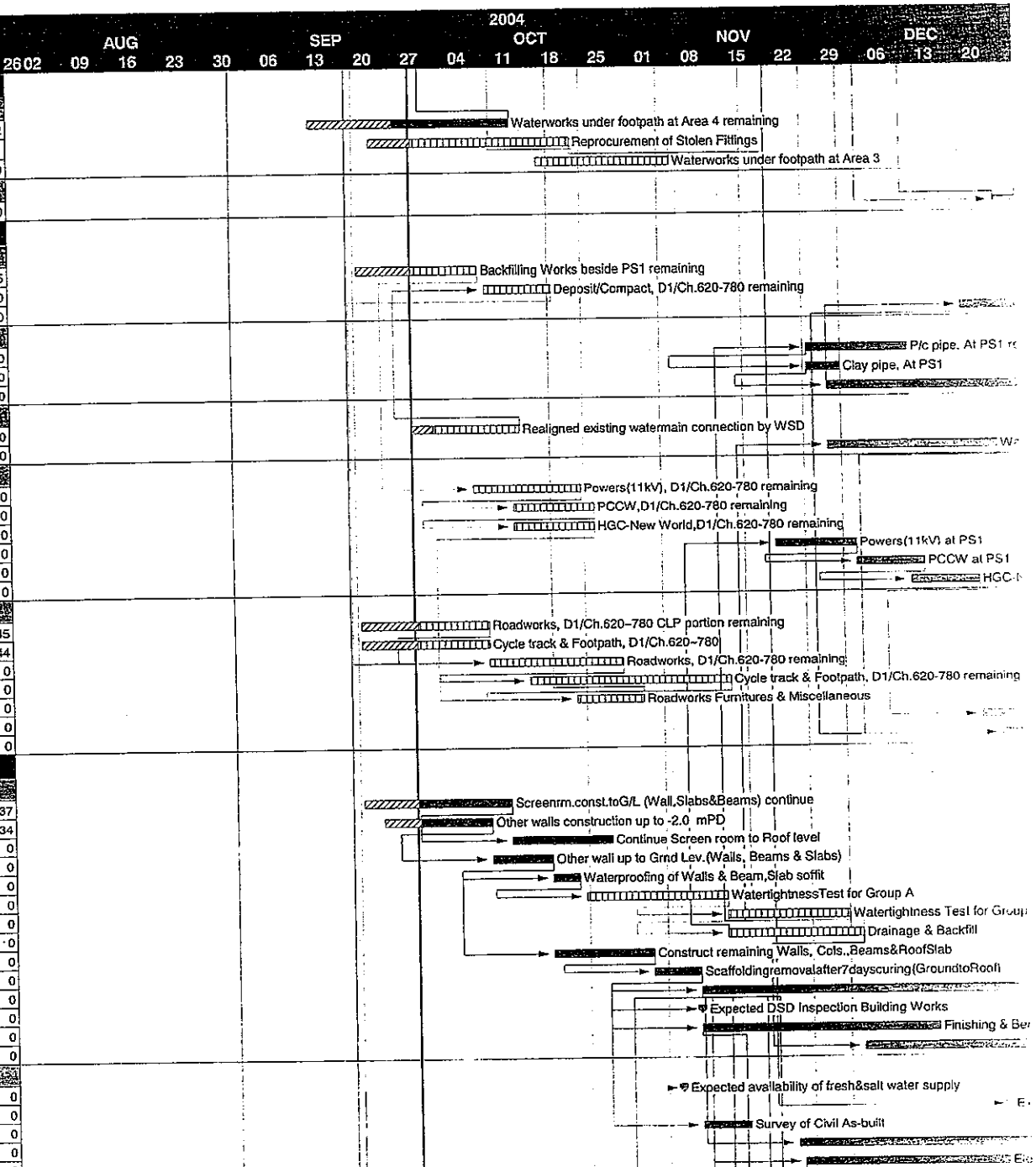


Data date	28SEP04
Page number	2A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
Section 4- Waterworks in Areas 3, 4, & 6					
Part 6:3 Waterworks - Section 4 except Area 6					
B6-0424C7	Waterworks under footpath at Area 4 remaining	25	13SEP04 A	12OCT04	42
B6-0424C13	Reprocurement of Stolen Fittings	30	22SEP04 A	21OCT04	21
B6-0424C3	Waterworks under footpath at Area 3	20	17OCT04	05NOV04	0
Part 6:4 Waterworks - Section 4 in Area 6					
B6-0417C32	Waterworks, D1/Ch.780-920 phase 2	7	24DEC04	30DEC04	0
Section 5-Work in Area 7A,except PumpStn.1,LS&EW					
Part 3:4 Earthworks - Section 5					
B3-0511L32	Backfilling Works beside PS1 remaining	18	20SEP04 A	07OCT04	45
B3-0511L22	Deposit/Compact, D1/Ch.620-780 remaining	10	09OCT04	18OCT04	0
B3-0512A30	Deposit/ Compact, At PS1	8	19DEC04	26DEC04	0
Part 4:5 Drainage & Sewerage - Section 5					
B4-0528F12	P/c pipe, At PS1 remaining (S303-S017)	15	26NOV04	10DEC04	0
B4-0530A3	Clay pipe, At PS1	5	26NOV04	30NOV04	0
B4-0535A1	SewerRising Main, At PS1	35	29NOV04	02JAN05	0
Part 6:5 Waterworks - Section 5					
B6-0503A6	Realigned existing watermain connection by WSD	20	28SEP04 A	13OCT04	20
B6-0503A3	Watermains, At PS1	25	29NOV04	23DEC04	0
Section 5:5 Utilities					
UT-0500P12	Powers(11kV), D1/Ch.620-780 remaining	16	07OCT04	22OCT04	0
UT-0500T2C	PCCW,D1/Ch.620-780 remaining	12	13OCT04	24OCT04	0
UT-0500T2D	HGC-New World,D1/Ch.620-780 remaining	12	13OCT04	24OCT04	0
UT-0500P3	Powers(11kV) at PS1	12	21NOV04	02DEC04	0
UT-0500T3A	PCCW at PS1	10	03DEC04	12DEC04	0
UT-0500T3B	HGC-New World at PS1	10	11DEC04	20DEC04	0
Part 5:5 Roadworks - Section 5					
B5-0540F22	Roadworks, D1/Ch.620~780 CLP portion remaining	19	20SEP04 A	08OCT04	45
B5-0541B12	Cycle track & Footpath, D1/Ch.620~780	20	20SEP04 A	08OCT04	44
B5-0540F2	Roadworks, D1/Ch.620-780 remaining	20	09OCT04	28OCT04	0
B5-0541B2	Cycle track & Footpath, D1/Ch.620-780 remaining	30	15OCT04	13NOV04	0
B5-0543E0	Roadworks Furnitures & Miscellaneous	10	22OCT04	31OCT04	0
B5-0541B3	Footpath, At PS1	15	21DEC04	04JAN05	0
B5-0540F3	Roadworks, At PS1	12	24DEC04	04JAN05	0
Section 12- Works of Sewage Pumping Station No.1					
Part 1:1 Pumping Station 1 Piling, Struct Works					
BS-120530	Screenrm.const.toG/L (Wall,Slabs&Beams) continue	22	20SEP04 A	11OCT04	37
BS-120520	Other walls construction up to -2.0 mPD	17	23SEP04 A	08OCT04	34
BS-120540	Continue Screen room to Roof level	15	12OCT04	26OCT04	0
BS-120670	Other wall up to Grnd Lev.(Walls, Beams & Slabs)	9	09OCT04	17OCT04	0
BS-120690	Waterproofing of Walls & Beam,Slab soffit	4	18OCT04	21OCT04	0
BS-120720	WatertightnessTest for Group A	18	23OCT04	12NOV04	0
BS-120660	Watertightness Test for Group B	18	13NOV04	30NOV04	0
BS-120700	Drainage & Backfill	20	13NOV04	02DEC04	0
BS-120600	Construct remaining Walls, Cols.,Beams&RoofSlab	15	18OCT04	01NOV04	0
BS-120610	Scaffoldingremovalafter7dayscuring(GroundtoRoof)	7	02NOV04	08NOV04	0
BS-120800	Finishing & Furniture above ground structure	60	09NOV04	07JAN05	0
BS-120740	Expected DSD Inspection Building Works	0	09NOV04		0
BS-120810	Finishing & Benching Works belowground chambers	35	09NOV04	13DEC04	0
BS-120730	Sheetpile Extraction	25	03DEC04	27DEC04	0
Part 1:4 Electrical & Mechanical Equipment					
BS-125080	Expected availability of fresh&salt water supply	0	06NOV04		0
BS-125090	Expected availability of power supply	0	24DEC04		0
BS-126010	Survey of Civil As-built	7	09NOV04	15NOV04	0
BS-124100	LV Switchboard and Control Panels	30	23NOV04	29DEC04	0
BS-126020	Electrical Installation-Concealed Conduit	30	24NOV04	23DEC04	0

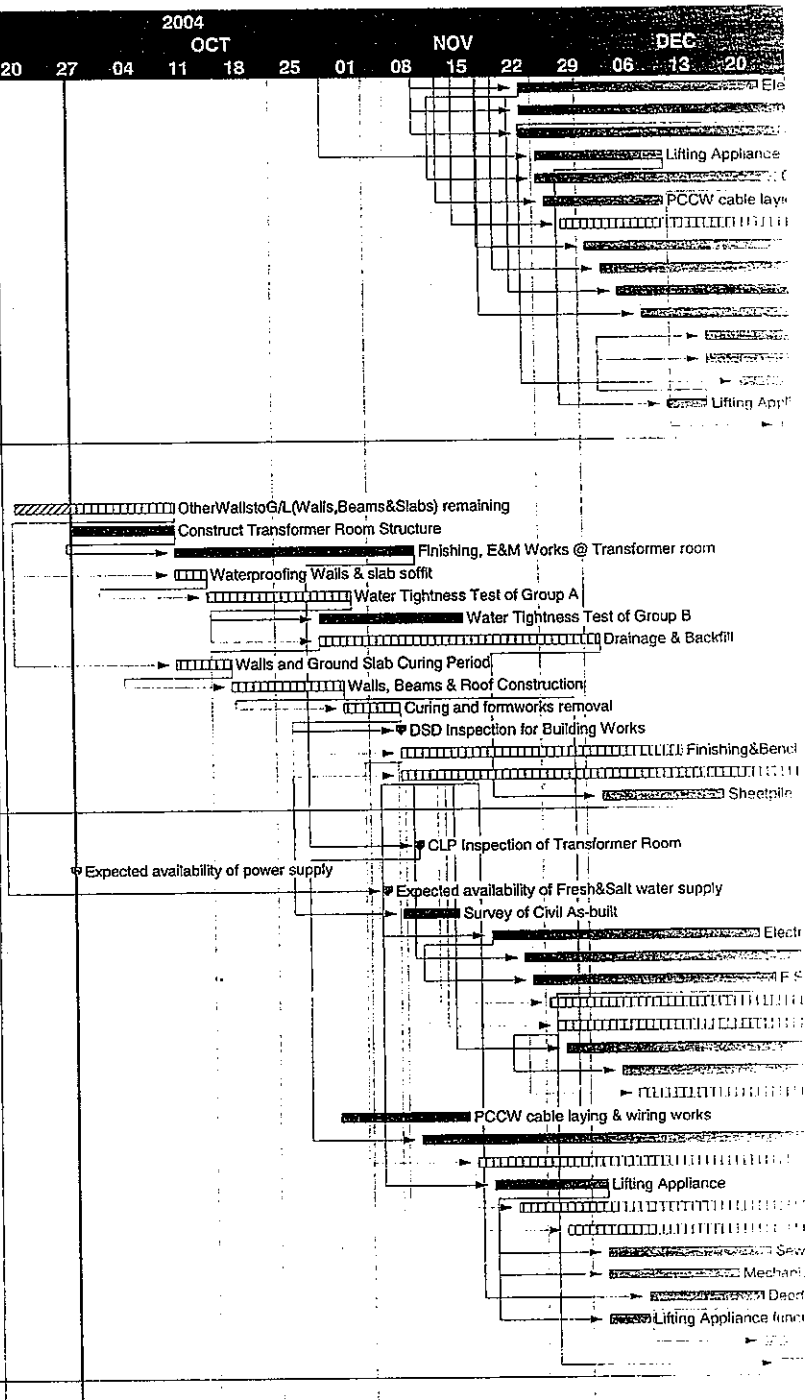


Data date	28SEP04
Page number	3A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
BS-126030	Electrical Installation	30	24NOV04	23DEC04	0
BS-126060	SCADA & PLC Works	35	24NOV04	28DEC04	0
BS-126080	P & D Installation	35	24NOV04	28DEC04	0
BS-124090	Lifting Appliance	14	26NOV04	11DEC04	0
BS-126050	Cabling works	30	26NOV04	25DEC04	0
BS-124110	PCCW cable laying & wiring works	15	27NOV04	11DEC04	0
BS-124070	Valves and Pipeworks	40	29NOV04	17JAN05	0
BS-126090	F.S. Services Installation	30	02DEC04	31DEC04	0
BS-124060	Penstock	33	04DEC04	14JAN05	0
BS-126040	Lightning & Earthing Installation	30	06DEC04	04JAN05	0
BS-124080	Deodourizer System	20	09DEC04	04JAN05	0
BS-124040	Sewage Pumpset and VSD	20	17DEC04	05JAN05	0
BS-124050	Mechanical Screen System	20	17DEC04	05JAN05	0
BS-126070	MVAC	30	21DEC04	19JAN05	0
BS-127090	Lifting Appliance testing	5	12DEC04	16DEC04	0
BS-127060	Cabling Works Testing	5	26DEC04	30DEC04	0
Section 13- Works of Sewage Pumping Station No.2					
Part 13.2 Pumping Station 2 Piling + Struct Work					
BS-130670	OtherWallstoG/L(Walls,Beams&Slabs) remaining	20	21SEP04 A	10OCT04	35
BS-130540	Construct Transformer Room Structure	13	28SEP04	10OCT04	0
BS-130620	Finishing, E&M Works @ Transformer room	30	11OCT04	09NOV04	0
BS-130650	Waterproofing Walls & slab soffit	4	11OCT04	14OCT04	0
BS-130660	Water Tightness Test of Group A	18	15OCT04	01NOV04	0
BS-130680	Water Tightness Test of Group B	18	29OCT04	15NOV04	0
BS-130700	Drainage & Backfill	35	29OCT04	02DEC04	0
BS-130630	Walls and Ground Slab Curing Period	7	11OCT04	17OCT04	0
BS-130640	Walls, Beams & Roof Construction	14	18OCT04	31OCT04	0
BS-130610	Curing and formworks removal	7	01NOV04	07NOV04	0
BS-130690	DSD Inspection for Building Works	0	08NOV04		0
BS-130720	Finishing&BenchingWorks for Underground Chambers	35	08NOV04	12DEC04	0
BS-130800	Finishing & Furniture for Above-ground Structure	60	08NOV04	06JAN05	0
BS-130710	Sheetpile Extraction	15	03DEC04	17DEC04	0
Part 13.4 Electrical & Mechanical Equipment					
BS-134110	CLP Inspection of Transformer Room	0	10NOV04		0
BS-135100	Expected availability of power supply	0	28SEP04		0
BS-135090	Expected availability of Fresh&Salt water supply	0	06NOV04		0
BS-136030	Survey of Civil As-built	7	08NOV04	14NOV04	0
BS-136040	Electrical Installation-Concealed Conduit	33	19NOV04	21DEC04	0
BS-136080	SCADA and PLC Works	35	23NOV04	27DEC04	0
BS-136110	F.S. Services Installation	30	24NOV04	23DEC04	0
BS-136100	P & D Installation	45	26NOV04	09JAN05	0
BS-136050	Electrical Installation	47	27NOV04	12JAN05	0
BS-136090	MVAC	30	28NOV04	27DEC04	0
BS-136060	Lightning & Earthing Installation	30	05DEC04	03JAN05	0
BS-136070	Cabling Works	30	07DEC04	05JAN05	0
BS-134120	PCCW cable laying & wiring works	16	31OCT04	15NOV04	0
BS-136010	CLP Installation	42	10NOV04	30DEC04	0
BS-134070	Valves & Pipeworks	40	17NOV04	05JAN05	0
BS-134090	Lifting Appliance	14	19NOV04	02DEC04	0
BS-134100	LV Switchboard and Control Panels	30	22NOV04	28DEC04	0
BS-134060	Penstock	40	28NOV04	06JAN05	0
BS-134040	Sewage Pumpset & VSD	20	03DEC04	22DEC04	0
BS-134050	Mechanical Screen System	16	03DEC04	18DEC04	0
BS-134080	Deodourizer System	12	08DEC04	21DEC04	0
BS-137080	Lifting Appliance functional testing	5	03DEC04	07DEC04	0
BS-137090	Deodorizer System functional testing	6	22DEC04	27DEC04	0
BS-137030	F.S. Services functional testing	3	24DEC04	26DEC04	0
Section 15- Waterworks in Area 15					

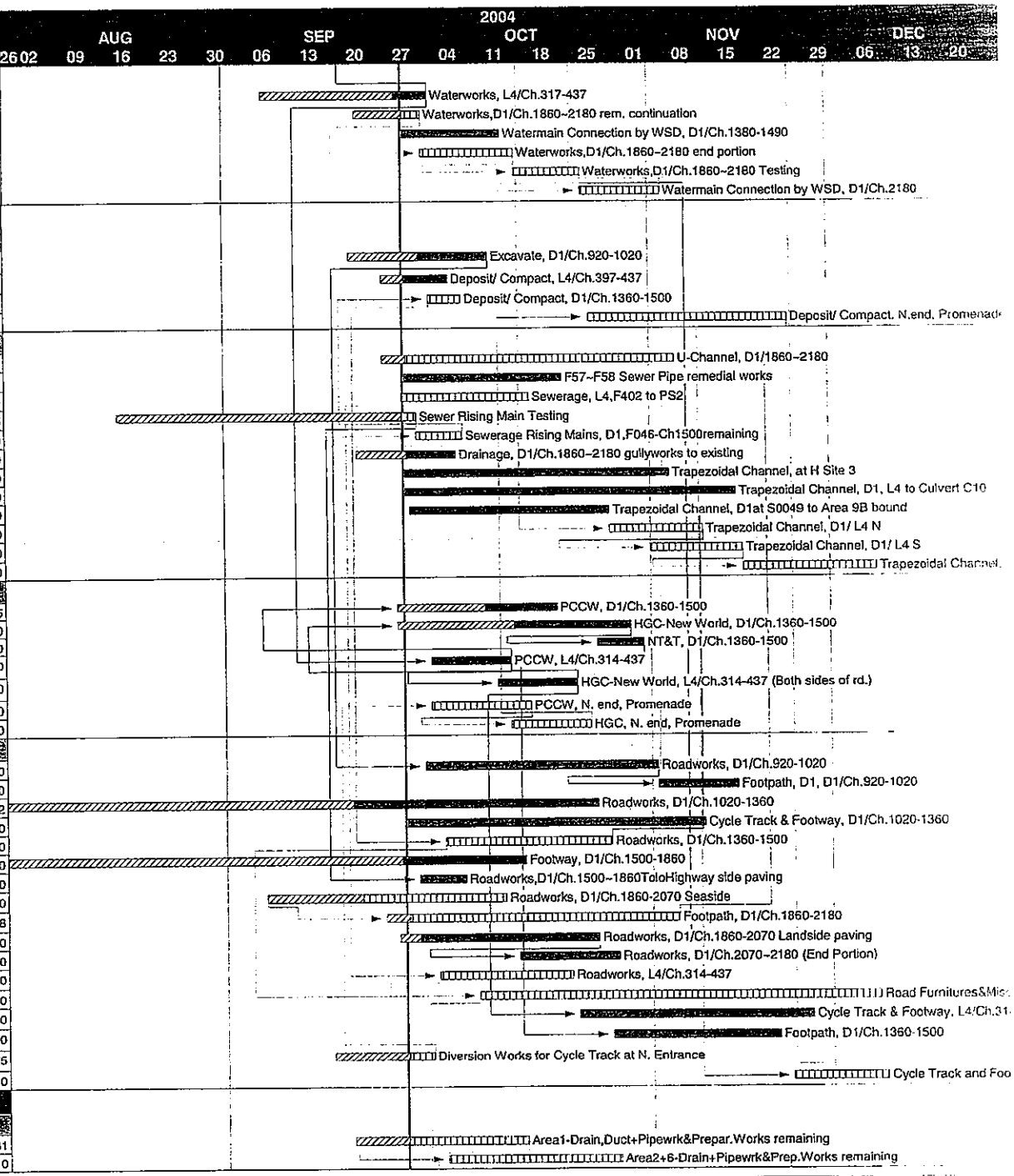


Data date	26SEP04
Page number	4A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

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

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
Part 6-1.0 Waterworks - Section 15					
B6-1595D7	Waterworks, L4/Ch.317-437	20	07SEP04 A	01OCT04	80
B6-1595D86	Waterworks,D1/Ch.1860~2180 rem. continuation	12	21SEP04 A	30SEP04	72
B6-1595D23	Watermain Connection by WSD, D1/Ch.1380-1490	15	28SEP04	12OCT04	0
B6-1595D76	Waterworks,D1/Ch.1860~2180 end portion	14	01OCT04	14OCT04	0
B6-1595D56	Waterworks,D1/Ch.1860~2180 Testing	10	15OCT04	24OCT04	0
B6-1595D66	Watermain Connection by WSD, D1/Ch.2180	12	25OCT04	05NOV04	0
Section 16- Remainder of Works, except LS+EW					
Part 3-1.1 Earthworks - Section 16					
B3-1622M1	Excavate, D1/Ch.920-1020	25	20SEP04 A	10OCT04	50
B3-1622N7	Deposit/ Compact, L4/Ch.397-437	10	25SEP04 A	04OCT04	33
B3-1622N3	Deposit/ Compact, D1/Ch.1360-1500	5	02OCT04	06OCT04	0
B3-1622N9	Deposit/ Compact, N.end, Promenade	30	26OCT04	24NOV04	0
Part 4-1.1 Drainage & Sewerage - Section 16					
B4-1683B56	U-Channel, D1/1860~2180	45	25SEP04 A	07NOV04	8
B4-1683B86	F57~F58 Sewer Pipe remedial works	24	28SEP04	21OCT04	0
B4-1685B18	Sewerage, L4,F402 to PS2	19	28SEP04	16OCT04	0
B4-1691B23	Sewer Rising Main Testing	45	16AUG04 A	29SEP04	95
B4-1691B13	Sewerage Rising Mains, D1,F046-Ch1500remaining	7	30SEP04	06OCT04	0
B4-1683B97	Drainage, D1/Ch.1860~2180 gullyworks to existing	15	21SEP04 A	05OCT04	50
B4-1689C8	Trapezoidal Channel, at H Site 3	40	28SEP04	06NOV04	0
B4-1689D6	Trapezoidal Channel, D1, L4 to Culvert C10	50	28SEP04	16NOV04	0
B4-1689D2	Trapezoidal Channel, D1at S0049 to Area 9B bound	30	29SEP04	28OCT04	0
B4-1689D3	Trapezoidal Channel, D1/ L4 N	14	29OCT04	11NOV04	0
B4-1689D4	Trapezoidal Channel, D1/ L4 S	14	04NOV04	17NOV04	0
B4-1689D5	Trapezoidal Channel, L4	20	18NOV04	07DEC04	0
Section 16 - Utilities - Section 16					
UT-1600T3A	PCCW, D1/Ch.1360-1500	15	27SEP04 A	20OCT04	55
UT-1600T3B	HGC-New World, D1/Ch.1360-1500	15	27SEP04 A	31OCT04	50
UT-1600T3C	NT&T, D1/Ch.1360-1500	7	27OCT04	02NOV04	0
UT-1600T7A	PCCW, L4/Ch.314-437	12	02OCT04	13OCT04	0
UT-1600T7B	HGC-New World, L4/Ch.314-437 (Both sides of rd.)	12	12OCT04	23OCT04	0
UT-1600T9A	PCCW, N. end, Promenade	15	02OCT04	16OCT04	0
UT-1600T9B	HGC, N. end, Promenade	12	14OCT04	25OCT04	0
Part 5-1.0 Roadworks - Section 16					
B5-1670A1	Roadworks, D1/Ch.920-1020	35	01OCT04	04NOV04	0
B5-1672A21	Footpath, D1, D1/Ch.920-1020	12	05NOV04	16NOV04	0
B5-1670A2	Roadworks, D1/Ch.1020-1360	75	22JUL04 A	26OCT04	62
B5-1672A2	Cycle Track & Footway, D1/Ch.1020-1360	45	28SEP04	11NOV04	0
B5-1670A3	Roadworks, D1/Ch.1360-1500	25	04OCT04	28OCT04	0
B5-1672A4	Footway, D1/Ch.1500-1860	90	15JUL04 A	15OCT04	80
B5-1670A14	Roadworks,D1/Ch.1500~1860ToloHighway side paving	7	30SEP04	05OCT04	0
B5-1670A6	Roadworks, D1/Ch.1860-2070 Seaside	25	07SEP04 A	12OCT04	40
B5-1672A6	Footpath, D1/Ch.1860-2180	45	25SEP04 A	07NOV04	8
B5-1670A26	Roadworks, D1/Ch.1860-2070 Landside paving	20	27SEP04 A	26OCT04	10
B5-1670A36	Roadworks, D1/Ch.2070~2180 (End Portion)	15	15OCT04	29OCT04	0
B5-1670A7	Roadworks, L4/Ch.314-437	20	03OCT04	22OCT04	0
B5-1674G0	Road Furnitures&Misc.,D1/Ch920-2180&L4/Ch315-437	60	09OCT04	07DEC04	0
B5-1672A7	Cycle Track & Footway, L4/Ch.314-437	35	24OCT04	27NOV04	0
B5-1672A3	Footpath, D1/Ch.1360-1500	25	29OCT04	22NOV04	0
B5-1670A46	Diversion Works for Cycle Track at N. Entrance	14	17SEP04 A	01OCT04	75
B5-1670A56	Cycle Track and Footpath, North End	14	25NOV04	08DEC04	0
Section 17- Areas 1,2,5,7A+7B Landscape Softwork					
Part 12-1 Landscape Works - Section 17					
BL-1705A11	Area1-Drain,Duct+Pipewrk&Prepar.Works remaining	26	20SEP04 A	15OCT04	31
BL-1705A12	Area2+6-Drain+Pipewrk&Prep.Works remaining	26	04OCT04	29OCT04	0

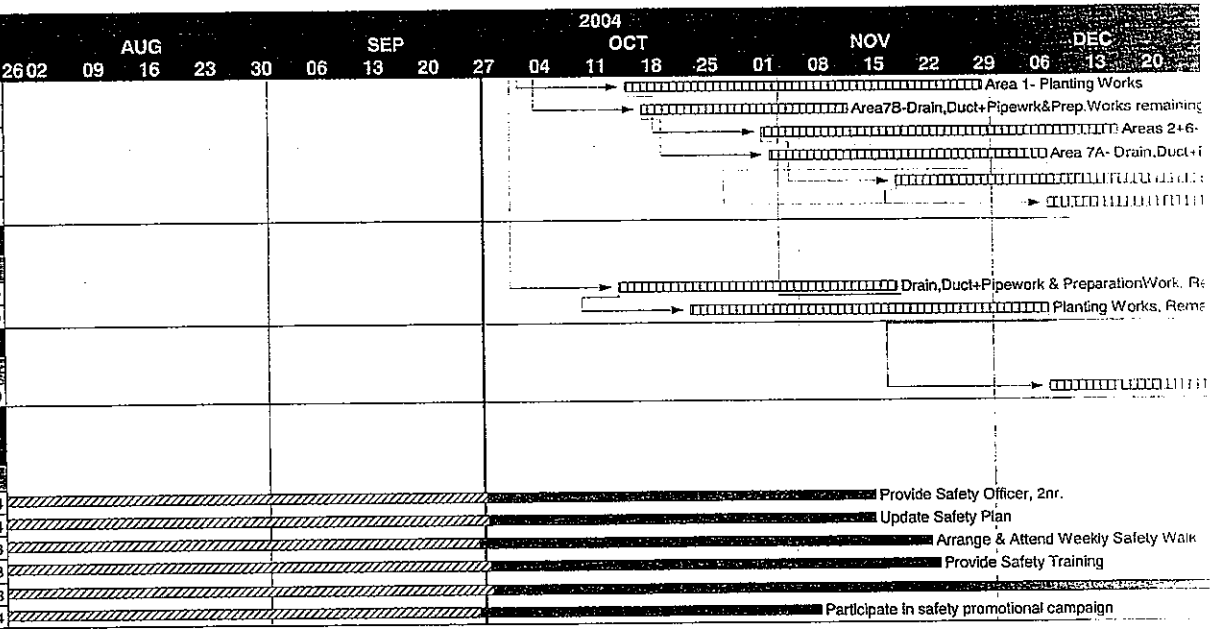


Data date	28SEP04
Page number	5A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

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

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Act ID	Description	Orig Dur	Early Start	Early Finish	Percent Complete
BL-1707A1	Area 1- Planting Works	45	16OCT04	29NOV04	0
BL-1705A14	Area7B-Drain,Duct+Pipewrk&Prep.Works remaining	26	18OCT04	12NOV04	0
BL-1707A2	Areas 2+6- Planting Works	45	02NOV04	16DEC04	0
BL-1705A3	Area 7A- Drain,Duct+Pipework & Preparation Works	35	03NOV04	07DEC04	0
BL-1707A4	Area 7B- Planting Works	45	19NOV04	02JAN05	0
BL-1707A3	Area 7A- Planting Works	45	08DEC04	21JAN05	0
Section 18- Remainder of Landscaping Works					
Part 12:2 Landscape Works - Section 18					
BL-1814A1	Drain,Duct+Pipework & PreparationWork, Remainder	35	15OCT04	18NOV04	0
BL-1814A2	Planting Works, Remainder	45	24OCT04	07DEC04	0
Section 20- Remainder of Establishment Works					
Part 12:4 Landscape Works - Section 20					
BL-300001	Establishment Works - Remainder	365	08DEC04	07DEC05	0
Part 14 Site Safety					
BT-1401D0	Provide Safety Officer, 2nr.	810	27AUG02 A	15NOV04	94
BT-1401C0	Update Safety Plan	810	31AUG02 A	15NOV04	94
BT-1401G0	Arrange & Attend Weekly Safety Walk	805	03SEP02 A	22NOV04	93
BT-1401H0	Provide Safety Training	810	10SEP02 A	23NOV04	93
BT-1401E0	Attend Site Safety Committee & Mgmt.Committee	810	26OCT02 A	02JAN05	88
BT-1401K0	Participate in safety promotional campaign	694	28NOV02 A	08NOV04	94



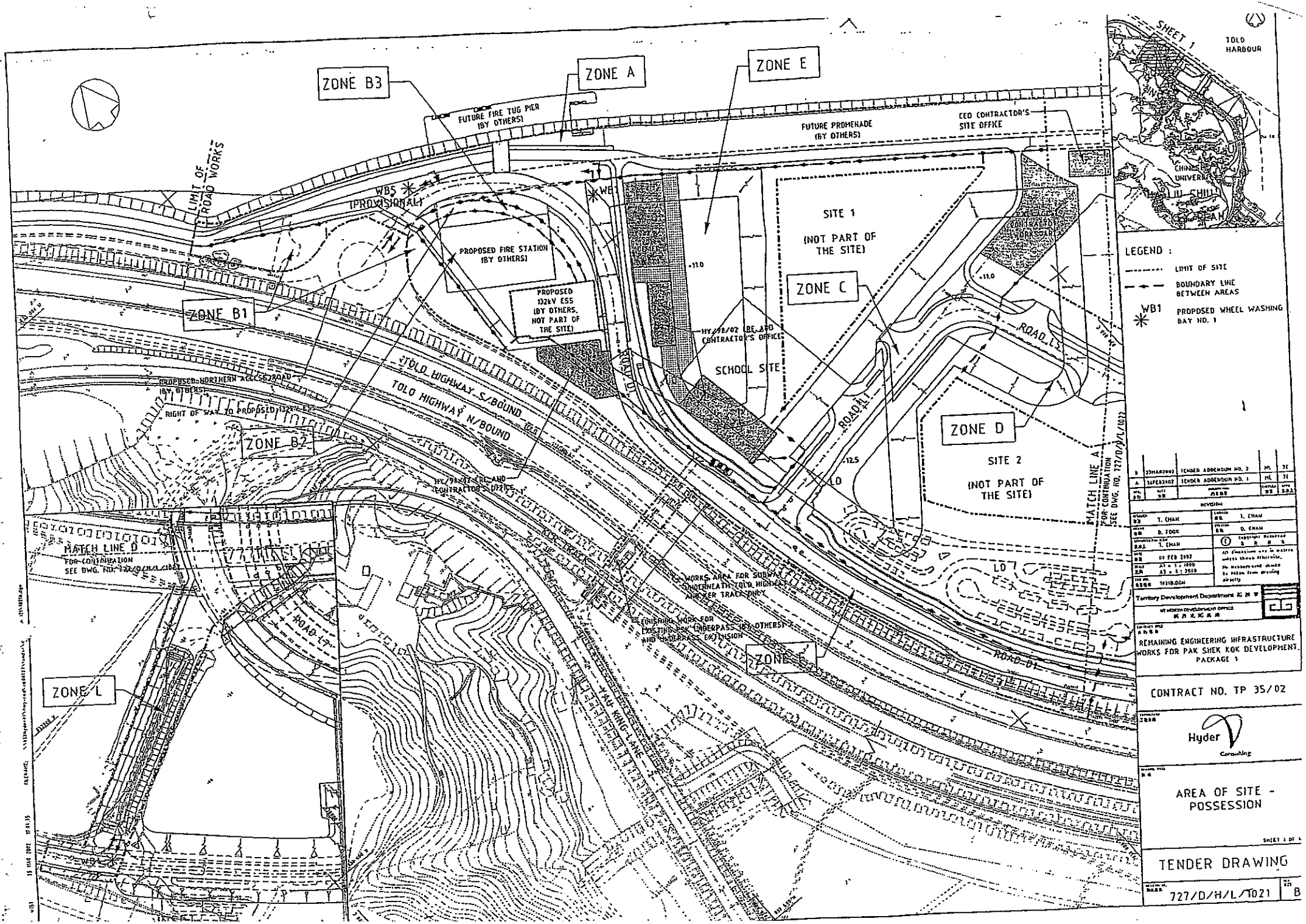
Data date	28SEP04
Page number	6A
Page count	6A
Number/Version	TP35/02/3MON/25
Company name	Penta-Ocean Construction Co. Ltd.

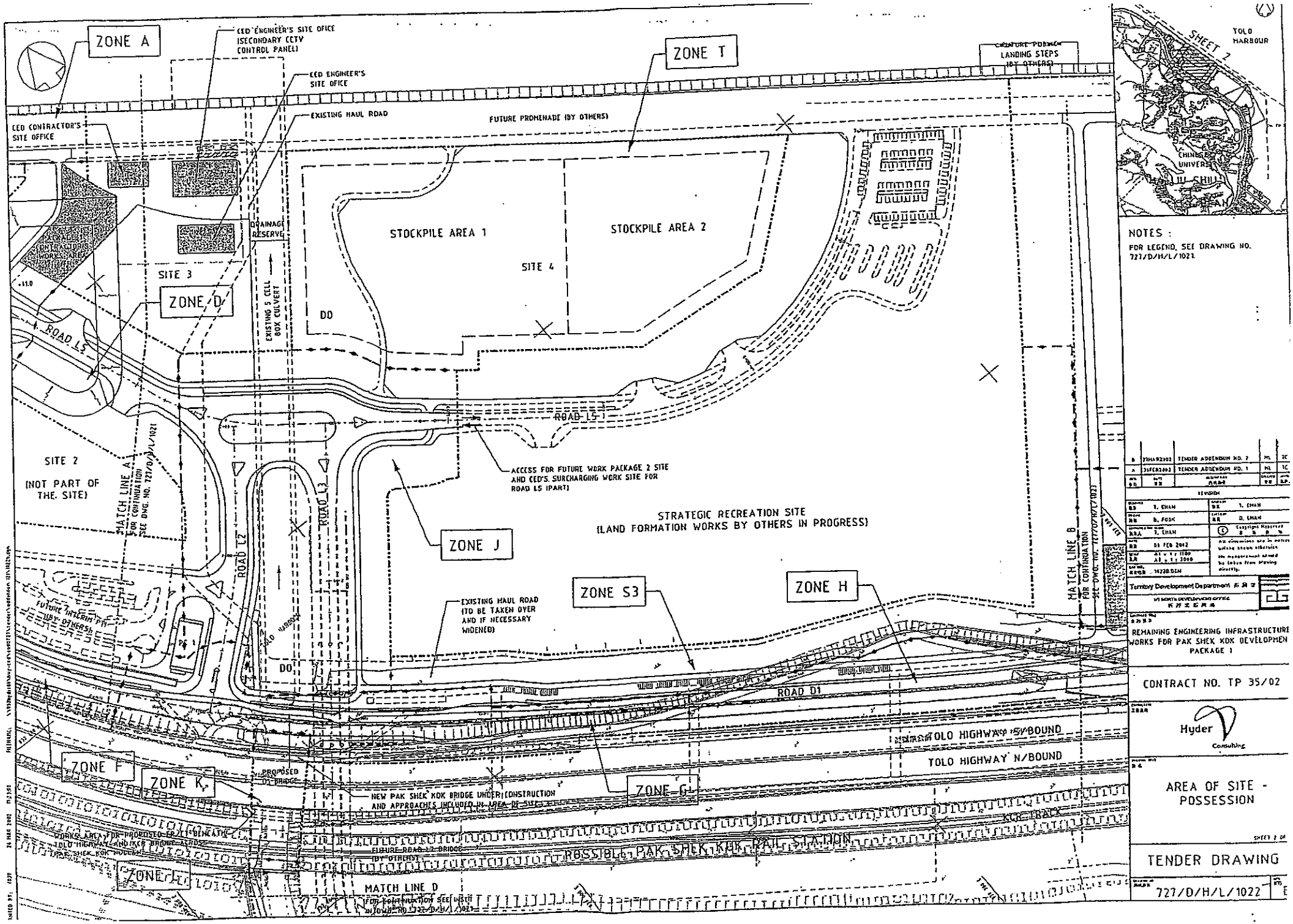
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.TP35/02
Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1
3MONTHS ROLLING PROGRAM

Appendix G

Construction Site Area


ZONE B3
ZONE A
ZONE E
FUTURE FIRE TUG PIER (BY OTHERS)
FUTURE PROMENADE (BY OTHERS)
CED CONTRACTOR'S SITE OFFICE
LIMIT OF ROAD WORKS
WB5 (PROVISIONAL)
WB1
PROPOSED FIRE STATION (BY OTHERS)
PROPOSED 132kV ESS (BY OTHERS, NOT PART OF THE SITE)
SITE 1
(NOT PART OF THE SITE)
ZONE C
ZONE B1
HY/98/02 RE AND CONTRACTOR'S OFFICE
SCHOOL SITE
ROAD L2
TOLO HIGHWAY S/BOUND
TOLO HIGHWAY N/BOUND
PROPOSED NORTHERN ACCESS ROAD (BY OTHERS)
RIGHT OF WAY TO PROPOSED 132kV ESS
ZONE B2
ZONE D
SITE 2
(NOT PART OF THE SITE)
MATCH LINE A
FOR CONTINUATION
SEE DWG. NO. 727/D/H/L/1022
HY/98/02 RE AND CONTRACTOR'S OFFICE
MATCH LINE D
FOR CONTINUATION
SEE DWG. NO. 727/D/H/L/1023
WORKS AREA FOR SUBWAY UNDERNEATH TOLO HIGHWAY UNDER TRACE ONLY
EXISTING WORK FOR EXISTING PEDESTRIAN UNDERPASS (BY OTHERS) TO BE DEMOLISHED AND RECONSTRUCTED
ZONE L
ZONE K
ROAD D1
ROAD L7
WAI KING LANE
SHEET 1
TOLO HARBOUR
CHINESE UNIVERSITY
LEGEND :
LIMIT OF SITE
BOUNDARY LINE BETWEEN AREAS
WB1 PROPOSED WHEEL WASHING BAY NO. 1
REVISION
T. CHAN
D. TOOK
T. CHAN
L. CHAN
D. CHAN
Territory Development Department
REMAINING ENGINEERING INFRASTRUCTURE WORKS FOR PAK SHEK KOK DEVELOPMENT, PACKAGE 1
CONTRACT NO. TP 35/02
Hyder Consulting
AREA OF SITE - POSSESSION
TENDER DRAWING
727/D/H/L/1021
B



NOTES :

FOR LEGEND, SEE DRAWING NO. 727/D/H/L/1021.

REV	DATE	DESCRIPTION	BY	CK
B	27MAR2002	TENDER ADDENDUM NO. 2	MS	KC
A	21FEB2002	TENDER ADDENDUM NO. 1	MS	KC

DRN	T. CHAN	CHK	T. CHAN
DES	B. FOOK	SUPVR	D. CHAN
APP	T. CHAN	©	Copyright Reserved
DATE	05 FEB 2002		All dimensions are in metres unless shown otherwise.
SCALE	A1 = 1 : 1000 A3 = 1 : 2000		Do not measure scaled to taken from drawing directly.
LEVEL DATUM	19720.DGN		

Territory Development Department 地 政 署

LAND DEVELOPMENT OFFICE 地 政 處 發 展 處

REMAINING ENGINEERING INFRASTRUCTURE WORKS FOR PAK SHEK KOK DEVELOPMENT PACKAGE 1

CONTRACT NO. TP 35/02

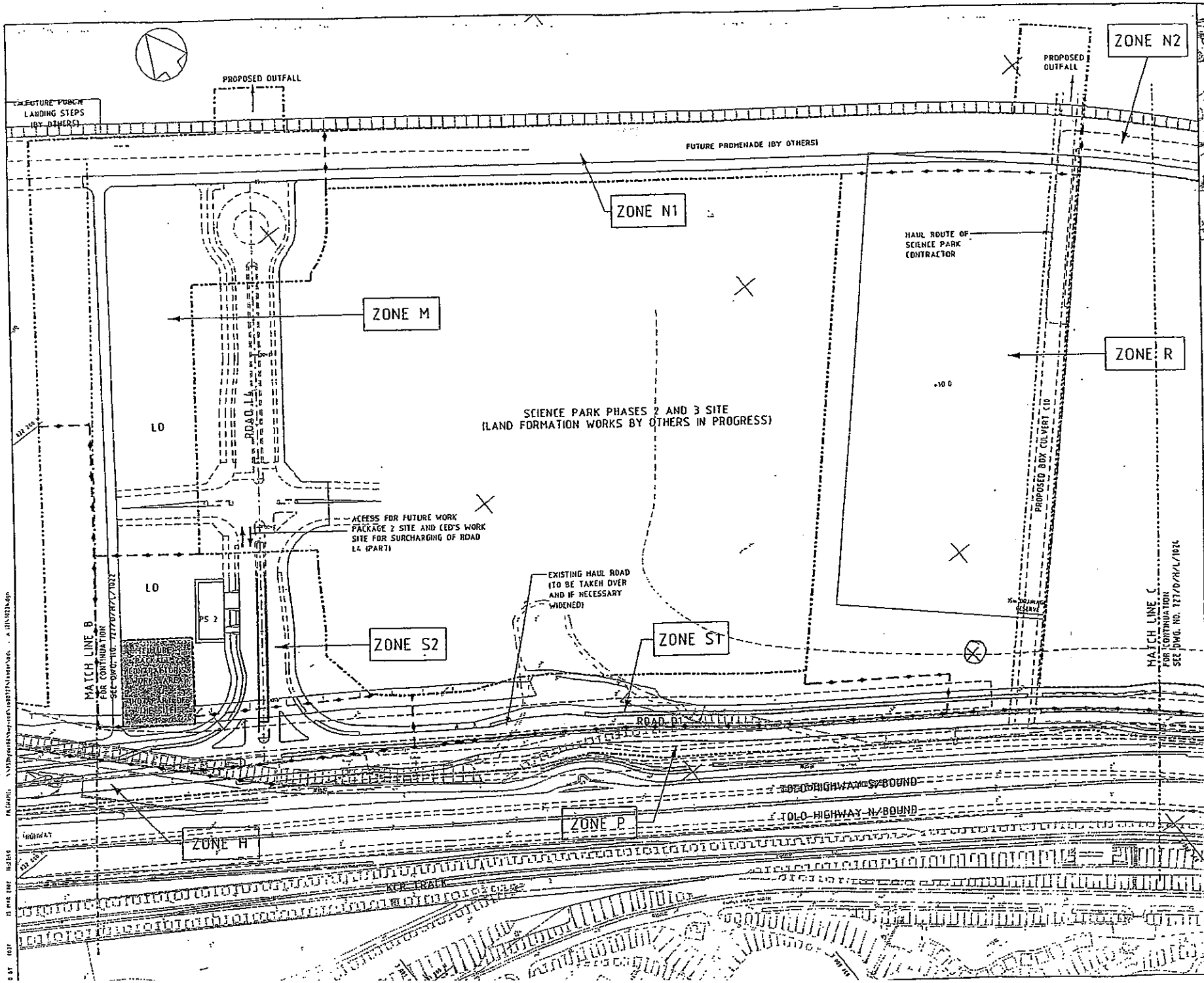
Hyder Consulting

AREA OF SITE - POSSESSION

SHEET 2 OF

TENDER DRAWING

727/D/H/L/1022



NOTES :

FOR LEGEND, SEE DRAWING NO. 727/D/H/L/1021.

B	27MAR2003	TENDER ADDENDUM NO. 2	ML	TC
A	26FEB2003	TENDER ADDENDUM NO. 1	ML	TC

REVISION

DESIGNED BY	T. CHAN	CHECKED BY	T. CHAN
DRAWN BY	D. FOOK	DESIGN BY	D. CHAN
SUPERVISED BY	T. CHAN	©	Copyright Reserved
DATE	01 FEB 2002		All dimensions are in metres unless shown otherwise. No measurement should be taken from scaling directly.
SCALE	A1 : 1 : 1000 A3 : 1 : 2000		
DWG. NO.	727/D/H/L/1023		

Territory Development Department

REMAINING ENGINEERING INFRASTRUCTURE WORKS FOR PAK SHEK KOK DEVELOPMENT PACKAGE 1

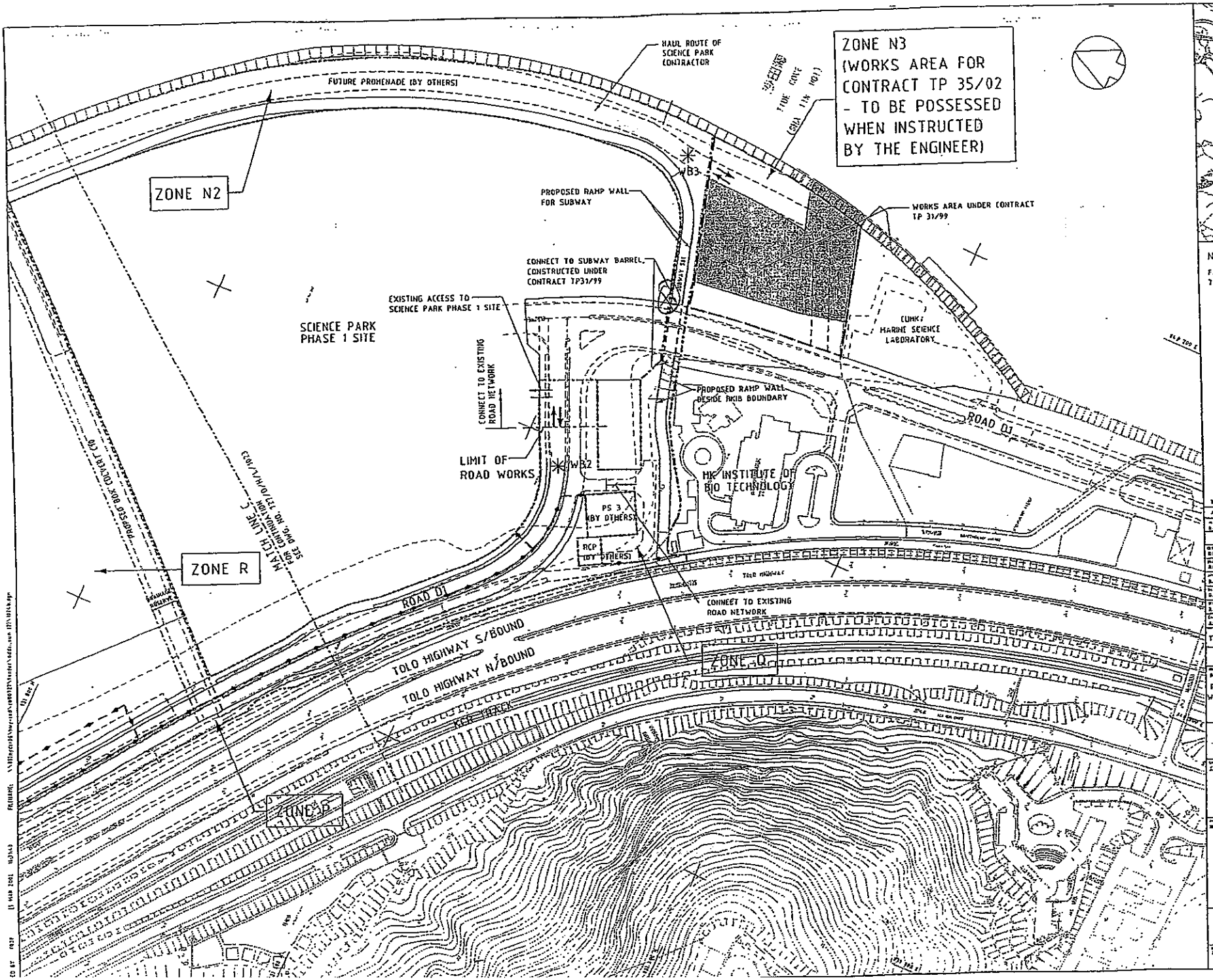
CONTRACT NO. TP 35/02

Hyder Consulting

AREA OF SITE - POSSESSION

TENDER DRAWING

727/D/H/L/1023 B


ZONE N3
(WORKS AREA FOR CONTRACT TP 35/02 - TO BE POSSESSED WHEN INSTRUCTED BY THE ENGINEER)
HAUL ROUTE OF SCIENCE PARK CONTRACTOR
FUTURE PROMENADE (BY OTHERS)
ZONE N2
PROPOSED RAMP WALL FOR SUBWAY
WORKS AREA UNDER CONTRACT TP 31/99
CONNECT TO SUBWAY BARREL CONSTRUCTED UNDER CONTRACT TP31/99
EXISTING ACCESS TO SCIENCE PARK PHASE 1 SITE
SCIENCE PARK PHASE 1 SITE
CUHK MARINE SCIENCE LABORATORY
CONNECT TO EXISTING ROAD NETWORK
PROPOSED RAMP WALL BESIDE RKIB BOUNDARY
ROAD 01
LIMIT OF ROAD WORKS
HK INSTITUTE OF BIO TECHNOLOGY
PS 3 (BY OTHERS)
RCP (BY OTHERS)
ZONE R
MAJOR CONTINUATION LINE S
TOLO HIGHWAY S/BOUND
TOLO HIGHWAY N/BOUND
KEE TIMBER
CONNECT TO EXISTING ROAD NETWORK
ZONE Q
ZONE P
TOLO HARBOUR
SHEET 2
CHINESE UNIVERSITY
SHUI CHAU
LAU FAU SHAN
NOTES :
FOR LEGEND, SEE DRAWING NO. 727/D/H/L/1021.
REVISION
TENDER ADDENDUM NO. 2
TENDER ADDENDUM NO. 1
T. CHAN
B. FOOK
O. CHAN
Copyright Reserved
All dimensions are in mm unless shown otherwise.
No measurement should be taken from drawing directly.
Territory Development Department
North Development Office
REMAINING ENGINEERING INFRASTRUCTUR WORKS FOR PAK SHEK KOK DEVELOPMEN PACKAGE 1
CONTRACT NO. TP 35/02
Hyder Consulting
AREA OF SITE - POSSESSION
TENDER DRAWING
727/D/H/L/1024

Appendix H

The Summary of Implementation Status of Mitigation Measures during Weekly Site Inspections

The Summary of Implementation status of Mitigation Measures

Aspect	Mitigation Measures	Implementation Status		
		Y	N	N/A
Air	- The height from which fill materials were dropped was controlled to a practical height to minimize the fugitive dust arising form unloading.	√		
	- During transportation by truck, material was loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	√		
	- All stockpile of aggregate or spoil were enclosed or covered and water applied in dry or windy condition.	√		
	- Effective water sprays were used on the site at potential dust emission sources such as unpaved area.	√		
	- The haul road was either paved or regular watering.	√		
	- Vehicle speed was limited to 20 km/hr.	√		
	- Adequately designed wheel washing facilities including a high pressure water jet were provided at all main entrance of work site.	√		
Noise	- Only well maintained plant was operated on-site and plant should be serviced regularly during the construction works.	√		
	- Machines and plants that were in intermittent use were shut down between work periods or throttled down to a minimum.	√		
	- Plant known to emit noise strongly in on direction, where possible, were orientated so that the noise is directed away from nearby NSRs.	√		
	- Silencers or mufflers on construction equipment were considered.	√		
Water	- Recirculation system was used to reduce SS from the vehicle wheel washing facility.	√		
	- Fuel tanks on site were housed within drainable trays and regularly drained of rainwater.	√		
	- Washing area and road exiting were paved from washing facility.	√		
	- Permanent / Temporary ditches were provided to facilities run-off discharge into the appropriate watercourses, via a sediment trap/sediment retention basin, prior to discharge.	√		
	- Sedimentation tanks with adequate capacity to settle the sand and silt out were provided.	√		
	- Sedimentation tanks were regularly cleaned and maintained in order to control their efficiency and to prevent the recycled water overflow to drains.	√		
	- All drainage facilities were adequate for the controlled release of storm flows.	√		
	- Exposed soil areas were minimized to reduce the potential for increased siltation and contamination of run-off.	√		
	- All chemical stores were contained (bunded) such that spills are not slowed to gain access to water bodies.	√		
	- Chemical toilets were provided to handle the sewage from the on-site construction workforce.	√		

The Summary of Implementation status of Mitigation Measures

Aspect	Mitigation Measures	Implementation Status		
		Y	N	N/A
Waste	- Wastes were handle and store in a manner, which ensure that they were held securely without loss or leakage, thereby minimizing the potential for pollution.	√		
	- Authorized or licensed waste hauliers were use to collect the specific category of waste.	√		
	- Wastes were removed in a timely manner.	√		
	- The waste storage areas were maintained and cleaned regularly.	√		
	- Windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed containers were minimized.	√		
	- Waste disposal permits were obtained form the appropriate authorities.	√		
	- Wastes were disposed at licensed sites.	√		
	- Procedures such as a ticketing system were developed to facilitate tracing of loads, particularly for chemical waste, and to ensure that illegal disposal of wastes does not occur.	√		
	- Records of the quantities of wastes generated, recycled and disposal were maintained.	√		
Chemical Waste	- Under the Waste Disposal (Chemical Waste) (General) Regulation, chemical waste producers were registered with EPD.	√		
	- Chemical wastes were transported by a registered chemical waste collector to a facility licensed to receive chemical waste.	√		
	- Containers used for the storage of chemical wastes were:			
	1.Suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;	√		
	2.Enclosed on at least 3 sides;	√		
	3.Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;	√		
	4.-Have adequate ventilation;	√		
	5.Covered to prevent rainfall entering (water collected within the bund must be tested and disposal as chemical waste if necessary);	√		
	6.Arranged so that incompatible materials are adequately separated.	√		

Appendix I

IEC and RE Comments on Monthly EM&A Report – October 2004

IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – October 2004

Item No.	Document Reference	Comment	ET Response
---	---	No RE / IEC Comments on Monthly Environmental Monitoring and Audit Report – July 2004 were received.	No ET responses were required

Appendix J

Wastewater Monitoring
–
Test Report of Wastewater Samples from Discharge Points

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

HOKLAS 022

TEST REPORT

Form : E/EN/R/01/Issue 4 (1/1) [08/02]

Environmental Testing of Water & Wastewater

Report No. : ENA40412
Date of issue : 13 September 2004
Page No. : 1 of 1

Information provided by client

Client name : Penta - Ocean Construction Co Ltd
Client address : 30/F MLC Tower 248 Queen's Road East Wan Chai HK
Sample Source : Remaining Engineering Infrastructure Works for Pak Shek Kok Development, Package 1 (Contract No. TP35/02)
Sample Type : Wastewater
Date of sampling : 9 September 2004
Sample Description : The sample was collected in 500mL plastic bottle and chilled when received.

Laboratory information

Date Received : 9 September 2004

Result

Client Sample ID	Lab Ref No	Test	Method Used	Result	Expanded Uncertainty*	Date Tested
Sample 1 (Discharge Point at PS1)	W17299 (01)	Total Suspended Solids	In house method TPE/006/W	<5.0 mg/L	N/A	10 September 2004

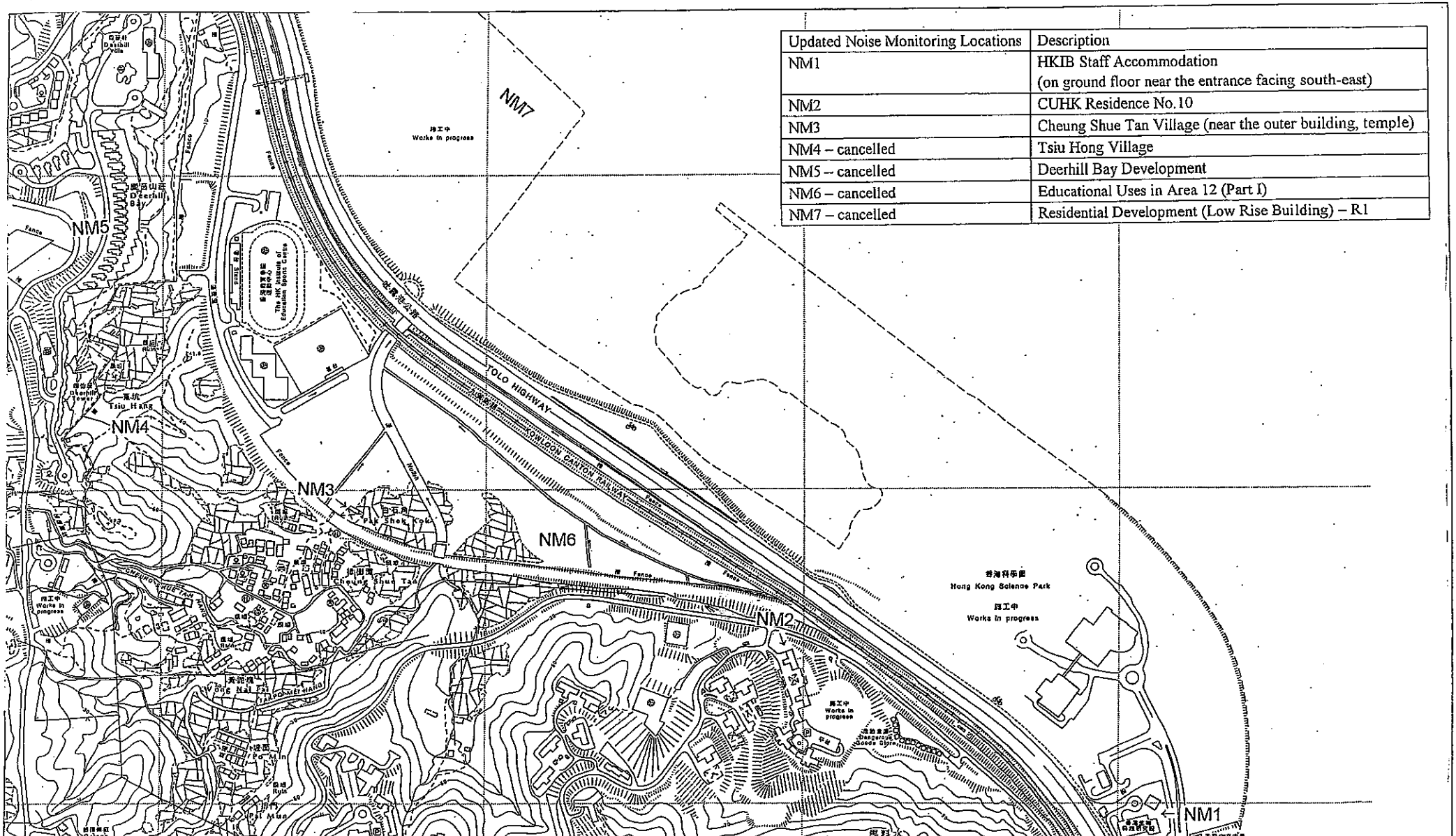
Remark (if any) : * All uncertainty was calculated at 95% confidence level and sampling uncertainty is not included. Coverage factor is 2.0 (assume that effective degree of freedom is infinity).

Checked by : Linda Law
Linda Law
Chemist

Approved by :
C L Lau
Chief Chemist

TPE/001/W

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

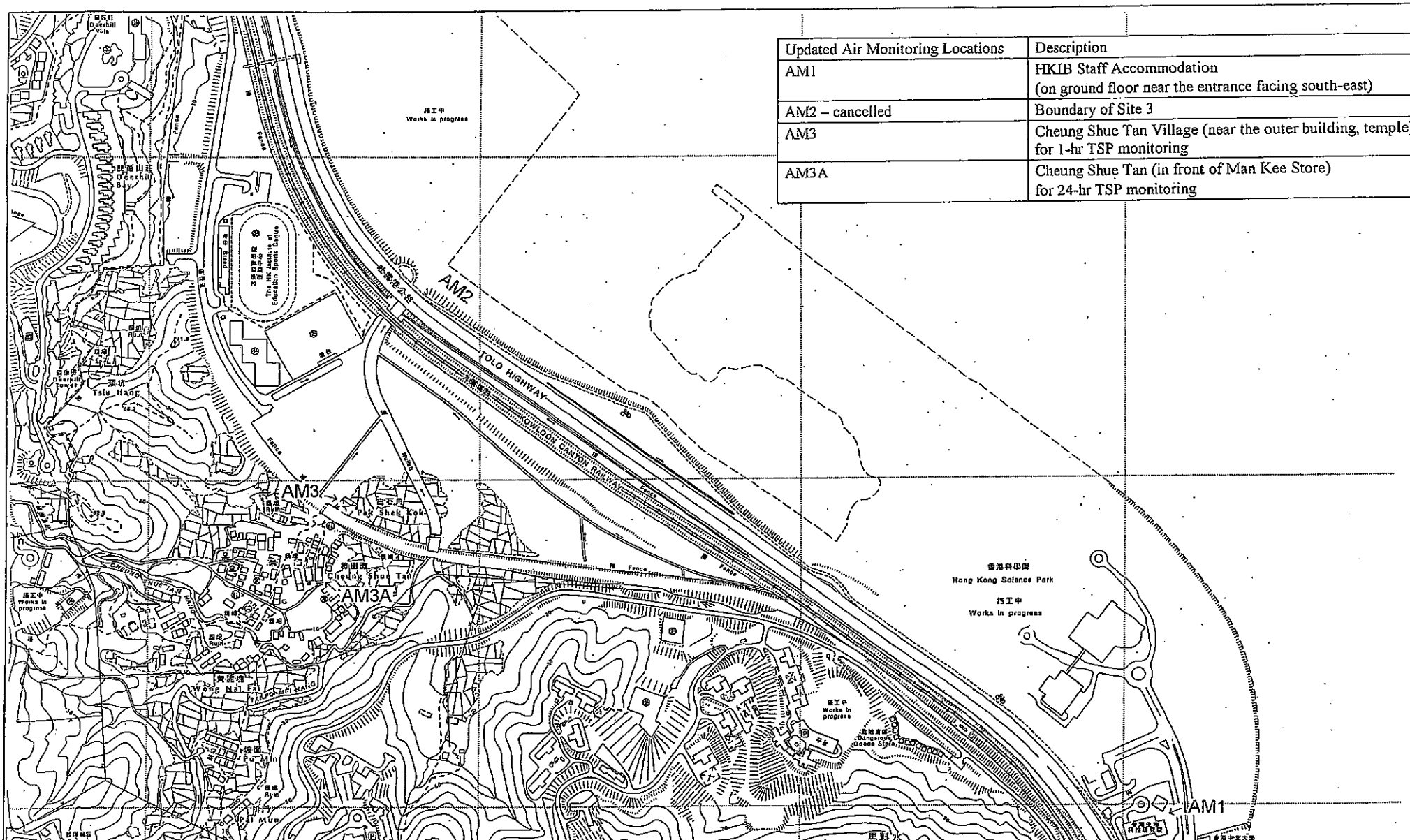
Remaining Engineering Works for Pak Shek Kok Development, Package 1
Contract No. TP35/02

Figure 1 Location of Noise Monitoring Stations

Scale : ---

Revised Date:
15/11/2002

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

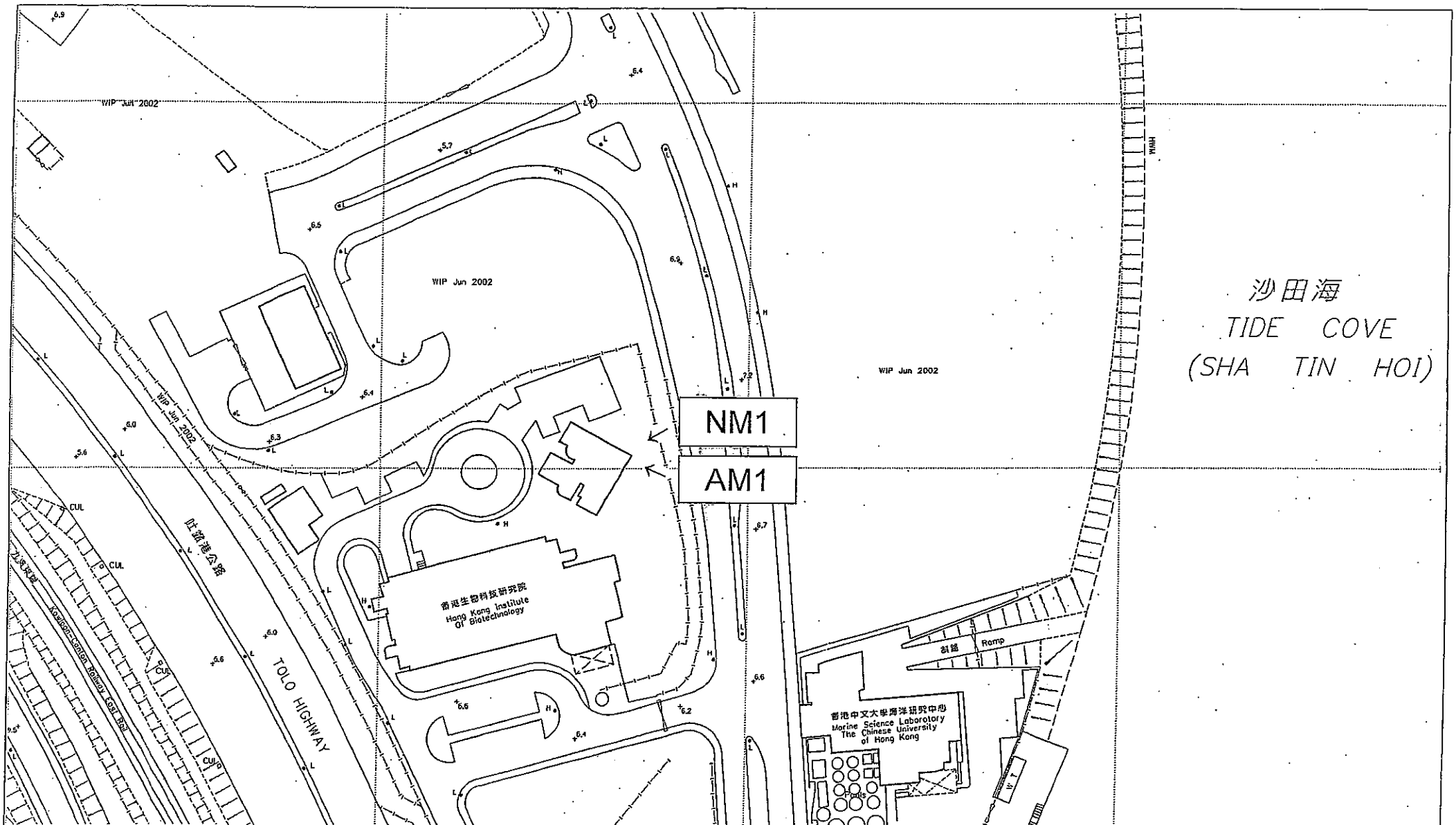
Remaining Engineering Works for Pak Shek Kok Development, Package 1
Contract No. TP35/02

Figure 2 Location of Air Monitoring Stations

Scale : ---

Revised Date:
15/11/2002

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



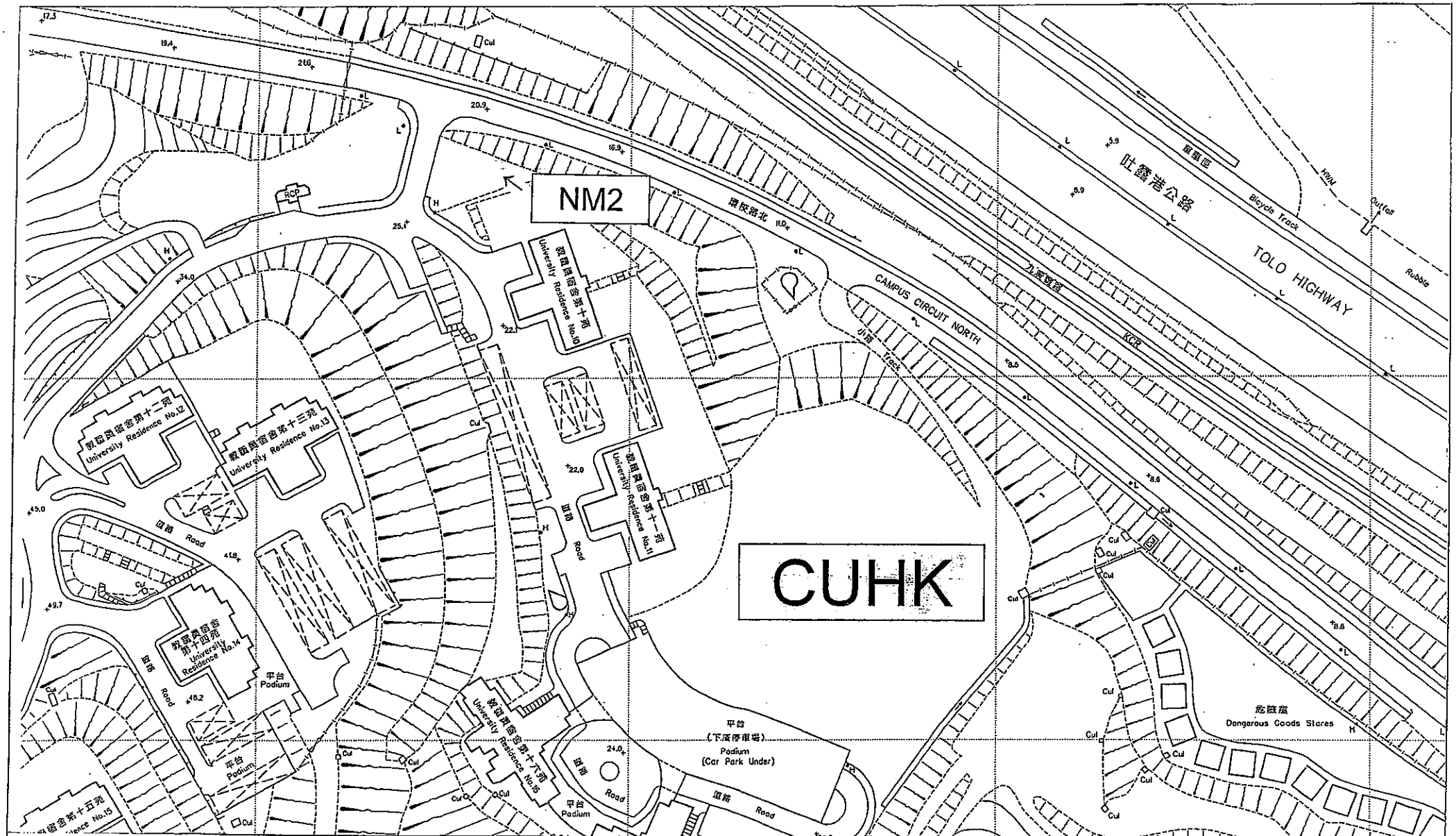
Remaining Engineering Works for Pak Shek Kok Development, Package 1
Contract No. TP35/02

Figure 3 Location of Air and Noise Monitoring Stations at HKIB Staff Accommodation

Scale : ---

Revised Date: 15/11/2002

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



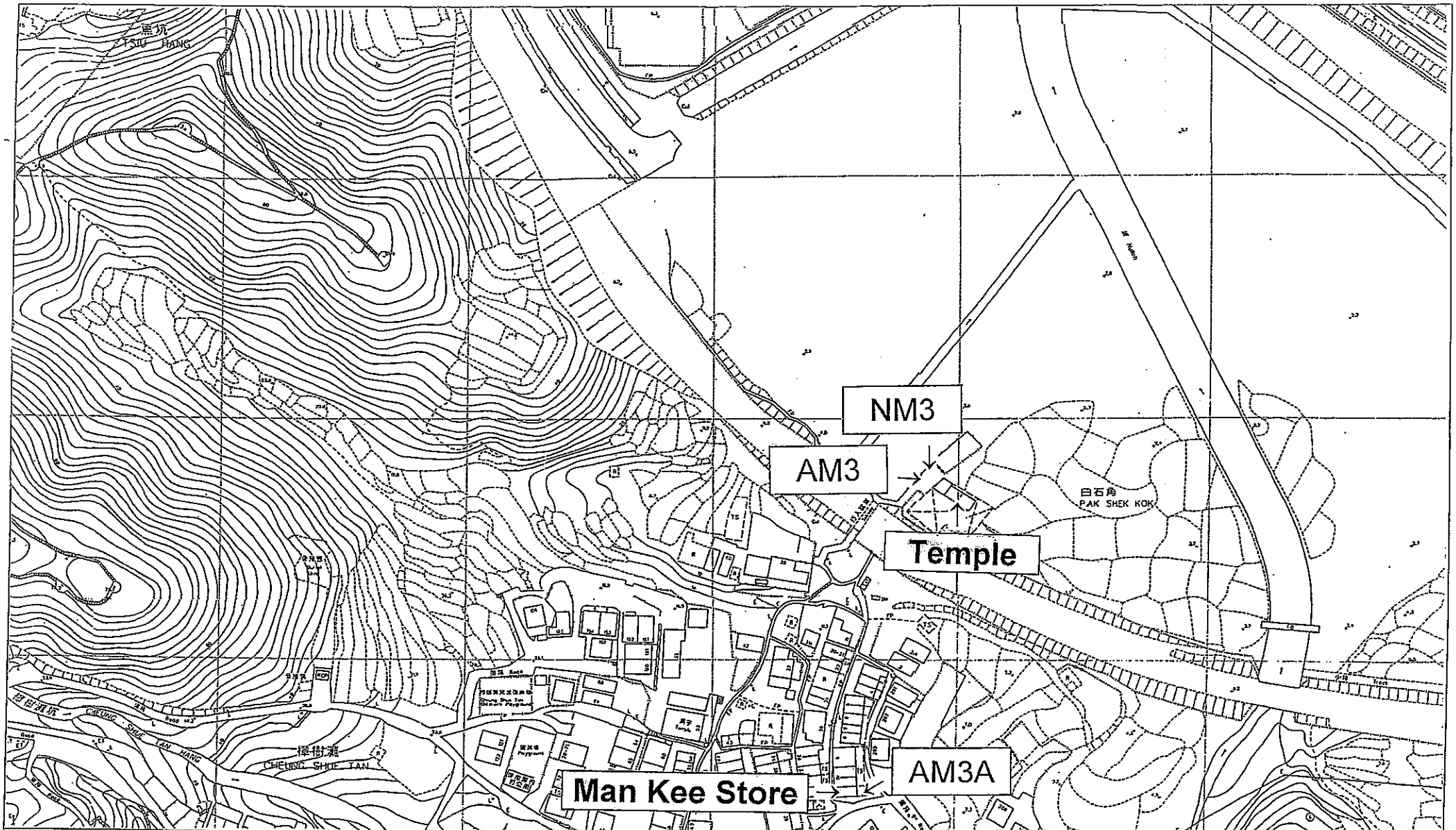
Remaining Engineering Works for Pak Shek Kok Development, Package 1
Contract No. TP35/02

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

Scale : ---

Revised Date:
15/11/2002

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



Remaining Engineering Works for Pak Shek Kok Development, Package 1
Contract No. TP35/02

Figure 5 Location of Air and Noise Monitoring Stations
at Cheung Shue Tan Village

Scale : ---

Revised Date:
15/11/2002

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED