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**TEST REPORT**

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

**REMAINING ENGINEERING  
INFRASTRUCTURE WORKS FOR  
PAK SHEK KOK DEVELOPMENT  
PACKAGE 2A  
(CONTRACT NO.: TP 37/03)  
MONTHLY EM&A REPORT  
(JULY 2007)**

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## **EXECUTIVE SUMMARY**

This monthly EM&A report (No.27) has been prepared to document the impact monitoring works conducted for the Contract of the Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No: TP 37/03) during the reporting period from 01 to 31 July 2007.

### **Construction Progress**

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

| Item | Construction Works  |
|------|---|
| 1    | Drainage works, UU duct laying works, water mains, roadworks and paving at Section 2  |
| 2    | Construction of central median of MLS Bridge  |
| 3    | Backfilling and construction of Retaining Wall No.1, R. C. Wall & R. E. Wall for MLS Bridge   |
| 4    | Construction of roof and erection of steel posts of the MLS Subway and construction of loading and unloading area   |
| 5    | Structural Steel Roof construction and brickworks for Toilet No.2   |
| 6    | Drainage work, landscape softworks, waterpoint construction, roadworks. Paver laying. E&M works, finishing works of precast concrete planter units and filling subsoil inside planters at Section 8 |
| 7    | Outstanding works at Section 7 at Pak Shek Kok Promenade  |
| 8    | Footpath and cycle track paving construction, roadworks adjacent to the Rd L4, de-silting and CCTV inspection of the completed drainage works at Section 5 (Road L4)                                |
| 9    | Outstanding works at Section 6  |
| 10   | Installation of irrigation pipe, lighting footing and duct, finishing of the landscape structure, construction of planter walls and asphalt paving at the proposed Landscape Nodes P1 & P2          |
| 11   | Installation of Lighting at Public Landing Steps at Section 9   |
| 12   | Outstanding works including watermain connection works for busy bay at Section 10   |
| 13   | Filling of soil mix at planter  |

### **Environmental Monitoring Progress**

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

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

### **Noise Monitoring**

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

### **Air Monitoring**

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

### **Wastewater Monitoring**

During this reporting month, no wastewater monitoring was required to be carried out since the wastewater monitoring had been carried out on 18 June 2007 and the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly. Hence, next wastewater monitoring should be at September 2007.

### **Site Inspection**

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

|  |  |
|--|--|
| Concerned Parties                      | Dates of Audit / Inspection in July 2007 |
| Weekly site inspection (ET)            | 07, 14, 21 and 27                        |
| Monthly site inspection (IEC/LWKJV/RE) | 27                                       |



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

| Item | Aspects       | Findings  | Action(s) taken by LWKJV   | ET Verification  |
|------|---------------|---|--|--|
| 1    | Water         | Follow up action to the incomplete finding in the previous month, mud and sand accumulated in the drainage channel at Node 2 were cleaned up during weekly site inspection on 21/07/07. | No further action required to be taken by LWKJV since the finding was completed. | No further verification was required to be taken by LEKJV since the finding was completed. |
| 2    | Site Practice | Follow up action to the incomplete finding in the previous month, rubbish and C&D waste accumulated at Node 1 were cleaned up during weekly site inspection on 07/07/07.                | No further action required to be taken by LWKJV since the finding was completed. | No further verification was required to be taken by LEKJV since the finding was completed. |
| 3    | Site Practice | Some idle tires were accumulated at Workshop without covered during weekly site inspections on 07/07/07 and 14/07/07.   | LWKJV replied to remove the tires to an appropriate area for storage.            | During the subsequent weekly site inspection on 21/07/07, the tires were removed.          |
| 4    | Site Practice | Rubbish was accumulated in sump pit at SA1 during the weekly site inspection on 07/07/07.   | LWKJV replied to clean up the rubbish immediately.                               | During the subsequent weekly site inspection on 14/07/07, the rubbish was cleaned up.      |

### **Waste Management**

According to weekly site inspection, ET found that the Contractor followed the recommended procedures stipulated in the Waste Management Plan (WMP) on handling and disposal of wastes. 325m<sup>3</sup> inert C&D materials and 263680kg general refuse were generated in this reporting month. All inert C&D materials were reused in the Contract and other wastes were handling under the instruction and procedure stated in the WMP in this reporting month.

### **Environmental Complaints**

No environmental complaints were received in this monitoring month.

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

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

### **Future Key Issues**

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

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



## 1.0 INTRODUCTION

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

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

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

This monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 01 to 31 July 2007.

## 2.0 PROJECT INFORMATION

### 2.1 Background

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

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

### 2.2 Site Description

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

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

### 2.3 Construction Programme

Details of construction programme are shown in Appendix F.

### 2.4 Project Organization and Management Structure

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

### 2.5 Contact Details of Key Personnel

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

Table 2.1 Contact Details of Key Personnel

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

### 3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

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

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

Table 3.1 Major Construction Activities in this reporting month

| Item | Construction Activities   |
|------|---|
| 1    | Drainage works, UU duct laying works, watemains, roadworks and paving at Section 2  |
| 2    | Construction of central median of MLS Bridge  |
| 3    | Backfilling and construction of Retaining Wall No.1, R. C. Wall & R. E. Wall for MLS Bridge   |
| 4    | Construction of roof and erection of steel posts of the MLS Subway and construction of loading and unloading area   |
| 5    | Structural Steel Roof construction and brickworks for Toilet No.2   |
| 6    | Drainage work, landscape softworks, waterpoint construction, roadworks. Paver laying. E&M works, finishing works of precast concrete planter units and filling subsoil inside planters at Section 8 |
| 7    | Outstanding works at Section 7 at Pak Shek Kok Promenade  |
| 8    | Footpath and cycle track paving construction, roadworks adjacent to the Rd L4, de-silting and CCTV inspection of the completed drainage works at Section 5 (Road L4)                                |
| 9    | Outstanding works at Section 6  |
| 10   | Installation of irrigation pipe, lighting footing and duct, finishing of the landscape structure, construction of planter walls and asphalt paving at the proposed Landscape Nodes P1 & P2          |
| 11   | Installation of Lighting at Public Landing Steps at Section 9   |
| 12   | Outstanding works including watermain connection works for busy bay at Section 10   |
| 13   | Filling of soil mix at planter  |

Table 3.2 Implementation of Environmental Mitigation Measures

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



## 4.0 AIR QUALITY MONITORING

### 4.1 Monitoring Requirement

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

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

### 4.2 Monitoring Equipment

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

Table 4.1 Air Quality Monitoring Equipment

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

### 4.3 Monitoring Parameters, Frequency and Duration

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

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

| <i>Parameter</i> | <i>Duration</i>          | <i>Frequency</i>                  |
|------------------|--------------------------|-----------------------------------|
| <i>24-hr TSP</i> | <i>24 hr (0000-2400)</i> | <i>Once every six days</i>        |
| <i>1-hr TSP</i>  | <i>1 hr (0700-1900)</i>  | <i>Three times every six days</i> |

### 4.4 Monitoring Locations and Schedule

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

Table 4.3 Air quality monitoring locations

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

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  | Date     | Start | Finish   |       |        |
| AM1                             | HKIB Staff Accommodation                                  |                   |       |          |       | 03/07/07 | 08:10 | 09:10  |
|                                 |   |                   |       |          |       | 05/07/07 | 10:15 | 11:15  |
|                                 |   |                   |       |          |       | 07/07/07 | 13:10 | 14:10  |
|                                 |   |                   |       |          |       | 10/07/07 | 10:02 | 11:02  |
|                                 |   |                   |       |          |       | 12/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 14/07/07 | 09:00 | 10:00  |
|                                 |   |                   |       |          | ---   | 17/07/07 | 09:30 | 10:30  |
|                                 |   |                   |       |          |       | 19/07/07 | 10:45 | 11:45  |
|                                 |   |                   |       |          |       | 21/07/07 | 11:00 | 12:00  |
|                                 |   |                   |       |          |       | 24/07/07 | 08:30 | 09:30  |
|                                 |   |                   |       |          |       | 26/07/07 | 13:05 | 14:05  |
|                                 |   |                   |       |          |       | 28/07/07 | 15:30 | 16:30  |
|                                 |   |                   |       |          |       | 31/07/07 | 08:55 | 09:55  |
| AM3                             | Cheung Shue Tan Village (Near the outer building, temple) |                   |       |          |       | 03/07/07 | 15:00 | 16:00  |
|                                 |   |                   |       |          |       | 05/07/07 | 14:30 | 15:30  |
|                                 |   |                   |       |          |       | 07/07/07 | 15:40 | 16:40  |
|                                 |   |                   |       |          |       | 10/07/07 | 13:03 | 14:03  |
|                                 |   |                   |       |          |       | 12/07/07 | 14:20 | 15:20  |
|                                 |   |                   |       |          |       | 14/07/07 | 10:30 | 11:30  |
|                                 |   |                   |       |          | ---   | 17/07/07 | 11:00 | 12:00  |
|                                 |   |                   |       |          |       | 19/07/07 | 13:10 | 14:10  |
|                                 |   |                   |       |          |       | 21/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 24/07/07 | 09:50 | 10:50  |
|                                 |   |                   |       |          |       | 26/07/07 | 14:16 | 15:16  |
|                                 |   |                   |       |          |       | 28/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 31/07/07 | 14:50 | 15:50  |
| AM5                             | Near Wen Chih Tang at the CUHK                            |                   |       |          |       | 03/07/07 | 09:26 | 10:26  |
|                                 |   |                   |       |          |       | 05/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 07/07/07 | 14:25 | 15:25  |
|                                 |   |                   |       |          |       | 10/07/07 | 16:30 | 17:30  |
|                                 |   |                   |       |          |       | 12/07/07 | 15:35 | 16:35  |
|                                 |   |                   |       |          |       | 14/07/07 | 15:00 | 16:00  |
|                                 |   |                   |       |          | ---   | 17/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 19/07/07 | 16:45 | 17:45  |
|                                 |   |                   |       |          |       | 21/07/07 | 14:10 | 15:10  |
|                                 |   |                   |       |          |       | 24/07/07 | 13:00 | 14:00  |
|                                 |   |                   |       |          |       | 26/07/07 | 15:37 | 16:37  |
|                                 |   |                   |       |          |       | 28/07/07 | 14:15 | 15:15  |
|                                 |   |                   |       |          |       | 31/07/07 | 10:05 | 11:05  |
| AM1                             | HKIB Staff Accommodation                                  | 05/07/07          | 10:17 | 06/07/07 | 10:18 |          |       |        |
|                                 |   | 11/07/07          | 09:51 | 12/07/07 | 09:49 |          |       |        |
|                                 |   | 17/07/07          | 11:33 | 18/07/07 | 11:46 |          | ---   |        |
|                                 |   | 23/07/07          | 15:32 | 24/07/07 | 15:34 |          |       |        |
|                                 |   | 28/07/07          | 14:00 | 29/07/07 | 14:11 |          |       |        |
| AM3A                            | Cheung Shue Tan (in front of Man Kee Store)               | 05/07/07          | 14:32 | 06/07/07 | 14:49 |          |       |        |
|                                 |   | 11/07/07          | 09:31 | 12/07/07 | 09:51 |          |       |        |
|                                 |   | 17/07/07          | 10:37 | 18/07/07 | 11:12 |          | ---   |        |
|                                 |   | 23/07/07          | 15:13 | 24/07/07 | 15:36 |          |       |        |
|                                 |   | 28/07/07          | 13:40 | 29/07/07 | 14:02 |          |       |        |
| AM5                             | Near Wen Chih Tang at the CUHK                            | 05/07/07          | 13:02 | 06/07/07 | 13:23 |          |       |        |
|                                 |   | 11/07/07          | 09:44 | 12/07/07 | 10:03 |          |       |        |
|                                 |   | 17/07/07          | 11:00 | 18/07/07 | 11:07 |          | ---   |        |
|                                 |   | 23/07/07          | 15:24 | 24/07/07 | 15:47 |          |       |        |
|                                 |   | 28/07/07          | 13:54 | 29/07/07 | 14:08 |          |       |        |

## 4.5 Monitoring Methodology

### 24-hour TSP Monitoring

#### Instrumentation

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

#### Installation

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

#### Operation/Analytical Procedures

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

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

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

#### Maintenance & Calibration

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

### 1-hour TSP Monitoring

#### Measuring Procedures

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

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



#### Maintenance & Calibration

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

#### **Wind Data Monitoring**

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

### **4.6 Action and Limit Levels**

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

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

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

- \* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Advance Engineering Infrastructure Works for Pak Shek Kok Development – Southern Access Road and Sewage Pumping Station No.3.
- \*\* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 – Contract No. TP 35/02.

### **4.7 Event-Action Plans**

Please refer to Appendix E for details.

### **4.8 Results**

#### **4.8.1 24-hour TSP Monitoring**

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

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

#### **4.8.2 1-hour TSP Monitoring**

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

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

## 5.0 Noise Monitoring

### 5.1 Monitoring Requirements

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

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

### 5.2 Monitoring Equipment

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

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

Table 5.1 Noise Monitoring Equipment

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

### 5.3 Monitoring Parameters, duration and Frequency

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

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

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

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

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

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

### 5.4 Monitoring Locations and Period

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



Table 5.3 Noise Monitoring Locations

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

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

Table 5.4 Monitoring Periods for noise monitoring stations

| Monitoring stations | Monitoring Period |       |              |     |         |     |            |     |
|---------------------|-------------------|-------|--------------|-----|---------|-----|------------|-----|
|                     | Day-time          |       | Evening-time |     | Holiday |     | Night-time |     |
| NM1                 | 03/07/07          | 08:15 | ---          | --- | ---     | --- | ---        | --- |
|                     | 10/07/07          | 10:55 | ---          | --- | ---     | --- | ---        | --- |
|                     | 17/07/07          | 09:30 | ---          | --- | ---     | --- | ---        | --- |
|                     | 24/07/07          | 08:35 | ---          | --- | ---     | --- | ---        | --- |
|                     | 31/07/07          | 08:58 | ---          | --- | ---     | --- | ---        | --- |
| NM2                 | 03/07/07          | 10:20 | ---          | --- | ---     | --- | ---        | --- |
|                     | 10/07/07          | 11:15 | ---          | --- | ---     | --- | ---        | --- |
|                     | 17/07/07          | 13:30 | ---          | --- | ---     | --- | ---        | --- |
|                     | 24/07/07          | 18:00 | ---          | --- | ---     | --- | ---        | --- |
|                     | 31/07/07          | 11:15 | ---          | --- | ---     | --- | ---        | --- |
| NM3                 | 03/07/07          | 15:05 | ---          | --- | ---     | --- | ---        | --- |
|                     | 10/07/07          | 13:10 | ---          | --- | ---     | --- | ---        | --- |
|                     | 17/07/07          | 11:00 | ---          | --- | ---     | --- | ---        | --- |
|                     | 24/07/07          | 09:55 | ---          | --- | ---     | --- | ---        | --- |
|                     | 31/07/07          | 14:55 | ---          | --- | ---     | --- | ---        | --- |
| NM8                 | 03/07/07          | 09:30 | ---          | --- | ---     | --- | ---        | --- |
|                     | 10/07/07          | 16:38 | ---          | --- | ---     | --- | ---        | --- |
|                     | 17/07/07          | 13:00 | ---          | --- | ---     | --- | ---        | --- |
|                     | 24/07/07          | 13:05 | ---          | --- | ---     | --- | ---        | --- |
|                     | 31/07/07          | 10:15 | ---          | --- | ---     | --- | ---        | --- |

## 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

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

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

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

### 5.7 Event-Action Plans

Please refer to the Appendix E for details.

### 5.8 Results

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

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

## 6.0 WASTEWATER MONITORING

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

During this reporting month, no wastewater monitoring was required to be carried out since the wastewater monitoring had been carried out on 18 June 2007 and the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly.

Since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly, the next wastewater monitoring should be at September 2007..

## 7.0 ENVIRONMENTAL NON-CONFORMANCE

### 7.1 Summary of environmental monitoring

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

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

During this reporting month, no wastewater monitoring was required to be carried out since the wastewater monitoring had been carried out on 18 June 2007 and the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly. Hence, next wastewater monitoring should be at September 2007.

## 7.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

## 7.3 Summary of Notification of Summons and Prosecution

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

## 8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET in this reporting month (07, 14, 21 and 27 July 2007). Monthly joint site inspection at 27 July 2007 was carried out by Engineer's Representative, IEC and LWKJV. The implementation status of the mitigation measures on site inspections in this reporting month is presented in Appendix H.

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

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

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

| Item | Aspects       | Findings  | Action(s) taken by LWKJV   | ET Verification  |
|------|---------------|---|--|--|
| 1    | Water         | Follow up action to the incomplete finding in the previous month, mud and sand accumulated in the drainage channel at Node 2 were cleaned up during weekly site inspection on 21/07/07. | No further action required to be taken by LWKJV since the finding was completed. | No further verification was required to be taken by LEKJV since the finding was completed. |
| 2    | Site Practice | Follow up action to the incomplete finding in the previous month, rubbish and C&D waste accumulated at Node 1 were cleaned up during weekly site inspection on 07/07/07.                | No further action required to be taken by LWKJV since the finding was completed. | No further verification was required to be taken by LEKJV since the finding was completed. |
| 3    | Site Practice | Some idle tires were accumulated at Workshop without covered during weekly site inspections on 07/07/07 and 14/07/07.   | LWKJV replied to remove the tires to an appropriate area for storage.            | During the subsequent weekly site inspection on 21/07/07, the tires were removed.          |
| 4    | Site Practice | Rubbish was accumulated in sump pit at SA1 during the weekly site inspection on 07/07/07.   | LWKJV replied to clean up the rubbish immediately.                               | During the subsequent weekly site inspection on 14/07/07, the rubbish was cleaned up.      |

### 8.2 Status of Environmental Licensing and Permitting

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

Table 8.2 Summary of environmental licensing and permit status

| Description  | Permit No.             | Valid Period |          | Section  |
|--|------------------------|--------------|----------|--|
|  |                        | From         | To       |  |
| Construction Noise Permit for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po | GW-RN0643-06           | 14/01/07     | 13/07/07 | <p><u>Group A</u><br/>Two Poker, vibratory, hand-held (CNP170)<br/>Two Concrete lorry mixer (CNP044)<br/>One Excavator, tracked (CNP081)</p> <p><u>Group B</u><br/>One Asphalt Paver (CNP004)<br/>One Roller, Vibratory (CNP186)<br/>One Road Roller (CNP185)<br/>One Dump Truck (CNP067)</p> <p><u>Group C</u><br/>One Dump Truck (CNP067)<br/>One Excavator, tracked (CNP081)<br/>One Crane, mobile (diesel) (CNP048)<br/>One Lorry with crane</p> |
| Construction Noise Permit for the Construction Works of the Project adjacent to Ma Liu Shui Interchange, N.T.      | GW-RN0120-07           | 01/04/07     | 30/06/07 | <p>One Crane, mobile (diesel) (CNP048)<br/>Two Lorry with crane<br/>Welding machine (electric)</p>   |
| Wastewater Discharge License   | 3246 – Part A          | 01/11/06     | 31/12/09 | Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank to Coastal water or communal drain for the carriage of surface drainage water.   |
| Wastewater Discharge License   | 3246 – Part B          | 06/12/04     | 05/12/09 | Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and on-site aerobic waste water treatment system to soak-away pit.  |
| Chemical Waste Producer  | 5113-729-LL<br>1113-01 | 24/09/04     | ---      | Spent lubricating oil, spent battery parts containing heavy metals   |

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

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

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

## 9.0 WASTE MANAGEMENT

### 9.1 Waste Management Audit

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



## 9.2 Records of Waste Quantities

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

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

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

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

| Type of Waste       |  | Quantity | Disposal Location      | Cumulative Quantity |
|---------------------|--|----------|------------------------|---------------------|
| Inert C&D Materials | Total Quantity Generated (m <sup>3</sup> ) | 325      | Reused in the Contract | 128248              |
|                     | Broken Concrete (m <sup>3</sup> )          | 25       | N/A                    | 1086                |
|                     | Reused in the Contract (m <sup>3</sup> )   | 300      | N/A                    | 127250              |
|                     | Reused in other Projects (m <sup>3</sup> ) | 0        | N/A                    | 0                   |
|                     | Disposal as Public Fill (m <sup>3</sup> )  | 0        | N/A                    | 0                   |
| C&D Waste           | Metals (1000kg)                            | 0        | N/A                    | 37.705              |
|                     | Paper/Cardboard Packaging (1000kg)         | 0        | N/A                    | 2.806               |
|                     | Plastics (1000kg)                          | 0        | N/A                    | 0.083               |
|                     | Chemical Waste (1000kg)                    | 0.0      | N/A                    | 3.4                 |
|                     | Other, e.g. General Refuse (1000kg)        | 263.68   | SENT                   | 1347.88             |

## 10.0 IMPLEMENTATION STATUS

### 10.1 Implementation Status of Environmental Mitigation Measures

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

#### Air Quality

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

#### Noise

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

#### Water Quality

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

#### Waste Management

LWKJV has been implementing most mitigation measures on waste management.

### 10.2 Implementation Status of Event and Action Plan

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

### 10.3 Implementation Status of Environmental Complaint Handling

No complaints had been received during this monitoring month.

## 11.0 CONCLUSION

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

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

During this reporting month, no wastewater monitoring was required to be carried out since the wastewater monitoring had been carried out on 18 June 2007 and the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly. Hence, next wastewater monitoring should be at September 2007.

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

## 12.0 FUTURE KEY ISSUES

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

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

Table 12.1 Upcoming EM&A Schedule in coming two months

| Type of Monitoring          | August 2007  | September 2007                                     |
|-----------------------------|--|--|
| Noise Monitoring (Day-time) | 07, 14, 21, 28                                     | 04, 11, 18, 25                                     |
| 1-hour TSP                  | 02, 04, 07, 09, 11, 14, 16, 18, 21, 23, 25, 28, 30 | 01, 04, 06, 08, 11, 13, 15, 18, 20, 22, 25, 27, 29 |
| 24-hour TSP                 | 03, 09, 15, 21, 27                                 | 01, 07, 13, 19, 25                                 |
| Site Inspection             | 04, 11, 18, 25                                     | 01, 08, 15, 22, 29                                 |

### 12.2 Upcoming construction works scheduled in the coming two months

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

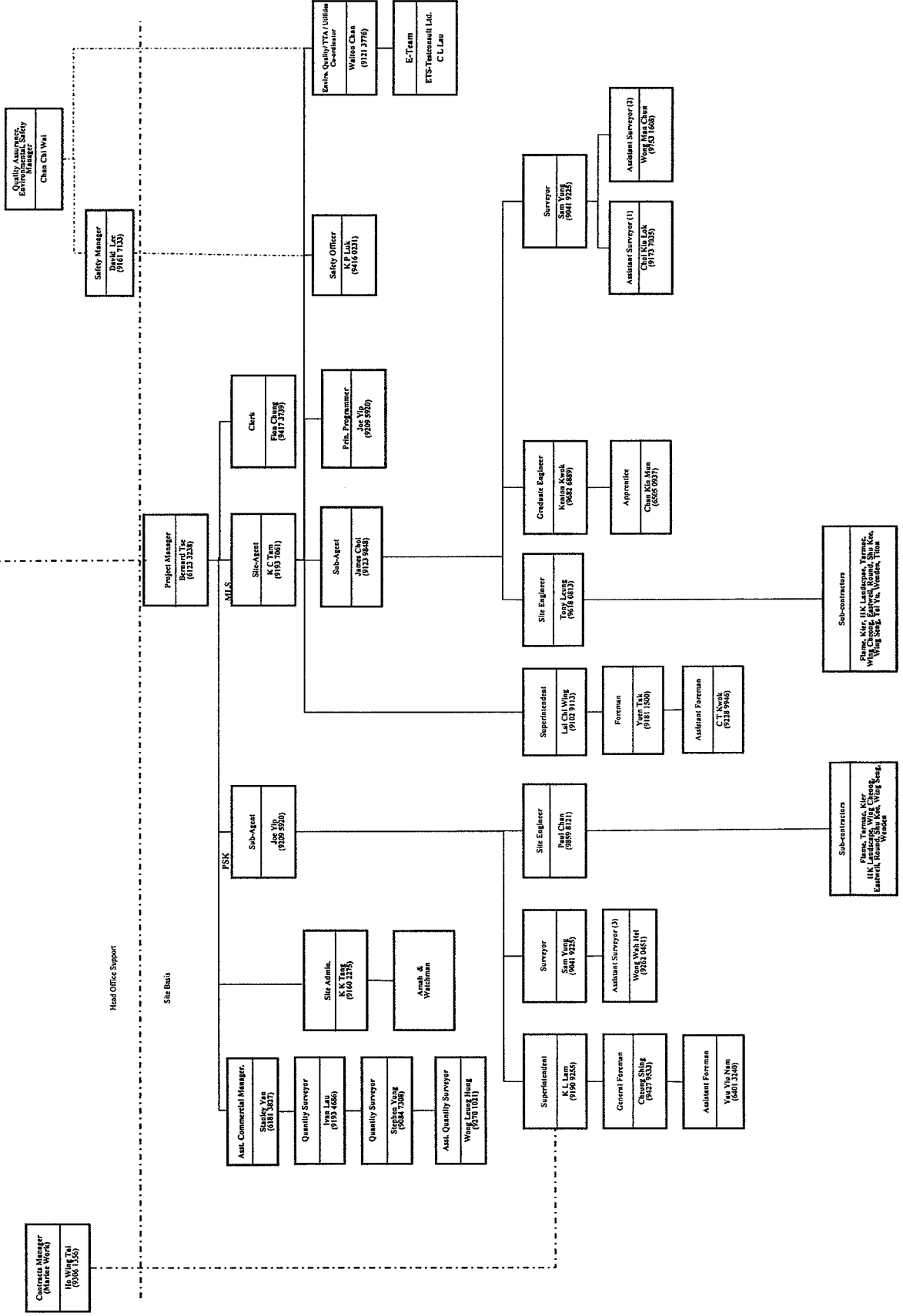
Table 12.2 Construction activities planned in the coming two months

| Item | Construction Activities planned to be carried out in the coming two months   |
|------|--|
| 1    | Drainage works at Section 2 (loading and unloading area in MLS and in the area blocked by CLP) & 8 (Promenade)   |
| 2    | Utility works at Section 2 (MLS) and outstanding works under Section 1   |
| 3    | Backfilling and construction of RE wall and R. C. Wall, construction of parapets and median barriers, preparation works for MJ installation of the Alternative Design of the proposed Ma Liu Shui Bridge |
| 4    | Waterproofing works of the Alternative Design of the proposed Ma Liu Shui Bridge   |
| 5    | Construction of Retaining Wall No.1 and parapet  |
| 6    | Construction of roof for the proposed Ma Liu Shui Subway (Alternative Design)  |
| 7    | Construction of structural steel roof, E&M works, architectural finishing works for Toilet No.2  |
| 8    | Construction of the slip road leading to the proposed RCP and Toilet No.1 under Section 5  |
| 9    | Installation of irrigation system along the proposed Promenade, construction of hard landscape structures, and CCTV inspection of the completed drainage pipes   |
| 10   | Hard and soft landscaping works, paving, construction of landscape structures at Section 8   |
| 11   | Paving works at proposed Landscape Nodes P1 and P2   |
| 12   | Filling of soil mix at planter wall  |
| 13   | Watermains connection works and hard landscape works for Section 10  |

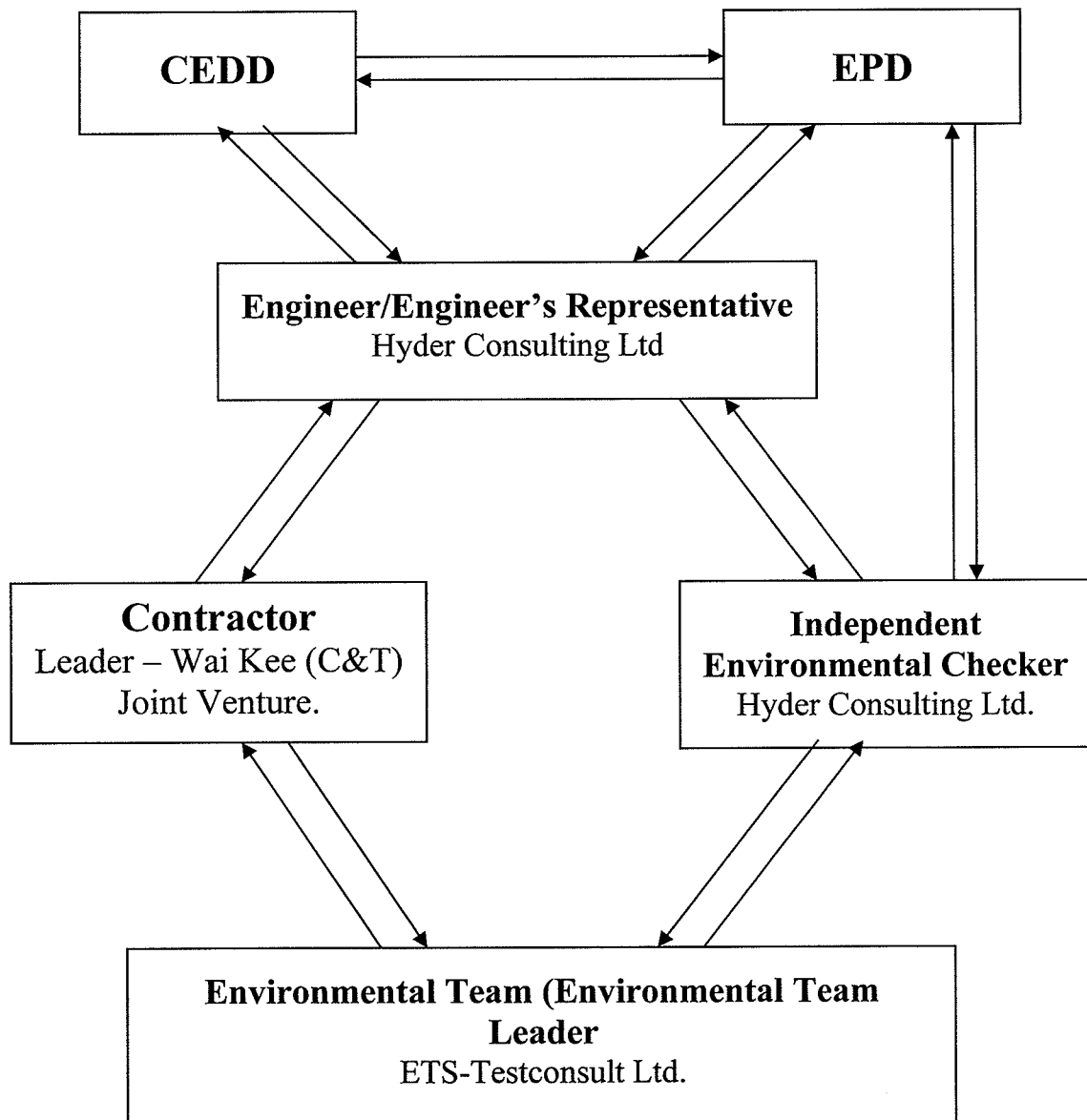


## **Appendix A**

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



# Lines of Communication





**Appendix B1**

**Calibration Certificates for  
Air Quality Monitoring Equipments**



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

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

**TEST REPORT**

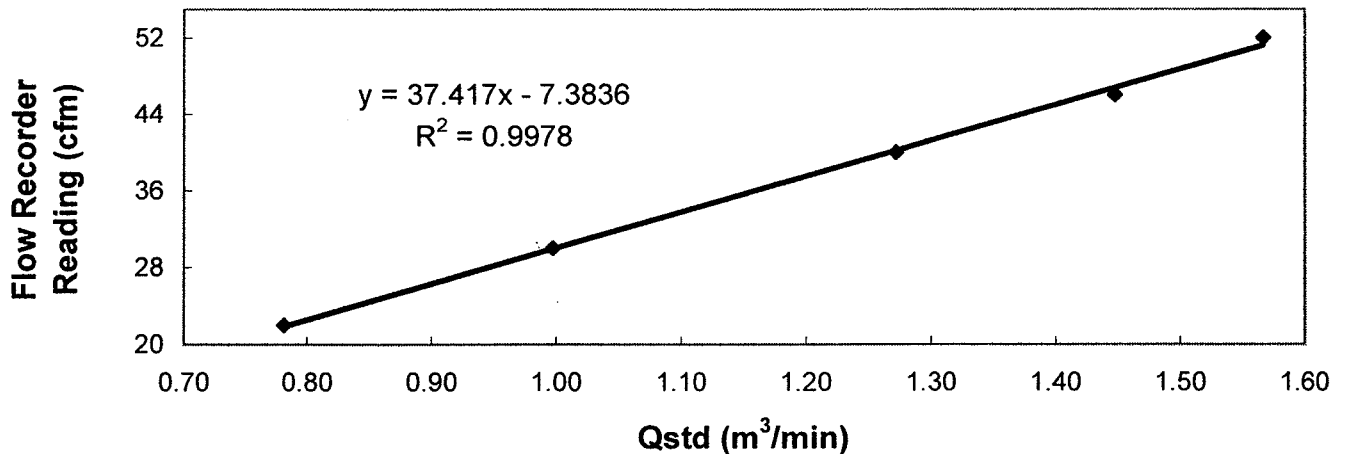
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 15 May 2007  
**Serial No.** : 1178 (ET / EA / 003 / 01) Calibration Due Date : 14 July 2007  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

|  |              |      |      |         |       |
|--|--------------|------|------|---------|-------|
| Flow recorder reading (cfm)                  | 52           | 46   | 40   | 30      | 22    |
| Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.57         | 1.45 | 1.27 | 1.00    | 0.78  |
| Pressure :                                   | 759.06 mm Hg |      |      | Temp. : | 311 K |

**Sampler 1178 Calibration Curve  
Site: Pak Shek Kok (AM-1)  
Date of Calibration: 15 May 2007**

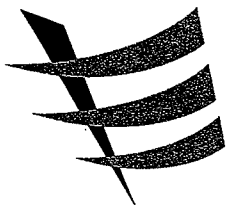


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

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

Calibrated by : Kiu  
Kenneth CHIU  
(Asst. Technician)

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



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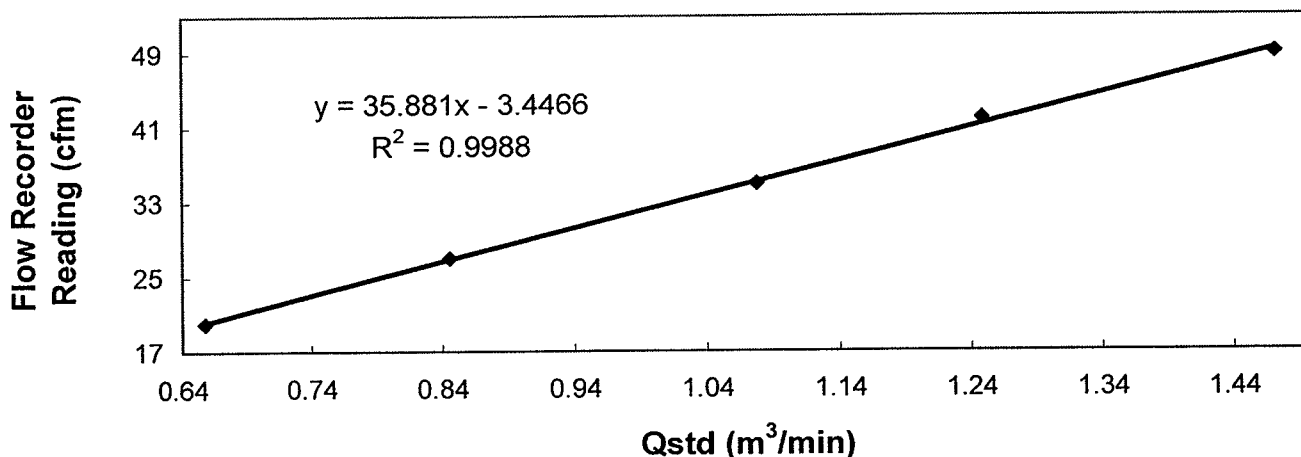
**TEST REPORT**

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

Manufacturer : Graseby GMW Date of Calibration : 17 July 2007  
Serial No. : 1178 (ET / EA / 003 / 01) Calibration Due Date : 16 September 2007  
Method : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

|         |  |               |      |      |      |      |
|---------|--|---------------|------|------|------|------|
| Results | Flow recorder reading (cfm)                  | 49            | 42   | 35   | 27   | 20   |
|         | Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.47          | 1.25 | 1.08 | 0.85 | 0.66 |
|         | Pressure : 754.56 mm Hg                      | Temp. : 316 K |      |      |      |      |

**Sampler 1178 Calibration Curve**  
**Site: Pak Shek Kok (AM-1)**  
**Date of Calibration: 17 July 2007**



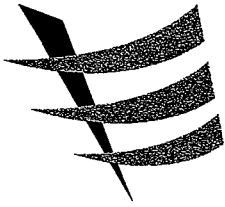
Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

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

Calibrated by : Kin  
Kenneth CHIU  
(Asst. Technician)

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





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

**TEST REPORT**

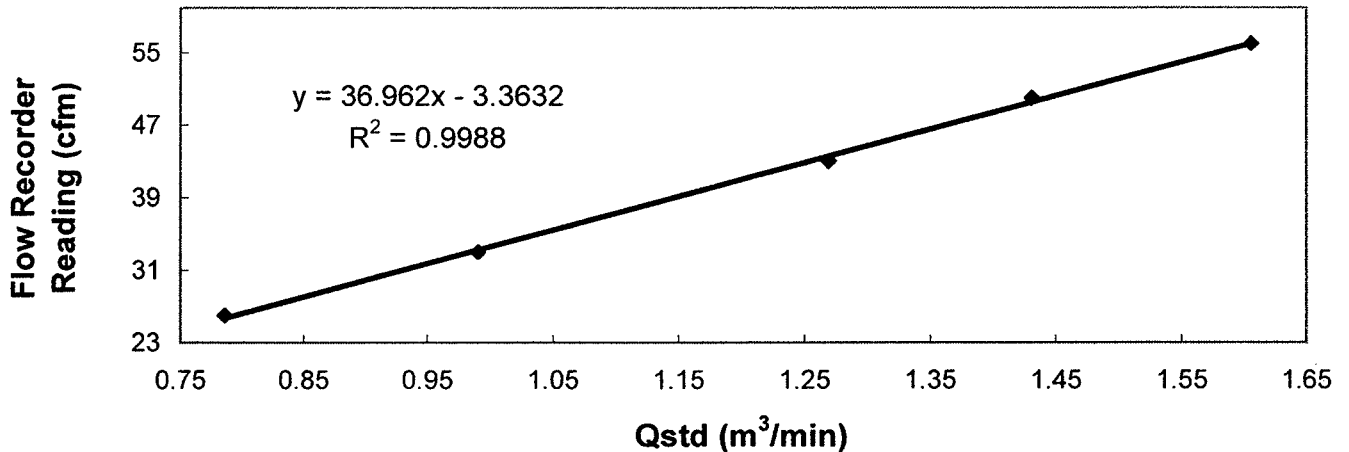
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 15 May 2007  
**Serial No.** : 7179 (ET / EA / 003 / 16) Calibration Due Date : 14 July 2007  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

|  |              |      |         |       |      |
|--|--------------|------|---------|-------|------|
| Flow recorder reading (cfm)                  | 56           | 50   | 43      | 33    | 26   |
| Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.61         | 1.43 | 1.27    | 0.99  | 0.79 |
| Pressure :                                   | 762.81 mm Hg |      | Temp. : | 309 K |      |

**Sampler 7179 Calibration Curve  
Site: Pak Shek Kok (AM-3A)  
Date of Calibration: 15 May 2007**

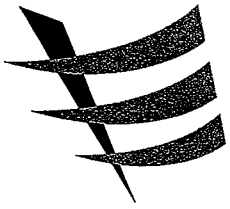


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

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

Calibrated by : Kin  
Kenneth CHIU  
(Asst. Technician)

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



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**TEST REPORT**

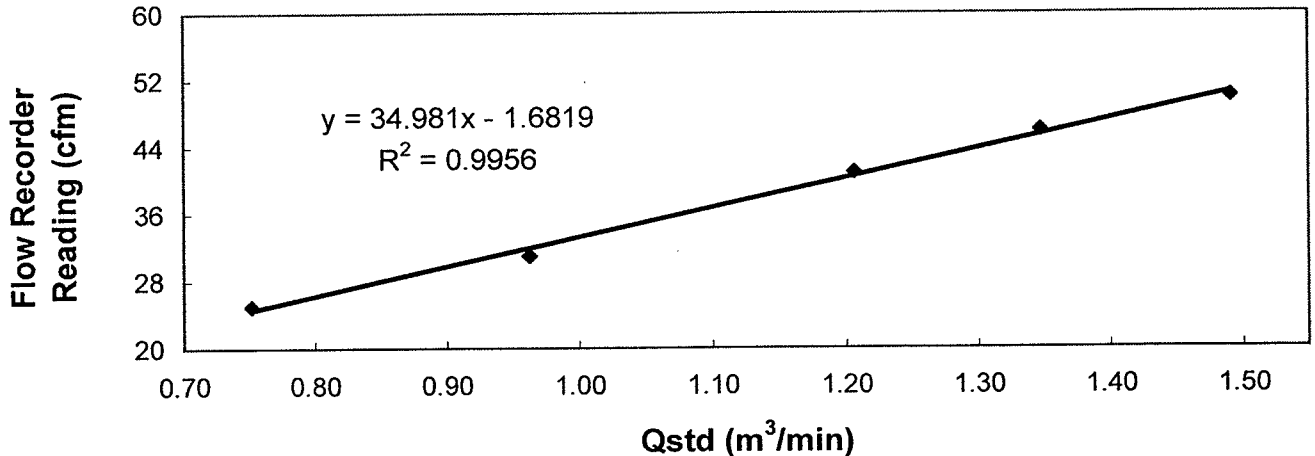
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW **Date of Calibration** : 17 July 2007  
**Serial No.** : 7179 (ET / EA / 003 / 16) **Calibration Due Date** : 16 September 2007  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

|  |              |      |      |         |       |
|--|--------------|------|------|---------|-------|
| Flow recorder reading (cfm)                  | 50           | 46   | 41   | 31      | 25    |
| Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.49         | 1.35 | 1.21 | 0.96    | 0.75  |
| Pressure :                                   | 756.81 mm Hg |      |      | Temp. : | 309 K |

**Sampler 7179 Calibration Curve**  
**Site: Pak Shek Kok (AM-3A)**  
**Date of Calibration: 17 July 2007**



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

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

Calibrated by : Kiu  
Kenneth CHIU  
(Asst. Technician)

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



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**TEST REPORT**

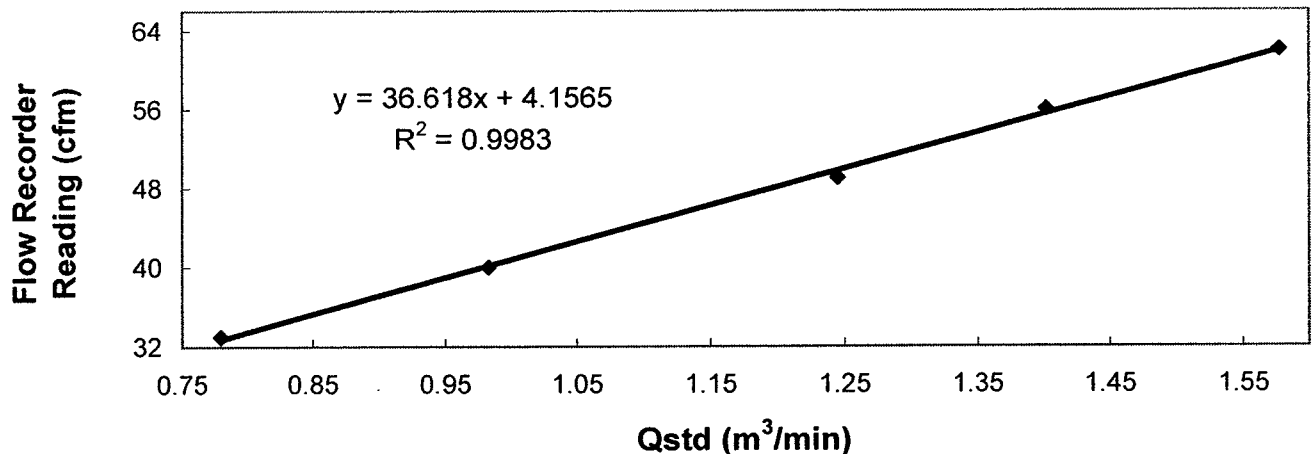
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 15 May 2007  
**Serial No.** : 1172 (ET / EA / 003 / 11) Calibration Due Date : 14 July 2007  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

|  |              |      |         |       |      |
|--|--------------|------|---------|-------|------|
| Flow recorder reading (cfm)                  | 62           | 56   | 49      | 40    | 33   |
| Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.58         | 1.40 | 1.24    | 0.98  | 0.78 |
| Pressure :                                   | 757.56 mm Hg |      | Temp. : | 312 K |      |

**Sampler 1172 Calibration Curve  
Site: Pak Shek Kok (AM-5)  
Date of Calibration: 15 May 2007**



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

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

Calibrated by : Kiu  
Kenneth CHIU  
(Asst. Technician)

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



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

**TEST REPORT**

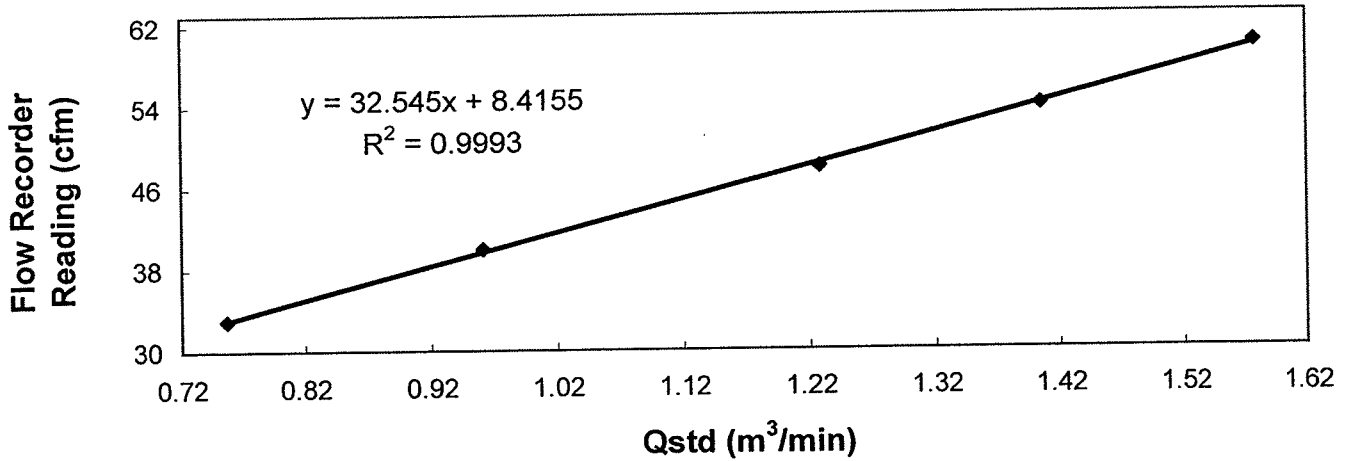
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW **Date of Calibration** : 17 July 2007  
**Serial No.** : 1172 (ET / EA / 003 / 11) **Calibration Due Date** : 16 September 2007  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

|  |              |      |      |         |       |
|--|--------------|------|------|---------|-------|
| Flow recorder reading (cfm)                  | 60           | 54   | 48   | 40      | 33    |
| Qstd (Actual flow rate, m <sup>3</sup> /min) | 1.58         | 1.41 | 1.23 | 0.96    | 0.76  |
| Pressure :                                   | 757.56 mm Hg |      |      | Temp. : | 312 K |

**Sampler 1172 Calibration Curve**  
**Site: Pak Shek Kok (AM-5)**  
**Date of Calibration: 17 July 2007**



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

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

Calibrated by : Kiu  
Kenneth CHIU  
(Asst. Technician)

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



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

**TEST REPORT**

**Internal Calibration Report  
of  
Dust Trak Monitor**

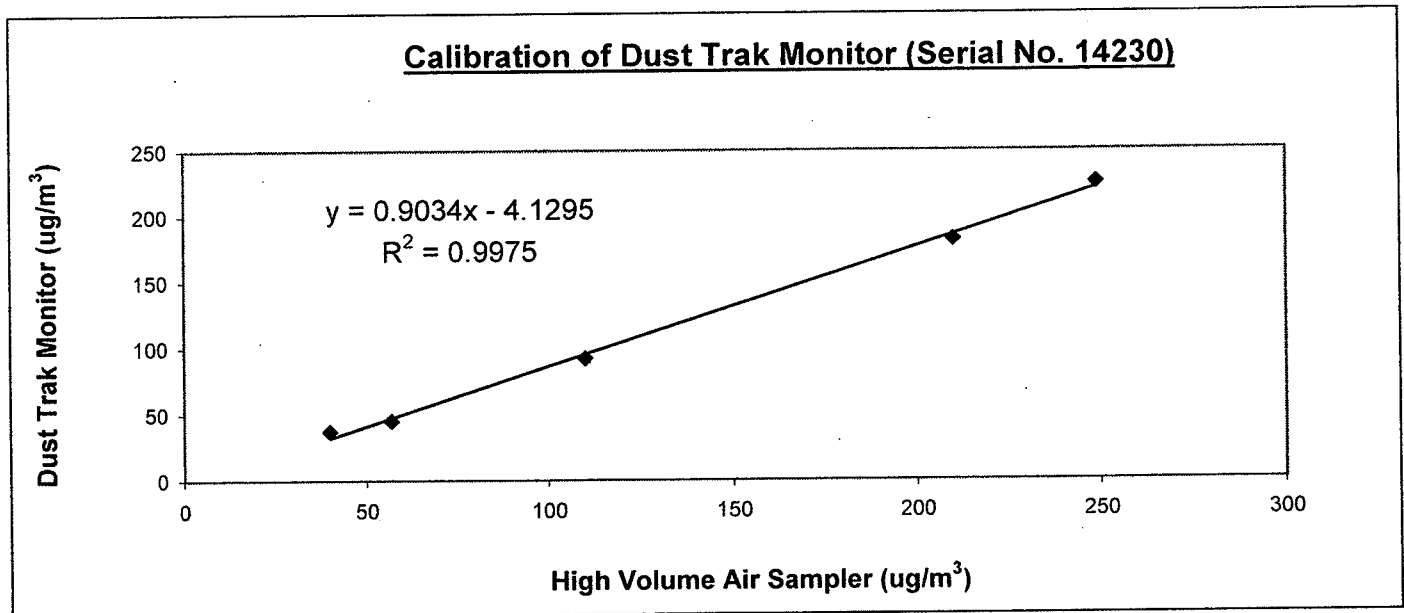
Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 20 January 2007

Serial No. : 14230 ( ET/EA/001/04 ) Due Date : 19 July 2007

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


Results :

|  |    |    |                                  |     |     |
|--|----|----|----------------------------------|-----|-----|
| Dust Trak Monitor (ug/m <sup>3</sup> )       | 40 | 57 | 110                              | 210 | 249 |
| High Volume Air Sampler (ug/m <sup>3</sup> ) | 37 | 45 | 92                               | 182 | 225 |
| High Volume Air Sampler Serial No.: 1178     |    |    | Calibration Date: 12 / 03 / 2007 |     |     |

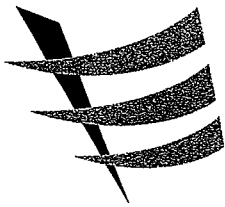


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

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

Calibrated by :   
LEUNG, Ka Chun  
(Site Technician)

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



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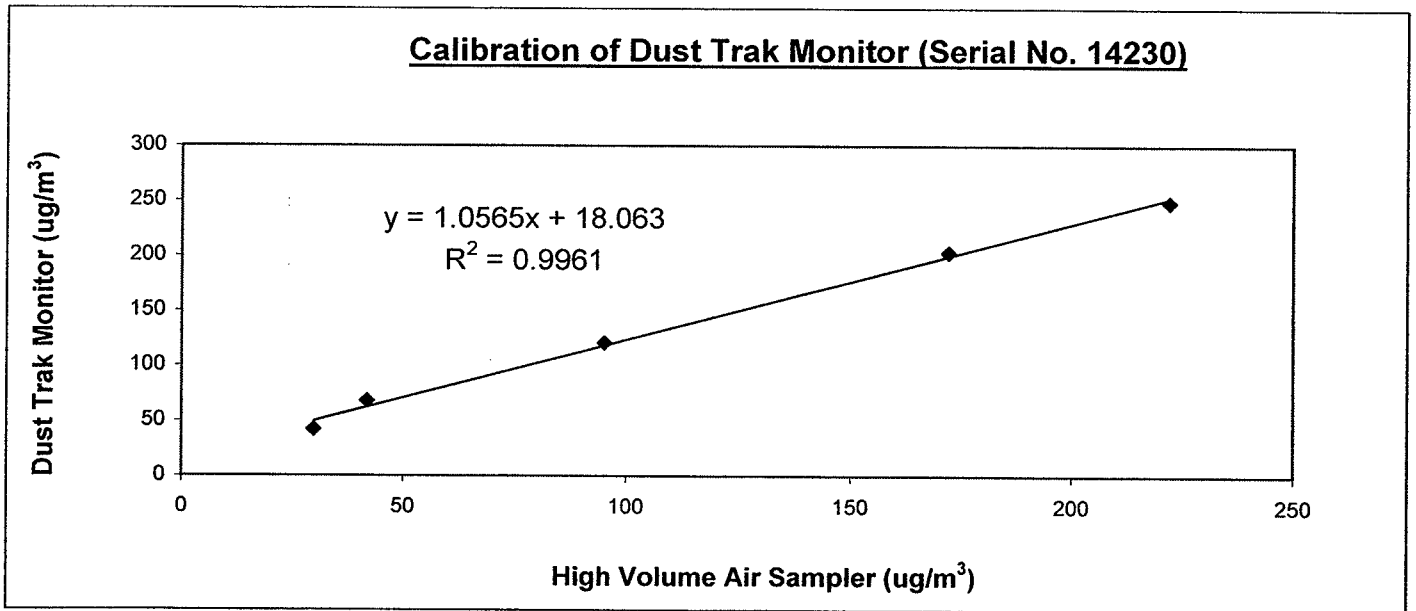
**TEST REPORT**

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

**Manufacturer** : TSI - 8520 Dust Trak **Date of Calibration** : 12 July 2007  
**Serial No.** : 14230 ( ET/EA/001/04 ) **Due Date** : 11 January 2008  
**Method** : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition


**Results** :

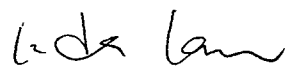
|  |    |    |                                    |     |     |
|--|----|----|------------------------------------|-----|-----|
| Dust Trak Monitor (ug/m <sup>3</sup> )       | 42 | 68 | 121                                | 203 | 249 |
| High Volume Air Sampler (ug/m <sup>3</sup> ) | 30 | 42 | 95                                 | 172 | 222 |
| High Volume Air Sampler Serail No.: 1178     |    |    | Calibration Due Date: 14 July 2007 |     |     |



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

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

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

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



## **Appendix B2**

### **Air Quality Monitoring Results**

## Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1  
Location : HKIB Staff Accommodation

| Start Date | Start Time | Finish   |       | Elapse Time |          | Sampling Time (hrs) | Flow Rate (m <sup>3</sup> /min.) |        | Average (m <sup>3</sup> /min.) | Filter Weight (g) |        | Conc. (µg/m <sup>3</sup> ) | Weather Condition |
|------------|------------|----------|-------|-------------|----------|---------------------|----------------------------------|--------|--------------------------------|-------------------|--------|----------------------------|-------------------|
|            |            | Date     | Time  | Initial     | Final    |                     | Initial                          | Final  |                                | Initial           | Final  |                            |                   |
| 05/07/07   | 10:17      | 06/07/07 | 10:18 | 11736.78    | 11760.80 | 24.02               | 1.1595                           | 1.1595 | 1.1595                         | 2.9002            | 2.9362 | 22                         | Cloudy            |
| 11/07/07   | 09:51      | 12/07/07 | 09:49 | 11760.80    | 11784.77 | 23.97               | 1.1327                           | 1.1327 | 1.1327                         | 2.9092            | 2.9604 | 31                         | Sunny             |
| 17/07/07   | 11:33      | 18/07/07 | 11:46 | 11784.77    | 11808.98 | 24.21               | 1.0715                           | 1.0715 | 1.0715                         | 2.8122            | 2.9128 | 65                         | Sunny             |
| 23/07/07   | 15:32      | 24/07/07 | 15:34 | 11808.98    | 11833.01 | 24.03               | 1.1272                           | 1.1272 | 1.1272                         | 2.8153            | 2.8735 | 36                         | Sunny             |
| 28/07/07   | 14:00      | 29/07/07 | 14:11 | 11833.01    | 11857.20 | 24.19               | 1.0994                           | 1.0994 | 1.0994                         | 2.8916            | 2.9425 | 32                         | Sunny             |

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

| Start Date | Start Time | Finish   |       | Elapse Time |          | Sampling Time (hrs) | Flow Rate (m <sup>3</sup> /min.) |        | Average (m <sup>3</sup> /min.) | Filter Weight (g) |        | Conc. (µg/m <sup>3</sup> ) | Weather Condition |
|------------|------------|----------|-------|-------------|----------|---------------------|----------------------------------|--------|--------------------------------|-------------------|--------|----------------------------|-------------------|
|            |            | Date     | Time  | Initial     | Final    |                     | Initial                          | Final  |                                | Initial           | Final  |                            |                   |
| 05/07/07   | 14:32      | 06/07/07 | 14:49 | 17209.68    | 17233.97 | 24.29               | 0.7944                           | 0.7944 | 0.7944                         | 2.8968            | 2.9165 | 17                         | Cloudy            |
| 11/07/07   | 09:31      | 12/07/07 | 09:51 | 17233.97    | 17258.31 | 24.34               | 0.6321                           | 0.6321 | 0.6321                         | 2.9085            | 2.9318 | 25                         | Sunny             |
| 17/07/07   | 10:37      | 18/07/07 | 11:12 | 17258.31    | 17282.89 | 24.58               | 0.6770                           | 0.6770 | 0.6770                         | 2.8303            | 2.8598 | 30                         | Sunny             |
| 23/07/07   | 15:13      | 24/07/07 | 15:36 | 17282.89    | 17307.28 | 24.39               | 0.6198                           | 0.6198 | 0.6198                         | 2.8429            | 2.8656 | 25                         | Sunny             |
| 28/07/07   | 13:40      | 29/07/07 | 14:02 | 17307.28    | 17331.64 | 24.36               | 0.6198                           | 0.6198 | 0.6198                         | 2.9230            | 2.9460 | 25                         | Sunny             |

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

| Start Date | Start Time | Finish   |       | Elapse Time |         | Sampling Time (hrs) | Flow Rate (m <sup>3</sup> /min.) |        | Average (m <sup>3</sup> /min.) | Filter Weight (g) |        | Conc. (µg/m <sup>3</sup> ) | Weather Condition |
|------------|------------|----------|-------|-------------|---------|---------------------|----------------------------------|--------|--------------------------------|-------------------|--------|----------------------------|-------------------|
|            |            | Date     | Time  | Initial     | Final   |                     | Initial                          | Final  |                                | Initial           | Final  |                            |                   |
| 05/07/07   | 13:02      | 06/07/07 | 13:23 | 7106.32     | 7130.67 | 24.35               | 0.8696                           | 0.8696 | 0.8696                         | 2.8625            | 2.8989 | 29                         | Cloudy            |
| 11/07/07   | 09:44      | 12/07/07 | 10:03 | 7130.67     | 7154.98 | 24.31               | 0.8423                           | 0.8423 | 0.8423                         | 2.8892            | 2.9252 | 29                         | Sunny             |
| 17/07/07   | 11:00      | 18/07/07 | 11:07 | 7154.98     | 7179.10 | 24.12               | 0.8476                           | 0.8476 | 0.8476                         | 2.8200            | 2.8599 | 33                         | Sunny             |
| 23/07/07   | 15:24      | 24/07/07 | 15:47 | 7179.10     | 7203.48 | 24.38               | 0.7554                           | 0.7554 | 0.7554                         | 2.8347            | 2.8668 | 29                         | Sunny             |
| 28/07/07   | 13:54      | 29/07/07 | 14:08 | 7203.48     | 7227.71 | 24.23               | 0.7554                           | 0.7554 | 0.7554                         | 2.8949            | 2.9265 | 29                         | Sunny             |



### Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

| Date     | Monitoring Period |        | 1-hr TSP ( $\mu\text{g}/\text{m}^3$ ) |         |         | Weather |
|----------|-------------------|--------|---------------------------------------|---------|---------|---------|
|          | Start             | Finish | Minimum                               | Maximum | Average |         |
| 03/07/07 | 08:10             | 09:10  | 72                                    | 275     | 165     | Cloudy  |
| 05/07/07 | 10:15             | 11:15  | 78                                    | 458     | 199     | Cloudy  |
| 07/07/07 | 13:10             | 14:10  | 82                                    | 466     | 208     | Sunny   |
| 10/07/07 | 10:02             | 11:02  | 92                                    | 487     | 222     | Sunny   |
| 12/07/07 | 13:00             | 14:00  | 99                                    | 401     | 129     | Sunny   |
| 14/07/07 | 09:00             | 10:00  | 89                                    | 398     | 121     | Sunny   |
| 17/07/07 | 09:30             | 10:30  | 87                                    | 395     | 125     | Sunny   |
| 19/07/07 | 10:45             | 11:45  | 92                                    | 387     | 114     | Sunny   |
| 21/07/07 | 11:00             | 12:00  | 90                                    | 376     | 102     | Cloudy  |
| 24/07/07 | 08:30             | 09:30  | 101                                   | 392     | 118     | Sunny   |
| 26/07/07 | 13:05             | 14:05  | 112                                   | 396     | 113     | Sunny   |
| 28/07/07 | 15:30             | 16:30  | 77                                    | 458     | 132     | Sunny   |
| 31/07/07 | 08:55             | 09:55  | 56                                    | 522     | 149     | Sunny   |

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

| Date     | Monitoring Period |        | 1-hr TSP ( $\mu\text{g}/\text{m}^3$ ) |         |         | Weather |
|----------|-------------------|--------|---------------------------------------|---------|---------|---------|
|          | Start             | Finish | Minimum                               | Maximum | Average |         |
| 03/07/07 | 15:00             | 16:00  | 75                                    | 242     | 126     | Cloudy  |
| 05/07/07 | 14:30             | 15:30  | 80                                    | 406     | 187     | Cloudy  |
| 07/07/07 | 15:40             | 16:40  | 75                                    | 423     | 187     | Sunny   |
| 10/07/07 | 13:03             | 14:03  | 73                                    | 415     | 184     | Sunny   |
| 12/07/07 | 14:20             | 15:20  | 74                                    | 343     | 89      | Sunny   |
| 14/07/07 | 10:30             | 11:30  | 72                                    | 325     | 91      | Sunny   |
| 17/07/07 | 11:00             | 12:00  | 63                                    | 305     | 77      | Sunny   |
| 19/07/07 | 13:10             | 14:10  | 66                                    | 312     | 62      | Sunny   |
| 21/07/07 | 13:00             | 14:00  | 60                                    | 309     | 90      | Cloudy  |
| 24/07/07 | 09:50             | 10:50  | 68                                    | 327     | 73      | Sunny   |
| 26/07/07 | 14:16             | 15:16  | 91                                    | 334     | 79      | Sunny   |
| 28/07/07 | 13:00             | 14:00  | 58                                    | 338     | 91      | Sunny   |
| 31/07/07 | 14:50             | 15:50  | 38                                    | 423     | 117     | Sunny   |

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

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

| Date     | Monitoring Period |        | 1-hr TSP ( $\mu\text{g}/\text{m}^3$ ) |         |         | Weather |
|----------|-------------------|--------|---------------------------------------|---------|---------|---------|
|          | Start             | Finish | Minimum                               | Maximum | Average |         |
| 03/07/07 | 09:26             | 10:26  | 78                                    | 292     | 154     | Cloudy  |
| 05/07/07 | 13:00             | 14:00  | 75                                    | 390     | 157     | Cloudy  |
| 07/07/07 | 14:25             | 15:25  | 70                                    | 385     | 170     | Sunny   |
| 10/07/07 | 16:30             | 17:30  | 74                                    | 394     | 167     | Sunny   |
| 12/07/07 | 15:35             | 16:35  | 89                                    | 370     | 103     | Sunny   |
| 14/07/07 | 15:00             | 16:00  | 91                                    | 348     | 101     | Sunny   |
| 17/07/07 | 13:00             | 14:00  | 88                                    | 342     | 112     | Sunny   |
| 19/07/07 | 16:45             | 17:45  | 82                                    | 337     | 85      | Sunny   |
| 21/07/07 | 14:10             | 15:10  | 87                                    | 333     | 98      | Cloudy  |
| 24/07/07 | 13:00             | 14:00  | 77                                    | 360     | 79      | Sunny   |
| 26/07/07 | 15:37             | 16:37  | 88                                    | 371     | 83      | Sunny   |
| 28/07/07 | 14:15             | 15:15  | 62                                    | 392     | 112     | Sunny   |
| 31/07/07 | 10:05             | 11:05  | 47                                    | 486     | 133     | Sunny   |

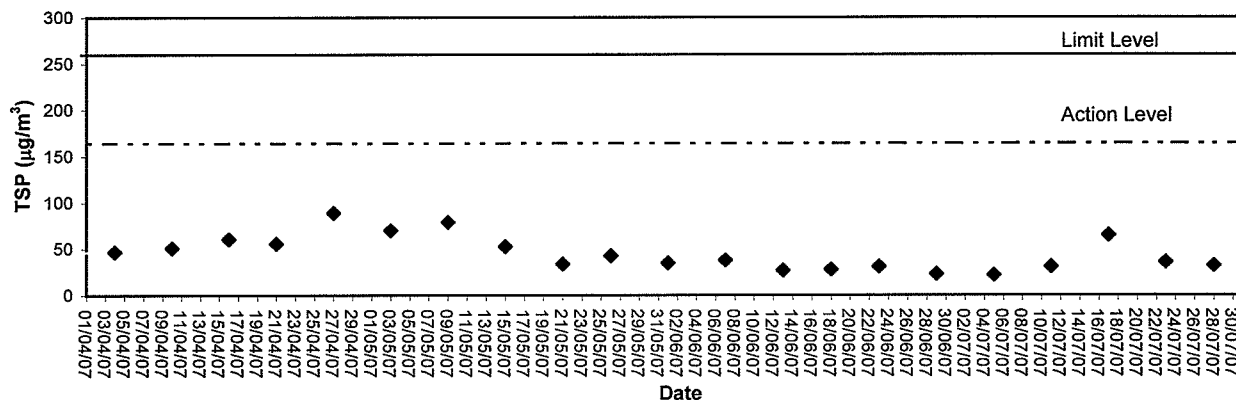


## **Appendix B3**

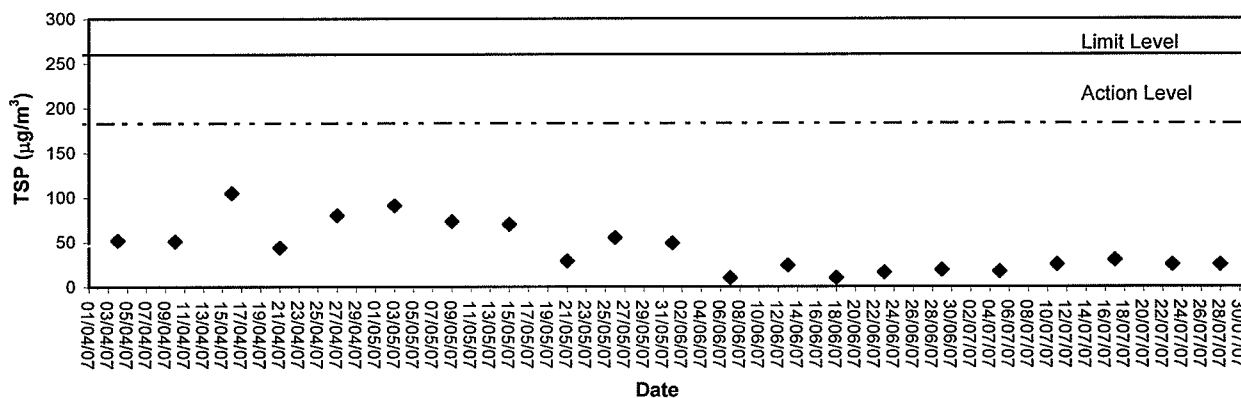
### **Graphical Plots of Air Quality Monitoring Data**



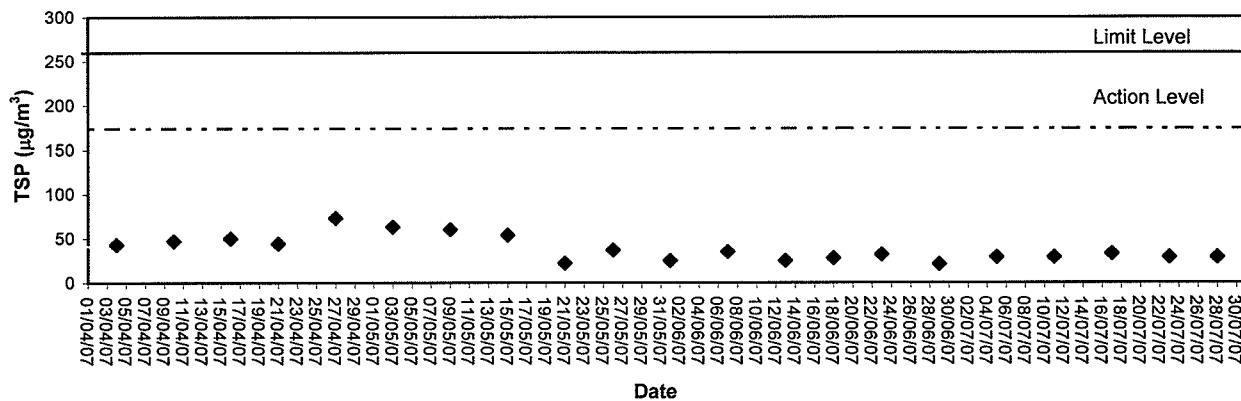
24-hour TSP level at AM1 (HKIB Staff Accommodation)



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

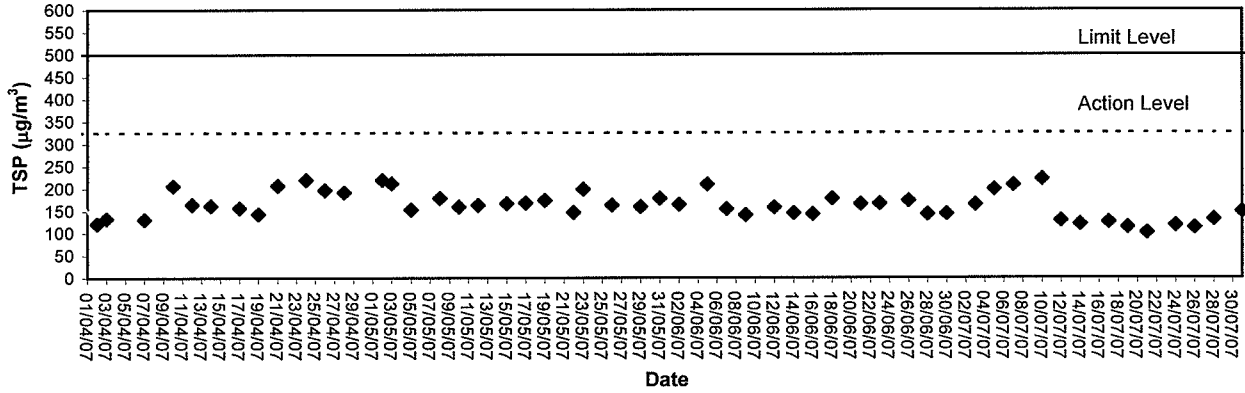


24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)

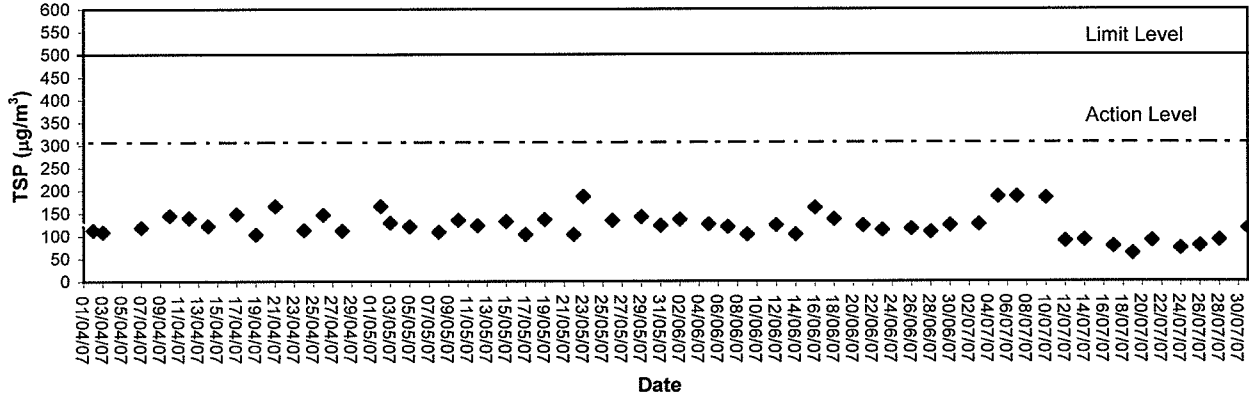




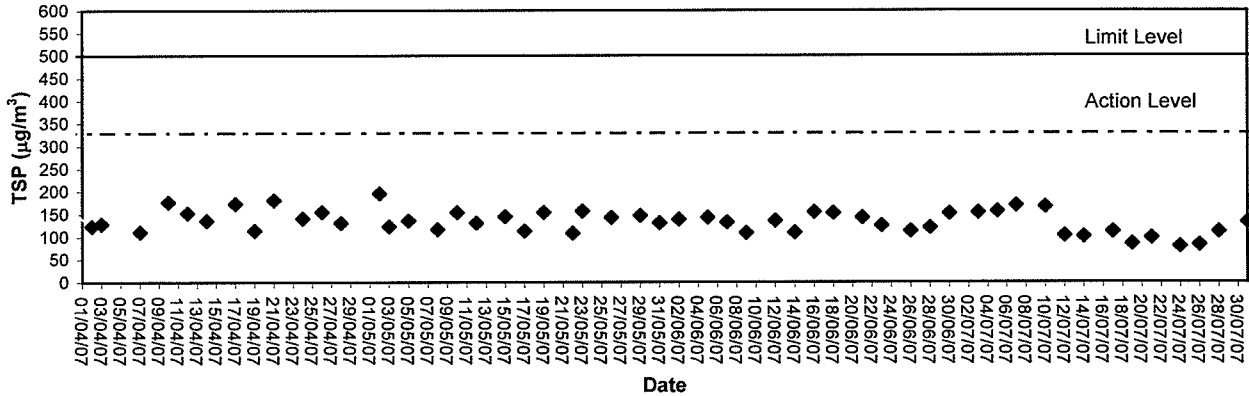
1-hour TSP level at AM1, HKIB Staff Accommodation



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



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





## **Appendix C1**

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



# Calibration Certificate

Certificate No. **65870**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q62237

**Date of receipt :** 16-Dec-06

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10727835

## Test Conditions

**Date of Test :** 27-Dec-06

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

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

Test equipment used:

| <u>Equipment No.</u> | <u>Description</u>     | <u>Cert. No.</u> | <u>Due Date</u> | <u>Traceable to</u> |
|----------------------|------------------------|------------------|-----------------|---------------------|
| S014                 | Spectrum Analyzer      | 62914            | 7-Jul-07        | NIM-PRC & SCL-HKSAR |
| S024                 | Sound Level Calibrator | 62691            | 22-Apr-07       | NIM-PRC & SCL-HKSAR |
| S041                 | Universal Counter      | 63839            | 22-Aug-07       | SCL-HKSAR           |

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

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

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

Calibrated by : P.F. Wong

Approved by : Steve Kwan

This Certificate is issued by:  
Hong Kong Calibration Ltd.

Date: 27-Dec-06

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 8846



# Calibration Certificate

Certificate No. 65870

Page 2 of 2 Pages

Results :

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

| UUT Nominal Value | Measured Value | Mfr's Spec. |
|-------------------|----------------|-------------|
| 94 dB             | 93.73 dB       | $\pm 1$ dB  |

Uncertainty :  $\pm 0.1$  dB

**2. Frequency Accuracy**

| UUT Nominal Value | Measured Value | Mfr's Spec. |
|-------------------|----------------|-------------|
| 1 kHz             | 0.998 kHz      | $\pm 2$ %   |

Uncertainty :  $\pm 0.1$  %

**3. Level Stability : 0.0 dB**

Uncertainty :  $\pm 0.01$  dB

**4. Total Harmonic Distortion :  $< 0.2$  %**

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

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

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

4. Atmospheric Pressure : 1 009 hPa

----- END -----





# Calibration Certificate

Certificate No. **65868**

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. :** Q62237

**Date of receipt :** 16-Dec-06

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 01120826

## Test Conditions

**Date of Test :** 27-Dec-06

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : Z01.

## Test Results

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

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

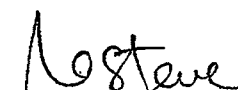
Test equipment used:

| <u>Equipment No.</u> | <u>Description</u>     | <u>Cert. No.</u> | <u>Due Date</u> | <u>Traceable to</u> |
|----------------------|------------------------|------------------|-----------------|---------------------|
| S017                 | Function Generator     | C051022          | 21-Mar-07       | SCL-HKSAR           |
| S024                 | Sound Level Calibrator | 62691            | 22-Apr-07       | NIM-PRC & SCL-HKSAR |

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

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

Calibrated by :   
P.F. Wong

Approved by :   
Steve Kwan

Date: 27-Dec-06

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



# Calibration Certificate

Certificate No. 65868

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

| UUT Setting      |                |                | Applied Value (dB) | UUT Reading (dB) |
|------------------|----------------|----------------|--------------------|------------------|
| Level Range (dB) | Weight         | Response       |                    |                  |
| 20 - 100         | L <sub>A</sub> | Fast           | 94.07              | 93.9             |
|                  |                | Slow           |                    | 93.9             |
|                  | L <sub>C</sub> | Fast           |                    | 93.9             |
|                  |                | L <sub>p</sub> |                    | Fast             |
| 30 - 120         | L <sub>A</sub> | Fast           | 94.07              | 93.9             |
|                  |                | Slow           |                    | 93.9             |
|                  | L <sub>C</sub> | Fast           |                    | 93.9             |
|                  |                | L <sub>p</sub> |                    | Fast             |
| 30 - 120         | L <sub>A</sub> | Fast           | 113.95             | 113.8            |
|                  |                | Slow           |                    | 113.8            |
|                  | L <sub>C</sub> | Fast           |                    | 113.8            |
|                  |                | L <sub>p</sub> |                    | Fast             |

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB

## 3. Linearity

### 3.1 Level Linearity

| UUT Range | Applied Value (dB) | UUT Rdg (dB) | IEC 651 Type 1 Spec.<br>(inside Primary) |
|-----------|--------------------|--------------|--|
| 140       | 114.0              | 114.0        | ± 0.7 dB                                 |
| 130       | 104.0              | 104.0        |  |
| 120       | 94.0               | 93.9         |  |
| 110       | 84.0               | 84.1         |  |
| 100       | 74.0               | 74.1         |  |
| 90        | 64.0               | 64.2         |  |
| 80        | 54.0               | 54.1         |  |

Uncertainty : ± 0.1 dB



# Calibration Certificate

Certificate No. 65868

Page 3 of 3 Pages

### 3.2 Differential level linearity

| UUT Range | Applied Value (dB) | UUT Rdg (dB) | IEC 651 Type 1 Spec. |
|-----------|--------------------|--------------|----------------------|
| 120       | 84.0               | 83.9         | ± 0.4                |
|           | 94.0               | 93.9         |                      |
|           | 95.0               | 94.9         | ± 0.2                |
|           | 104.0              | 103.9        | ± 0.3                |
|           | 105.0              | 104.9        | ± 1.0                |

Uncertainty : ± 0.1 dB

### 4. Frequency Weighting

A weighting

| Frequency | Attenuation (dB) | IEC 651 Type 1 Spec.        |
|-----------|------------------|-----------------------------|
| 31.5 Hz   | - 39.6           | - 39.4 dB, ± 1.5 dB         |
| 63 Hz     | - 26.2           | - 26.2 dB, ± 1.5 dB         |
| 125 Hz    | - 16.2           | - 16.1 dB, ± 1 dB           |
| 250 Hz    | - 8.7            | - 8.6 dB, ± 1 dB            |
| 500 Hz    | - 3.2            | - 3.2 dB, ± 1 dB            |
| 1 kHz     | 0.0 (Ref.)       | 0 dB, ± 1 dB                |
| 2 kHz     | + 1.3            | + 1.2 dB, ± 1 dB            |
| 4 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

### 5. Time Averaging

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

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 009 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 <sub>eq(30min)</sub> | L10  | L90  |                  |                   |
| 03/07/07 | 08:15                       | 57.4                   | 59.1 | 54.0 | 1.2              | Cloudy            |
| 10/07/07 | 10:55                       | 57.0                   | 60.2 | 54.1 | 0.8              | Sunny             |
| 17/07/07 | 09:30                       | 57.6                   | 60.8 | 54.3 | 1.2              | Sunny             |
| 24/07/07 | 08:35                       | 57.3                   | 59.4 | 54.9 | 0.8              | Sunny             |
| 31/07/07 | 08:58                       | 65.3                   | 67.9 | 62.6 | 0.9              | 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 <sub>eq(30min)</sub> | L10  | L90  |                  |                   |
| 03/07/07 | 10:20                       | 55.1                   | 56.2 | 53.1 | 1.0              | Cloudy            |
| 10/07/07 | 11:15                       | 56.4                   | 58.9 | 53.2 | 0.9              | Sunny             |
| 17/07/07 | 13:30                       | 56.4                   | 59.4 | 54.0 | 1.0              | Sunny             |
| 24/07/07 | 18:00                       | 54.9                   | 57.7 | 52.8 | 1.0              | Sunny             |
| 31/07/07 | 11:15                       | 62.6                   | 65.6 | 59.1 | 0.6              | Sunny             |

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

| Date     | Start Sampling Time (hh:mm) | Noise Level dB (A)     |      |      | Wind Speed (m/s) | Weather Condition |
|----------|-----------------------------|------------------------|------|------|------------------|-------------------|
|          |                             | L <sub>eq(30min)</sub> | L10  | L90  |                  |                   |
| 03/07/07 | 15:05                       | 53.8                   | 55.2 | 51.9 | 1.2              | Cloudy            |
| 10/07/07 | 13:10                       | 55.2                   | 58.0 | 52.1 | 0.9              | Sunny             |
| 17/07/07 | 11:00                       | 53.9                   | 57.7 | 50.6 | 0.8              | Sunny             |
| 24/07/07 | 09:55                       | 52.0                   | 54.0 | 49.3 | 0.7              | Sunny             |
| 31/07/07 | 14:55                       | 54.8                   | 56.4 | 52.9 | 0.8              | Sunny             |

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

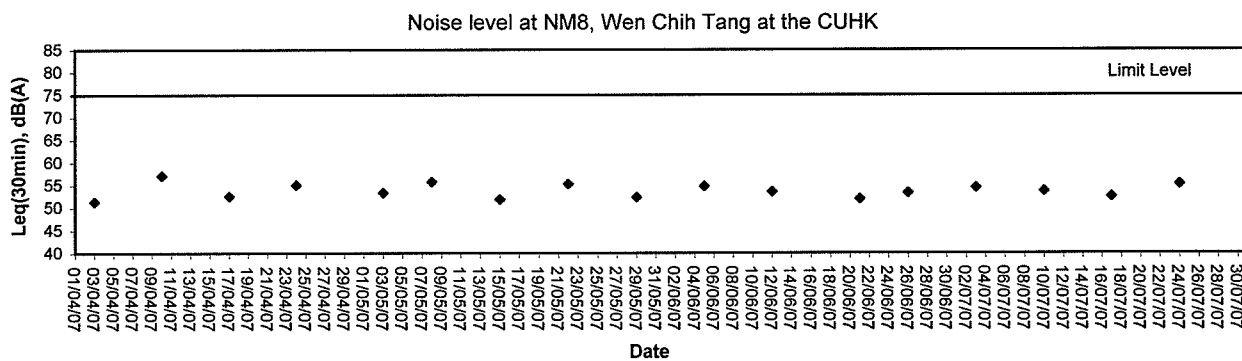
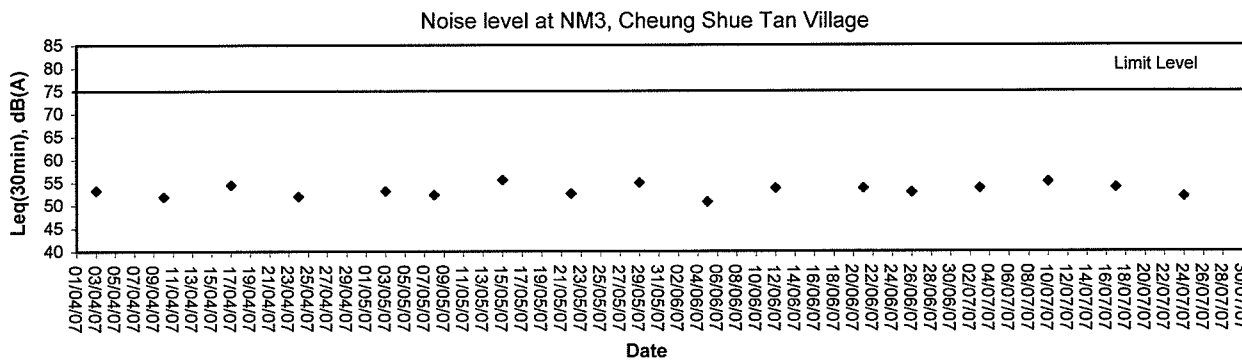
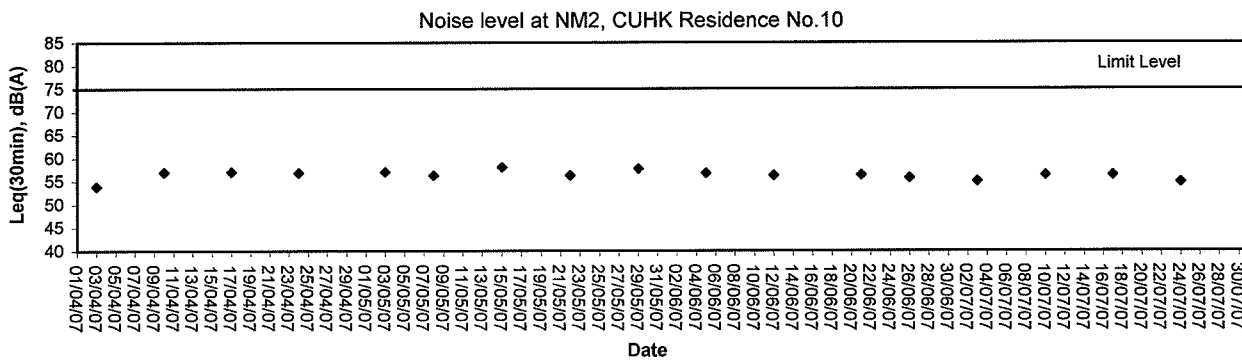
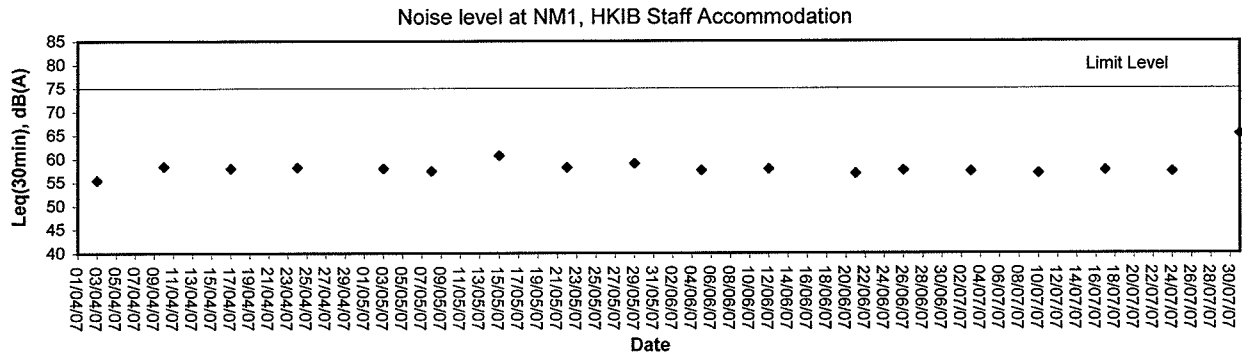
| Date     | Start Sampling Time (hh:mm) | Noise Level dB (A)     |      |      | Wind Speed (m/s) | Weather Condition |
|----------|-----------------------------|------------------------|------|------|------------------|-------------------|
|          |                             | L <sub>eq(30min)</sub> | L10  | L90  |                  |                   |
| 03/07/07 | 09:30                       | 54.5                   | 56.3 | 52.6 | 1.5              | Cloudy            |
| 10/07/07 | 16:38                       | 53.7                   | 58.0 | 51.1 | 0.8              | Sunny             |
| 17/07/07 | 13:00                       | 52.5                   | 56.3 | 48.8 | 0.9              | Sunny             |
| 24/07/07 | 13:05                       | 55.3                   | 58.0 | 53.0 | 0.8              | Sunny             |
| 31/07/07 | 10:15                       | 59.0                   | 62.9 | 55.5 | 0.7              | Sunny             |

## **Appendix C3**

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



## Noise Monitoring (Day-time)



## **Appendix D**

### **Weather Condition**





## Weather Condition

| Date     | Rainfall (mm) | Max. Temp (°C) | Min. Temp. (°C) | Relative Humidity (%) | Wind Direction | Wind Speed (m/s) |
|----------|---------------|----------------|-----------------|-----------------------|----------------|------------------|
| 01/07/07 | 4.5           | 30.6           | 25.0            | 87                    | 140            | <5               |
| 02/07/07 | 28.5          | 31.8           | 24.8            | 88                    | 160            | <5               |
| 03/07/07 | 2.5           | 31.3           | 24.9            | 80                    | 140            | <5               |
| 04/07/07 | 5.5           | 31.4           | 27.5            | 86                    | 140            | <5               |
| 05/07/07 | 37.5          | 31.0           | 26.1            | 82                    | 160            | <5               |
| 06/07/07 | 8.5           | 32.5           | 26.7            | 79                    | 210            | <5               |
| 07/07/07 | 0.5           | 32.6           | 26.2            | 75                    | 170            | <5               |
| 08/07/07 | 0.0           | 33.7           | 26.7            | 71                    | 200            | <5               |
| 09/07/07 | 2.5           | 33.3           | 26.8            | 76                    | 240            | <5               |
| 10/07/07 | 0.0           | 33.7           | 27.8            | 72                    | 230            | <5               |
| 11/07/07 | 0.0           | 33.9           | 28.0            | 71                    | 220            | <5               |
| 12/07/07 | 0.0           | 34.4           | 27.3            | 71                    | 220            | <5               |
| 13/07/07 | 0.0           | 33.1           | 28.4            | 74                    | 230            | <5               |
| 14/07/07 | 0.0           | 34.1           | 28.7            | 72                    | 220            | <5               |
| 15/07/07 | 0.5           | 34.0           | 28.3            | 74                    | 20             | <5               |
| 16/07/07 | 26.0          | 33.5           | 26.0            | 76                    | 220            | <5               |
| 17/07/07 | 1.0           | 32.6           | 27.8            | 73                    | 210            | <5               |
| 18/07/07 | 4.0           | 32.3           | 27.6            | 74                    | 220            | <5               |
| 19/07/07 | 5.5           | 32.2           | 27.1            | 78                    | 210            | <5               |
| 20/07/07 | 0.0           | 32.4           | 28.2            | 76                    | 220            | <5               |
| 21/07/07 | 0.0           | 33.1           | 28.0            | 74                    | 210            | <5               |
| 22/07/07 | 0.0           | 33.5           | 28.0            | 74                    | 230            | <5               |
| 23/07/07 | 0.0           | 33.4           | 27.6            | 72                    | 230            | <5               |
| 24/07/07 | 0.0           | 33.2           | 27.3            | 72                    | 230            | <5               |
| 25/07/07 | 0.0           | 33.2           | 27.7            | 71                    | 230            | <5               |
| 26/07/07 | 0.0           | 32.3           | 25.6            | 75                    | 130            | <5               |
| 27/07/07 | 0.0           | 33.5           | 25.6            | 74                    | 120            | <5               |
| 28/07/07 | 0.0           | 33.7           | 27.4            | 75                    | 090            | <5               |
| 29/07/07 | 3.0           | 33.6           | 27.4            | 76                    | 150            | <5               |
| 30/07/07 | 0.0           | 33.4           | 27.0            | 76                    | 160            | <5               |
| 31/07/07 | 1.5           | 32.7           | 26.2            | 77                    | 220            | <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  | CNTRACTOR  |
| <p>Action Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two more consecutive samples</p>   | <p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Discuss with IC(E) and Contractor on remedial actions required</p> <p>6. If exceedance continuous, arrange meeting with IC(E) and ER</p> <p>7. If exceedance stops, cease additional monitoring</p>   | <p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>1. Checking monitoring data submitted by ET</p> <p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposed remedial measures</p> <p>5. Supervisor implementation of remedial measures</p>   | <p>1. Notify Contractor</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p>   | <p>1. Rectify any unacceptable practice</p> <p>2. Amend working methods if possible</p> <p>1. Submit proposals for remedial action to IC(E) within 3 working days of notification</p> <p>2. Implement the agreed proposals</p> <p>3. Amend proposal if possible</p>  |
| <p>Limit Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two or more consecutive samples</p> | <p>1. Identify source</p> <p>2. Inform ER and EPD</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</p> <p>1. Notify IC(E), ER, Contractor and EPD</p> <p>2. Identify source</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</p> <p>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER to discuss the remedial action to be taken</p> <p>8. If exceedance stops, cease additional monitoring</p> | <p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposal remedial measures</p> <p>5. Supervisor implementation of remedial measures</p> <p>1. Discuss amongst ER, ET, and Contractor on potential remedial actions</p> <p>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</p> <p>3. Supervise the implementation of remedial measures</p> | <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. In consultation with the IC(E), agreed with the Contractor on the remedial measures to be implemented</p> <p>4. Ensure remedial measures properly implemented</p> <p>5. If exceedance continues, consider what portion of this work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p> | <p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposal for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Amend proposal if appropriate</p> <p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Resubmit proposals if possible still not under control</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p> |

## Event / Action Plan for Construction Noise

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

## **Appendix F**

# **Construction Programme**

| Act ID                                 | Description                                      | Original Duration | Percent Complete | Total Float | Early Start | Early Finish | Late Start | Late Finish |
|--|--|-------------------|------------------|-------------|-------------|--------------|------------|-------------|
| A2TTMS1050                             | TTA No 91 Diversion of Sul Cheung St. to SL3     | 1                 | 0                | 0           | 30MAY07     | 30MAY07      | 30MAY07    | 30MAY07     |
| A2TTMS1080                             | TTA No 92-93, 88 Road Marking for MLSB R/A       | 1                 | 0                | 35d         | 14JUN07     | 14JUN07      | 27JUL07    | 27JUL07     |
| Proposed Ma Liu Shui Bridge            |  |                   |                  |             |             |              |            |             |
| Voided Abutment                        |  |                   |                  |             |             |              |            |             |
| A2MBVA1000                             | Construct Wall (Stage 5)                         | 16                | 90               | 28d         | 09DEC06 A   | 07FEB07      | 09DEC06 A  | 15MAR07     |
| A2MBVA1100                             | Construct Slab above Void Abutment               | 36                | 0                | 23d         | 08MAR07     | 19APR07      | 04APR07    | 17MAY07     |
| North Abutment                         |  |                   |                  |             |             |              |            |             |
| A2MBNA0200                             | Construct RE Wall to Formation of RC Wall Type A | 36                | 40               | 7d          | 13SEP06 A   | 14FEB07      | 13SEP06 A  | 28FEB07     |
| A2MBNA0300                             | Fix RE Wall to Face of Abutment & RC Wall        | 24                | 0                | 7d          | 06FEB07     | 06MAR07      | 14FEB07    | 16MAR07     |
| A2MBNA1300                             | Construct RC Wall Type A                         | 24                | 0                | 7d          | 15FEB07     | 17MAR07      | 27FEB07    | 28MAR07     |
| A2MBNA1400                             | Construct RC Wall Type B                         | 36                | 75               | 16d         | 06NOV06 A   | 12FEB07      | 06NOV06 A  | 06MAR07     |
| A2MBNA1500                             | Construct RC Wall Type C                         | 18                | 75               | 40d         | 04DEC06 A   | 21FEB07      | 04DEC06 A  | 10APR07     |
| Bridge Deck - Voided Abutment to Pier  |  |                   |                  |             |             |              |            |             |
| A2MBDA0900                             | Erect Formwork for upper deck slab               | 12                | 70               | 23d         | 11JAN07 A   | 24JAN07      | 11JAN07 A  | 23FEB07     |
| A2MBDA0700                             | Steel Fixing for upper deck slab                 | 8                 | 40               | 23d         | 13JAN07 A   | 30JAN07      | 13JAN07 A  | 01MAR07     |
| A2MBDA0800                             | Concreting for upper deck slab                   | 1                 | 0                | 23d         | 31JAN07     | 31JAN07      | 02MAR07    | 02MAR07     |
| A2MBDA0950                             | Striking of dead locking formwork before stress  | 4                 | 0                | 23d         | 01FEB07     | 05FEB07      | 03MAR07    | 07MAR07     |
| A2MBDA0900                             | Install, Stress Tendons & Grouting               | 23                | 0                | 23d         | 06FEB07     | 07MAR07      | 08MAR07    | 03APR07     |
| A2MBDA0950                             | Completion of Diaphragm and Anchorage Recess     | 10                | 0                | 51d         | 08MAR07     | 19MAR07      | 09MAY07    | 19MAY07     |
| A2MBDA1000                             | Remove Formwork & Scaffolding                    | 8                 | 0                | 51d         | 20MAR07     | 28MAR07      | 21MAY07    | 29MAY07     |
| A2MBDA1100                             | Construct Parapet                                | 70                | 0                | 32d         | 28FEB07     | 22MAY07      | 07APR07    | 29JUN07     |
| A2MBDA1200                             | Construct Centre Barrier                         | 36                | 0                | 32d         | 10APR07     | 22MAY07      | 18MAY07    | 29JUN07     |
| Bridge Deck - Pier to North Abutment   |  |                   |                  |             |             |              |            |             |
| A2MBDC0700                             | Steel Fixing                                     | 8                 | 40               | 26d         | 09JAN07 A   | 25JAN07      | 09JAN07 A  | 28FEB07     |
| A2MBDC0800                             | Concreting (Pier to North Abutment)              | 1                 | 0                | 26d         | 26JAN07     | 26JAN07      | 01MAR07    | 01MAR07     |
| A2MBDC0850                             | Striking of dead locking formwork before stress  | 4                 | 0                | 26d         | 27JAN07     | 31JAN07      | 02MAR07    | 06MAR07     |
| A2MBDC0900                             | Install, Stress Tendons & Grouting               | 24                | 0                | 26d         | 01FEB07     | 03MAR07      | 07MAR07    | 03APR07     |
| A2MBDC0950                             | Completion of Diaphragm and Anchorage Recess     | 10                | 0                | 62d         | 05MAR07     | 15MAR07      | 18MAY07    | 29MAY07     |
| A2MBDC1000                             | Remove Formwork & Scaffolding                    | 8                 | 0                | 51d         | 28MAR07     | 07APR07      | 30MAY07    | 07JUN07     |
| A2MBDC1100                             | Construct Parapet                                | 70                | 0                | 31d         | 01MAR07     | 23MAY07      | 07APR07    | 28JUN07     |
| A2MBDC1200                             | Construct Centre Barrier                         | 36                | 0                | 31d         | 11APR07     | 23MAY07      | 18MAY07    | 28JUN07     |
| Miscellaneous works                    |  |                   |                  |             |             |              |            |             |
| A2MBMW0100                             | Install Drainage System                          | 18                | 0                | 31d         | 03MAY07     | 23MAY07      | 08JUN07    | 29JUN07     |
| A2MBMW0200                             | Install Aluminium Rail                           | 18                | 0                | 31d         | 03MAY07     | 23MAY07      | 08JUN07    | 29JUN07     |
| A2MBMW0300                             | Install Public Lighting Post                     | 12                | 0                | 37d         | 24MAY07     | 06JUN07      | 09JUL07    | 21JUL07     |
| A2MBMW0400                             | Soffit Lighting                                  | 28                | 0                | 91d         | 08MAR07     | 10APR07      | 26JUN07    | 28JUL07     |
| Roads and Paving                       |  |                   |                  |             |             |              |            |             |
| A2MBRP0100                             | North Abutment - Backfill to Formation           | 28                | 0                | 40d         | 22FEB07     | 26MAR07      | 11APR07    | 14MAY07     |
| A2MBRP0200                             | North Abutment - Lay Subbase                     | 8                 | 0                | 40d         | 09MAY07     | 12MAY07      | 21JUN07    | 29JUN07     |
| A2MBRP0300                             | Road Pavement                                    | 18                | 0                | 24d         | 01JUN07     | 22JUN07      | 30JUN07    | 21JUL07     |
| Road Marking, Traffic Sign and Fencing |  |                   |                  |             |             |              |            |             |
| A2MBRM0100                             | Apply Road Marking                               | 6                 | 0                | 24d         | 23JUN07     | 29JUN07      | 23JUL07    | 28JUL07     |

2008 DEC 2007 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

TTA No 91 Diversion of Sul Cheung St. to SL3  
TTA No 92-93, 88 Road Marking for MLSB R/A

Construct Wall (Stage 5)  
Construct Slab above Void Abutment  
Construct RE Wall to Formation of RC Wall Type A  
Fix RE Wall to Face of Abutment & RC Wall  
Construct RC Wall Type A  
Construct RC Wall Type B  
Construct RC Wall Type C  
Erect Formwork for upper deck slab  
Steel Fixing for upper deck slab  
Concreting for upper deck slab  
Striking of dead locking formwork before stress  
Install, Stress Tendons & Grouting  
Completion of Diaphragm and Anchorage Recess  
Remove Formwork & Scaffolding  
Construct Parapet  
Construct Centre Barrier  
Steel Fixing  
Concreting (Pier to North Abutment)  
Striking of dead locking formwork before stress  
Install, Stress Tendons & Grouting  
Completion of Diaphragm and Anchorage Recess  
Remove Formwork & Scaffolding  
Construct Parapet  
Construct Centre Barrier  
Install Drainage System  
Install Aluminium Rail  
Install Public Lighting Post  
Soffit Lighting  
North Abutment - Backfill to Formation  
North Abutment - Lay Subbase  
Road Pavement  
Apply Road Marking

Leader - Wai Kee (C&T) Joint Venture  
TP37103 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)

10JUN04  
09MAY08  
20JAN07  
08FEB07  
3A

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

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LEADER

















| Act. ID                              | Description                                    | Total Float | Percent Complete | Original Duration | Early Start | Early Finish | Late Start | Late Finish |
|--------------------------------------|--|-------------|------------------|-------------------|-------------|--------------|------------|-------------|
| A2AMUT0200                           | Water Point WP2-3 to Water Meter No.2          | 83d         | 0                | 83d               | 30MAR07     | 19APR07      | 10JUL07    | 28JUL07     |
| A2AMUT0300                           | Water Point WP3-5 to Water Meter No.3          | 82d         | 0                | 82d               | 14APR07     | 15MAY07      | 28JUN07    | 28JUL07     |
| A2AMUT0400                           | Water Point WP6-2 to Water Meter No.8          | 82d         | 0                | 82d               | 02MAY07     | 15MAY07      | 16JUL07    | 28JUL07     |
| <b>Section 3</b>                     |  |             |                  |                   |             |              |            |             |
| <b>Ma Liu Shui Subway</b>            |  |             |                  |                   |             |              |            |             |
| <b>Pump House Construction</b>       |  |             |                  |                   |             |              |            |             |
| A3MSPH0300                           | Construct Wall up to Top Slab                  | 50          | 0                | 10d               | 06DEC06 A   | 26JAN07      | 06DEC06 A  | 07FEB07     |
| A3MSPH0400                           | Construct Top Slab                             | 0           | 0                | 10d               | 27JAN07     | 06FEB07      | 08FEB07    | 24FEB07     |
| A3MSPH0500                           | Install Hoisting Beam                          | 0           | 0                | 10d               | 03FEB07     | 09FEB07      | 15FEB07    | 24FEB07     |
| <b>Subway Barrel Construction</b>    |  |             |                  |                   |             |              |            |             |
| A3MSSB0900                           | Construct Subway #4 Wall + Top Slab            | 80          | 0                | 10d               | 25DEC06 A   | 09FEB07      | 25DEC06 A  | 24FEB07     |
| A3MSSB1000                           | Backfilling                                    | 0           | 0                | 10d               | 03FEB07     | 27FEB07      | 15FEB07    | 10MAR07     |
| <b>Subway East Ramp Construction</b> |  |             |                  |                   |             |              |            |             |
| A3MSE2700                            | Install Roof Steel Posts                       | 10          | 0                | 10d               | 16FEB07     | 02MAR07      | 03MAR07    | 14MAR07     |
| A3MSE2800                            | Construct Roof Slab E6                         | 12          | 0                | 10d               | 03MAR07     | 16MAR07      | 15MAR07    | 28MAR07     |
| A3MSE2900                            | Construct Roof Slab E5                         | 12          | 0                | 10d               | 17MAR07     | 30MAR07      | 29MAR07    | 12APR07     |
| A3MSE3000                            | Construct Roof Slab E4, E7                     | 12          | 0                | 10d               | 31MAR07     | 14APR07      | 13APR07    | 26APR07     |
| A3MSE3100                            | Construct Roof Slab E3, E8                     | 12          | 0                | 10d               | 03MAR07     | 16MAR07      | 15MAR07    | 28MAR07     |
| A3MSE3200                            | Construct Roof Slab E2                         | 12          | 0                | 10d               | 17MAR07     | 30MAR07      | 29MAR07    | 12APR07     |
| A3MSE3300                            | Construct Roof Slab E1, E9                     | 12          | 0                | 10d               | 31MAR07     | 14APR07      | 13APR07    | 26APR07     |
| <b>Subway West Ramp Construction</b> |  |             |                  |                   |             |              |            |             |
| A3MSSW1400                           | Construct W5 Ramp Walls                        | 7           | 0                | 13d               | 25JAN07     | 01FEB07      | 09FEB07    | 16FEB07     |
| A3MSSW1500                           | Construct W6 Ramp Walls                        | 10          | 0                | 13d               | 14JAN07 A   | 24JAN07      | 14JAN07 A  | 08FEB07     |
| A3MSSW1600                           | Backfilling                                    | 20          | 0                | 13d               | 02FEB07     | 28FEB07      | 21FEB07    | 15MAR07     |
| A3MSSW1700                           | Install Roof Posts                             | 18          | 0                | 13d               | 15FEB07     | 10MAR07      | 08MAR07    | 26MAR07     |
| A3MSSW1800                           | Construct Roof Slab W3                         | 12          | 0                | 13d               | 12MAR07     | 24MAR07      | 27MAR07    | 10APR07     |
| A3MSSW1900                           | Construct Roof Slab W4                         | 12          | 0                | 13d               | 26MAR07     | 08APR07      | 11APR07    | 24APR07     |
| A3MSSW2000                           | Construct Roof Slab W2, W5                     | 12          | 0                | 13d               | 29MAR07     | 09APR07      | 11APR07    | 24APR07     |
| A3MSSW2100                           | Construct Roof Slab W1, W6                     | 12          | 0                | 25d               | 12MAR07     | 24MAR07      | 11APR07    | 24APR07     |
| <b>Pumping and Drainage System</b>   |  |             |                  |                   |             |              |            |             |
| A3MSPD0100                           | Pumping System Installation                    | 30          | 0                | 31d               | 10FEB07     | 20MAR07      | 22MAR07    | 26APR07     |
| A3MSPD0200                           | Drainage System Installation (Barrel)          | 7           | 0                | 25d               | 28FEB07     | 07MAR07      | 29MAR07    | 06APR07     |
| A3MSPD0210                           | Drainage System Installation (East Ramp)       | 7           | 0                | 10d               | 16APR07     | 23APR07      | 27APR07    | 05MAY07     |
| A3MSPD0220                           | Drainage System Installation (West Ramp)       | 7           | 0                | 13d               | 10APR07     | 17APR07      | 25APR07    | 03MAY07     |
| <b>Miscellaneous works</b>           |  |             |                  |                   |             |              |            |             |
| A3MSMW0100                           | Miscellaneous Metal Works                      | 24          | 0                | 13d               | 11MAY07     | 07JUN07      | 26MAY07    | 23JUN07     |
| <b>Finishing Works</b>               |  |             |                  |                   |             |              |            |             |
| A3MSFW0100                           | Finishing Works at Barrel                      | 24          | 0                | 25d               | 09MAR07     | 04APR07      | 07APR07    | 05MAY07     |
| A3MSFW0200                           | Finishing Works at East Ramp                   | 24          | 0                | 10d               | 24APR07     | 22MAY07      | 07MAY07    | 02JUN07     |
| A3MSFW0300                           | Finishing Works at West Ramp                   | 24          | 0                | 13d               | 18APR07     | 16MAY07      | 04MAY07    | 31MAY07     |
| <b>E &amp; M Works</b>               |  |             |                  |                   |             |              |            |             |
| A3MSEM0100                           | Electrical Installation at Barrel & Pump House | 24          | 0                | 25d               | 29MAR07     | 25APR07      | 27APR07    | 25MAY07     |
| A3MSEM0200                           | Electrical Installation at East Ramp           | 24          | 0                | 10d               | 15MAY07     | 11JUN07      | 26MAY07    | 23JUN07     |

Start date 10JUN04  
 Finish date 09MAY08  
 Data date 20JAN07  
 Run date 06FEB07  
 Page number 8A

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

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**Leader - Wai Kee (C&T) Joint Venture**  
**TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)**







| Act ID                                | Description                                 | Total Float | Percent Complete | Original Duration | Early Start | Early Finish | Late Start | Late Finish |
|---------------------------------------|---|-------------|------------------|-------------------|-------------|--------------|------------|-------------|
| <b>Ramp Wall - North</b>              |   |             |                  |                   |             |              |            |             |
| A4RAR2200                             | Backfilling                                 | 78d         | 0                | 6                 | 20JAN07     | 26JAN07      | 26APR07    | 03MAY07     |
| A4RAR2300                             | Construct Granite Facing Stone              | 80d         | 0                | 12                | 27JAN07     | 09FEB07      | 07MAY07    | 19MAY07     |
| A4RAR2400                             | Paving                                      | 78d         | 0                | 14                | 27JAN07     | 12FEB07      | 04MAY07    | 19MAY07     |
| A4RAR2500                             | Erect Type 2 Railing                        | 78d         | 0                | 6                 | 13FEB07     | 24FEB07      | 21MAY07    | 29MAY07     |
| A4RAR2600                             | Construct Staircase                         | 88d         | 0                | 12                | 27JAN07     | 09FEB07      | 16MAY07    | 29MAY07     |
| <b>Ramp Wall - South</b>              |   |             |                  |                   |             |              |            |             |
| A4RART1000                            | Erect Formwork for Wall                     | 20d         | 1                | 6                 | 18JAN07 A   | 26JAN07      | 18JAN07 A  | 22FEB07     |
| A4RART1100                            | Concreting                                  | 20d         | 0                | 1                 | 27JAN07     | 27JAN07      | 23FEB07    | 23FEB07     |
| A4RART1200                            | Remove Formwork                             | 20d         | 0                | 3                 | 29JAN07     | 31JAN07      | 24FEB07    | 27FEB07     |
| A4RART1400                            | Backfilling                                 | 66d         | 0                | 12                | 01FEB07     | 14FEB07      | 24APR07    | 08MAY07     |
| A4RART1500                            | Construct Granite Facing Stone              | 66d         | 0                | 10                | 15FEB07     | 01MAR07      | 11MAY07    | 22MAY07     |
| A4RART1600                            | Paving                                      | 66d         | 0                | 12                | 15FEB07     | 03MAR07      | 09MAY07    | 22MAY07     |
| A4RART1700                            | Erect Type 2 Railing                        | 66d         | 0                | 6                 | 05MAR07     | 10MAR07      | 23MAY07    | 29MAY07     |
| <b>Ramp Wall - South</b>              |   |             |                  |                   |             |              |            |             |
| A4RARS1700                            | Steel Fixing for Side Walls (S2)            | 19d         | 50               | 6                 | 18JAN07 A   | 23JAN07      | 18JAN07 A  | 14FEB07     |
| A4RARS1800                            | Erect Formwork for Side Walls (S2)          | 19d         | 0                | 6                 | 24JAN07     | 30JAN07      | 15FEB07    | 24FEB07     |
| A4RARS1900                            | Concreting (S2)                             | 19d         | 0                | 1                 | 31JAN07     | 31JAN07      | 26FEB07    | 26FEB07     |
| A4RARS2000                            | Remove Formwork (S2)                        | 19d         | 0                | 1                 | 01FEB07     | 01FEB07      | 27FEB07    | 27FEB07     |
| A4RARS2200                            | Backfilling                                 | 65d         | 0                | 12                | 02FEB07     | 15FEB07      | 24APR07    | 08MAY07     |
| A4RARS2300                            | Construct Granite Facing Stone              | 71d         | 0                | 6                 | 16FEB07     | 26FEB07      | 19MAY07    | 22MAY07     |
| A4RARS2400                            | Paving                                      | 65d         | 0                | 12                | 16FEB07     | 05MAR07      | 09MAY07    | 22MAY07     |
| A4RARS2500                            | Erect Type 2 Railing                        | 65d         | 0                | 6                 | 06MAR07     | 12MAR07      | 23MAY07    | 29MAY07     |
| <b>Section 7</b>                      |   |             |                  |                   |             |              |            |             |
| <b>Waterfront Promenade</b>           |   |             |                  |                   |             |              |            |             |
| <b>Utility Works</b>                  |   |             |                  |                   |             |              |            |             |
| A7WPU00610                            | PCCW - Lay Cable (Landscape Node P3)        | 2d          | 0                | 12                | 20JAN07     | 02FEB07      | 23JAN07    | 05FEB07     |
| <b>Public Lighting, Duct and Kerb</b> |   |             |                  |                   |             |              |            |             |
| A7WPP00100                            | Public Lighting (in ZU)                     | 24d         | 90               | 60                | 03APR06 A   | 26JAN07      | 03APR06 A  | 27FEB07     |
| A7WPP00200                            | Public Lighting (in ZS)                     | 6d          | 60               | 60                | 03APR06 A   | 16FEB07      | 03APR06 A  | 27FEB07     |
| <b>Roads and Paving</b>               |   |             |                  |                   |             |              |            |             |
| A7WPR00050                            | Paving works at Foot Message Area           | 21d         | 50               | 18                | 08JAN07 A   | 30JAN07      | 08JAN07 A  | 27FEB07     |
| A7WPR00100                            | Lay asphalt & paving block (in ZU & ZUS)    | 21d         | 40               | 50                | 12DEC06 A   | 09MAR07      | 12DEC06 A  | 03APR07     |
| A7WPR00200                            | Lay asphalt & paving block (in ZS & ZR1)    | 0           | 40               | 50                | 21OCT06 A   | 27FEB07      | 21OCT06 A  | 27FEB07     |
| A7WPR00205                            | TTA approval in TMLG (Section 7 & 8)        | 0           | 0                | 14                | 02FEB07     | 21FEB07      | 02FEB07    | 21FEB07     |
| A7WPR00206                            | RMO notice for crossing TTA (Section 7 & 8) | 0           | 0                | 7                 | 22FEB07     | 01MAR07      | 22FEB07    | 01MAR07     |
| A7WPR00210                            | Additional 2 nos crossing (VO158B) 1st half | 0           | 0                | 14                | 02MAR07     | 17MAR07      | 02MAR07    | 17MAR07     |
| A7WPR00220                            | Additional 2 nos crossing (VO158B) 2nd half | 0           | 0                | 14                | 19MAR07     | 03APR07      | 19MAR07    | 03APR07     |
| A7WPR00230                            | Repave verge adjacent to promenade (VO164)  | 0           | 0                | 28                | 02MAR07     | 03APR07      | 02MAR07    | 03APR07     |
| <b>Finishing Works</b>                |   |             |                  |                   |             |              |            |             |
| A7WPF00100                            | Finishing Works (in ZU) (include pump room) | 39d         | 30               | 30                | 08JAN06 A   | 13FEB07      | 09JAN06 A  | 03APR07     |
| A7WPF00200                            | Finishing Works (in ZS)                     | 54d         | 90               | 55                | 13APR06 A   | 26JAN07      | 13APR06 A  | 03APR07     |

**Leader - Wai Kee (C&T) Joint Venture**  
**TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)**

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

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| Act ID  | Description                                      | Original Duration | Percent Complete | Total Focal | Early Start | Early Finish | Late Start | Late Finish |
|---|--|-------------------|------------------|-------------|-------------|--------------|------------|-------------|
| ABWPRP0500                                    | Lay asphalt & paving block (ZJ) (PLSN - N1)      | 40                | 0                | 24          | 13FEB07     | 03APR07      | 15FEB07    | 06APR07     |
| ABWPRP0502                                    | Lay asphalt & paving block (ZM) (N1N - TP)       | 26                | 0                | 36d         | 27FEB07     | 30MAR07      | 14APR07    | 17MAY07     |
| ABWPRP0510                                    | Additional 3 EVA & 2 crossings (VO158B) 1st half | 18                | 0                | 0           | 04APR07     | 25APR07      | 04APR07    | 25APR07     |
| ABWPRP0520                                    | Additional 3 EVA & 2 crossings (VO158B) 2nd half | 18                | 0                | 0           | 26APR07     | 17MAY07      | 26APR07    | 17MAY07     |
| ABWPRP0530                                    | Repave verge adjacent to promenade (VO165)       | 36                | 0                | 0           | 04APR07     | 17MAY07      | 04APR07    | 17MAY07     |
| <b>Finishing Works</b>                        |  |                   |                  |             |             |              |            |             |
| ABWPFW0100                                    | Finishing Works                                  | 60                | 23               | 50d         | 08SEP06 A   | 17MAR07      | 08SEP06 A  | 17MAY07     |
| <b>E &amp; M Works</b>                        |  |                   |                  |             |             |              |            |             |
| ABWPEM0900                                    | Irrigation System                                | 50                | 20               | 27d         | 15JAN07 A   | 14APR07      | 15JAN07 A  | 17MAY07     |
| ABWPEM1000                                    | E & M Works                                      | 30                | 20               | 36d         | 15JAN07 A   | 03APR07      | 15JAN07 A  | 17MAY07     |
| <b>Road Marking, Traffic Sign and Fencing</b> |  |                   |                  |             |             |              |            |             |
| ABWPRM0200                                    | Erect Signage                                    | 21                | 0                | 26d         | 19MAR07     | 12APR07      | 23APR07    | 17MAY07     |
| <b>Landscaping Hardworks</b>                  |  |                   |                  |             |             |              |            |             |
| ABWPHL0700                                    | Parapet Wall along Seawall (In ZR)               | 47                | 20               | 23d         | 21DEC06 A   | 08MAR07      | 21DEC06 A  | 04APR07     |
| ABWPHL0800                                    | Parapet Wall (In ZK) & N2 (& VO 95 continuation) | 22                | 50               | 18d         | 01JAN07 A   | 28FEB07      | 01JAN07 A  | 21MAR07     |
| ABWPHL0900                                    | Parapet Wall along Seawall (In ZJ6)              | 12                | 0                | 18d         | 30JAN07     | 12FEB07      | 23FEB07    | 08MAR07     |
| ABWPHL1000                                    | Parapet Wall along Seawall (In ZJ5)              | 8                 | 0                | 18d         | 20JAN07     | 28JAN07      | 10FEB07    | 22FEB07     |
| ABWPHL1200                                    | Construct Pergola (3 nos.)                       | 72                | 90               | 50d         | 10APR06 A   | 27JAN07      | 10APR06 A  | 30MAR07     |
| ABWPHL1300                                    | Water Point WP24-4 to 24-1                       | 15                | 0                | 39d         | 23JAN07     | 08FEB07      | 13MAR07    | 28MAR07     |
| ABWPHL1400                                    | Water Point WP23-3 to 22-1                       | 18                | 0                | 36d         | 23JAN07     | 12FEB07      | 08MAR07    | 29MAR07     |
| ABWPHL1500                                    | Water Point WP21-3 to 21-1                       | 12                | 0                | 2d          | 02FEB07     | 15FEB07      | 05FEB07    | 21FEB07     |
| ABWPHL1600                                    | Water Point WP20-6 to 20-1                       | 21                | 0                | 5d          | 30JAN07     | 26FEB07      | 05FEB07    | 03MAR07     |
| ABWPHL1700                                    | Water Point WP19-4 to 19-1                       | 15                | 0                | 16d         | 22JAN07     | 07FEB07      | 09FEB07    | 01MAR07     |
| ABWPHL1800                                    | Water Point WP18-3 to 18-2                       | 12                | 0                | 19d         | 22JAN07     | 03FEB07      | 13FEB07    | 01MAR07     |
| ABWPHL1900                                    | Water Point WP17-5 to 17-1                       | 18                | 0                | 40d         | 20JAN07     | 09FEB07      | 12MAR07    | 31MAR07     |
| ABWPHL2000                                    | Water Point WP16-3 to 16-1                       | 12                | 0                | 44d         | 20JAN07     | 02FEB07      | 16MAR07    | 29MAR07     |
| ABWPHL2200                                    | ASD's Contractor Works                           | 303               | 69               | -246d       | 25JUL06 A   | 17MAY07      | 23JUL06 A  | 22JUL06     |
| ABWPHL2210                                    | Litter-bin footing excavation (46 nos) (VO179)   | 10                | 0                | 2d          | 08MAR07     | 19MAR07      | 10MAR07    | 21MAR07     |
| ABWPHL2220                                    | Litter-bin footing concreting (46 nos) (VO179)   | 10                | 0                | 2d          | 20MAR07     | 30MAR07      | 22MAR07    | 02APR07     |
| ABWPHL2230                                    | Litter-bin paving temp reinstata (VO179)         | 16                | 0                | 2d          | 31MAR07     | 19APR07      | 03APR07    | 21APR07     |
| ABWPHL2240                                    | Install litter-bin w/ reinstata (79 nos S7 & 8)  | 21                | 0                | 0           | 23APR07     | 17MAY07      | 23APR07    | 17MAY07     |
| <b>Section 9</b>                              |  |                   |                  |             |             |              |            |             |
| <b>Public Landing Step</b>                    |  |                   |                  |             |             |              |            |             |
| <b>Land Works</b>                             |  |                   |                  |             |             |              |            |             |
| AGLSLW0900                                    | Inspection & Testing                             | 30                | 90               | 0           | 01NOV06 A   | 23JAN07      | 01NOV06 A  | 23JAN07     |
| AGLSLW0900                                    | Fabrication & Painting of Steel Works (Roof)     | 48                | 75               | 2d          | 05DEC06 A   | 06FEB07      | 05DEC06 A  | 08FEB07     |
| AGLSLW1000                                    | Concrete Coping with 10 tonne Bollard & Handrail | 30                | 30               | 3d          | 13NOV06 A   | 13FEB07      | 13NOV06 A  | 16FEB07     |
| AGLSLW1400                                    | Public Lighting & Pillar install. (T&C) (VO147)  | 21                | 0                | 0           | 24JAN07     | 16FEB07      | 24JAN07    | 16FEB07     |
| AGLSLW1500                                    | Rubber, Step & land Step Fender                  | 21                | 0                | 0           | 24JAN07     | 16FEB07      | 24JAN07    | 16FEB07     |
| AGLSLW1600                                    | Surface Mounted Seats                            | 7                 | 0                | 2d          | 07FEB07     | 14FEB07      | 09FEB07    | 16FEB07     |
| AGLSLW1700                                    | Construct Insitu Concrete Paving                 | 18                | 5                | 7d          | 01NOV06 A   | 08FEB07      | 01NOV06 A  | 16FEB07     |
| <b>Section 11</b>                             |  |                   |                  |             |             |              |            |             |
| <b>Land Works</b>                             |  |                   |                  |             |             |              |            |             |
| AGLSLW0900                                    | Inspection & Testing                             | 30                | 90               | 0           | 01NOV06 A   | 23JAN07      | 01NOV06 A  | 23JAN07     |
| AGLSLW0900                                    | Fabrication & Painting of Steel Works (Roof)     | 48                | 75               | 2d          | 05DEC06 A   | 06FEB07      | 05DEC06 A  | 08FEB07     |
| AGLSLW1000                                    | Concrete Coping with 10 tonne Bollard & Handrail | 30                | 30               | 3d          | 13NOV06 A   | 13FEB07      | 13NOV06 A  | 16FEB07     |
| AGLSLW1400                                    | Public Lighting & Pillar install. (T&C) (VO147)  | 21                | 0                | 0           | 24JAN07     | 16FEB07      | 24JAN07    | 16FEB07     |
| AGLSLW1500                                    | Rubber, Step & land Step Fender                  | 21                | 0                | 0           | 24JAN07     | 16FEB07      | 24JAN07    | 16FEB07     |
| AGLSLW1600                                    | Surface Mounted Seats                            | 7                 | 0                | 2d          | 07FEB07     | 14FEB07      | 09FEB07    | 16FEB07     |
| AGLSLW1700                                    | Construct Insitu Concrete Paving                 | 18                | 5                | 7d          | 01NOV06 A   | 08FEB07      | 01NOV06 A  | 16FEB07     |

Start date 10JUN04  
Finish date 09MAY08  
Start date 20JAN07  
Run date 08FEB07  
Egg number 13A

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

**Leader - Wai Kee (C&T) Joint Venture**  
**TP37/03 - Critical Path Reference Program for RP10 (Progress Updated to 20 January 2007)**

| Act ID                            | Description                       | Total | Percent Complete | Original Duration | Early Start | Early Finish | Late Start | Late Finish |
|-----------------------------------|-----------------------------------|-------|------------------|-------------------|-------------|--------------|------------|-------------|
| <b>Area SA8, SA11B &amp; SA14</b> |                                   |       |                  |                   |             |              |            |             |
| <b>Landscape Soilworks</b>        |                                   |       |                  |                   |             |              |            |             |
| B1AASL0600                        | Soil Mix (In ZS, 400 - North End) | 30    | 21               | 0                 | 12DEC06 A   | 16FEB07      | 12DEC06 A  | 16FEB07     |
| B1AASL0800                        | Planting Works (Section 7 only)   | 28    | 0                | 0                 | 21FEB07     | 24MAR07      | 21FEB07    | 24MAR07     |
| B1AASL0900                        | Groundcovers Works                | 20    | 0                | 0                 | 03MAR07     | 26MAR07      | 03MAR07    | 26MAR07     |

| <b>Section 12</b>                             |  |    |    |     |           |         |           |         |
|---|--|----|----|-----|-----------|---------|-----------|---------|
| <b>Area SA7, SA10, SA11A, SA12 &amp; SA13</b> |  |    |    |     |           |         |           |         |
| <b>Landscape Soilworks</b>                    |  |    |    |     |           |         |           |         |
| B2ABSL0100                                    | Soil Mix (In ZR, 395m)                       | 47 | 70 | 0   | 21OCT06 A | 07FEB07 | 21OCT06 A | 07FEB07 |
| B2ABSL0200                                    | Soil Mix (In ZK, 180m)                       | 21 | 0  | 24  | 16FEB07   | 15MAR07 | 22FEB07   | 17MAR07 |
| B2ABSL0300                                    | Soil Mix (In ZJ6, 85m)                       | 12 | 0  | 5d  | 27FEB07   | 12MAR07 | 05MAR07   | 17MAR07 |
| B2ABSL0400                                    | Soil Mix (In ZJ5, 50m)                       | 7  | 0  | 13d | 24JAN07   | 31JAN07 | 08FEB07   | 16FEB07 |
| B2ABSL0500                                    | Soil Mix (ZJ - Landscape Node 1 South, 260m) | 28 | 50 | 18d | 21DEC06 A | 27FEB07 | 21DEC06 A | 17MAR07 |
| B2ABSL0600                                    | Soil Mix (ZM, ZL1, ZJ)                       | 71 | 90 | 51d | 21OCT06 A | 21FEB07 | 21OCT06 A | 23APR07 |
| B2ABSL0650                                    | Planting Works for ZR, ZJ5, ZJ6              | 35 | 0  | 22d | 08FEB07   | 23MAR07 | 09MAR07   | 19APR07 |
| B2ABSL0700                                    | Planting Works for ZK, ZJ, ZM, ZL1           | 40 | 0  | 0   | 23FEB07   | 11APR07 | 23FEB07   | 11APR07 |
| B2ABSL0800                                    | Groundcovers Works                           | 34 | 0  | 0   | 14MAR07   | 23APR07 | 14MAR07   | 23APR07 |
| B2ABSL1100                                    | Root Barrier (In ZM & ZJ) (VO121)            | 18 | 90 | 15d | 06NOV06 A | 22JAN07 | 06NOV06 A | 08FEB07 |
| B2ABSL1200                                    | Root Barrier (In ZJ, ZJ5, ZJ6 & ZK) (VO124)  | 28 | 90 | 13d | 13NOV06 A | 23JAN07 | 13NOV06 A | 07FEB07 |

| <b>Section 13</b>                        |   |    |    |     |           |         |           |         |
|--|---|----|----|-----|-----------|---------|-----------|---------|
| <b>Area SA1, SA2, SA3, SA4 &amp; SA5</b> |   |    |    |     |           |         |           |         |
| <b>Landscape Soilworks</b>               |   |    |    |     |           |         |           |         |
| B3ACSL0100                               | Soil Mix (Area SA1 - South Section)               | 30 | 28 | 0   | 15JAN07 A | 16FEB07 | 15JAN07 A | 16FEB07 |
| B3ACSL0200                               | Soil Mix (Area SA1 - North Section)               | 30 | 30 | 0   | 08JAN07 A | 21FEB07 | 08JAN07 A | 21FEB07 |
| B3ACSL0300                               | Soil Mix (Car Park, Loading & Unloading Area)     | 6  | 0  | 16d | 02APR07   | 09APR07 | 25APR07   | 02MAY07 |
| B3ACSL0400                               | Soil Mix (Area Adjacent Road SL3)                 | 30 | 0  | 7d  | 09MAR07   | 13APR07 | 17MAR07   | 21APR07 |
| B3ACSL0500                               | Planting Works                                    | 65 | 0  | 0   | 12FEB07   | 03MAY07 | 12FEB07   | 03MAY07 |
| B3ACSL0600                               | Planting Works (Car Park, Loading/Unloading Area) | 6  | 0  | 19d | 10APR07   | 16APR07 | 09MAY07   | 09MAY07 |

| <b>Section 14</b>                                 |                    |    |   |   |         |         |         |         |
|---|--------------------|----|---|---|---------|---------|---------|---------|
| <b>Area SA8, SA9, SA15, SA16, SA17 &amp; SA18</b> |                    |    |   |   |         |         |         |         |
| <b>Landscape Soilworks</b>                        |                    |    |   |   |         |         |         |         |
| B3ADSL0100  | Planting Works     | 35 | 0 | 0 | 22FEB07 | 03APR07 | 22FEB07 | 03APR07 |
| B3ADSL0200  | Groundcovers Works | 30 | 0 | 0 | 17MAR07 | 21APR07 | 17MAR07 | 21APR07 |

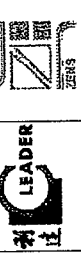
| <b>Section 15</b>                 |                     |     |   |   |         |         |         |         |
|-----------------------------------|---------------------|-----|---|---|---------|---------|---------|---------|
| <b>Area SA8, SA11B &amp; SA14</b> |                     |     |   |   |         |         |         |         |
| <b>Establishment Works</b>        |                     |     |   |   |         |         |         |         |
| B4AAEW0100                        | Establishment Works | 305 | 0 | 0 | 27MAR07 | 26MAR08 | 27MAR07 | 26MAR08 |

| <b>Section 16</b>                        |                     |     |   |   |         |         |         |         |
|--|---------------------|-----|---|---|---------|---------|---------|---------|
| <b>Area SA1, SA2, SA3, SA4 &amp; SA5</b> |                     |     |   |   |         |         |         |         |
| <b>Establishment Works</b>               |                     |     |   |   |         |         |         |         |
| B5ABEW0100                               | Establishment Works | 290 | 0 | 0 | 24APR07 | 04APR08 | 24APR07 | 04APR08 |

| <b>Section 17</b>                                 |                     |     |   |   |         |         |         |         |
|---|---------------------|-----|---|---|---------|---------|---------|---------|
| <b>Area SA8, SA9, SA15, SA16, SA17 &amp; SA18</b> |                     |     |   |   |         |         |         |         |
| <b>Establishment Works</b>                        |                     |     |   |   |         |         |         |         |
| B6ACEW0200  | Establishment Works | 312 | 0 | 0 | 04MAY07 | 09MAY08 | 04MAY07 | 09MAY08 |

|             |         |                        |
|-------------|---------|------------------------|
| Start date  | 10JUN04 | Early bar              |
| Finish date | 09MAY08 | Progress bar           |
| Start date  | 20JAN07 | Critical bar           |
| Start date  | 06FEB07 | Summary bar            |
| Age number  | 14A     | Start milestone point  |
|             |         | Finish milestone point |

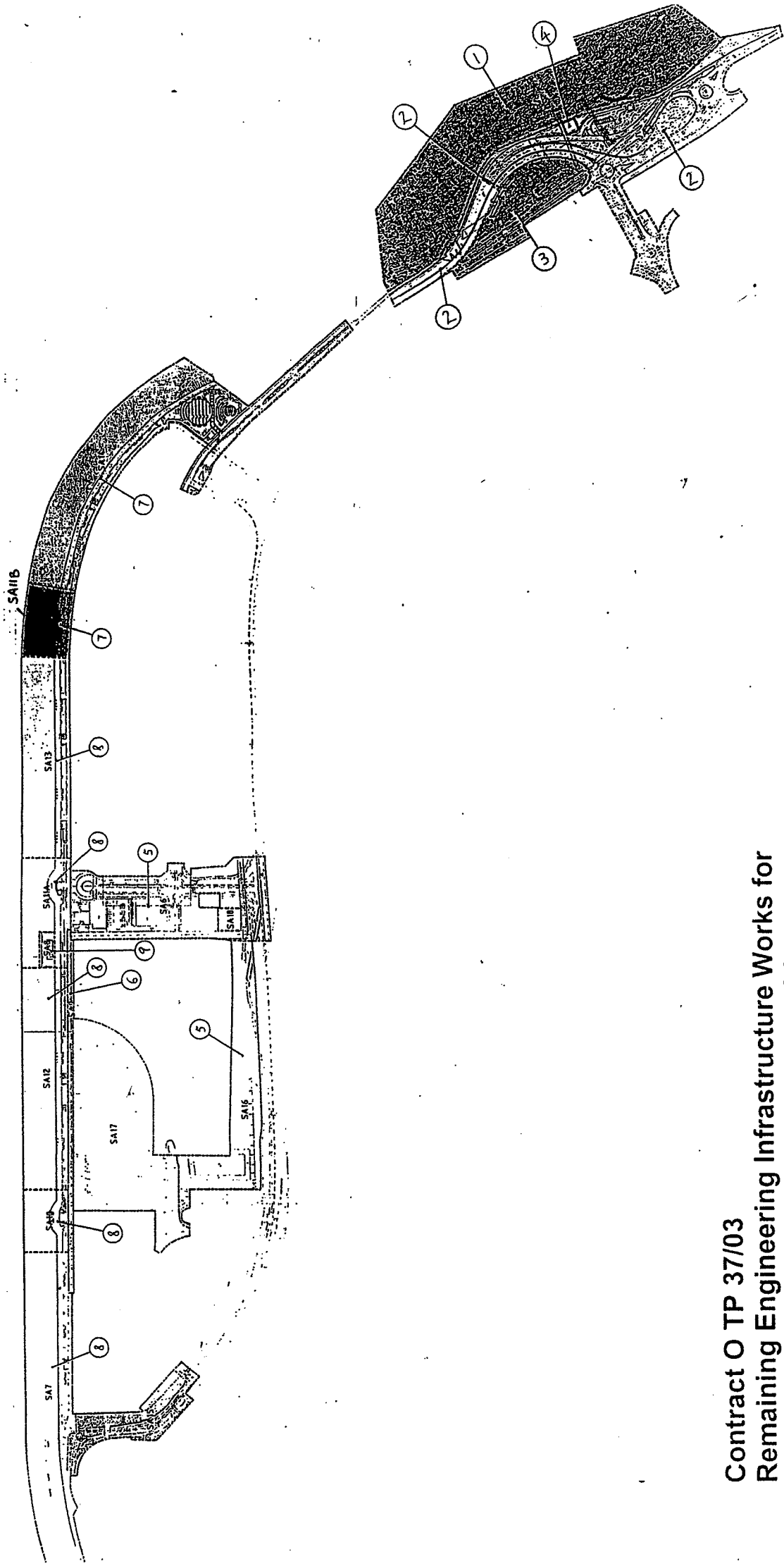
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## **Appendix G**

### **Construction Site Area**



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

Location and Key Plan



**Appendix H**

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

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

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

Inspection Date : 7 July 2007 Inspected by Name : (RSS) Brian Cheng (LWKJM) Inspector (ET) H.T. Chow  
 Time : 10:00 Signature : [Signature]   
 Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy Temperature : 32°C  
 Wind : Calm / Light / Breeze / Strong Humidity : High / Moderate / Low

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







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

|   | Implementation Stages* |          | Remark |
|---|------------------------|----------|--------|
|   | Yes                    | No / N/A |        |
| <b>Mitigation Measures on Waste Management</b>  |                        |          |        |
| <b>Filling Activities</b>   |                        |          |        |
| <ul style="list-style-type: none"> <li>▪ Use of silt screen around the filling face to reduce the losses to the surrounding.</li> <li>▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.</li> <li>▪ The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.</li> <li>▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.</li> <li>▪ Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading/transportation.</li> </ul>  | ✓                      |          | ✓      |
| <b>Waste Management</b>   |                        |          |        |
| <b>Marine Dredged Sediment</b>  |                        |          |        |
| <ul style="list-style-type: none"> <li>• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.</li> <li>• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.</li> <li>• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.</li> <li>• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m<sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.</li> <li>• Inspection of the barge loading to ensure that loss of material does not take place during transportation.</li> </ul>   | ✓                      |          | ✓      |
| <b>Construction and Demolition (C&amp;D) Waste</b>  |                        |          |        |
| <ul style="list-style-type: none"> <li>• Most of the C&amp;D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.</li> <li>• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&amp;D materials.</li> <li>• Proper protective measures, such as fences and tarpaulin, are provided, in order to protective the temporary stockpiled materials for later reuse / recycle.</li> <li>• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)</li> <li>• In order to reduce the impacts to the public, except for those sorted inert C&amp;D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.</li> <li>• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.</li> <li>• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.</li> <li>• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills</li> <li>• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized</li> </ul> | ✓                      |          | ✓      |



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

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

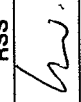
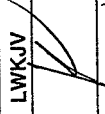

|   | Implementation Stages* |    |     | Remark |
|---|------------------------|----|-----|--------|
|   | Yes                    | No | N/A |        |
| <b>Mitigation Measures on Waste Management</b>  |                        |    |     |        |
| • Proper storage will minimize the damage and thus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

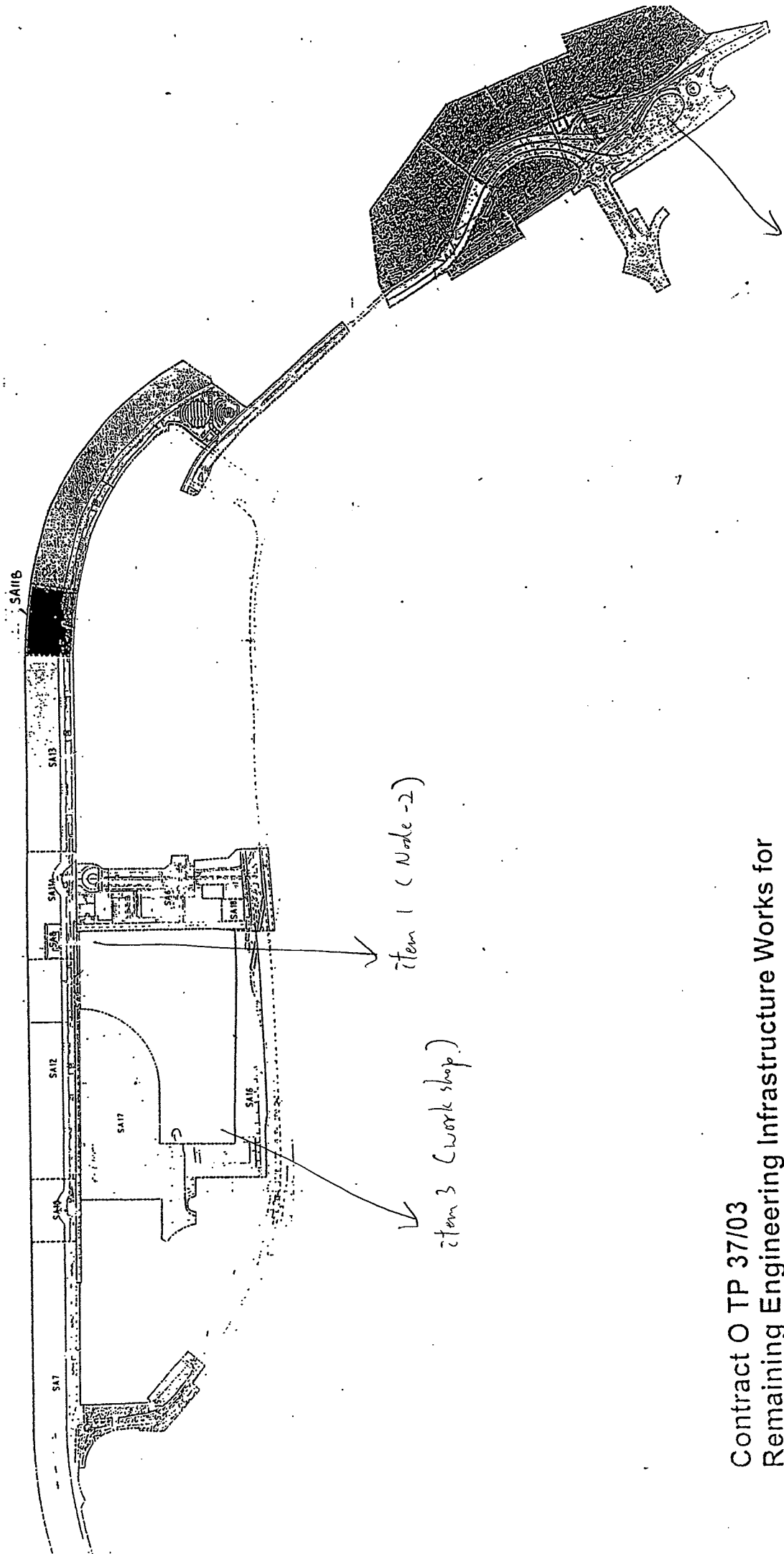
## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

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

**Table for follow-up Action:**

| Item | Details of defective works or observations   | Location | Further action to be taken (Included persons / party to take action)   | Expected Date for Action taken |
|------|--|----------|--|--------------------------------|
| 1.   | Follow up action to the previous site inspection item 2 on 26-8-07, item 2 on 2-6-07, item 1 on 9-6-07, item 1 on 15-6-07, item 1 on 23-6-07 and item 1 on 30-6-07, mud and silt were still observed accumulated inside the main drainage channel at Node-2. | Node-2   | The Contractor was reminded to clean up the mud and silt.              | 14-7-2007                      |
| 2.   | Follow up action to the previous site inspection item 3 on 9-6-07, item 2 on 15-6-07, item 2 on 23-6-07, and item 2 on 30-6-07, CRD waste and rubbish at Node-1 were cleaned up.   | Node-1   | Follow up action was completed, no further action to be taken.         | N/A                            |
| 3.   | Some tire was found without covered at Workshop.   | Workshop | The Contractor was reminded to cover the tire avoid mosquito breeding. | 14-7-2007                      |
| 4.   | Rubbish was accumulated in sump pit at SA-1.   | SA-1     | The Contractor was reminded to clean up the rubbish more frequently.   | 14-7-2007                      |

| Signature: | RSS   | LWKJV  | ET  |
|------------|---|--|---|
|            |  |  |  |
| Name:      | Brian Cheng   | WALTON CHAN  | H.T. Chow   |
| Date:      | 7 July 2007   | 7 July 2007  | 7-7-2007  |



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

Location and Key Plan

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

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

Inspection Date : 14 July 2007 Inspected by Name : (RSS) Michelle Fung (LWKJM) (ET) H.T. Chow  
 Time : 10:00 Signature : *[Signature]*  
 Weather : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy Temperature : 34°C  
 Condition : Calm / Light / Breeze / Strong Humidity : High / Moderate / Low  
 Wind : *[Signature]*

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



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

|  | Implementation Stages* |    |     | Remark |
|--|------------------------|----|-----|--------|
|  | Yes                    | No | N/A |        |
| <b>Mitigation Measures on Waste Management</b>   |                        |    |     |        |
| <b>Water Quality</b>   |                        |    |     |        |
| <b>General Construction Activities</b>   |                        |    |     |        |
| ▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.   | ✓                      |    |     |        |
| ▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.  | ✓                      |    |     |        |
| ▪ All traps shall incorporate oil and grease removal facilities.   | ✓                      |    |     |        |
| ▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.  | ✓                      |    |     | item 1 |
| ▪ All drainage facilities should be adequate for controlled release of storm flows.  | ✓                      |    |     | item 1 |
| ▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.  | ✓                      |    |     |        |
| ▪ Open stockpiles of more than 50m <sup>3</sup> should be covered.   | ✓                      |    |     |        |
| ▪ Temporary stockpiles of excavated materials should be covered during rainstorms.   | ✓                      |    |     |        |
| ▪ Manholes should be covered and sealed.   | ✓                      |    |     |        |
| ▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.   | ✓                      |    |     |        |
| ▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.   | ✓                      |    |     |        |
| ▪ Vehicle washing facilities should be provided at every site exit.  | ✓                      |    |     |        |
| ▪ Vehicle washing facilities should be adequate to settle out the sand and silt.   | ✓                      |    |     |        |
| ▪ Washing area and road exiting from washing facility should be paved.   | ✓                      |    |     |        |
| ▪ Access road should have sufficient back fall toward washing facility.  | ✓                      |    |     |        |
| <b>Dredging Activities</b>   |                        |    |     |        |
| ▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.   |                        |    |     | ✓      |
| ▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.  |                        |    |     | ✓      |
| ▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site. |                        |    |     | ✓      |
| ▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.  |                        |    |     | ✓      |
| ▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.  |                        |    |     | ✓      |
| ▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.   |                        |    |     | ✓      |
| ▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.                                    |                        |    |     | ✓      |
| ▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.   |                        |    |     | ✓      |



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

|  | <b>Mitigation Measures on Waste Management</b> |            |           | <b>Remark</b> |            |  |
|--|--|------------|-----------|---------------|------------|--|
|  | <b>Implementation Stages*</b>                  | <b>Yes</b> | <b>No</b> |               | <b>N/A</b> |  |
| <b>Filling Activities</b>  |  |            |           |               |            |  |
| <ul style="list-style-type: none"> <li>▪ Use of silt screen around the filling face to reduce the losses to the surrounding.</li> <li>▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.</li> <li>▪ The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.</li> <li>▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.</li> <li>▪ Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.</li> </ul>   | /  | /          | /         |               |            |  |
| <b>Waste Management</b>  |  |            |           |               |            |  |
| <b>Marine Dredged Sediment</b>   |  |            |           |               |            |  |
| <ul style="list-style-type: none"> <li>• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.</li> <li>• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.</li> <li>• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.</li> <li>• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m<sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.</li> <li>• Inspection of the barge loading to ensure that loss of material does not take place during transportation.</li> </ul>  | /  | /          | /         | /             |            |  |
| <b>Construction and Demolition (C&amp;D) Waste</b>   |  |            |           |               |            |  |
| <ul style="list-style-type: none"> <li>• Most of the C&amp;D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.</li> <li>• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&amp;D materials.</li> <li>• Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.</li> <li>• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)</li> <li>• In order to reduce the impacts to the public, except for those sorted inert C&amp;D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.</li> <li>• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.</li> <li>• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.</li> <li>• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills</li> <li>• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized</li> </ul> | /  | /          | /         | /             | /          |  |



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

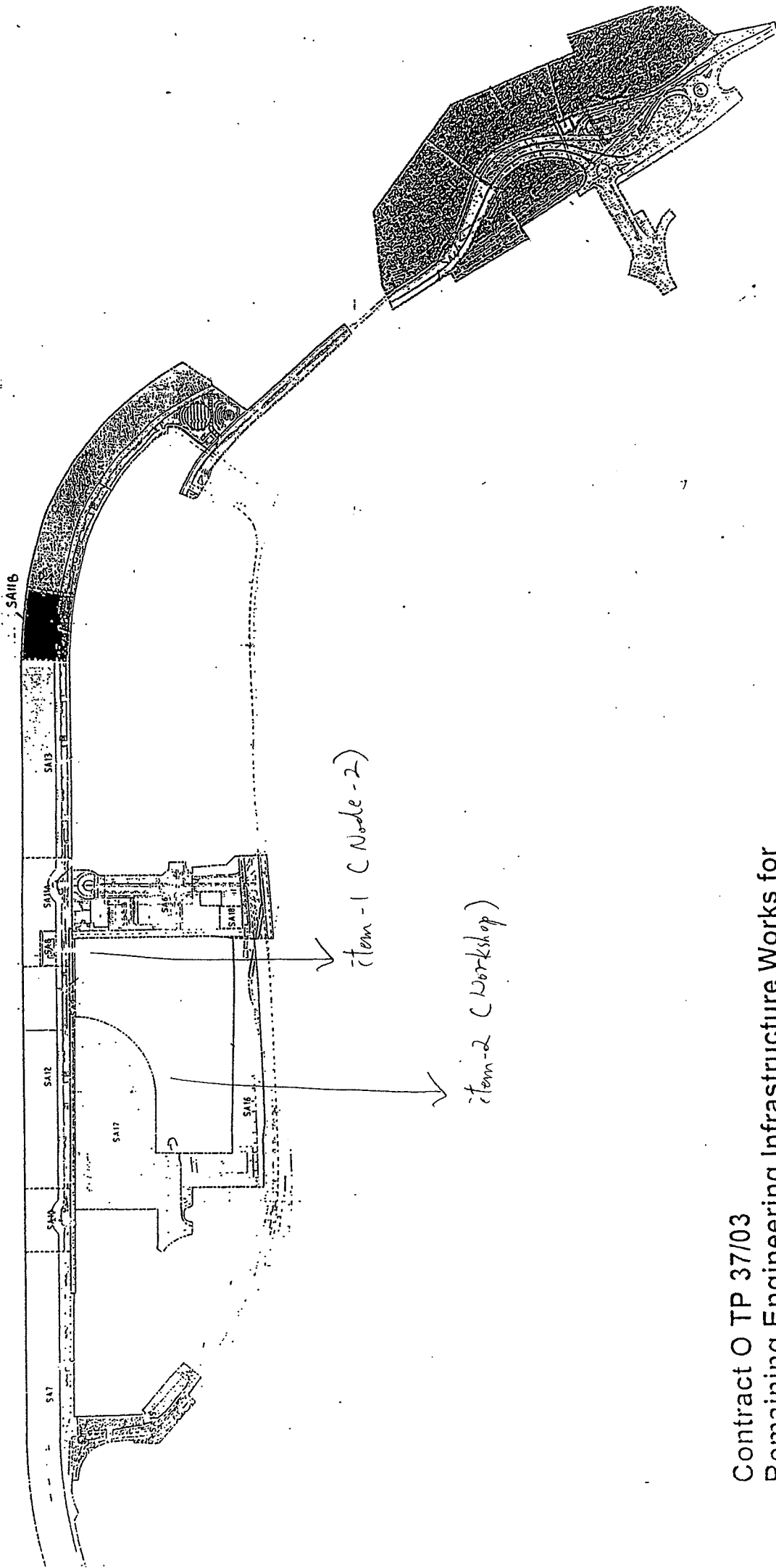
|   | Implementation Stages* |  | Remark |
|---|------------------------|--|--------|
|   |                        |  |        |
|   |                        |  |        |
| <b>Mitigation Measures on Waste Management</b>  |                        |  |        |
| • Proper storage will minimize the damage and thus the wastage of the materials   | ✓                      |  |        |
| • Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned. | ✓                      |  |        |
| • Chemical Waste  |                        |  |        |
| • It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.  | ✓                      |  |        |
| • After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.   | ✓                      |  |        |
| • Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.   | ✓                      |  |        |
| • Containers used for the storage of chemical wastes  |                        |  |        |
| • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed   | ✓                      |  |        |
| • Have a capacity of less than 450L unless the specification have been approved by the EPD  | ✓                      |  |        |
| • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice   | ✓                      |  |        |
| • Labelling   |                        |  |        |
| • Every container of chemical waste would bear an appropriate label, which would contain the particulars details.   | ✓                      |  |        |
| • The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste  | ✓                      |  |        |
| • Storage Area  |                        |  |        |
| • Be clearly labeled and used solely for the storage of chemical waste  | ✓                      |  |        |
| • Be enclosed on at least 3 sides   | ✓                      |  |        |
| • Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest  | ✓                      |  |        |
| • Have adequate ventilation   | ✓                      |  |        |
| • Be covered to prevent rainfall entering   | ✓                      |  |        |
| • Be arranged so that incompatible materials are adequately separated   | ✓                      |  |        |
| • Be clean and maintain regularly   | ✓                      |  |        |
| • Disposal  |                        |  |        |
| • Be via a licensed waste collector   | ✓                      |  |        |
| • To a licensed disposal facility, such as Chemical Waste Treatment Centre  | ✓                      |  |        |
| • Be a reuser of the waste, under approval from the EPD   | ✓                      |  |        |



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

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





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

Location and Key Plan

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

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

Inspection Date : 21 July 2007 Inspected by Name : (RSS) Brian Cheng (LWKV) *Mak Yan Ching* (ET) H. T. Chow  
 Time : 10:15 Signature : *[Signature]*

Weather Condition Wind : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy  
 : Calm / Light / Breeze / Strong  
 Temperature : 32°C  
 Humidity : High / Moderate / Low

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



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

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







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

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



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

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



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

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

Inspection Date : 27 July 2007  
 Time : 14:30

Inspected by : (RSS) *[Signature]*  
 Name : (LWKJM)  
 Signature : Fung Fie Fie

(ET) *[Signature]*  
 H.T. Chow

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

Temperature :  
 Humidity : High / Moderate / Low

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



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

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



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

| Mitigation Measures on Waste Management   | Implementation Stages* |          | Remark |
|---|------------------------|----------|--------|
|   | Yes                    | No / N/A |        |
| <b>Filling Activities</b>   |                        |          |        |
| <ul style="list-style-type: none"> <li>▪ Use of silt screen around the filling face to reduce the losses to the surrounding.</li> <li>▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.</li> <li>▪ The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.</li> <li>▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.</li> <li>▪ Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during transportation.</li> </ul>  | ✓                      |          | ✓      |
| <b>Waste Management</b>   |                        |          |        |
| <b>Marine Dredged Sediment</b>  |                        |          |        |
| <ul style="list-style-type: none"> <li>• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.</li> <li>• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.</li> <li>• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.</li> <li>• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m<sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.</li> <li>• Inspection of the barge loading to ensure that loss of material does not take place during transportation.</li> </ul>   | ✓                      |          | ✓      |
| <b>Construction and Demolition (C&amp;D) Waste</b>  |                        |          |        |
| <ul style="list-style-type: none"> <li>• Most of the C&amp;D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.</li> <li>• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&amp;D materials.</li> <li>• Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.</li> <li>• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)</li> <li>• In order to reduce the impacts to the public, except for those sorted inert C&amp;D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.</li> <li>• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.</li> <li>• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.</li> <li>• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills</li> <li>• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized</li> </ul> | ✓                      |          | ✓      |



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

|  | <b>Mitigation Measures on Waste Management</b> |     |    | Remark |
|--|--|-----|----|--------|
|  | Implementation Stages*                         | Yes | No |        |
| <ul style="list-style-type: none"> <li>Proper storage will minimize the damage and thus the wastage of the materials</li> <li>Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.</li> </ul>   | /  |     |    |        |
| <ul style="list-style-type: none"> <li>Chemical Waste</li> <li>It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</li> <li>After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.</li> <li>Containers used for the storage of chemical wastes</li> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed</li> <li>Have a capacity of less than 450L unless the specification have been approved by the EPD</li> <li>Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice</li> <li>Labelling</li> <li>Every container of chemical waste would bear an appropriate label, which would contain the particulars details.</li> <li>The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste</li> </ul> | /  |     |    |        |
| <ul style="list-style-type: none"> <li>Storage Area</li> <li>Be clearly labeled and used solely for the storage of chemical waste</li> <li>Be enclosed on at least 3 sides</li> <li>Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest</li> <li>Have adequate ventilation</li> <li>Be covered to prevent rainfall entering</li> <li>Be arranged so that incompatible materials are adequately separated</li> <li>Be clean and maintain regularly</li> </ul>  | /  |     |    |        |
| <ul style="list-style-type: none"> <li><b>Disposal</b></li> <li>Be via a licensed waste collector</li> <li>To a licensed disposal facility, such as Chemical Waste Treatment Centre</li> <li>Be a reuser of the waste, under approval from the EPD</li> </ul>  | /  |     |    |        |

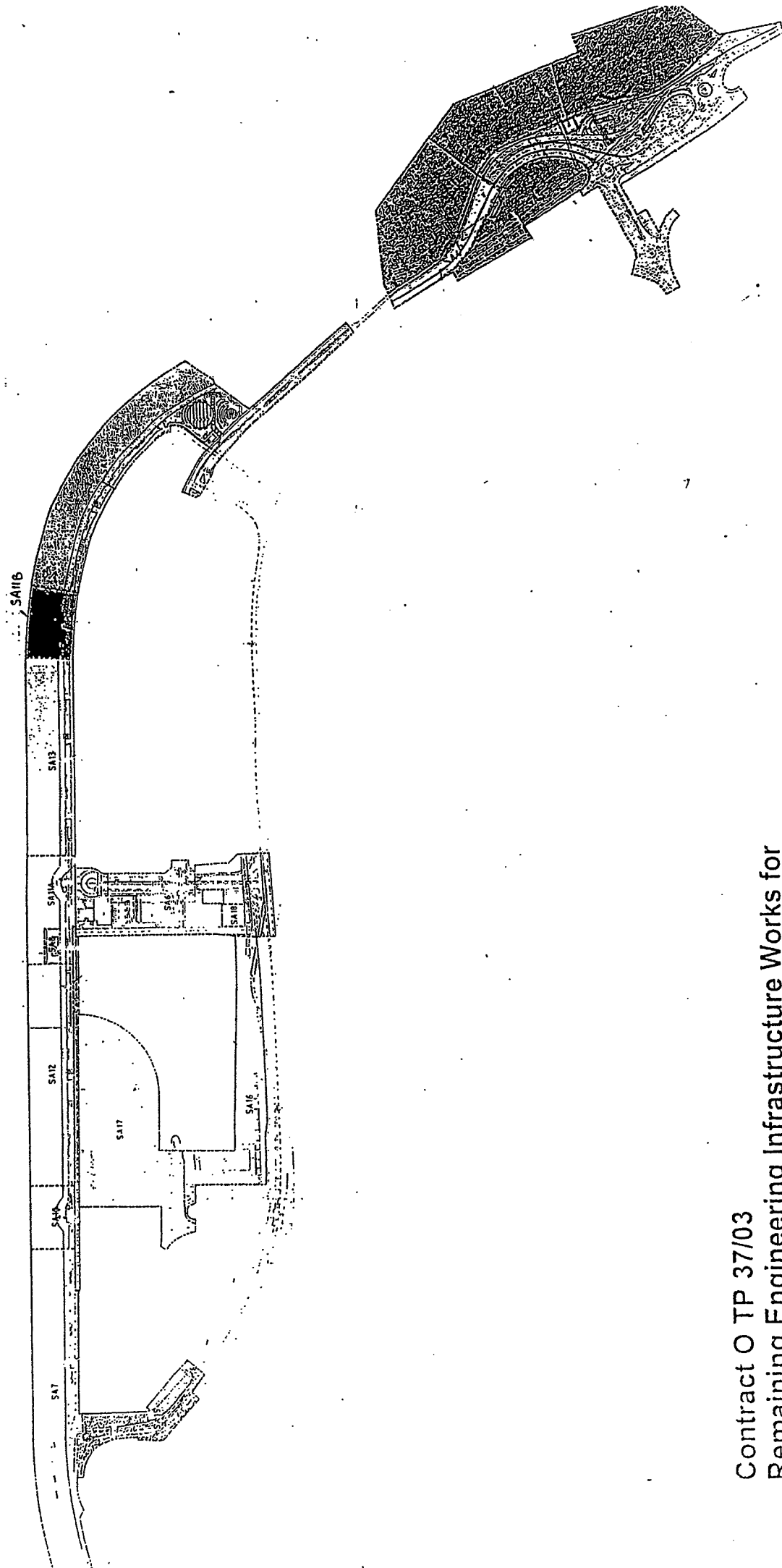


## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

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







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

Location and Key Plan



**Appendix I**  
**IEC and RE Comments on Monthly EM&A Report**  
—  
**June 2007**

**IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – June 2007**

| Item No. | Document Reference | Comment | ET Response |
|----------|--------------------|---------|-------------|
| ---      | ---                | ---     | ---         |

## **Appendix J**

### **Wastewater Monitoring**

—

### **Test Report of Wastewater Samples from Discharge Point**



# ENVIRO LABS LIMITED

## 環境化驗有限公司

### TEST REPORT

JOB NO. : 706196-1  
 DATE OF ISSUE : 22 June 2007 PAGE : 1 of 1

#### 1. Customer

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

#### 2. Sample Identification

Sample Description : One batch of water samples said to be wastewater were received in cool condition  
 Sampling : Conducted by the staff of the Enviro Labs Ltd.  
 Sampling Point : Outlet of sedimentation tank at  
 Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok  
 Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)  
 Preservation : Delivered and stored under refrigerated condition  
 Sampling Date : 18 Jun 2007  
 Received Date : 18 Jun 2007

#### 3. Test Method

| Parameter                         | Reference Method                                   | Testing Period        |
|-----------------------------------|--|-----------------------|
| (i) pH                            | Lovibond Digital Photometer<br>(Phenol Red Method) | 18 Jun 2007 (on-site) |
| (ii) Chemical Oxygen Demand (COD) | APHA <sup>1</sup> 20e 5220 C                       | 18 - 22 Jun 2007      |

<sup>1</sup> APIA Standard Methods for the Examination of Water and Wastewater

#### 4. Test Result\*

| Sample Label   | Test Parameter         | Sample No. | Test Result | Discharge Limit <sup>**</sup> | Unit                |
|--|------------------------|------------|-------------|-------------------------------|---------------------|
| Pak Shek Kok Workshop<br>Area Adjacent to<br>Site Office | pH                     | 706196-1   | 7.7         | 6 - 9                         | -                   |
|  | Chemical Oxygen Demand | 706196-2   | 51          | ≤80                           | mgO <sub>2</sub> /L |

\* Test results relate only to the items received.

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

— END OF REPORT —



APPROVED SIGNATORY :

Kenneth Kar Kin LAM  
 (Laboratory Manager)



# ENVIRO LABS LIMITED

## 環境化驗有限公司

### TEST REPORT

|                      |                |             |          |
|----------------------|----------------|-------------|----------|
| <b>JOB NO.</b>       | : 706196-2     | <b>PAGE</b> | : 1 of 1 |
| <b>DATE OF ISSUE</b> | : 22 June 2007 |             |          |

#### 1. Customer

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

#### 2. Sample Identification

**Sample Description** : One batch of water samples said to be wastewater were received in cool condition  
**Sampling** : Conducted by the staff of the Enviro Labs Ltd.  
**Sampling Point** : Outlet of sedimentation tank at  
 Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok  
 Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)  
**Preservation** : Delivered and stored under refrigerated condition  
**Sampling Date** : 18 Jun 2007  
**Received Date** : 18 Jun 2007

#### 3. Test Method

| Parameter   | Reference Method             | Testing Period   |
|---|------------------------------|------------------|
| (i) Total Suspended Solids (TSS) Dried at 103-105°C | APHA <sup>1</sup> 17e 2540 D | 18 - 22 Jun 2007 |

1. APHA Standard Methods for the Examination of Water and Wastewater

#### 4. Test Result\*

| Sample Label  | Test Parameter         | Sample No. | Test Result | Discharge Limit ** | Unit |
|---|------------------------|------------|-------------|--------------------|------|
| Pak Shek Kok Workshop Area<br>Adjacent to Site Office | Total Suspended Solids | 706196-1   | 15          | ≤30                | mg/L |

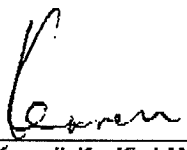
\* Test results relate only to the items received.

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

— END OF REPORT —



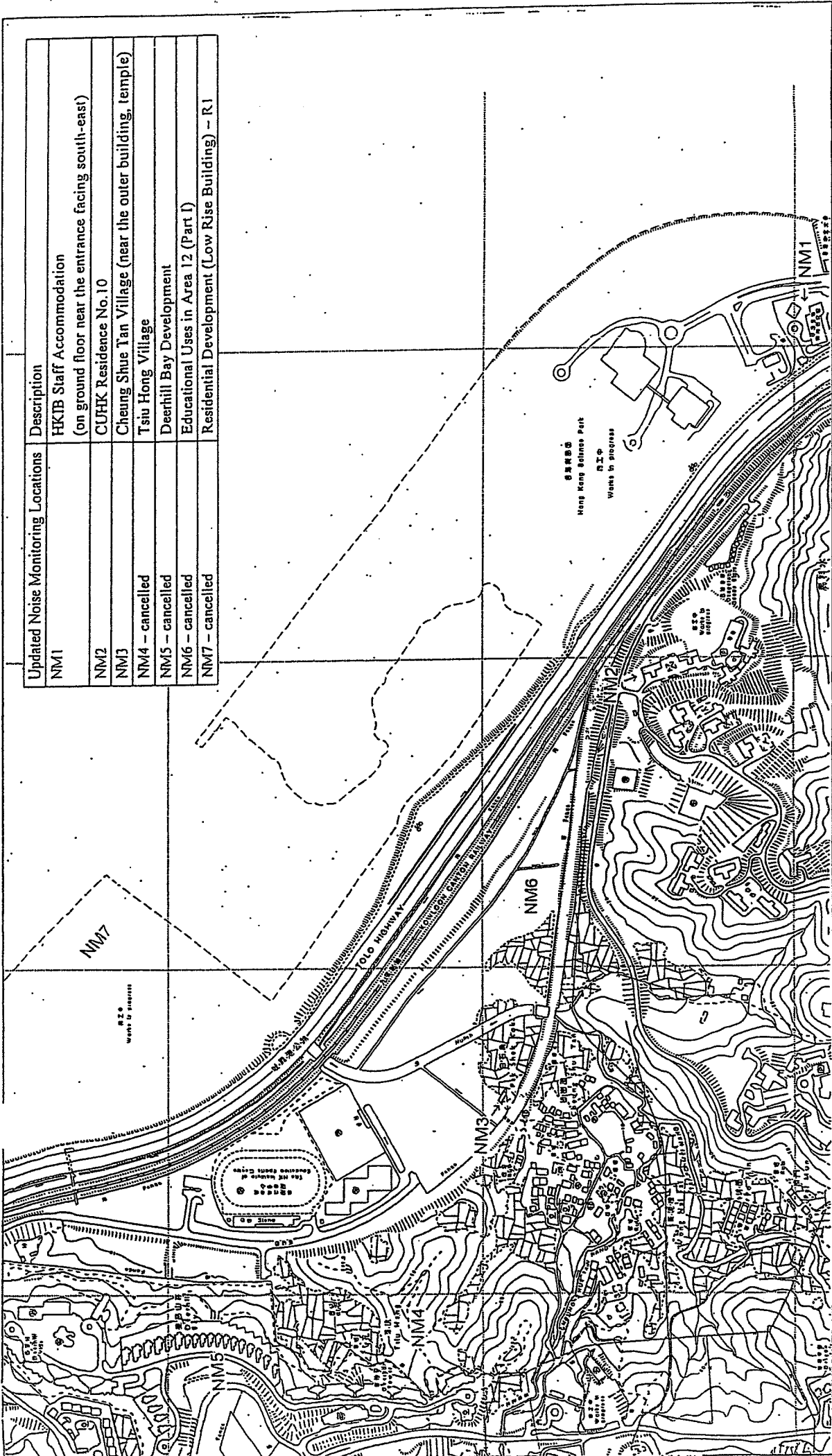
APPROVED SIGNATORY:

  
 Kenneth Kar Kin LAM  
 (Laboratory Manager)



## Figures





Scale : ---

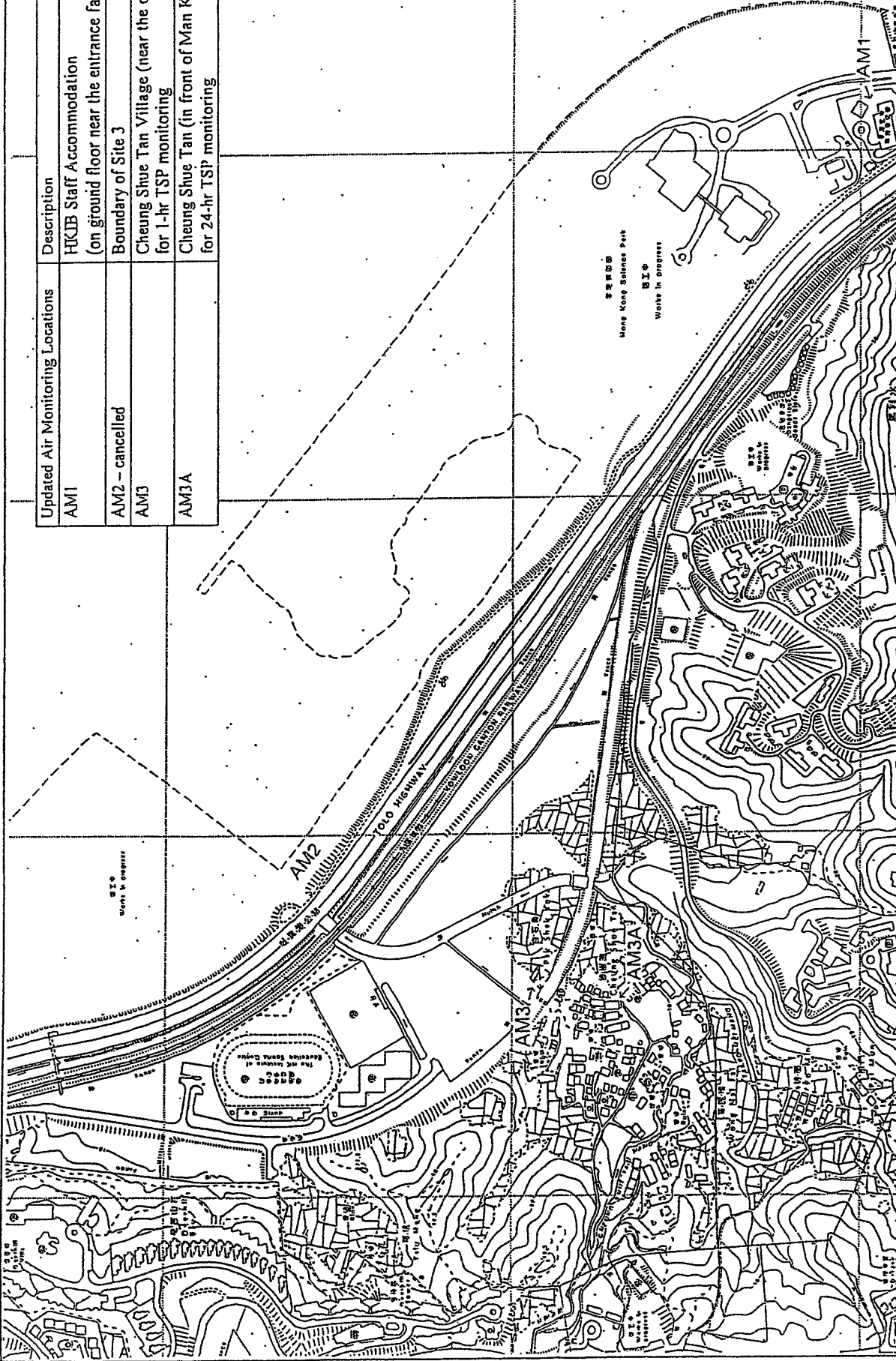
Revised Date: June 2004



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ETS-TESTCONSULT LIMITED

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

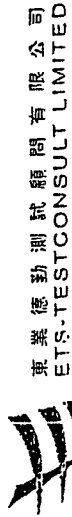
| Updated Air Monitoring Locations | Description  |
|----------------------------------|--|
| AM1                              | HKJB Staff Accommodation<br>(on ground floor near the entrance facing south-east)    |
| AM2 - cancelled                  | Boundary of Site 3   |
| AM3                   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



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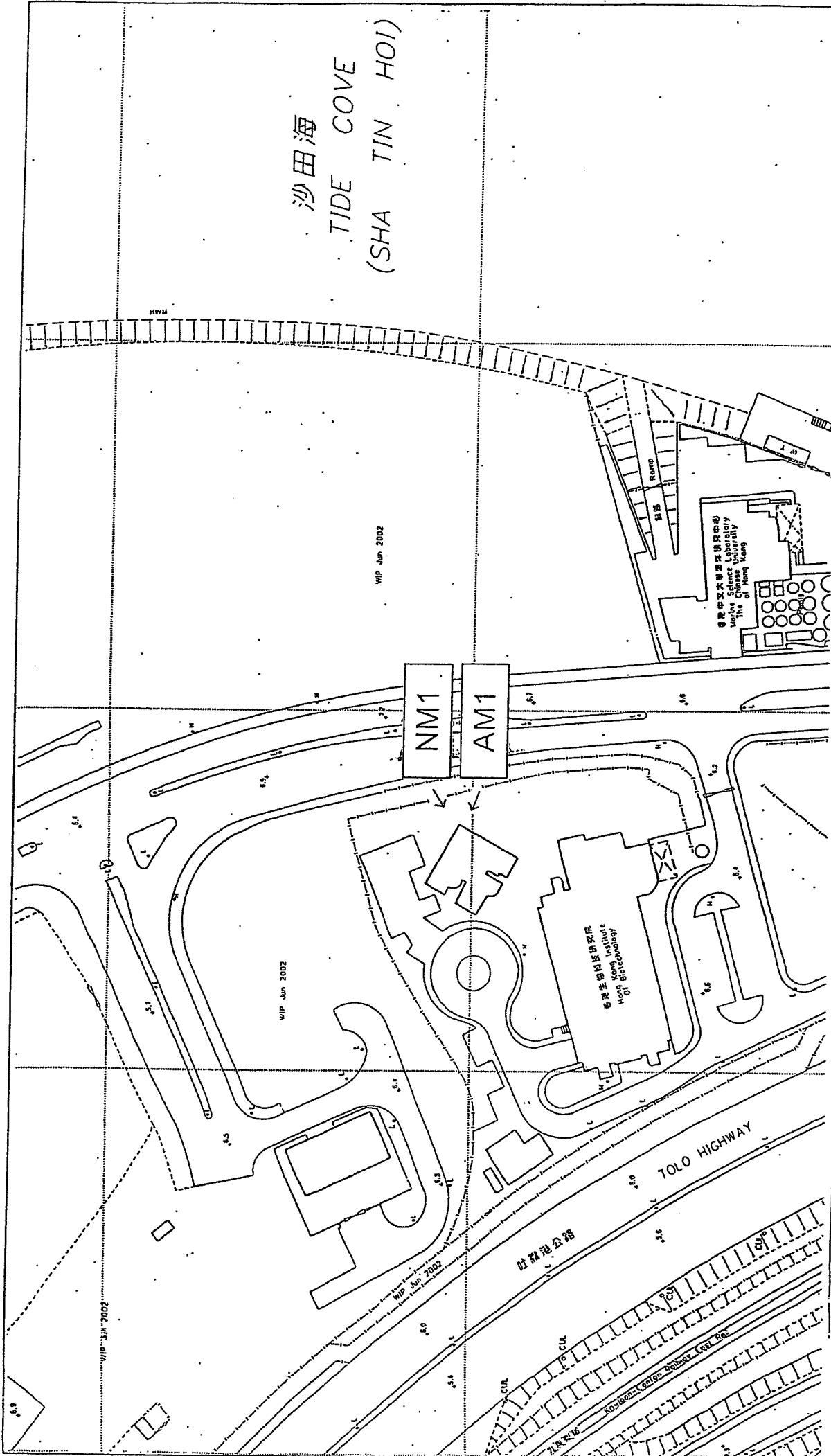
Revised Date:

June 2004



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ETS-TESTCONSULT LIMITED

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

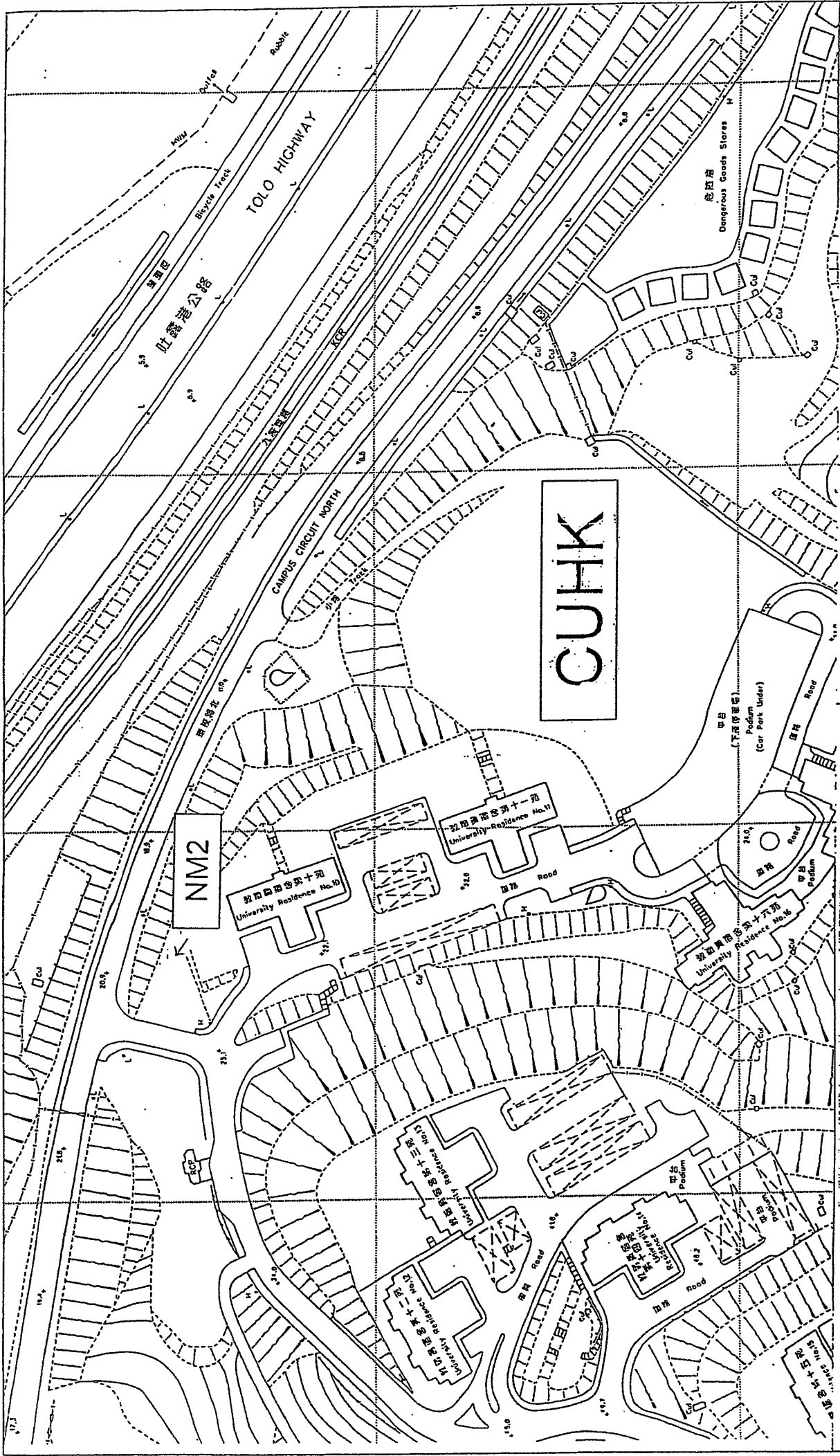


Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A  
 Contract No. TP 37/03  
 Figure 3 Location of Air and Noise Monitoring Stations  
 at HKIB Staff Accommodation

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

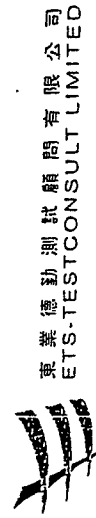
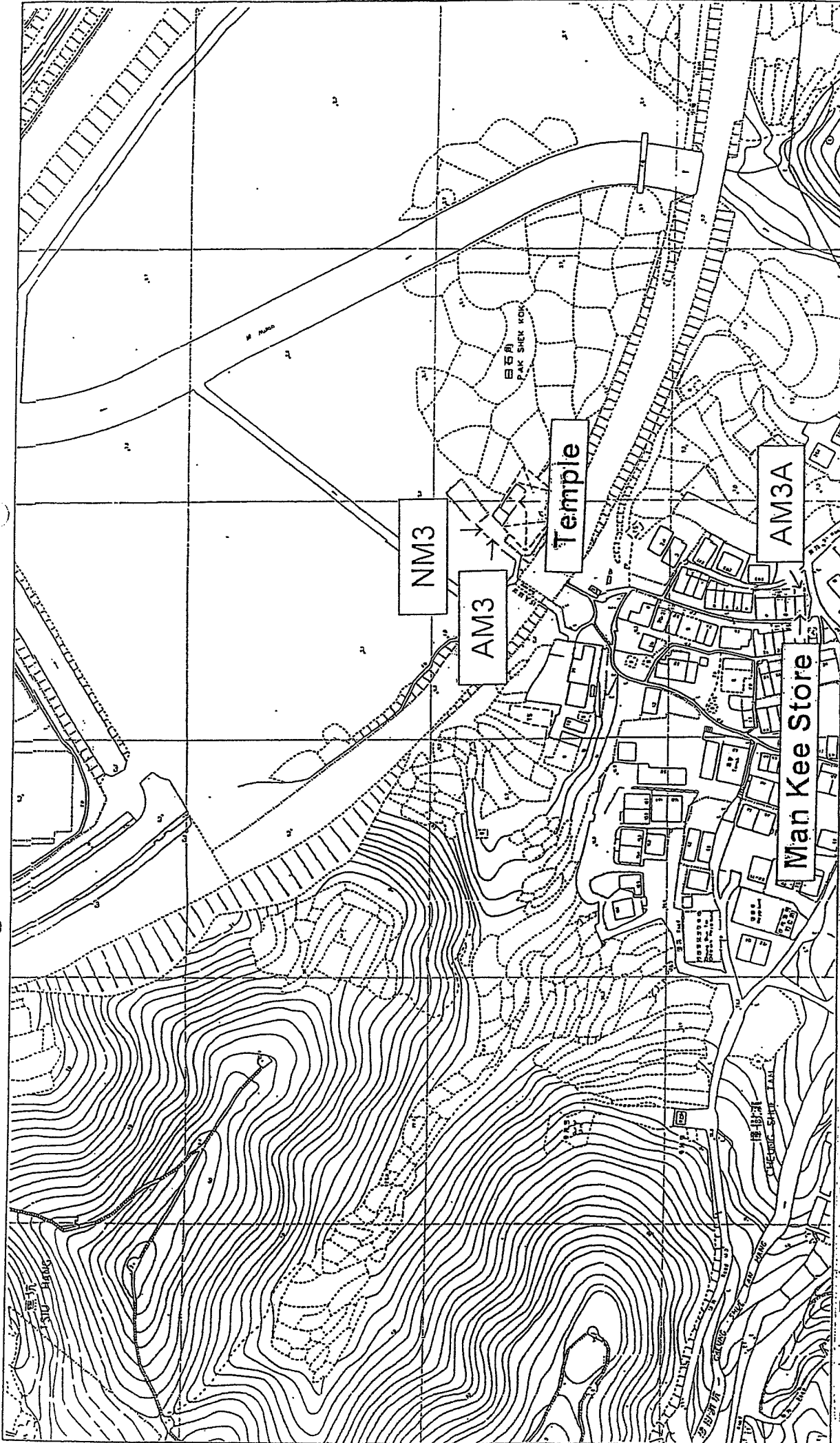
Scale : ---

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June 2004



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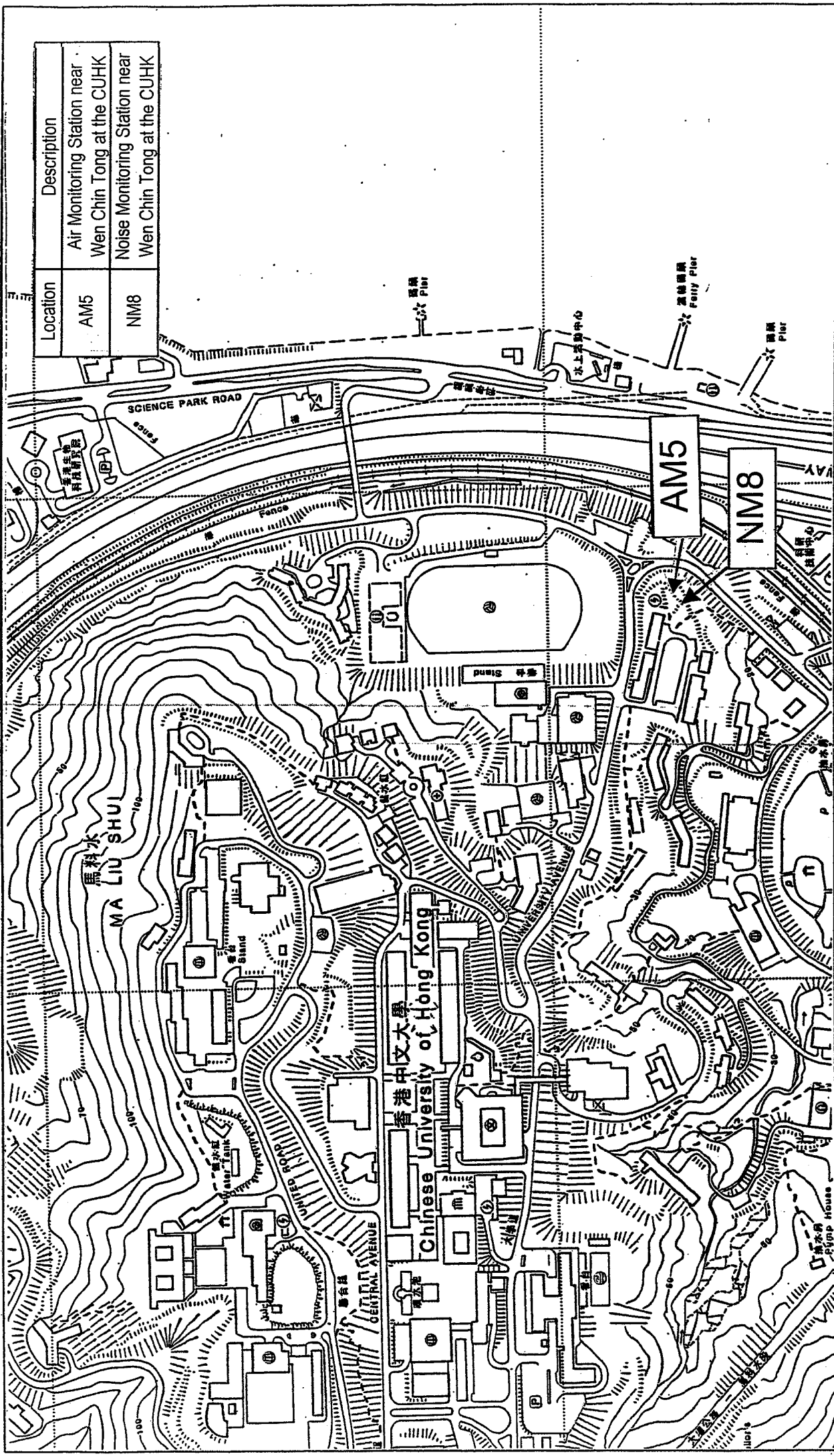
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Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2 A  
Contract No. TP 37/03  
Figure 5 Location of Air and Noise Monitoring Stations  
at Cheung Shue Tan Village



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

Remaining Engineering Infrastructure Works for Pak Shek Kok Development

Package 2A Contract No. TP 37/03

Scale : ---

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

Revised Date :  
October 2004



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