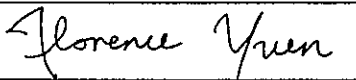


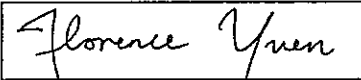
Contract No. SS M333

Reprovisioning of Diamond Hill
Crematorium

Monthly EM&A Report for February 2005

March 2005

| |
|---|
|  |
| Reviewed by (PM): |

| |
|---|
|  |
| Checked by: |

| |
|---|
|  |
| Approved by: (Environmental Team Leader) |

| | |
|-----------------------------------|--|
| Report Version: <u>Revision 0</u> | Date of Submission: <u>11 March 2005</u> |
|-----------------------------------|--|

The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of our brief. This report has been prepared for the sole and specific use of our client and MEMCL accepts no responsibility for its use by others.

This report is copyright and may not be reproduced in whole or in part without prior written permission.





安誠工程顧問有限公司
香港灣仔
皇后大道東183號
合和中心47樓

Hyder Consulting Limited
47/F Hopewell Centre,
183 Queen's Road East,
Wan Chai, Hong Kong

電話: (852) 2911 2233
傳真: (852) 2805 5028
電子郵件: hyder@hyder.com.hk
網址: www.hyderconsulting.com

Tel : (852) 2911 2233
Fax : (852) 2805 5028
Email: hyder@hyder.com.hk
Website: www.hyderconsulting.com

Hyder Consulting Limited is incorporated in Hong Kong with limited liability.
COI Number 126012

11 March 2005

BY POST & FAX (2524 8194)

Architectural Services Department
Queensway Government Offices
66 Queensway
Hong Kong

Your
Ref:

Our 1148-06/E05-18323
Ref:

For attention of: Mr Michael Mak

Dear Michael

**Reprovisioning of Diamond Hill Crematorium
Monthly EM&A Report for February 2005 (Revision 0)**

We refer to the email on 3 March 2005 from MEMCL copied to us enclosing the draft monthly EM&A Report for February 2005 (Revision 0) and subsequent email on 9 March 2005 from MEMCL enclosing the revised EM&A Report.

We have no further comment and hereby verified the captioned EM&A report.

Should you have any queries, please do not hesitate to contact the undersigned on 2911 2719.

Yours sincerely

**Coleman Ng
Independent Environmental Checker
HYDER CONSULTING LIMITED**

cc MEMCL - Mr. Y. T. Tang/Ms Florence Yuen
CRCCL - Mr. Eric To

(Fax: 2891 0305)
(Fax: 2827 2921)

CN/UKY





TABLE OF CONTENTS

| | |
|--|-----|
| EXECUTIVE SUMMARY | III |
| 1. INTRODUCTION | 1 |
| BACKGROUND | 1 |
| SCOPE OF REPORT | 1 |
| PROJECT ORGANISATION | 1 |
| ENVIRONMENTAL STATUS IN THE REPORTING MONTH..... | 1 |
| SUMMARY OF EM&A REQUIREMENTS | 1 |
| 2. AIR QUALITY | 2 |
| MONITORING REQUIREMENTS..... | 2 |
| MONITORING EQUIPMENT | 2 |
| MONITORING PARAMETERS, FREQUENCY AND DURATION..... | 2 |
| MONITORING LOCATIONS..... | 2 |
| MONITORING METHODOLOGY | 3 |
| RESULTS AND OBSERVATIONS..... | 4 |
| 3. NOISE..... | 5 |
| MONITORING REQUIREMENTS..... | 5 |
| MONITORING EQUIPMENT | 5 |
| MONITORING PARAMETERS, FREQUENCY AND DURATION..... | 5 |
| MONITORING LOCATIONS..... | 5 |
| MONITORING METHODOLOGY | 6 |
| RESULTS AND OBSERVATIONS..... | 6 |
| 4. ENVIRONMENTAL SITE INSPECTION | 7 |
| SITE INSPECTIONS..... | 7 |
| REVIEW OF ENVIRONMENTAL MONITORING PROCEDURES | 7 |
| ADVICE ON WASTE MANAGEMENT STATUS | 7 |
| STATUS ENVIRONMENTAL LICENCES AND PERMITS..... | 8 |
| IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES | 8 |
| SUMMARY OF EXCEEDANCES OF ENVIRONMENTAL QUALITY PERFORMANCE LIMIT | 9 |
| SUMMARY OF ENVIRONMENTAL COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS... | 9 |
| 5. FUTURE KEY ISSUES | 9 |
| KEY ISSUES FOR COMING MONTH..... | 9 |
| ENVIRONMENTAL MONITORING AND AUDIT SCHEDULE FOR THE COMING MONTHS | 9 |
| 6. CONCLUSIONS AND RECOMMENDATIONS..... | 9 |
| CONCLUSIONS..... | 9 |
| RECOMMENDATIONS | 10 |

LIST OF TABLES

| | | |
|-----------|---|---|
| TABLE 2.1 | AIR QUALITY MONITORING EQUIPMENT | 2 |
| TABLE 2.2 | AIR QUALITY MONITORING PARAMETERS, FREQUENCY AND DURATION..... | 2 |
| TABLE 2.3 | LOCATIONS OF AIR QUALITY MONITORING STATIONS..... | 2 |
| TABLE 2.4 | SUMMARY OF IMPACT 1-HOUR TSP MONITORING RESULTS | 4 |
| TABLE 2.5 | SUMMARY OF IMPACT 24-HOUR TSP MONITORING RESULTS | 5 |
| TABLE 3.1 | NOISE MONITORING EQUIPMENT | 5 |
| TABLE 3.2 | NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION..... | 5 |
| TABLE 3.3 | LOCATIONS OF NOISE MONITORING STATIONS..... | 6 |
| TABLE 3.4 | SUMMARY OF IMPACT NOISE MONITORING RESULTS DURING 07:00 – 19:00 ON NORMAL WEEKDAYS | 7 |
| TABLE 4.1 | SUMMARY OF WASTE DISPOSAL IN THE MONTH..... | 8 |

LIST OF FIGURES

| | |
|------------|---|
| Figure 1.1 | Project Organisation for Environmental Management |
| Figure 1.2 | Layout of Work Site |
| Figure 2.1 | Locations of Air Quality Monitoring Stations |
| Figure 3.1 | Locations of Construction Noise Monitoring Stations |
| Figure 4.1 | Complaint Flow Diagram |

APPENDICES

| | |
|------------|--|
| Appendix A | Key Contacts of Environmental Personnel |
| Appendix B | Construction Programme |
| Appendix C | Environmental Action and Limit Levels |
| Appendix D | Environmental Monitoring and Audit Schedules |
| Appendix E | Calibration Details |
| Appendix F | Air Quality Monitoring Results and Graphical Presentation |
| Appendix G | Noise Monitoring Results and Graphical Presentation |
| Appendix H | Summary of Weekly Environmental Site Inspection Observations |
| Appendix I | Status of Environmental Permits/Licences |
| Appendix J | Implementation Schedule of Mitigation Measures |
| Appendix K | Event and Action Plans |

EXECUTIVE SUMMARY

Introduction

Maunsell Environmental Management Consultants Limited (MEMCL) is the designated Environmental Team (ET) for "Reprovisioning of Diamond Hill Crematorium" (The Project). This is the fourth monthly Environmental Monitoring and Audit (EM&A) report prepared by MEMCL for the Project. The EM&A programme for the Project commenced on 29 October 2004. This report documents the findings of EM&A Works conducted in the month of February 2005 (1 to 28 February 2005).

As informed by the Contractor, construction activities in the reporting period were:

- Hoarding erection;
- Excavation;
- Draw pits and cable ducts construction;
- Underground utilities laying and backfilling; and
- Tarmac and concrete road slab construction.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

| | |
|-------------------------------|-------------|
| 1-hour TSP monitoring | 15 sessions |
| 24-hour TSP monitoring | 5 sessions |
| Daytime noise monitoring | 4 sessions |
| Environmental site inspection | 4 sessions |

Breaches of Action and Limit Levels

Air Quality

All 1-hour and 24-hour TSP monitoring results recorded in the month complied with the Action and Limit Levels.

Construction Noise

All noise monitoring results recorded in the month complied with the Action and Limit Levels.

Implementation Status of Environmental Mitigation Measures

In general, the Contractor satisfactorily implemented all the required mitigation measures and was reasonably responsive to the ET's recommendations on any discrepancy observed during the weekly environmental site inspection.

Environmental Complaints, Notification of Summons and Successful Prosecutions

No environmental complaint, notification of summons or successful prosecution was received or made against this Project in the month.

Reporting Changes

No reporting change was required in the month.

Future Key Issues

Key issues to be considered in the coming month include:

- Generation of dust from activities on-site;
- Noise impact from operating equipment and machinery on-site;

- Generation of site surface runoffs and wastewater from activities on-site;
- Storage and disposal of general refuse and construction waste from activities on-site;
- Management of chemicals and avoidance of oil spillage.

摘要

簡介

茂盛環境管理顧問有限公司乃「重置鑽石山火葬場」[下稱(工程項目)]的指定環境小組。本冊是茂盛為工程項目製作的第四份每月環境監察及審核報告。工程項目的環境監察及審核由二零零四年十月廿九日開始、本報告記錄了二零零五年二月份(二零零五年二月一日至二月二十八日)所進行的環境監察及審核工作。

根據承建商的資料，本月有以下的建築活動：

- 豎立圍街板
- 挖掘
- 建設坑道及配線管
- 鋪設地下公共事業設備及回填
- 建造柏油碎石及混凝土路面

本月有下列幾項的監察及審核活動：

| | |
|-------------|-----|
| 一小時總懸浮粒子監察 | 15次 |
| 廿四小時總懸浮粒子監察 | 5次 |
| 日間噪音監察 | 4次 |
| 環境巡查 | 4次 |

違反監察標準

空氣質素

本月所有一小時與廿四小時總懸浮粒子監測結果皆符合行動水平和極限水平。

建築噪音

本月所有噪音監測結果皆符合行動水平和極限水平。

環境影響緩和措施

承建商大致上完成所需的緩和措施，同時已對環境小組在每週的環境巡查中的建議作出合理的回應及跟進。

有關環境的投訴，傳票及檢控

本月沒有收到有關環境的投訴，傳票及檢控。

報告修訂

本月並沒有修訂報告。

預計要注意的事項

下月要注意事項包括：

- 工程活動所產生的塵埃
- 操作中儀器及機器產生的噪音影響
- 工程活動所產生的污水
- 普通廢物與建築廢物的暫貯及棄置
- 化學品的管理及防止意外漏油

1. INTRODUCTION

Background

- 1.1 Maunsell Environmental Management Consultants Limited (MEMCL) (hereinafter called the "ET") was appointed by China Resources Construction Company Limited (CRC) (hereinafter called the "Contractor") to undertake Environmental Monitoring and Audit for "Reprovisioning of Diamond Hill Crematorium" (hereinafter called the "Project"). Under the requirements of Section 4 of Environmental Permit EP-179/2004, EM&A programme as set out in the approved EM&A Manual is required to be implemented. In accordance with the approved EM&A Manual, environmental monitoring of air quality and noise and environmental site inspections are required for the Project.

Scope of Report

- 1.2 The EM&A programme for the Project commenced on 29 October 2004. This report presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures for the Project in February 2005 (from 1 to 28 February 2005).

Project Organisation

- 1.3 The organisation of the environmental management team is shown in Figure 1.1. Key personnel contacts are presented in Appendix A.

Environmental Status in the Reporting Month

- 1.4 The construction programme of the Project is provided in Appendix B. In the month, the following activities took place for the construction of the Project:

- Excavation;
- Draw pits and cable ducts construction;
- Underground utilities laying and backfilling;
- Tarmac and concrete road slab construction; and
- Installation work in transformer room.

- 1.5 Layout plan of the Project work site is provided in Figure 1.2.

Summary of EM&A Requirements

- 1.6 The description and detailed locations of sensitive receivers and monitoring stations for air quality and noise are shown in Figures 2.1 and 3.1 respectively and relevant sections of this Report.

- 1.7 The EM&A programme require environmental monitoring for air quality and noise and environmental site inspections for air quality, noise, water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

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

- 1.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarised in Appendix J of the Report.

2. AIR QUALITY

Monitoring Requirements

- 2.1 1-hour and 24-hour TSP levels at two designated monitoring stations were monitored in the month in accordance with the EM&A Manual. Appendix C shows the established Action and Limit Levels for the environmental monitoring works.
- 2.2 The monitoring schedule for month is shown in Appendix D. Air quality monitoring stations for 24-hour and 1-hour TSP measurements are shown in Figure 2.1.

Monitoring Equipment

- 2.3 Portable dust meter was used to carry out 1-hour TSP monitoring. High volume sampler (HVS - Model GMWS-2310 Accu-Vol) completed with the appropriate sampling inlets was installed for 24-hour TSP sampling. The HVS meet all the requirements as specified in the approved EM&A Manual. Table 2.1 summarised the equipment that were used in the dust-monitoring programme.

TABLE 2.1 AIR QUALITY MONITORING EQUIPMENT

| Equipment | Model |
|---|--------------------------------------|
| Dust Meter (for 1-hour TSP measurement) | Laser Dust Monitor – Model LD-1/LD-3 |
| HVS (for 24-hour TSP measurement) | GMWS 2310 Accy-Vol system |
| Calibration Kit (for HVS) | GMW 25 |

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.2 summarised the monitoring parameters, frequency and duration of impact air quality monitoring.

TABLE 2.2 AIR QUALITY MONITORING PARAMETERS, FREQUENCY AND DURATION

| Parameter | Duration | Frequency |
|------------------|-----------------|------------------------|
| 1-hour TSP | 1 hour | 3 times every six days |
| 24-hour TSP | 24 hours | Once every six days |

Monitoring Locations

- 2.5 In accordance with the EM&A Manual, two air quality monitoring stations, as shown in Figure 2.1 were selected for 24-hour and 1-hour TSP sampling. Table 2.3 describes the location of the air quality monitoring stations.

TABLE 2.3 LOCATIONS OF AIR QUALITY MONITORING STATIONS

| Monitoring Station | Identity / Description | Level |
|---------------------------|--|-------------------------------------|
| ASR8 | Po Leung Kuk Grandmont Primary School | Roof top level of 7 storey building |
| ASR17 | Staff Quarter for Diamond Hill Crematorium | Roof top level of 1 storey building |

Monitoring Methodology

1-hour TSP Monitoring

Monitoring Procedure

2.6 The measuring procedures of 1-hour TSP by a portable dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

- Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).
- Push the knob at MEASURE position.
- Push "O-ADJ" button. (Then meter's indication is 0).
- Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
- Pull out the knob and return it to MEASURE position.
- Push "START" button.

Maintenance and Calibration

- The 1-hour TSP dust meters are verified at 1-year intervals throughout all stages of the impact air quality monitoring.
- Calibration details for the dust meters are provided in Appendix E.

24-hour TSP Monitoring

Installation

2.7 The HVSs were installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVSs:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2 meters separation from walls, parapets and penthouses was provided for rooftop sampler.
- No furnace or incinerator flues were nearby.
- Airflow around the sampler was unrestricted.
- Permission was obtained to set up the sampler and to obtain access to the monitoring stations.
- A secure supply of electricity was obtained to operate the sampler.

Preparation of Filter papers

- Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than ± 5 %. A convenient working RH was 40%.
- *ALS Technichem (HK) Pty Ltd.* is a HOKLAS accredited laboratory which has comprehensive quality assurance and quality control programmes.

Monitoring Procedures

- The power supply was checked to ensure the HVSs work properly.
- The filter holder and the area surrounding the filter were cleaned.

- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- Then the shelter lid was closed and secured with the aluminum strip.
- The HVSs were warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flowrate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.1 m³/min. The range was between 0.6-1.7 m³/min.
- The programmable timer was set for a sampling period of 24 hrs ± 1 hr, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then be placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.
- Filters were sent to *ALS Technichem (HK) Pty Ltd.* for analysis.

Maintenance and Calibration

- The HVSs and their accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSs are calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the impact air quality monitoring.
- Calibration details for the HVSs are provided in Appendix E.

Results and Observations

2.8 Dust monitoring was conducted for both 1-hr TSP and 24-hr TSP at all designated monitoring stations in the month. Air quality monitoring results and graphical presentations are provided in Appendix F.

1-hour TSP Monitoring

2.9 All measured 1-hour TSP levels complied with the Action and Limit Levels in the month. A summary of 1-hour TSP monitoring results is presented in Table 2.4.

TABLE 2.4 SUMMARY OF IMPACT 1-HOUR TSP MONITORING RESULTS

| Monitoring Station | 1-hour TSP (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) | No. of Exceedance | |
|--------------------|---------------------------------|-----------------------------------|----------------------------------|-------------------|-------|
| | Range | | | Action | Limit |
| ASR8 | 21.4 – 143.4 | 408.1 | 500.0 | Nil | Nil |
| ASR17 | 24.1 – 144.7 | 408.4 | 500.0 | Nil | Nil |

24-hour TSP Monitoring

2.10 All measured 24-hour TSP levels complied with the Action and Limit Levels in the month. A summary of 24-hour TSP monitoring results is presented in Table 2.5.

TABLE 2.5 SUMMARY OF IMPACT 24-HOUR TSP MONITORING RESULTS

| Monitoring Station | 24-hour TSP ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) | No. of Exceedance | |
|--------------------|--|---|--|-------------------|-------|
| | Range | | | Action | Limit |
| ASR8 | 44.9 – 117.4 | 195.0 | 260.0 | Nil | Nil |
| ASR17 | 39.7 – 107.8 | 174.1 | 260.0 | Nil | Nil |

3. NOISE

Monitoring Requirements

- 3.1 Noise levels at three designated monitoring stations were monitored in the month in accordance with the EM&A Manual. Appendix C shows the established Action and Limit Levels for the environmental monitoring works.
- 3.2 The monitoring schedule for the month is shown in Appendix D. Noise monitoring stations are shown in Figure 3.1.

Monitoring Equipment

- 3.3 Integrating Sound Level Meter was employed for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Portable electronic wind speed indicator capable of measuring wind speed in m/s was employed to check the wind speed. Table 3.1 details the noise monitoring equipment used.

TABLE 3.1 NOISE MONITORING EQUIPMENT

| Equipment | Model |
|-------------------------------|---------------|
| Integrating Sound Level Meter | Rion NL-18/31 |
| Calibrator | Rion NC-73 |

Monitoring Parameters, Frequency and Duration

- 3.4 Table 3.2 summarised the monitoring parameters, period, frequency and duration of impact noise monitoring.

TABLE 3.2 NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

| Time Period | Parameters | Duration (min) | Frequency |
|---|------------|----------------|---------------|
| Daytime (0700 to 1900 on normal weekdays) | L_{eq} | 30 | Once per week |

Monitoring Locations

- 3.5 In accordance with the EM&A Manual, three noise monitoring stations, as shown in Figure 3.1 were selected for noise monitoring. Table 3.3 describes the location of this monitoring station.

TABLE 3.3 LOCATIONS OF NOISE MONITORING STATIONS

| Monitoring Station | Identity / Description | Level |
|--------------------|--|-------------------------------------|
| SR3 | International Christian Quality Music Secondary and Primary School | Roof top level of 7 storey building |
| SR4 | Po Leung Kuk Grandmont Primary School | Roof top level of 7 storey building |
| SR6 | Staff Quarter for Diamond Hill Crematorium | Roof top level of 1 storey building |

Monitoring Methodology

Monitoring Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- Façade measurements were made at all three monitoring locations.
- 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: L_{eq} (30 minutes) during non-restricted hours i.e. between 07:00 and 19:00 on normal weekdays
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise 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 L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meter and calibrator are sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- Calibration details for the sound level meter and calibrator are provided in Appendix E.

Results and Observations

- 3.6 Noise monitoring was conducted at all designated monitoring stations as scheduled in the month. Noise monitoring results and graphical presentations are provided in Appendix G.
- 3.7 All measured noise levels complied with the Action and Limit Levels in the month. A summary of noise monitoring results is presented in Table 3.4.

TABLE 3.4 SUMMARY OF IMPACT NOISE MONITORING RESULTS DURING 07:00 – 19:00 ON NORMAL WEEKDAYS

| Monitoring Station | Measured Noise Level, dB(A) <i>L_{eq} (30 min)</i> | Calculated Construction Noise Level, dB(A) | Limit Level | No. of Exceedance | |
|--------------------|---|--|---------------------|-------------------|-------|
| | Average and Range | Average and Range | | Action* | Limit |
| SR3 | 65.1 (61.8 – 69.0) | # (# - 66.7) | 70/65 ^{##} | Nil | Nil |
| SR4 | 63.4 (60.5 – 67.4) | # (# - 62.7) | 70/65 ^{##} | Nil | Nil |
| SR6 | 58.2 (57.4 – 59.0) | # (# - #) | 75 | Nil | Nil |

* - Action Level is triggered by receipt of a noise complaint

- Measured noise level is less than the baseline noise level

- reduce to 70dB(A) for schools and 65dB(A) during school examination periods

4. ENVIRONMENTAL SITE INSPECTION

Site Inspections

- 4.1 Site inspection was carried out on a weekly basis to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In the month, four site inspections were carried out in the month. The summary of weekly environmental site inspections observations and environmental site inspection checklists are attached in Appendix H.

Review of Environmental Monitoring Procedures

- 4.2 The monitoring works conducted by the Environmental Team were inspected regularly. Observations have been recorded for the monitoring works as follows:

Air Quality Monitoring

- The monitoring team recorded the observations around the monitoring stations within and outside of the construction site.
- The monitoring team recorded the temperature and general weather condition on the monitoring day.

Noise Monitoring

- The monitoring team recorded the observations around the monitoring stations, which might affect the results.
- Major noise sources were identified and recorded.

Advice on Waste Management Status

- 4.3 The actual quantities of inert C&D materials and non-inert C&D wastes generated by activities of the Project in the month are provided in Table 4.1. Trip ticket system was implemented for all offsite waste disposal.

TABLE 4.1 SUMMARY OF WASTE DISPOSAL IN THE MONTH

| Type of Waste Material | | Disposed Quantity | Destination |
|------------------------|-----------------------------|-------------------|-----------------------------------|
| Inert C&D materials | | 619m ³ | Kai Tak Public Fill Barging Point |
| Non-inert C&D waste | Metals | Nil | Not Applicable |
| | Paper/cardboard packaging | Nil | Not Applicable |
| | Plastics | Nil | Not Applicable |
| | Chemical waste | Nil | Not Applicable |
| | Others, e.g. general refuse | 57m ³ | SENT Landfill |

Status Environmental Licences and Permits

4.4 The status of all permits/licences obtained/in-use in the month is summarised in Appendix I.

Implementation Status of Environmental Mitigation Measures

4.5 An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix J.

4.6 During the weekly site inspection conducted by the Environmental Team in the month, the following observations and recommendations were made.

Water Quality

- The Contractor indicated that application for effluent discharge license was in progress.

Air Quality

- Fugitive dust was observed near the Chemical Waste Storage Area. The Contractor was reminded to remove the dry soil deposited on the paved area and dampen the unpaved areas to avoid dust generation. Water spray was observed provided to unpaved areas by the next weekly site inspection.
- Stockpile of sand located next to the Chemical Waste Storage Area, which was not in use, was not covered nor provided with water spray. The Contractor was reminded to cover it with tarpaulin. The stockpile was covered by the next weekly site inspection.
- Stockpile at the temporary stockpiling area was generally covered. Water spray was applied to exposed surfaces.

Noise

- The Contractor indicated that application for construction noise permit was in progress.

Waste or Chemical Management

- Gate with lock was erected for the Chemical Waste Storage Area. Proper label in both English and Chinese was also provided for the Chemical Waste Storage Area.
- The Contractor was reminded to clean up the concrete debris left at roadside as soon as possible.

Landscape and Visual

- No particular observations and recommendations were made during the weekly site inspections in the month.

Others

- No particular observations and recommendations were made during the weekly site inspections in the month.

Summary of Exceedances of Environmental Quality Performance Limit

- 4.7 The Event and Action Plans for air quality and noise are presented in Appendix K.
- 4.8 No exceedance of Action and Limit Levels for 1-hour and 24-hour TSP and noise levels was recorded in the month.

Summary of Environmental Complaints, Notifications of Summons and Successful Prosecutions

- 4.9 Figure 4.1 presents the environmental complaint flow diagram of the Project.
- 4.10 No environmental complaint, notification of summons and prosecution was received or made against the Project in the month.

5. FUTURE KEY ISSUES

Key Issues for Coming Month

- 5.1 Key issues to be considered in the coming month include:
- Generation of dust from activities on-site;
 - Noise impact from operating equipment and machinery on-site;
 - Generation of site surface runoffs and wastewater from activities on-site;
 - Storage and disposal of general refuse and construction waste from activities on-site;
 - Management of chemicals and avoidance of oil spillage;

Environmental Monitoring and Audit Schedule for the Coming Months

- 5.2 The tentative schedules for environmental monitoring and audit for the next three months are provided in Appendix D.

6. CONCLUSIONS AND RECOMMENDATIONS

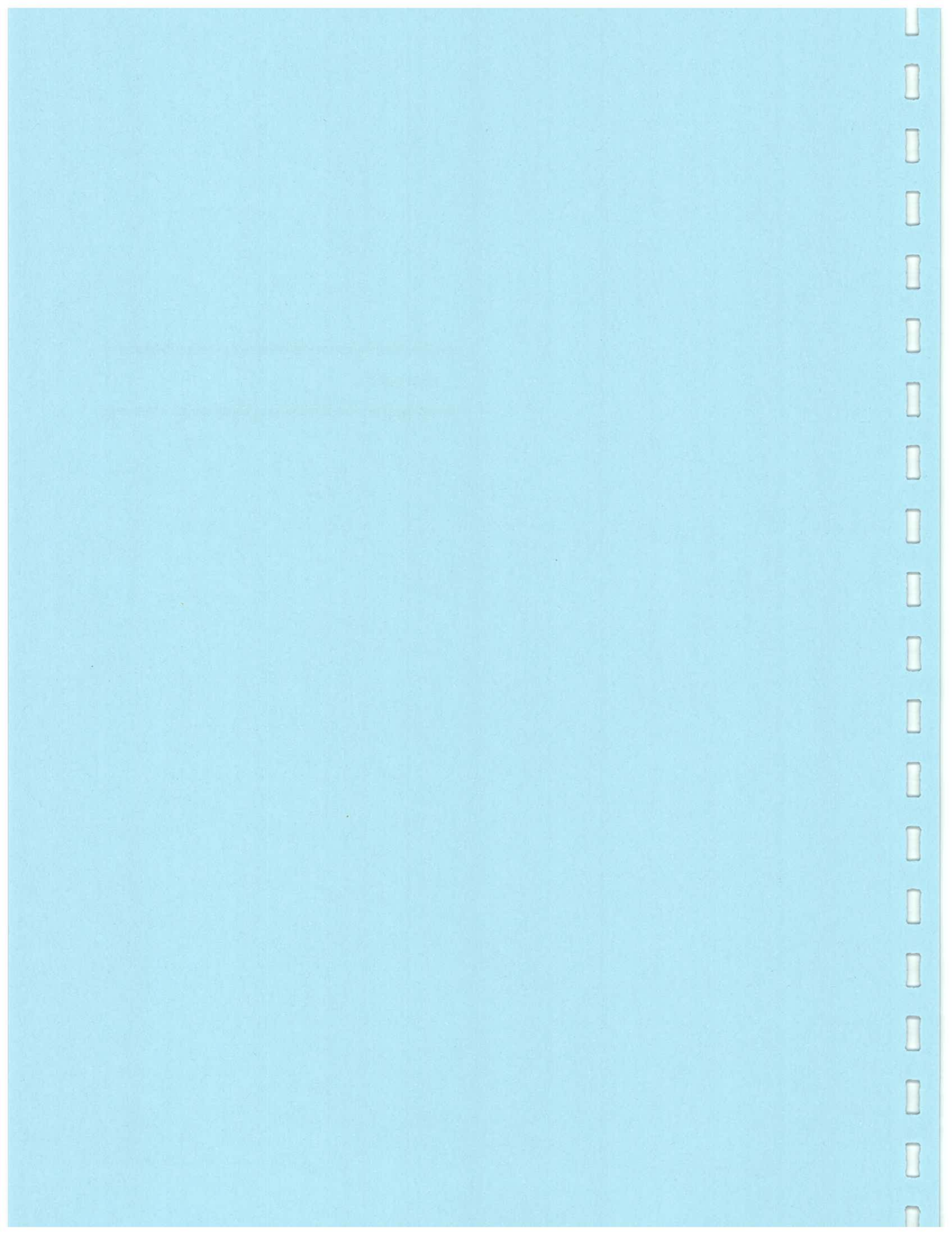
Conclusions

- 6.1 Environmental monitoring and audit was performed in February 2005. All monitoring and audit results in the month were checked and reviewed.
- 6.2 All 1-hour and 24-hour TSP monitoring results recorded in the month complied with the Action and Limit Levels.
- 6.3 All noise monitoring results recorded in the month complied with the Action and Limit Levels.
- 6.4 In general, the Contractor satisfactorily implemented all the required mitigation measure and was reasonably responsive to the ET's recommendations on any discrepancy observed during the weekly environmental site inspection.
- 6.5 No environmental complaint, notification summons or successful prosecution was received or made against this Project in the month

Recommendations

- 6.6 According to results of weekly environmental site inspections performed in the month and the construction programme for the coming month, recommendations for air quality, construction noise, water quality and waste and chemical management are detailed in Section 5.1.

FIGURES

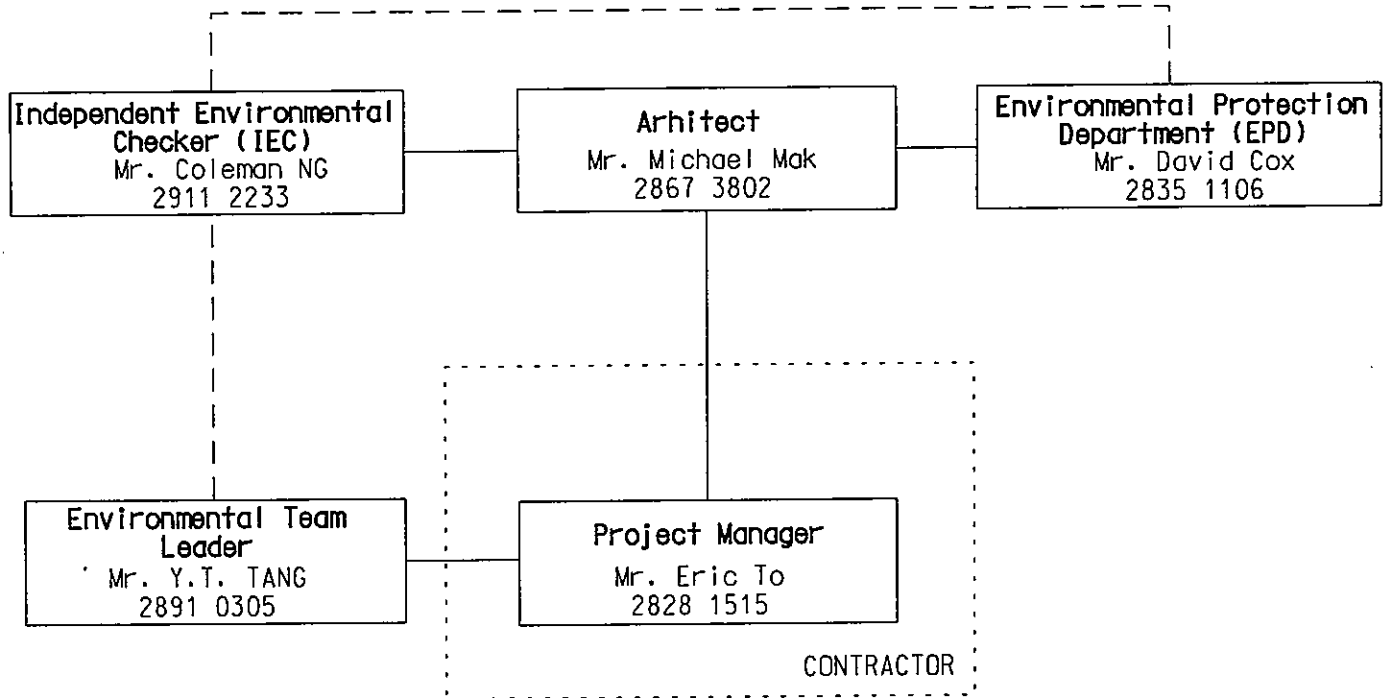


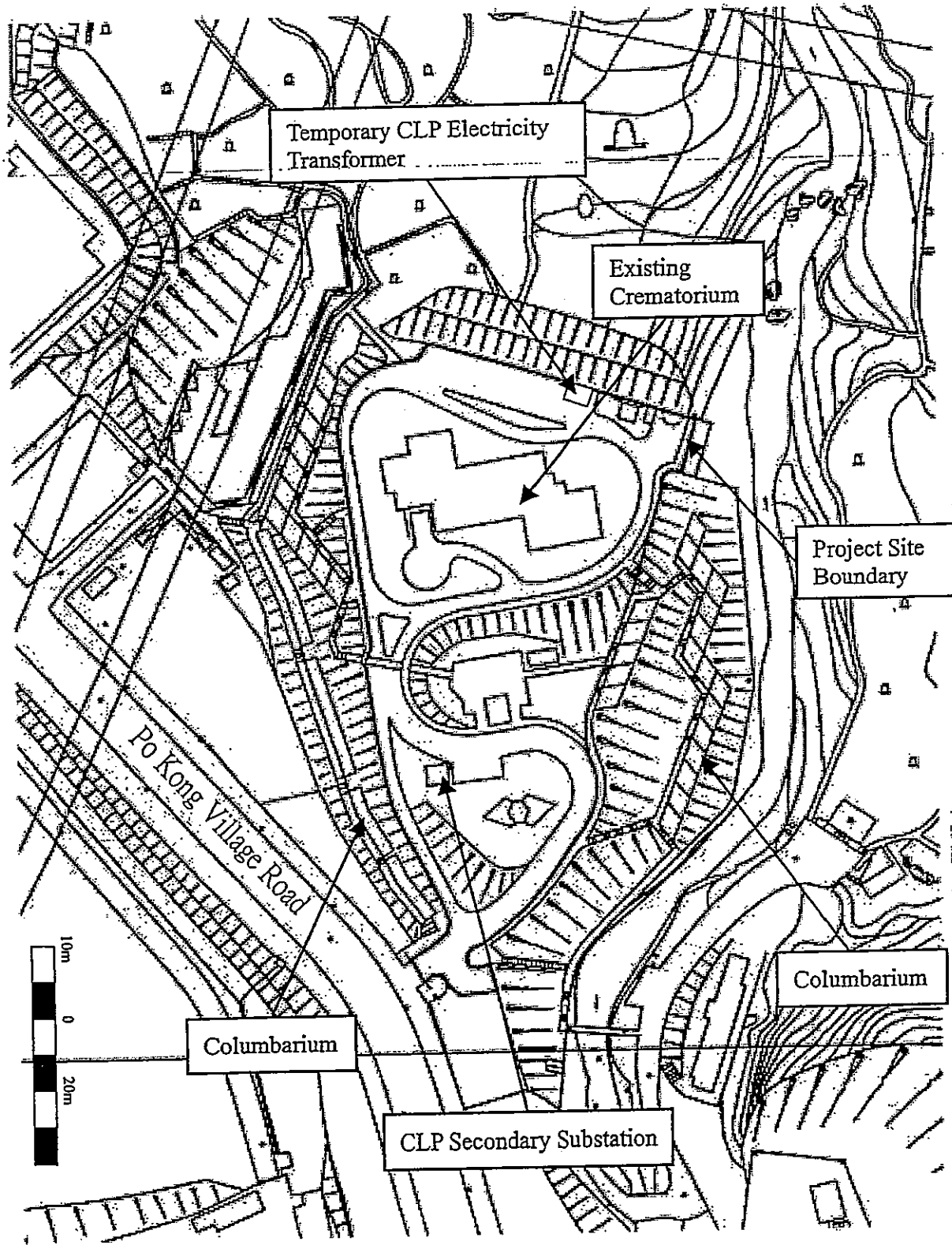
Project Organization for Environmental Management

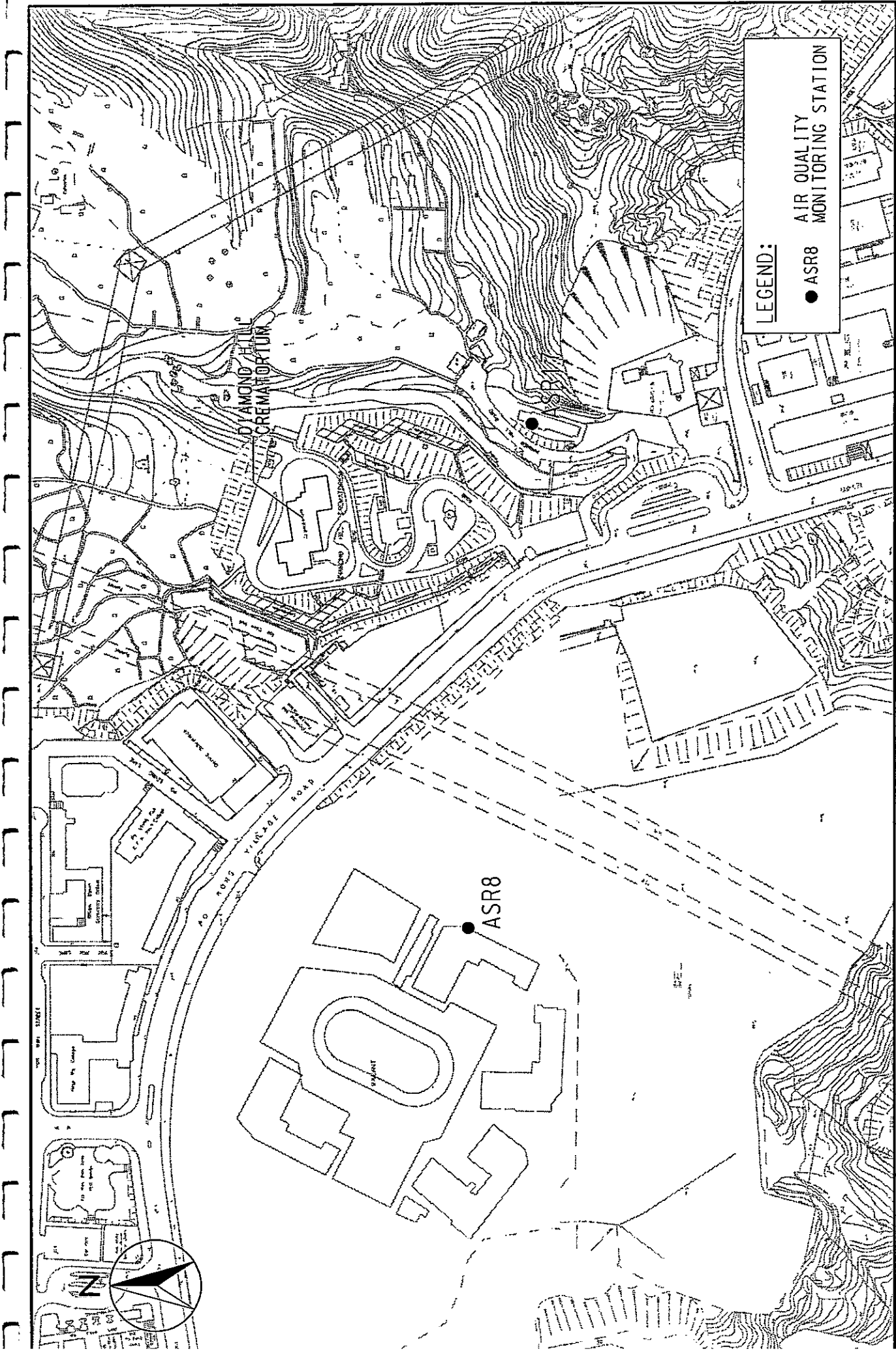
Legend:

———— Direct Communication

- - - - - Liaison







| | | | |
|-----------------|-----------|-------------------|------|
| SCALE 比例 | A4 1:3000 | DATE 日期 | 2005 |
| JOB NO. 項目編號 | S07904 | DRAWING NO. 圖號 | 2.1 |

CONTRACT NO: SS M333
 REPROVISIONING OF DIAMOND HILL CREMATORIUM
LOCATIONS OF AIR QUALITY MONITORING STATIONS



SCALE
比例尺 A4 1:3000

DATE
日期 2005

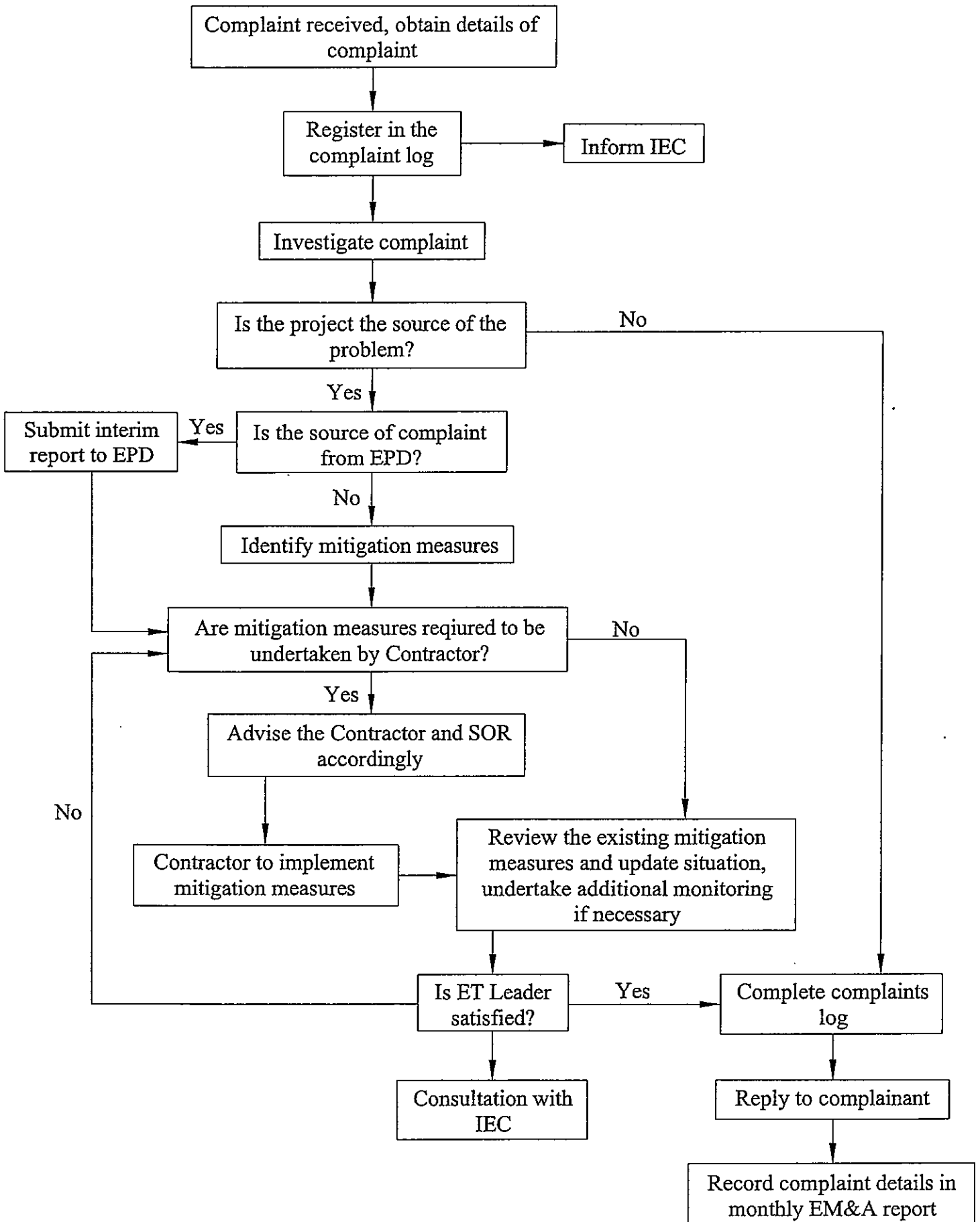
CONTRACT NO: SS M333
REPROVISIONING OF DIAMOND HILL CREMATORIUM

LOCATIONS OF CONSTRUCTION NOISE MONITORING STATIONS

JOB NO.
项目编号 S07904

DRAWING NO.
圖號 3.1

ansell
ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD.
環境管理顧問有限公司





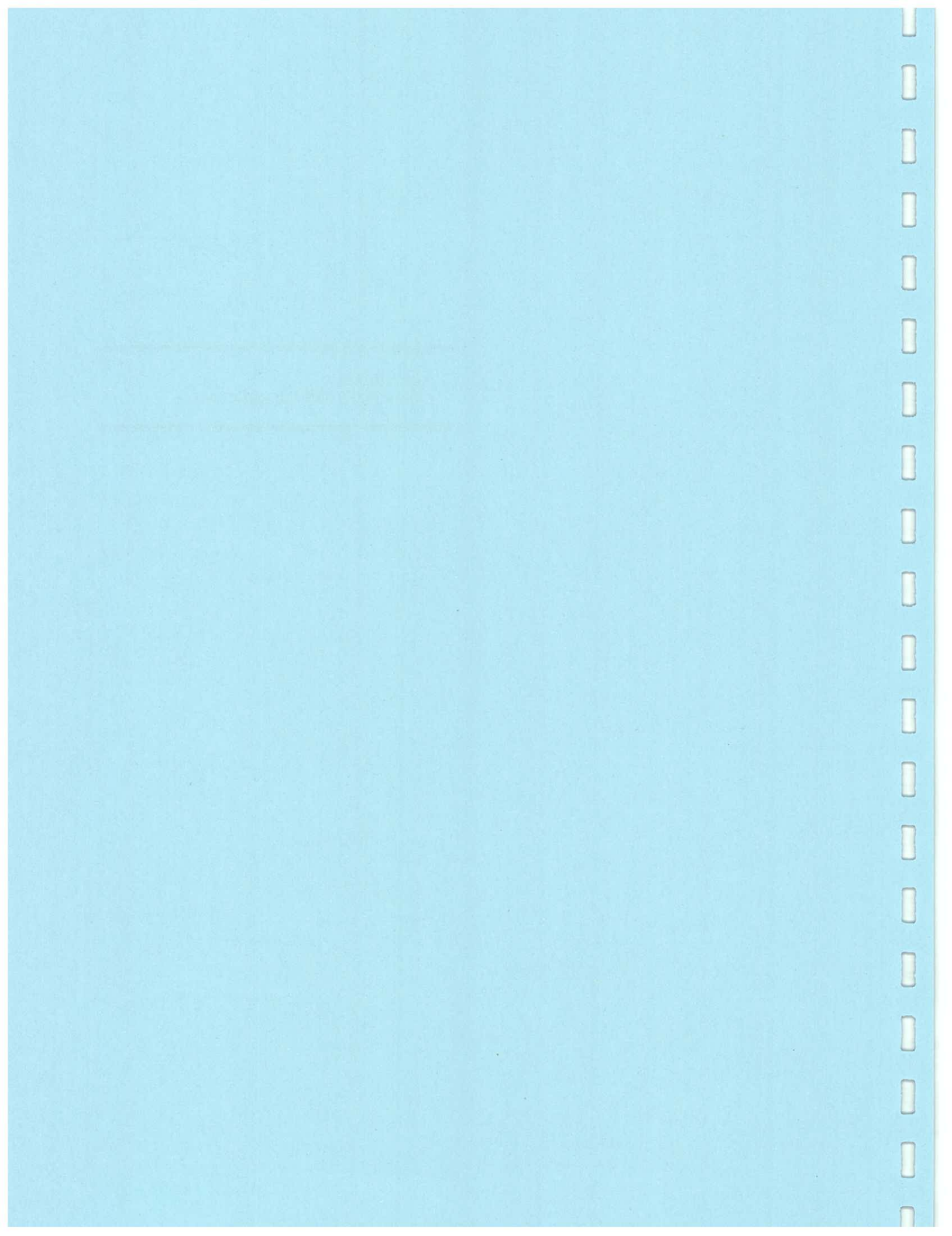
**APPENDIX A
KEY CONTACTS OF ENVIRONMENTAL
PERSONNEL**

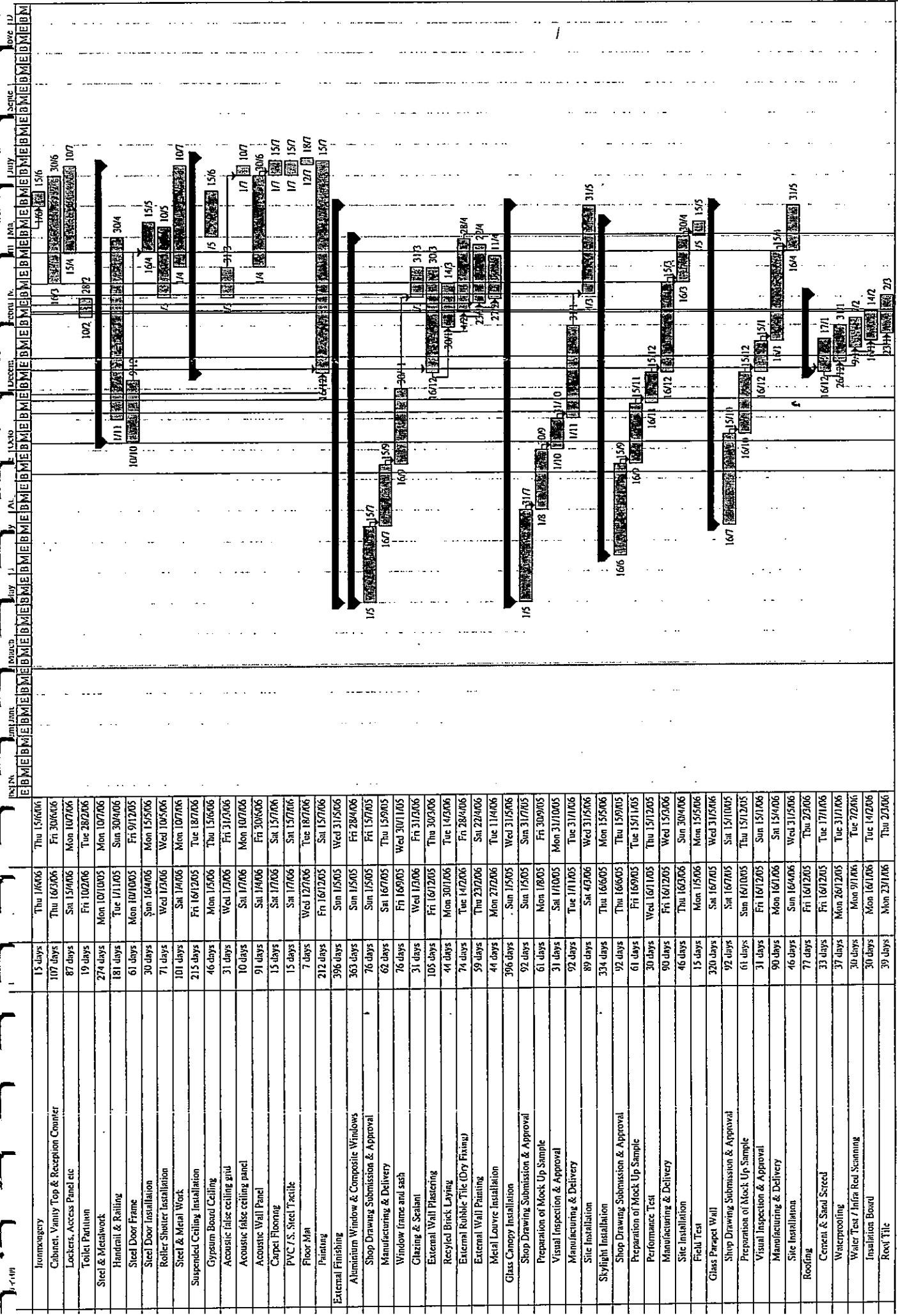
Appendix A — Key Contacts of Environmental Personnel

| Party | Name | Telephone No. | Fax No. |
|---|-------------------|---------------|-----------|
| Environmental Protection Department | | | |
| SEPO | Mr. David Cox | 2835 1106 | 2591 0558 |
| EPO | Ms. Marlene Ho | 2835 1186 | 2591 0558 |
| EPO (LCO) | Mr. Charles Wu | 2117 7540 | 2756 8588 |
| Architect | | | |
| Architectural Services Department | | | |
| Project Architect | Mr. Michael Mak | 2867 3802 | 2524 8194 |
| Assistant Architect | Mr. Johnson Lee | 2867 4135 | 2524 8194 |
| Independent Environmental Checker | | | |
| Hyder Consulting Limited | | | |
| IEC | Mr. Coleman Ng | 2911 2233 | 2805 5028 |
| Assistant to IEC | Mr. Adi Lee | 2911 2233 | 2805 5028 |
| Contractor | | | |
| China Resources Construction Company Limited | | | |
| Project Manager | Mr. Eric To | 2828 1515 | 2827 2921 |
| Environmental Team | | | |
| Maunsell Environmental Management Consultants Limited | | | |
| ET Leader | Mr. Y.T. Tang | 2893 1551 | 2891 0305 |
| Audit Team Leader | Ms. Florence Yuen | 2893 1551 | 2891 0305 |
| Monitoring Team Leader | Mr. Thomas Chan | 2893 1551 | 2891 0305 |

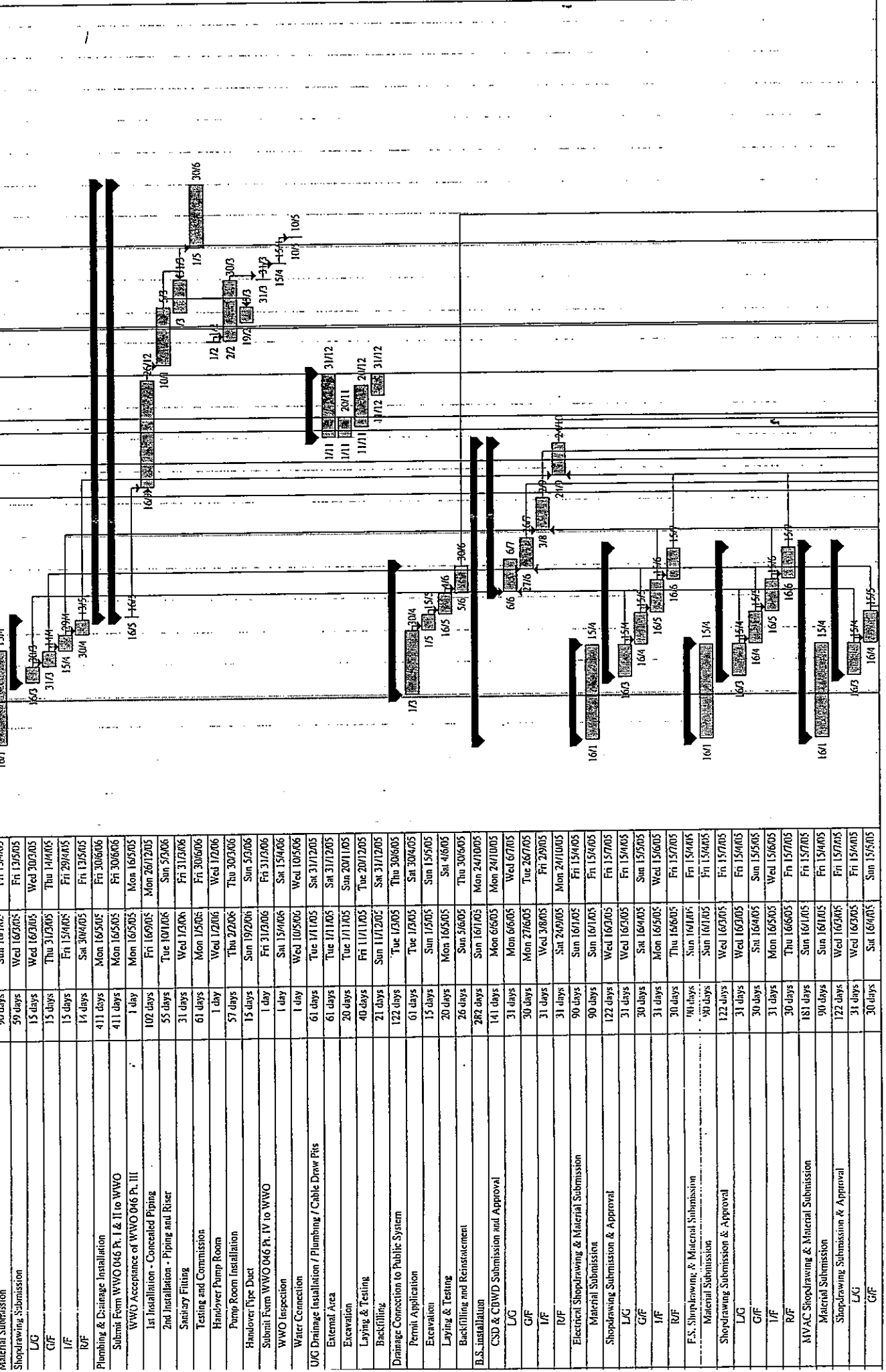


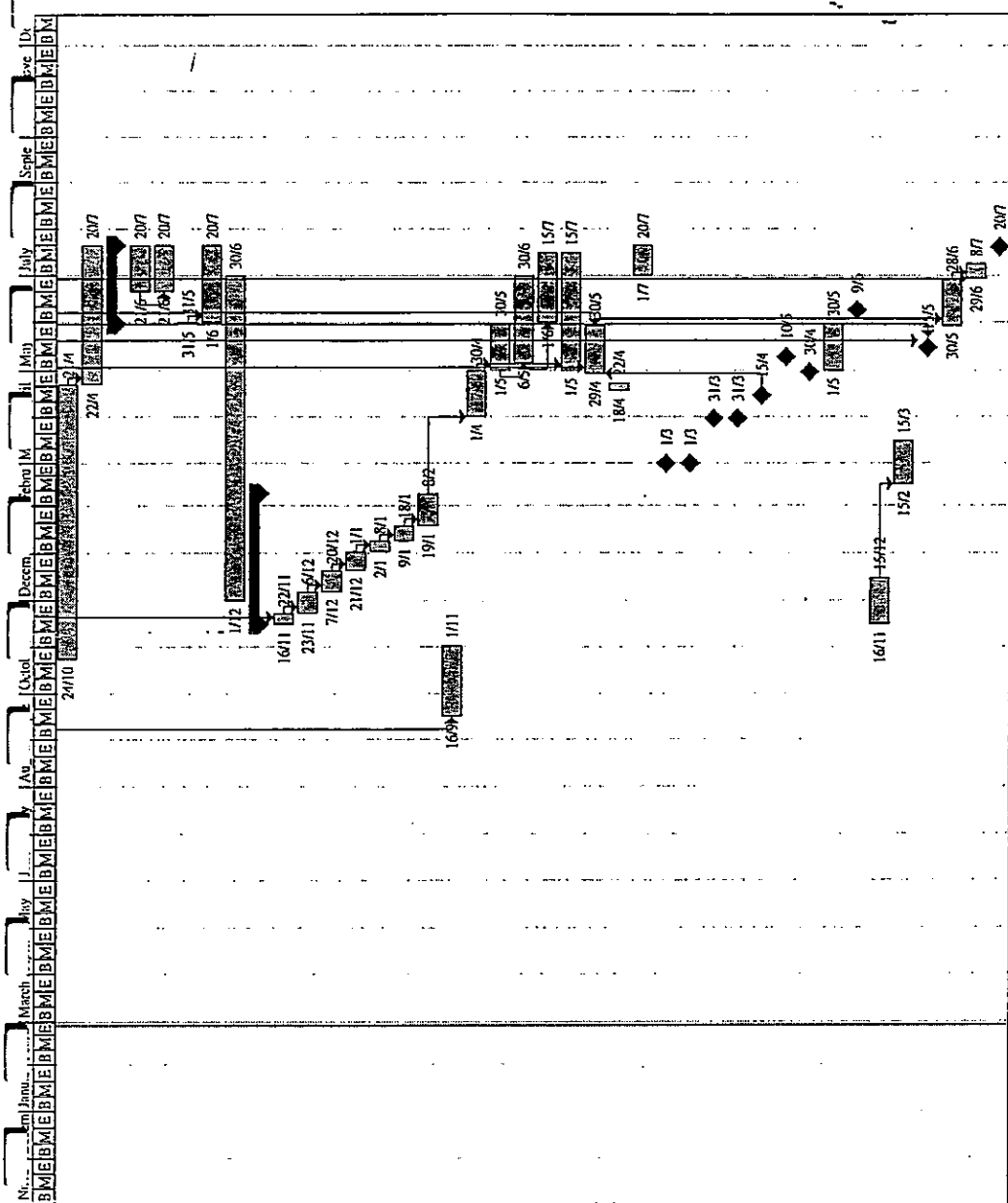
APPENDIX B
CONSTRUCTION PROGRAMME





| Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Milestone | Rolled Up Progress | External Tasks | Project Summary | Group By Summary |
|--|----------|--------------|--------------|----------------|---------------------|--------------------|----------------|-----------------|------------------|
| Ironmongery | 15 days | Thu 1/6/06 | Thu 15/6/06 | | | | | | |
| Cabinet, Vandy Top & Reception Counter | 107 days | Thu 16/3/06 | Fri 30/6/06 | | | | | | |
| Lockers, Access Panel etc | 87 days | Sat 13/4/06 | Mon 10/7/06 | | | | | | |
| Toilet Partition | 19 days | Fri 10/2/06 | Tue 28/2/06 | | | | | | |
| Steel & Metalwork | 274 days | Mon 10/1/06 | Mon 10/7/06 | | | | | | |
| Handrail & Railing | 181 days | Tue 1/11/05 | Fri 9/12/05 | | | | | | |
| Steel Door Frame | 61 days | Mon 10/1/06 | Fri 9/12/05 | | | | | | |
| Steel Door Installation | 30 days | Sun 16/4/06 | Mon 15/5/06 | | | | | | |
| Roller Shutter Installation | 71 days | Wed 17/4/06 | Wed 10/5/06 | | | | | | |
| Steel & Metal Work | 101 days | Sat 1/4/06 | Mon 10/7/06 | | | | | | |
| Suspended Ceiling Installation | 215 days | Fri 16/12/05 | Tue 18/7/06 | | | | | | |
| Gypsum Board Ceiling | 46 days | Mon 15/4/06 | Thu 15/6/06 | | | | | | |
| Acoustic false ceiling grid | 31 days | Wed 17/4/06 | Fri 31/3/06 | | | | | | |
| Acoustic false ceiling panel | 10 days | Sat 17/4/06 | Mon 10/7/06 | | | | | | |
| Acoustic Wall Panel | 91 days | Sat 14/4/06 | Fri 30/6/06 | | | | | | |
| Carpet Flooring | 15 days | Sat 17/7/06 | Sat 15/7/06 | | | | | | |
| PVC J.S. Steel Tricite | 15 days | Sat 17/7/06 | Sat 15/7/06 | | | | | | |
| Floor Mat | 7 days | Wed 12/7/06 | Tue 18/7/06 | | | | | | |
| Painting | 212 days | Fri 16/12/05 | Sat 15/7/06 | | | | | | |
| External Finishing | 396 days | Sun 15/5/05 | Wed 31/5/06 | | | | | | |
| Aluminium Window & Composite Windows | 363 days | Sun 15/5/05 | Fri 28/4/06 | | | | | | |
| Shop Drawing Submission & Approval | 76 days | Sun 15/5/05 | Fri 15/7/05 | | | | | | |
| Manufacturing & Delivery | 62 days | Sat 16/7/05 | Thu 15/9/05 | | | | | | |
| Window frame and sash | 76 days | Fri 16/9/05 | Wed 30/11/05 | | | | | | |
| Glazing & Sealant | 31 days | Wed 15/3/06 | Fri 31/7/06 | | | | | | |
| External Wall Plastering | 105 days | Fri 16/12/05 | Thu 30/3/06 | | | | | | |
| Recycled Brick Laying | 44 days | Mon 30/1/06 | Tue 14/3/06 | | | | | | |
| External Rubble Tile (Dry Fixing) | 74 days | Tue 14/2/06 | Fri 28/4/06 | | | | | | |
| External Wall Painting | 59 days | Thu 23/2/06 | Tue 22/4/06 | | | | | | |
| Metal Louvre Installation | 44 days | Mon 27/2/06 | Tue 11/4/06 | | | | | | |
| Glass Canopy Installation | 396 days | Sun 15/5/05 | Wed 31/5/06 | | | | | | |
| Shop Drawing Submission & Approval | 92 days | Sun 15/5/05 | Sun 31/7/05 | | | | | | |
| Preparation of Mock Up Sample | 61 days | Mon 1/8/05 | Fri 30/9/05 | | | | | | |
| Visual Inspection & Approval | 31 days | Sat 1/10/05 | Mon 31/10/05 | | | | | | |
| Manufacturing & Delivery | 92 days | Tue 1/11/05 | Tue 31/1/06 | | | | | | |
| Site Installation | 89 days | Sat 4/2/06 | Wed 31/5/06 | | | | | | |
| Skylight Installation | 334 days | Thu 16/6/05 | Mon 15/5/06 | | | | | | |
| Shop Drawing Submission & Approval | 92 days | Thu 16/6/05 | Thu 15/9/05 | | | | | | |
| Preparation of Mock Up Sample | 61 days | Fri 16/9/05 | Tue 15/11/05 | | | | | | |
| Performance Test | 30 days | Wed 16/11/05 | Thu 15/12/05 | | | | | | |
| Manufacturing & Delivery | 90 days | Fri 16/12/05 | Wed 15/3/06 | | | | | | |
| Site Installation | 46 days | Thu 16/3/06 | Sun 30/4/06 | | | | | | |
| Field Test | 15 days | Mon 15/5/06 | Mon 15/5/06 | | | | | | |
| Glass Parapet Wall | 320 days | Sat 16/7/05 | Wed 31/5/06 | | | | | | |
| Shop Drawing Submission & Approval | 92 days | Sat 16/7/05 | Sat 15/10/05 | | | | | | |
| Preparation of Mock Up Sample | 61 days | Sun 16/10/05 | Thu 15/12/05 | | | | | | |
| Visual Inspection & Approval | 31 days | Fri 16/12/05 | Sun 15/1/06 | | | | | | |
| Manufacturing & Delivery | 90 days | Mon 16/1/06 | Sat 15/4/06 | | | | | | |
| Site Installation | 46 days | Sun 16/4/06 | Wed 31/5/06 | | | | | | |
| Roofing | 77 days | Fri 16/12/05 | Thu 2/2/06 | | | | | | |
| Cement & Sand Screed | 33 days | Fri 16/12/05 | Tue 17/1/06 | | | | | | |
| Waterproofing | 37 days | Mon 26/12/05 | Tue 31/1/06 | | | | | | |
| Water Test / Infra Red Scanning | 30 days | Mon 9/1/06 | Tue 7/2/06 | | | | | | |
| Insulation Board | 30 days | Mon 16/1/06 | Tue 14/2/06 | | | | | | |
| Roof Tile | 39 days | Mon 23/1/06 | Thu 2/3/06 | | | | | | |





| Task | Start Date | End Date | Duration |
|--|--------------|--------------|----------|
| Crematory Plant Installation | Mon 24/10/05 | Fri 21/11/06 | 180 days |
| Testing & Commissioning | Sat 22/11/06 | Thu 20/07/06 | 90 days |
| Works by Specialist Contractors / Public Utility | Wed 31/05/06 | Thu 20/07/06 | 51 days |
| CCTV & PA System | Wed 21/06/06 | Thu 20/07/06 | 30 days |
| Client's Utilities and Fixtures | Wed 21/06/06 | Thu 20/07/06 | 30 days |
| Handover of TBE Room | Wed 31/05/06 | Wed 31/05/06 | 1 day |
| Telephone Installations | Thu 1/06/06 | Thu 20/07/06 | 50 days |
| External works | Thu 1/12/05 | Fri 30/06/06 | 212 days |
| EVA Construction | Wed 16/11/05 | Wed 8/2/06 | 85 days |
| Excavation for Footing | Wed 16/11/05 | Thu 22/11/05 | 7 days |
| Concrete Footing | Wed 23/11/05 | Tue 6/12/05 | 14 days |
| Concrete Wall | Wed 23/11/05 | Tue 20/12/05 | 14 days |
| Concrete Footing | Wed 23/11/05 | Tue 6/12/05 | 14 days |
| UIG Services | Wed 21/12/05 | Sun 1/1/06 | 12 days |
| Backfilling | Mon 21/06 | Sun 8/1/06 | 7 days |
| Road Slab | Mon 9/1/06 | Wed 18/1/06 | 10 days |
| Toe Wall | Thu 19/1/06 | Wed 8/2/06 | 21 days |
| UIG Fuel Tank Construction | Fri 16/09/05 | Tue 1/11/05 | 47 days |
| Planter & Planter Curb | Sat 1/10/06 | Sun 30/04/06 | 30 days |
| Finishes to Planters | Mon 1/05/06 | Tue 30/05/06 | 30 days |
| Granite Paver | Sat 6/04/06 | Fri 30/06/06 | 56 days |
| External Works Painting | Thu 1/06/06 | Sat 15/7/06 | 45 days |
| Soil Landscape | Mon 1/05/06 | Sat 15/7/06 | 76 days |
| Removal of Scaffolding | Sat 29/04/06 | Tue 30/05/06 | 31 days |
| Removal of Tower Crane | Tue 18/04/06 | Sat 22/04/06 | 5 days |
| Final cleaning | Sat 1/7/06 | Thu 20/07/06 | 20 days |
| Project Key Milestone Date | Wed 1/06/06 | Wed 1/06/06 | 0 days |
| CLP Inspection | Wed 1/06/06 | Wed 1/06/06 | 0 days |
| Permanent Power On | Fri 31/03/06 | Fri 31/03/06 | 0 days |
| Submit WWO46 | Fri 31/03/06 | Fri 31/03/06 | 0 days |
| WVO Inspection | Sat 15/04/06 | Sat 15/04/06 | 0 days |
| Permanent Water Supply | Wed 10/03/06 | Wed 10/03/06 | 0 days |
| Submit Form 5 | Sun 30/04/06 | Sun 30/04/06 | 0 days |
| EMSD Inspection | Mon 1/05/06 | Tue 30/05/06 | 30 days |
| Lift certificate | Fri 9/06/06 | Fri 9/06/06 | 0 days |
| Submit & Approval of Final GBP | Wed 16/11/05 | Thu 15/12/05 | 30 days |
| Submit & Approval of Form 314 | Wed 15/02/06 | Wed 15/02/06 | 29 days |
| Submit Form 501 | Mon 15/05/06 | Mon 15/05/06 | 0 days |
| F.S. Inspection | Tue 30/05/06 | Wed 28/06/06 | 30 days |
| F.S. Certificate | Thu 29/06/06 | Sat 8/7/06 | 10 days |
| Handover of Section 1 | Thu 20/07/06 | Thu 20/07/06 | 0 days |

Dec 2010
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

24/10
23/11
7/12
21/12
9/1
19/1
1/11
1/14
15/1
6/2
15/2
29/4
18/4
22/4
17/5
10/5
30/5
15/6
31/3
31/3
15/6
30/4
15/6
30/5
9/6
16/11
15/2
15/2
30/5
28/6
29/6
8/7
20/7

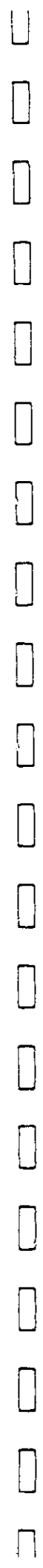
Task
Milestone
Progress

Rollled Up Task
Rollled Up Milestone

External Tasks
Project Summary

Group By Summary

Master Programme for Reprovisioning of Diamond Hill Crematorium at Po Kong Village Road, Kowloon, Hong Kong



**APPENDIX C
ENVIRONMENTAL ACTION AND LIMIT
LEVELS**

Appendix C — Environmental Action and Limit Levels

Action and Limit Levels for 24-hour TSP

| Monitoring Station | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|--------------------|---|--|
| ASR8 | 195.0 | 260 |
| ASR17 | 174.1 | 260 |

Action and Limit Levels for 1-hour TSP

| Monitoring Station | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|--------------------|---|--|
| ASR8 | 408.1 | 500 |
| ASR17 | 408.4 | 500 |

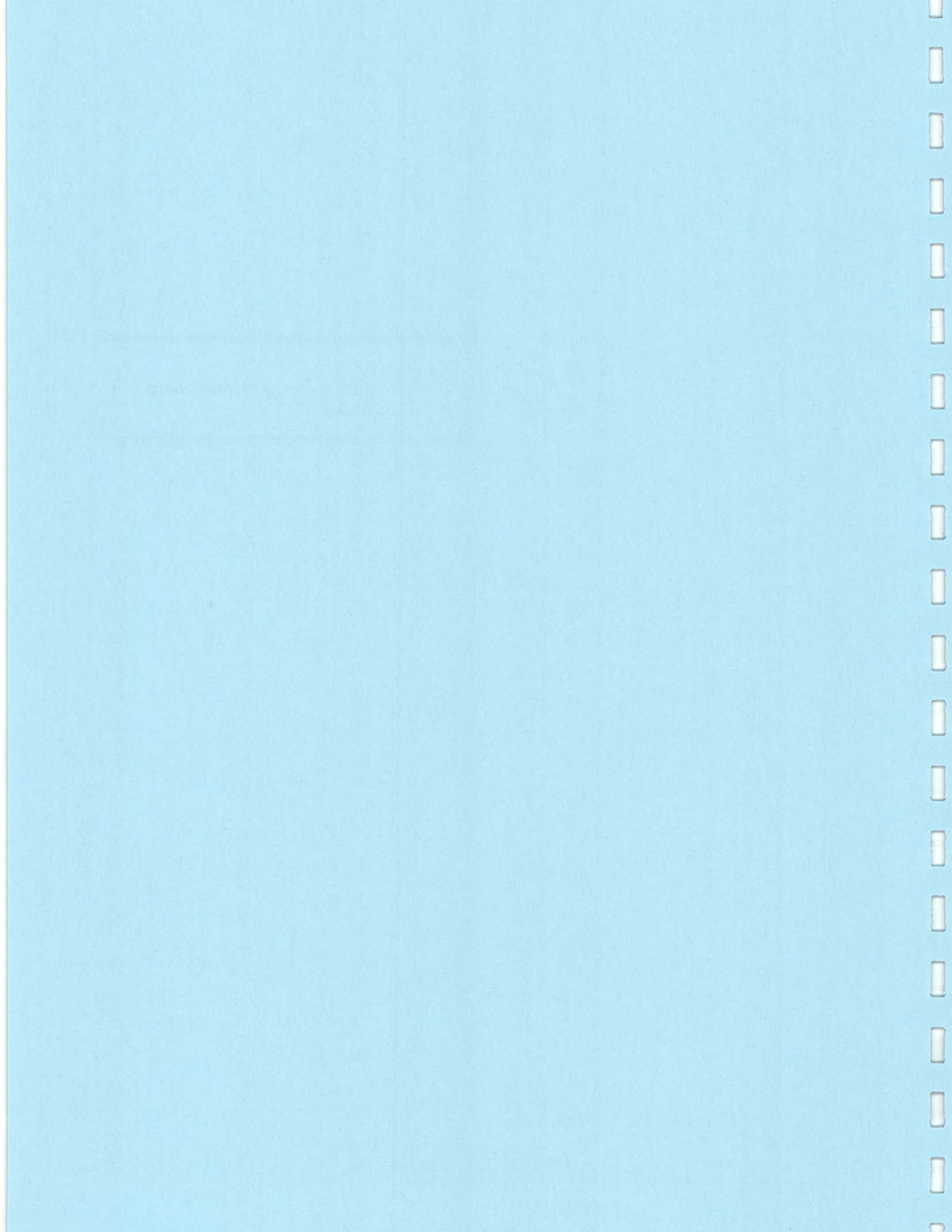
Action and Limit Levels (L_{eq}) for Construction Noise

| Time Period | Action Level | Limit Level | | |
|--|---|---|--------|-----|
| | | SR3 | SR4 | SR6 |
| 0700 – 1900 hours on normal weekdays | When one documented complaint is received from any one of the sensitive receivers | 70/65* | 70/65* | 75 |
| 0700 – 2300 hours on public holidays including Sundays and | | Subject to requirements stipulated in future Construction Noise Permits | | |
| 1900 – 2300 hours on all days | | | | |
| 2300 – 0700 on all days | | | | |

*reduce to 70dB(A) for schools and 65dB(A) during school examination periods



**APPENDIX D
ENVIRONMENTAL MONITORING AND
AUDIT SCHEDULES**



**Reprovisioning of Diamond Hill Crematorium
Impact Air Quality and Noise Monitoring and Audit Schedule for February 2005**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------------------------|---|--------------------------|-------------|---------------------|-------------|
| | | 01-Feb | 02-Feb | 03-Feb | 04-Feb | 05-Feb |
| | 24-hour TSP | 1-hour TSP Noise Site Environmental Audit | | | | |
| 06-Feb | 07-Feb | 08-Feb | 09-Feb | 10-Feb | 11-Feb | 12-Feb |
| | 24-hour TSP | 1-hour TSP Noise | | | | 24-hour TSP |
| 13-Feb | 14-Feb | 15-Feb | 16-Feb | 17-Feb | 18-Feb | 19-Feb |
| | Site Environmental Audit | | | | 24-hour TSP | |
| | 1-hour TSP Noise | | Site Environmental Audit | | | 1-hour TSP |
| 20-Feb | 21-Feb | 22-Feb | 23-Feb | 24-Feb | 25-Feb | 26-Feb |
| | | | | 24-hour TSP | 1-hour TSP Noise | |
| 27-Feb | 28-Feb | | Site Environmental Audit | | | |
| | | | | | | |

schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for March 2005**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|---------------------|---------------------|--------------------------|---------------------------|--------|-------------|
| | | 01-Mar | 02-Mar | 03-Mar | 04-Mar | 05-Mar |
| | | | 24-hour TSP | 1-hour TSP Noise | | |
| 06-Mar | 07-Mar | 08-Mar | 09-Mar | 10-Mar | 11-Mar | 12-Mar |
| | | 24-hour TSP | Site Environmental Audit | | | |
| | | | 1-hour TSP Noise | | | |
| 13-Mar | 14-Mar | 15-Mar | 16-Mar | 17-Mar | 18-Mar | 19-Mar |
| | 24-hour TSP | | Site Environmental Audit | | | 24-hour TSP |
| | | 1-hour TSP Noise | | | | |
| 20-Mar | 21-Mar | 22-Mar | 23-Mar | 24-Mar | 25-Mar | 26-Mar |
| | | | Site Environmental Audit | 24-hour TSP 1-hour TSP | | |
| | 1-hour TSP Noise | | | | | |
| 27-Mar | 28-Mar | 29-Mar | 30-Mar | 31-Mar | | |
| | | | Site Environmental Audit | 24-hour TSP | | |
| | | | Site Environmental Audit | | | |

Schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for April 2005**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|------------------|------------------|--|------------------|------------------|------------------|
| | | | | | 1-hour TSP Noise | |
| 03-Apr | 04-Apr | 05-Apr | 06-Apr | 07-Apr | 08-Apr | 09-Apr |
| | | | 24-hour TSP | 1-hour TSP Noise | | |
| 10-Apr | 11-Apr | 12-Apr | 13-Apr | 14-Apr | 15-Apr | 16-Apr |
| | | 24-hour TSP | Site Environmental Audit | | | |
| 17-Apr | 18-Apr | 19-Apr | 20-Apr | 21-Apr | 22-Apr | 23-Apr |
| | 24-hour TSP | 1-hour TSP Noise | 1-hour TSP Noise Site Environmental Audit | | | 24-hour TSP |
| 24-Apr | 25-Apr | 26-Apr | 27-Apr | 28-Apr | 29-Apr | 30-Apr |
| | 1-hour TSP Noise | | Site Environmental Audit | | 24-hour TSP | 1-hour TSP Noise |

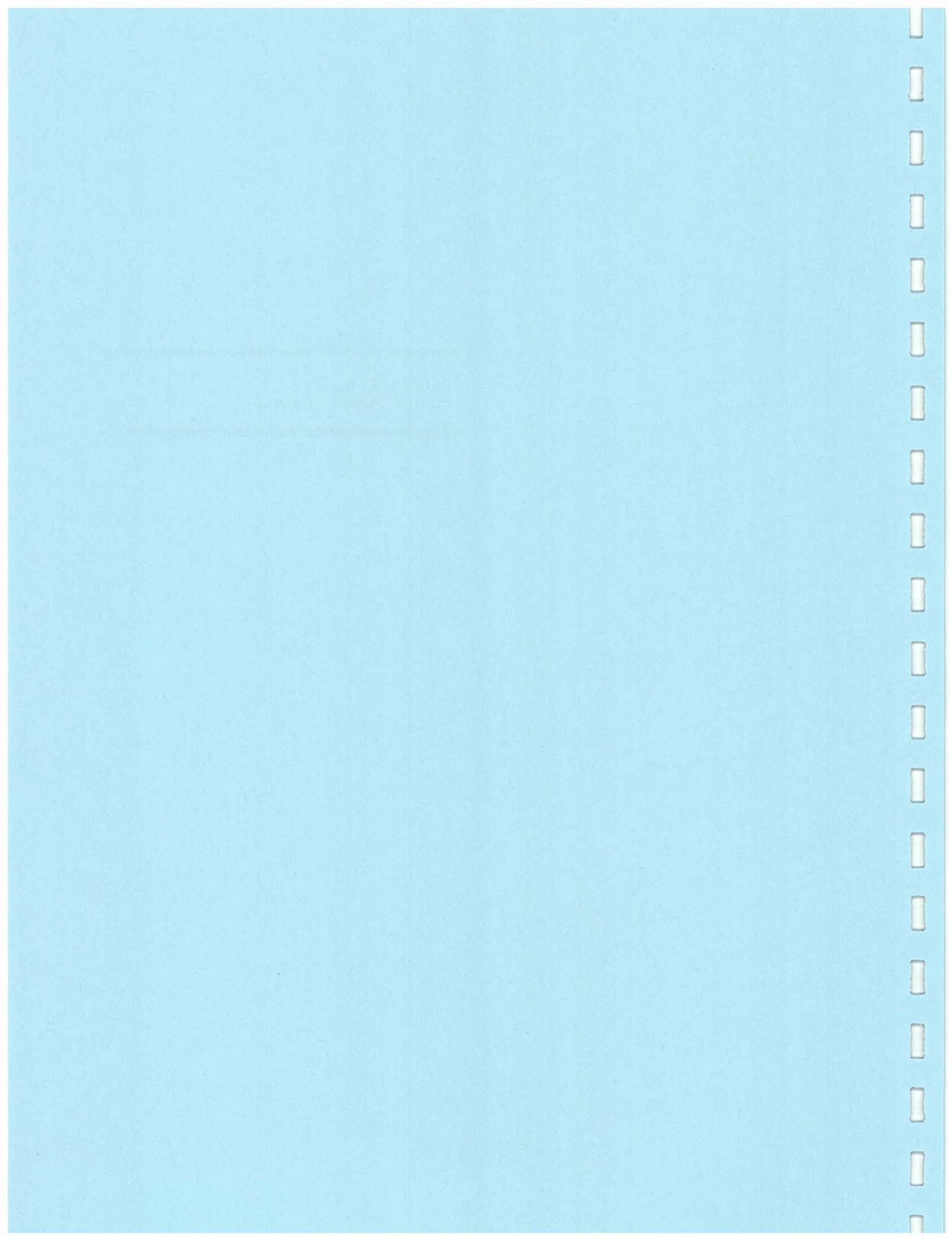
schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for May 2005**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|---------------------|---------------------|---|---------------------|---------------------|-------------|
| 01-May | 02-May | 03-May | 04-May | 05-May | 06-May | 07-May |
| | | | Site Environmental Audit | 24-hour TSP | 1-hour TSP Noise | |
| 08-May | 09-May | 10-May | 11-May | 12-May | 13-May | 14-May |
| | | | 24-hour TSP | 1-hour TSP Noise | | |
| 15-May | 16-May | 17-May | 18-May | 19-May | 20-May | 21-May |
| | | 24-hour TSP | Site Environmental Audit | | | |
| 22-May | 23-May | 24-May | 25-May | 26-May | 27-May | 28-May |
| | 24-hour TSP | 1-hour TSP Noise | 1-hour TSP Noise Site Environmental Audit | | | 24-hour TSP |
| 29-May | 30-May | 31-May | | | | |
| | 1-hour TSP Noise | | Site Environmental Audit | | | |

Schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

APPENDIX E
CALIBRATION DETAILS



Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station Po Leung Kuk Grandmont Primary School (ASR8) Operator: Porky Chu
 Cal. Date: 19-Feb-05 Next Due Date: 19-Apr-05
 Equipment No.: A-001-69T Serial No. 0716

| Ambient Condition | | | |
|---------------------|-----|---------------------|-------|
| Temperature, Ta (K) | 283 | Pressure, Pa (mmHg) | 768.0 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|--|---------|---------------|----------|
| Equipment No.: | A-003-03 | Slope, mc | 2.01571 | Intercept, bc | -0.02096 |
| Last Calibration Date: | 03-Dec-04 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 02-Dec-05 | $Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|--|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | $[DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 12.5 | 3.65 | 1.82 | 50.0 | 51.58 |
| 13 | 10.0 | 3.26 | 1.63 | 46.0 | 47.45 |
| 10 | 7.7 | 2.86 | 1.43 | 38.0 | 39.20 |
| 7 | 5.0 | 2.31 | 1.15 | 30.0 | 30.95 |
| 5 | 2.5 | 1.63 | 0.82 | 20.0 | 20.63 |

By Linear Regression of Y on X
 Slope, mw = 31.6681 Intercept, bw = -5.4443
 Correlation Coefficient* = 0.9959
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 34.63

Remarks: _____

QC Reviewer: Thomas Chen Signature: [Signature] Date: 21/02/05

Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station Po Leung Kuk Grandmont Primary School (ASR8) Operator: Porky Chu
 Cal. Date: 23-Dec-04 Next Due Date: 23-Feb-05
 Equipment No.: A-001-69T Serial No. 0716

| Ambient Condition | | | |
|---------------------|-----|---------------------|-------|
| Temperature, Ta (K) | 293 | Pressure, Pa (mmHg) | 768.0 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|--|---------|---------------|----------|
| Equipment No.: | A-003-03 | Slope, mc | 2.01571 | Intercept, bc | -0.02096 |
| Last Calibration Date: | 03-Dec-04 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 02-Dec-05 | $Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|--|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | $[DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 12.4 | 3.57 | 1.78 | 53.0 | 53.73 |
| 13 | 9.9 | 3.19 | 1.59 | 46.0 | 46.63 |
| 10 | 7.5 | 2.78 | 1.39 | 42.0 | 42.58 |
| 7 | 4.4 | 2.13 | 1.07 | 29.0 | 29.40 |
| 5 | 2.5 | 1.60 | 0.81 | 20.0 | 20.28 |

By Linear Regression of Y on X

Slope, mw = 34.1521 Intercept, bw = -6.7829

Correlation Coefficient* = 0.9929

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation | |
|--|--------------|
| From the TSP Field Calibration Curve, take Qstd = 1.30m ³ /min | |
| From the Regression Equation, the "Y" value according to | |
| $mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$ | |
| Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)] ^{1/2} = | <u>37.10</u> |

Remarks: _____

QC Reviewer: Thomas Chen Signature: T. Chen Date: 24/12/04

Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station: Staff Quarter For Diamond Hill Crematorium (ASR17) Operator: Porky Chu
 Cal. Date: 19-Feb-04 Next Due Date: 19-Apr-05
 Equipment No.: A-001-21T Serial No.: 10278

| Ambient Condition | | | |
|---------------------|-----|---------------------|-------|
| Temperature, Ta (K) | 283 | Pressure, Pa (mmHg) | 768.0 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|--|---------|---------------|----------|
| Equipment No.: | A-003-03 | Slope, mc | 2.01571 | Intercept, bc | -0.02096 |
| Last Calibration Date: | 03-Dec-04 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 02-Dec-05 | $Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|--|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | $[DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 12.0 | 3.57 | 1.78 | 53.0 | 54.67 |
| 13 | 9.6 | 3.20 | 1.60 | 45.0 | 46.42 |
| 10 | 7.2 | 2.77 | 1.38 | 39.0 | 40.23 |
| 7 | 5.3 | 2.37 | 1.19 | 31.0 | 31.98 |
| 5 | 3.0 | 1.79 | 0.90 | 23.0 | 23.73 |

By Linear Regression of Y on X
 Slope, mw = 34.8178 Intercept, bw = -8.2819
 Correlation Coefficient* = 0.9940
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]^{1/2} = 35.85

Remarks: _____

QC Reviewer: Thomas Chua Signature: T. Chua Date: 21/04/05

Maunsel Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station: Staff Quarter For Diamond Hill Crematorium (ASR17) Operator: Porky Chu
 Cal. Date: 23-Dec-04 Next Due Date: 23-Feb-05
 Equipment No.: A-001-21T Serial No.: 10278

| Ambient Condition | | | |
|---------------------|-----|---------------------|-------|
| Temperature, Ta (K) | 293 | Pressure, Pa (mmHg) | 768.0 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|--|---------|---------------|----------|
| Equipment No.: | A-003-03 | Slope, mc | 2.01571 | Intercept, bc | -0.02096 |
| Last Calibration Date: | 03-Dec-04 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 02-Dec-05 | $Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|--|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | $[DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 11.7 | 3.47 | 1.73 | 52.0 | 52.72 |
| 13 | 8.9 | 3.02 | 1.51 | 45.0 | 45.62 |
| 10 | 6.5 | 2.58 | 1.29 | 39.0 | 39.54 |
| 7 | 4.5 | 2.15 | 1.08 | 30.0 | 30.41 |
| 5 | 2.8 | 1.70 | 0.85 | 22.0 | 22.30 |

By Linear Regression of Y on X

Slope, mw = 34.7039 Intercept, bw = -6.7433

Correlation Coefficient* = 0.9953

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 37.85

Remarks: _____

QC Reviewer: Porky Chu Signature: Porky Chu Date: 24/12/04

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-1
 Equipment No.: A.005.05a
 Sensitivity Adjustment Scale Setting: 510 CPM
 Operator: Eddie Yang (EWNY)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K_o: 12500
 Last Calibration Date*: 17 June 2004

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 510 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 510 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|-------------------|-------------|--|--------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 07-08-04 | 10:00 - 11:00 | 29 | 69 | 0.02442 | 1360 | 22.67 |
| 2 | 07-08-04 | 12:00 - 13:00 | 30 | 68 | 0.03482 | 1720 | 28.67 |
| 3 | 07-08-04 | 14:00 - 15:00 | 30 | 70 | 0.03421 | 1694 | 28.23 |
| 4 | 07-08-04 | 16:00 - 17:00 | 29 | 72 | 0.04043 | 1961 | 32.68 |

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0012
 Correlation coefficient: 0.9286

Validity of Calibration Record: 7 August 2005

Remarks:

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.07a
 Sensitivity Adjustment Scale Setting: 557 CPM

Operator: Eddie Yang (EWNY)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K_o: 12500
 Last Calibration Date*: 17 June 2004

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 557 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 557 CPM

| Hour | Date (dd-mm-yy) | Time | Ambient Condition | | Concentration ¹ (mg/m ³) Y-axis | Total Count ² | Count/ Minute ³ X-axis |
|------|--------------------|---------------|----------------------|-------------|--|-----------------------------|---|
| | | | Temp (°C) | R.H. (%) | | | |
| 1 | 19-06-04 | 12:00 - 13:00 | 31 | 80 | 0.02767 | 762 | 12.70 |
| 2 | 19-06-04 | 13:00 - 14:00 | 31 | 80 | 0.02698 | 727 | 12.12 |
| 3 | 19-06-04 | 14:00 - 15:00 | 30 | 79 | 0.02574 | 704 | 11.73 |
| 4 | 19-06-04 | 16:00 - 17:00 | 29 | 78 | 0.02939 | 819 | 13.65 |

- Note:
1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0022
 Correlation coefficient: 0.9345

Validity of Calibration Record: 1 July 2005

Remarks:



CERTIFICATE OF CALIBRATION

Certificate No.: 04CA0519 02-02 Page: 1 of 2 Pages

Item tested

| | | | |
|-----------------------|--------------------------------|----------------|----------------|
| Description: | Integrating Sound Level Meter; | Microphone; | Preamplifier |
| Manufacturer: | RION Co., Ltd. | RION Co., Ltd; | RION Co., Ltd. |
| Type/Model No.: | NL-31; | UC-53A; | NH-20 |
| Serial/Equipment No.: | 00320528; | 102439; | 84131 |
| Adaptors used: | - | | |

Item submitted by

Client: Maunsell Environmental Management Consultants Ltd.
Request No.: 04CA0519 02-02
Date of request: 18/05/2004

Date of test: 20/05/2004

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---------------------------------|----------|------------|--------------|---------------|
| Multi function sound calibrator | B&K 4226 | 2286444 | 05/01/2005 | NIM, China |
| Measuring amplifier | B&K 2610 | 2346941 | 10/12/2004 | NIM |
| Signal generator | DS 360 | 33873 | 14/11/2004 | NIM |
| Audio analyzer | 8903B | GB41300350 | 09/12/2004 | NIM |
| Digital multi-meter | 34401A | US36087050 | 23/12/2004 | SCM |
| Digital barometer | CST2001B | RR163 | 20/08/2007 | NIM |

Ambient conditions

Temperature: (23 ± 3) °C
Relative humidity: (50 ± 15) %
Air pressure: (1010 ± 10) hPa

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the Type 1 for the conditions under which the test was performed.

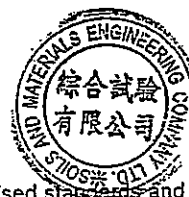
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jia Min/Qian Xing

Date: 20/05/2004

Company Chop:



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 04CA0223 01-04 Page: 1 of 2 Pages

Item tested

| | | |
|-----------------------|--------------------------------|----------------|
| Description: | Integrating Sound Level Meter; | Microphone. |
| Manufacturer: | RION Co., Ltd. | RION Co., Ltd. |
| Type/Model No.: | NL-18; | UC-53A |
| Serial/Equipment No.: | 00570446 | 76066 |
| Adaptors used: | - | |

Item submitted by

Client: Maunsell Environmental Management Consultants Ltd.
Request No.: 04CA0223 01-04
Date of request: 23/02/2004

Date of test: 25/02/2004

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---------------------------------|----------|------------|--------------|---------------|
| Multi function sound calibrator | B&K 4226 | 2288444 | 05/01/2005 | NIM, China |
| Measuring amplifier | B&K 2610 | 2346941 | 10/12/2004 | NIM |
| Signal generator | DS 360 | 33873 | 14/11/2004 | NIM |
| Audio analyzer | 8903B | GB41300350 | 09/12/2004 | NIM |
| Digital multi-meter | 34401A | US36087050 | 23/12/2004 | SCM |
| Digital barometer | CST2001B | RR-163 | 20/08/2007 | NIM |

Ambient conditions

Temperature: (22 ± 3) °C
Relative humidity: (50 ± 15) %
Air pressure: (1010 ± 10) hPa

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the Type 1 for the conditions under which the test was performed.

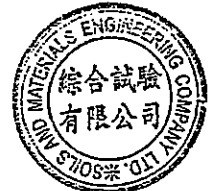
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jianmin/Qian Xing

Date: 25/02/2004

Company Chop:



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 05CA0119 01-01 Page: 1 of 2

Item tested

Description: Sound Level Calibrator
Manufacturer: RION, Tokyo, Japan
Type/Model No.: NC-73
Serial/Equipment No.: N.004.09 (S/N: 10185232)
Adaptors used: -

Item submitted by

Client: Maunsell Consultants Asia Ltd.
Request No.: 05CA0119 01
Date of request: 19-Jan-2005

Date of test: 19-Jan-2005

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|-------------------------|----------|------------|--------------|---------------|
| Lab standard microphone | B&K 4180 | 2341427 | 10-Nov-2005 | NIM |
| Preamplifier | B&K 2673 | 2239857 | 09-Nov-2005 | NIM |
| Measuring amplifier | B&K 2610 | 2346941 | 09-Nov-2005 | NIM |
| Signal generator | DS 360 | 33873 | 09-Nov-2005 | NIM |
| Digital multi-meter | 34401A | US36087050 | 22-Nov-2005 | SCM |
| Audio analyzer | 8903B | GB41300350 | 08-Nov-2005 | NIM |
| Universal counter | 53132A | MY40003662 | 12-Nov-2005 | NIM |

Ambient conditions

Temperature: 23 ± 2 °C
Relative humidity: 50 ± 15 %
Air pressure: 1013 ± 15 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using equivalent insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the Class 1 for the conditions under which the test was performed, with sound pressure level 94 dB and frequency 1000 Hz. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

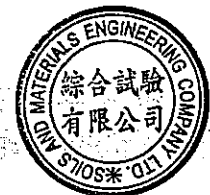
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Qian Xing

Date: 19-Jan-2005

Company Chop:



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



**APPENDIX F
AIR QUALITY MONITORING RESULTS AND
GRAPHICAL PRESENTATION**

1950-1951

1952-1953

1954-1955

APPENDIX F: Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station ASR8

| Date | Starting Time | Concentration, $\mu\text{g}/\text{m}^3$ | | | |
|-----------|---------------|---|-------|-------|---------|
| | | 1st | 2nd | 3rd | Average |
| 2-Feb-05 | 11:12 | 21.4 | 22.5 | 22.1 | 22.0 |
| 8-Feb-05 | 12:28 | 33.2 | 32.4 | 33.8 | 33.1 |
| 14-Feb-05 | 9:00 | 57.9 | 69.9 | 66.6 | 64.8 |
| 19-Feb-05 | 7:00 | 124.9 | 120.6 | 127.9 | 124.5 |
| 25-Feb-05 | 10:15 | 141.4 | 137.8 | 143.4 | 140.9 |
| Min. | | | | | 21.4 |
| Max. | | | | | 143.4 |
| Average | | | | | 77.1 |

1-hour TSP Monitoring Results at Station ASR17

| Date | Starting Time | Concentration, $\mu\text{g}/\text{m}^3$ | | | |
|-----------|---------------|---|-------|-------|---------|
| | | 1st | 2nd | 3rd | Average |
| 2-Feb-05 | 11:00 | 36.1 | 32.5 | 33.2 | 33.9 |
| 8-Feb-05 | 12:20 | 25.4 | 26.1 | 24.1 | 25.2 |
| 14-Feb-05 | 9:00 | 54.6 | 62.9 | 65.2 | 60.9 |
| 19-Feb-05 | 7:00 | 122.7 | 119.5 | 121.7 | 121.3 |
| 25-Feb-05 | 7:00 | 134.4 | 144.7 | 138.2 | 139.1 |
| Min. | | | | | 24.1 |
| Max. | | | | | 144.7 |
| Average | | | | | 76.1 |

Remark: **Bold value** indicated an Action level exceedance
 Bold & Italic value indicated an Limit level exceedance

PENDIX F: Air Quality Monitoring Results

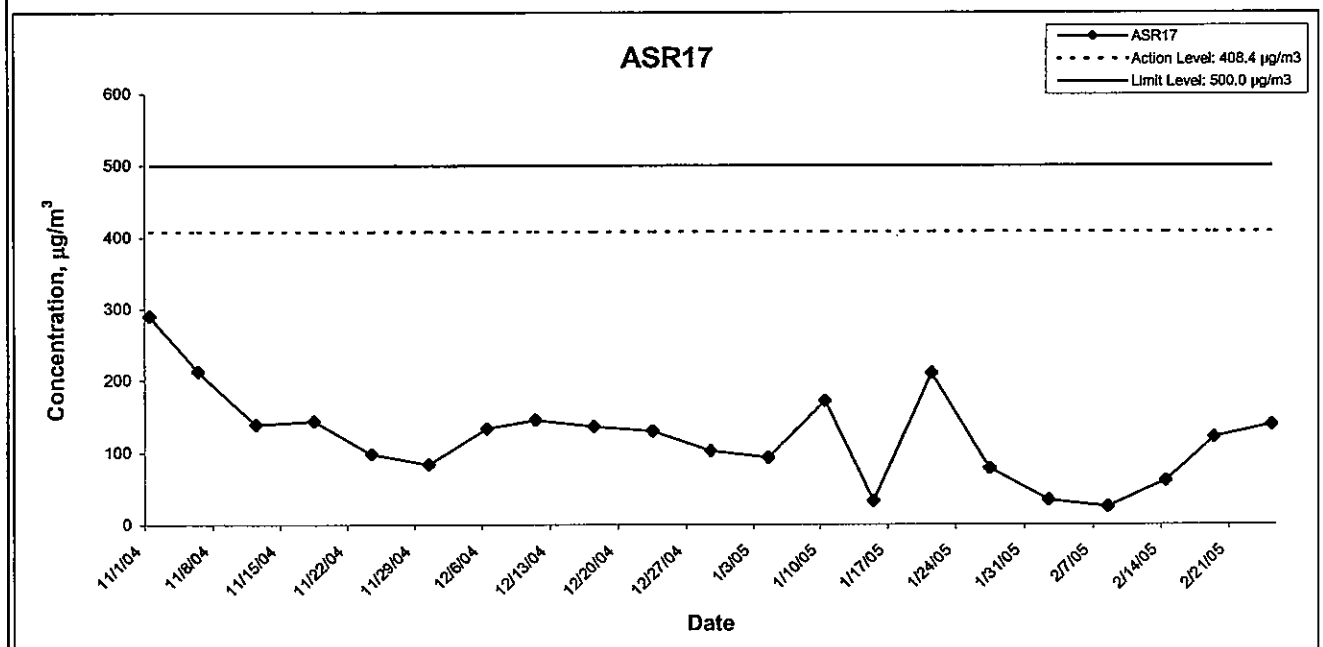
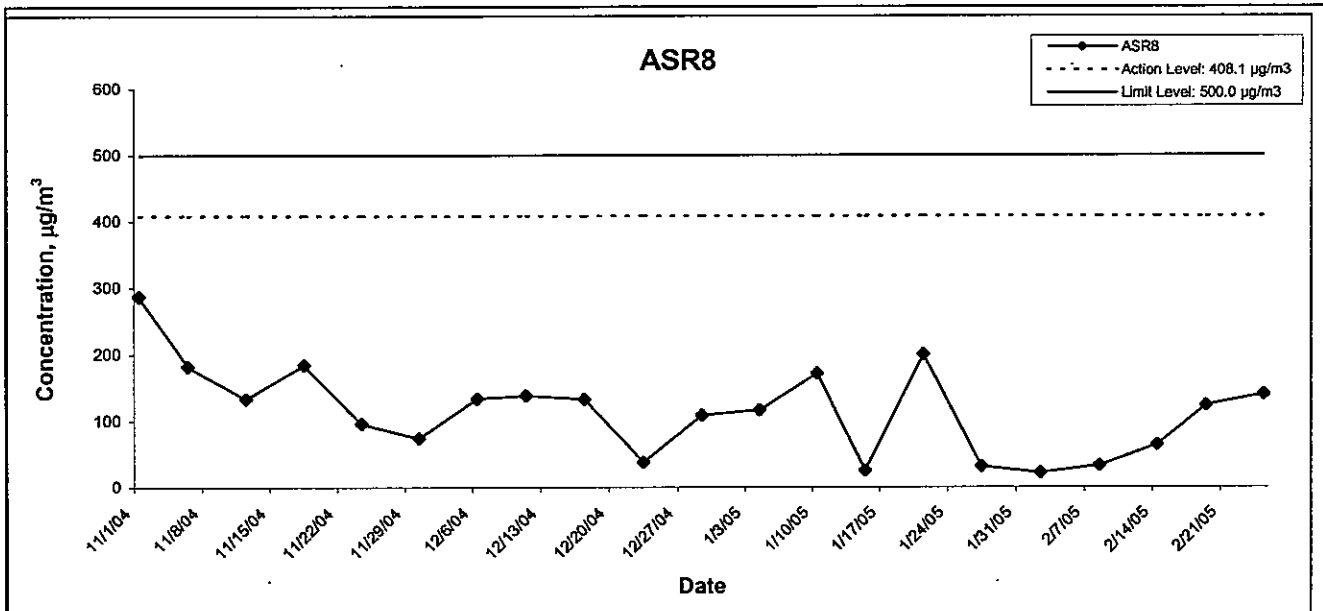
our TSP Monitoring Results at Station ASR8

| Date | Filter Weight (g) | | Flow Rate (m ³ /min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. (µg/m ³) | Weather Condition | Particulate weight(g) | Av. flow (m ³ /min) | Total vol. (m ³) |
|--------|-------------------|--------|----------------------------------|-------|-------------|-------|---------------------|----------------------------|-------------------|-----------------------|--------------------------------|------------------------------|
| | Initial | Final | Initial | Final | Initial | Final | | | | | | |
| Feb-05 | 3.5148 | 3.7266 | 1.25 | 1.25 | 516.6 | 540.6 | 24.0 | 117.4 | Cloudy | 0.21 | 1.25 | 1804.3 |
| Feb-05 | 3.4769 | 3.6110 | 1.25 | 1.25 | 540.6 | 564.6 | 24.0 | 74.3 | Fine | 0.13 | 1.25 | 1804.3 |
| Feb-05 | 3.4708 | 3.5935 | 1.25 | 1.25 | 567.6 | 591.6 | 24.0 | 67.9 | Fine | 0.12 | 1.25 | 1805.8 |
| Feb-05 | 3.4989 | 3.5812 | 1.25 | 1.25 | 591.6 | 615.9 | 24.4 | 44.9 | Fine | 0.08 | 1.25 | 1832.1 |
| Feb-05 | 3.4941 | 3.6593 | 1.31 | 1.31 | 615.9 | 639.9 | 24.0 | 87.6 | Cloudy | 0.17 | 1.31 | 1885.0 |
| | | | | | | | | Min | 44.9 | | | |
| | | | | | | | | Max | 117.4 | | | |
| | | | | | | | | Average | 78.4 | | | |

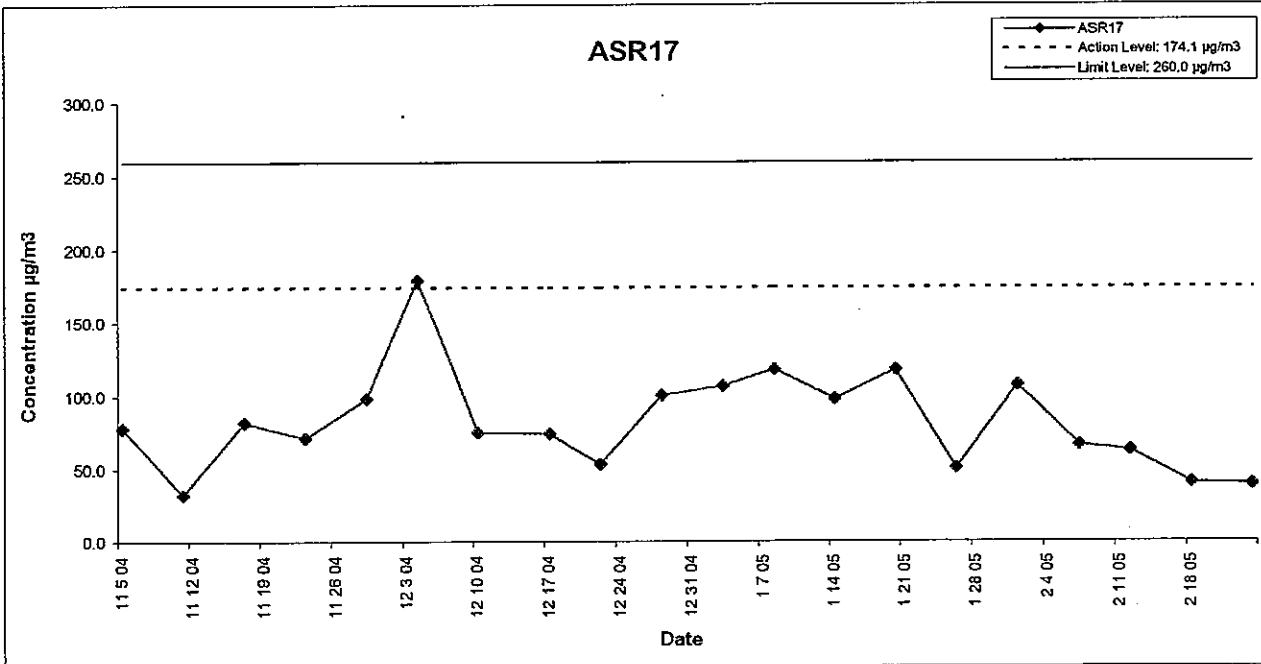
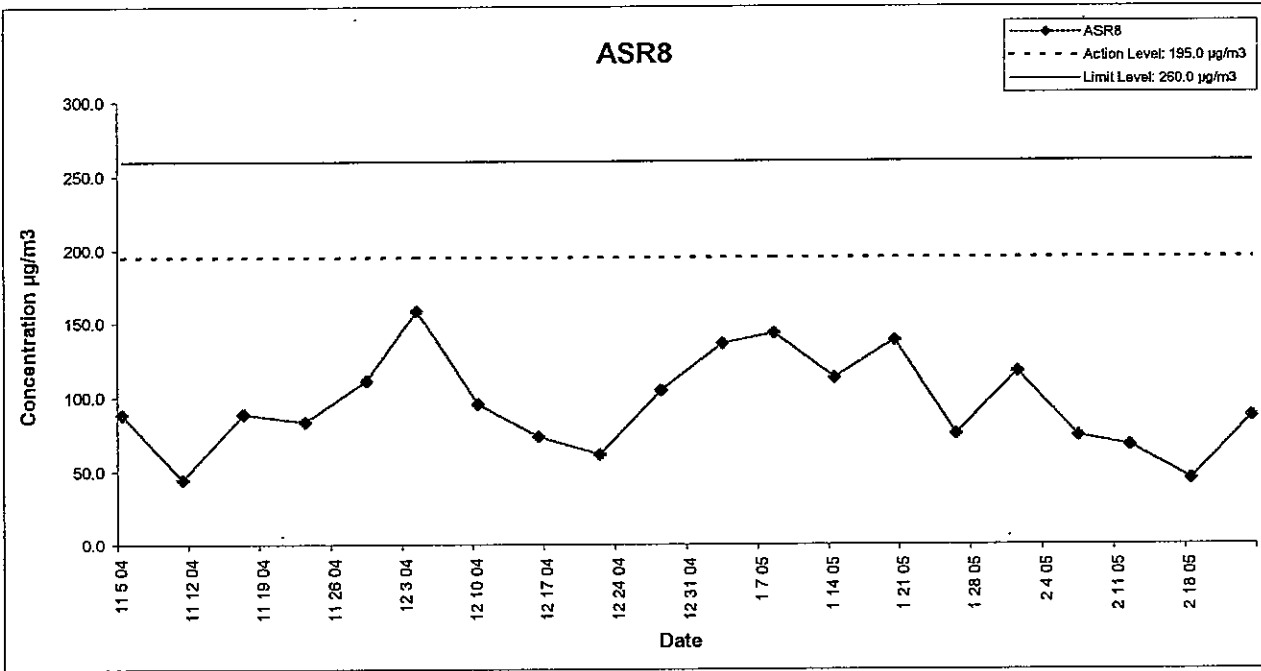
our TSP Monitoring Results at Station ASR17

| Date | Filter Weight (g) | | Flow Rate (m ³ /min.) | | Elapse Time | | Sampling Time(hrs.) | Conc. (µg/m ³) | Weather Condition | Particulate weight(g) | Av. flow (m ³ /min) | Total vol. (m ³) |
|--------|-------------------|--------|----------------------------------|-------|-------------|---------|---------------------|----------------------------|-------------------|-----------------------|--------------------------------|------------------------------|
| | Initial | Final | Initial | Final | Initial | Final | | | | | | |
| Feb-05 | 3.4950 | 3.7043 | 1.35 | 1.35 | 14675.3 | 14699.3 | 24.0 | 107.8 | Cloudy | 0.21 | 1.35 | 1940.7 |
| Feb-05 | 3.4842 | 3.6139 | 1.35 | 1.35 | 14699.3 | 14723.3 | 24.0 | 67.0 | Fine | 0.13 | 1.35 | 1935.6 |
| Feb-05 | 3.4840 | 3.6096 | 1.38 | 1.38 | 14723.3 | 14747.3 | 24.0 | 63.4 | Fine | 0.13 | 1.38 | 1979.8 |
| Feb-05 | 3.4976 | 3.5804 | 1.41 | 1.41 | 14747.3 | 14771.3 | 24.0 | 40.9 | Fine | 0.08 | 1.41 | 2023.2 |
| Feb-05 | 3.5016 | 3.5776 | 1.33 | 1.33 | 14771.3 | 14795.3 | 24.0 | 39.7 | Cloudy | 0.08 | 1.33 | 1913.8 |
| | | | | | | | | Min | 39.7 | | | |
| | | | | | | | | Max | 107.8 | | | |
| | | | | | | | | Average | 63.8 | | | |

ark: Bold value indicated an Action level exceedance
 Bold & Italic value indicated an Limit level exceedance

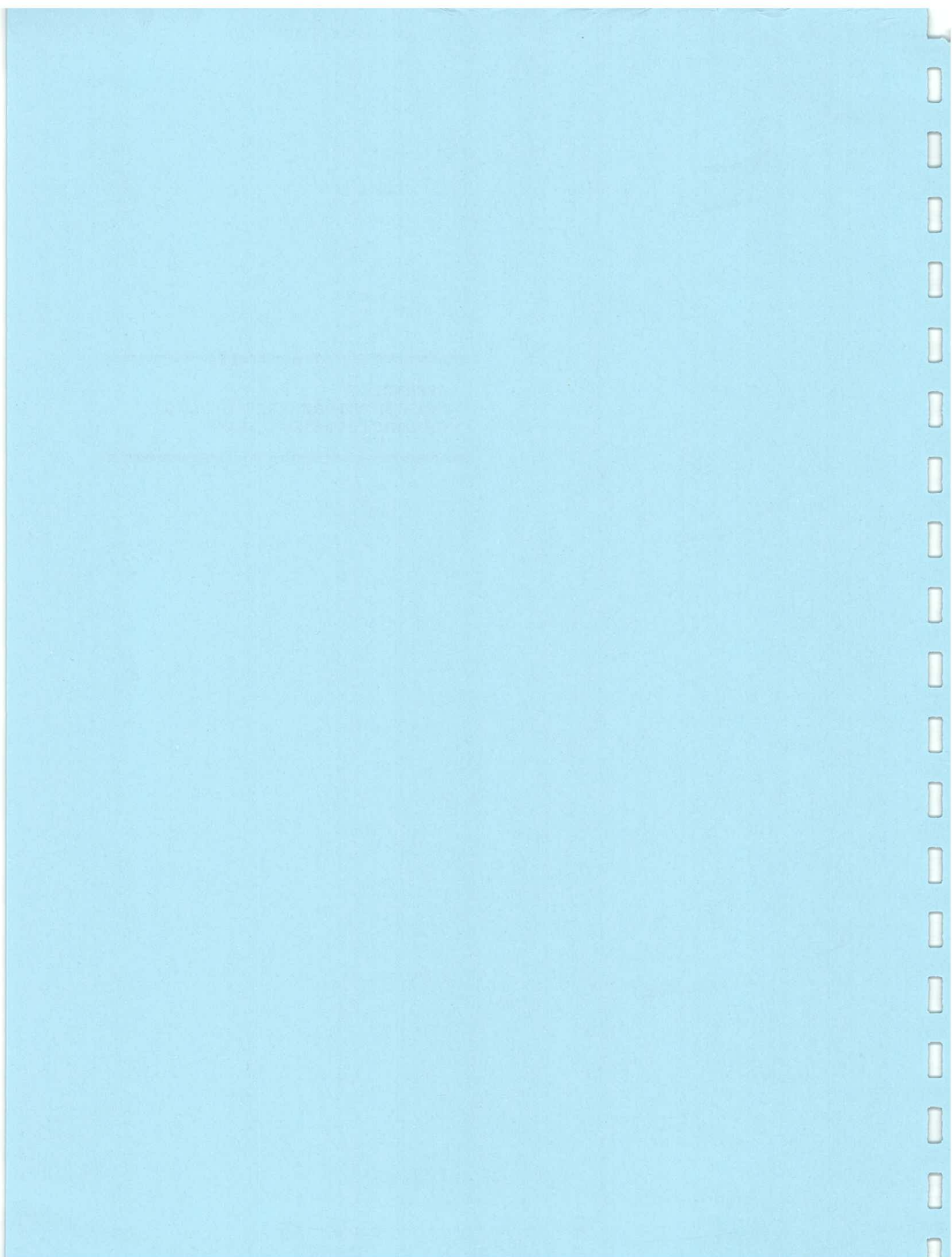


| | | | |
|--|-----------------|-----------------------|--|
| Title Contract No. SS M333 Reprovisioning of Diamond Hill Crematorium Graphical Presentation of 1-hour TSP Monitoring Results for Location ASR8 and ASR17 | Scale N.T.S. | Project No. S07904 | |
| | Date 2005 | Appendix F | |



| | | | |
|--|-----------------|-----------------------|--|
| Title Contract No. SS M333 Reprovisioning of Diamond Hill Crematorium Graphical Presentation of 24-hour TSP Monitoring Results for Location ASR8 and ASR17 | Scale N.T.S. | Project No. S07904 | |
| | Date 2005 | Appendix F | |

**APPENDIX G
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATION**



Appendix G Noise Monitoring Results

Daytime Noise Monitoring Results at Station SR3

| Date | Weather Condition | Noise Level for 30-min, dB(A) [†] | | | | Baseline Noise Level, dB(A) | Calculated Construction Noise Level, dB(A) | Limit Level, dB(A) | Exceedance (Y/N) |
|-----------|-------------------|--|------|------|------|-----------------------------|--|--------------------|------------------|
| | | Time | L90 | L10 | Leq | | | | |
| 2-Feb-05 | Cloudy | 11:28 | 60.3 | 64.0 | 62.6 | 65.1 | *Note | 70 | N |
| 8-Feb-05 | Fine | 13:00 | 64.5 | 69.5 | 67.0 | 65.1 | 62.5 | 70 | N |
| 14-Feb-05 | Fine | 10:05 | 60.5 | 63.5 | 61.8 | 65.1 | *Note | 70 | N |
| 25-Feb-05 | Cloudy | 9:27 | 64.2 | 72.7 | 69.0 | 65.1 | 66.7 | 70 | N |
| | | Min | 60.3 | 63.5 | 61.8 | | | | |
| | | Max | 64.5 | 72.7 | 69.0 | | | | |
| | | Average | 62.4 | 67.4 | 65.1 | | | | |

Daytime Noise Monitoring Results at Station SR4

| Date | Weather Condition | Noise Level for 30-min, dB(A) [†] | | | | Baseline Noise Level, dB(A) | Calculated Construction Noise Level, dB(A) | Limit Level, dB(A) | Exceedance (Y/N) |
|-----------|-------------------|--|------|------|------|-----------------------------|--|--------------------|------------------|
| | | Time | L90 | L10 | Leq | | | | |
| 2-Feb-05 | Cloudy | 11:15 | 59.5 | 63.5 | 60.7 | 65.6 | *Note | 70 | N |
| 8-Feb-05 | Fine | 13:00 | 62.0 | 67.5 | 65.0 | 65.6 | *Note | 70 | N |
| 14-Feb-05 | Fine | 9:50 | 58.0 | 62.7 | 60.5 | 65.6 | *Note | 70 | N |
| 25-Feb-05 | Cloudy | 9:20 | 63.5 | 69.8 | 67.4 | 65.6 | 62.7 | 70 | N |
| | | Min | 58.0 | 62.7 | 60.5 | | | | |
| | | Max | 63.5 | 69.8 | 67.4 | | | | |
| | | Average | 60.8 | 65.9 | 63.4 | | | | |

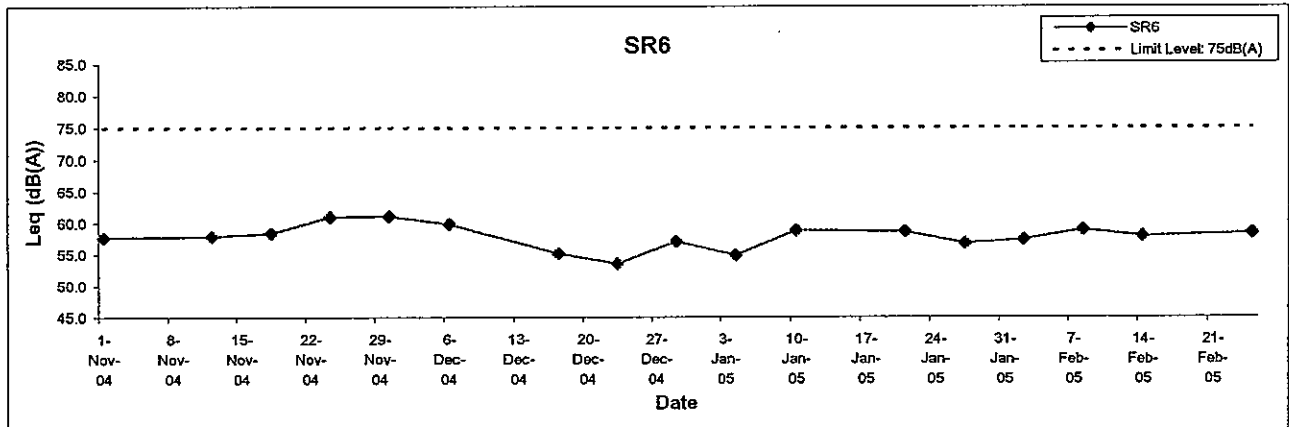
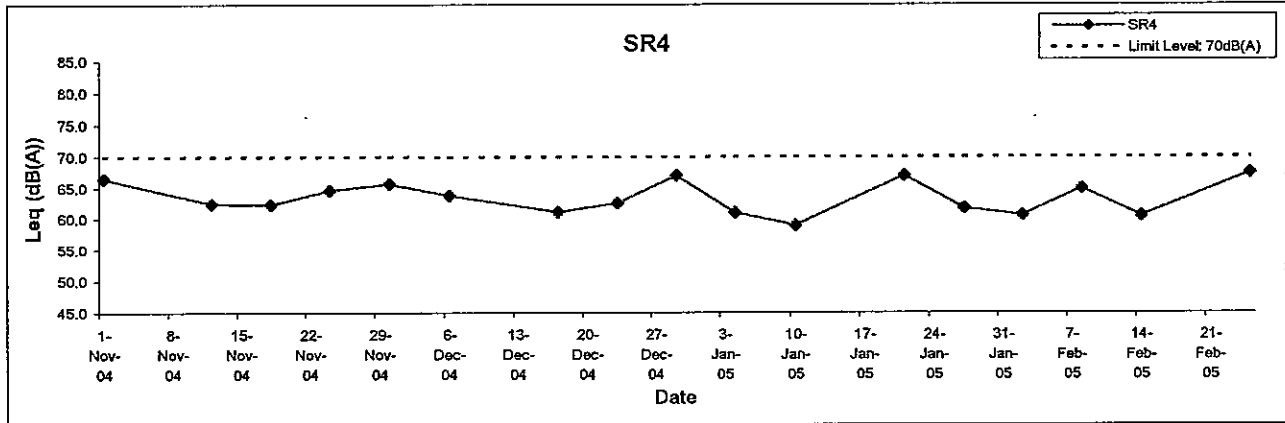
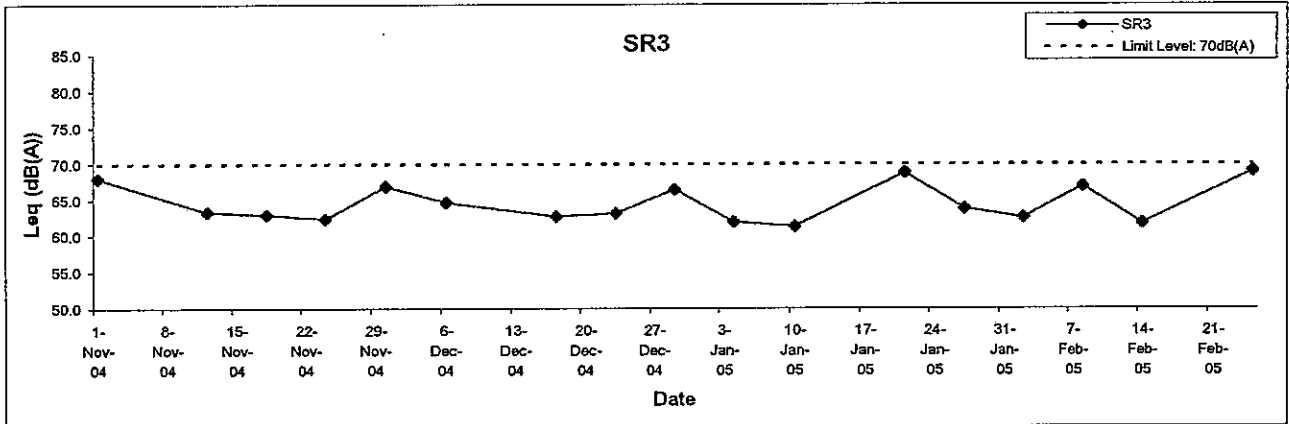
Daytime Noise Monitoring Results at Station SR6

| Date | Weather Condition | Noise Level for 30-min, dB(A) [†] | | | | Baseline Noise Level, dB(A) | Calculated Construction Noise Level, dB(A) | Limit Level, dB(A) | Exceedance (Y/N) |
|-----------|-------------------|--|------|------|------|-----------------------------|--|--------------------|------------------|
| | | Time | L90 | L10 | Leq | | | | |
| 2-Feb-05 | Cloudy | 14:58 | 54.5 | 59.0 | 57.4 | 68.5 | *Note | 75 | N |
| 8-Feb-05 | Fine | 13:50 | 55.5 | 61.5 | 59.0 | 68.5 | *Note | 75 | N |
| 14-Feb-05 | Fine | 9:00 | 56.3 | 60.5 | 58.0 | 68.5 | *Note | 75 | N |
| 25-Feb-05 | Cloudy | 10:17 | 56.3 | 60.0 | 58.5 | 68.5 | *Note | 75 | N |
| | | Min | 54.5 | 59.0 | 57.4 | | | | |
| | | Max | 56.3 | 61.5 | 59.0 | | | | |
| | | Average | 55.7 | 60.3 | 58.2 | | | | |

[†] - Façade measurement

Bold & Italic value indicated an Limit level exceedance

Note: Measured noise level is less than the baseline noise level.



| | | | |
|---|-----------------|-----------------------|--|
| Title Contract No. SS M333 Reprovisioning of Diamond Hill Crematorium Graphical Presentation of Noise Monitoring Results for Location SR3, SR4 and SR6 | Scale N.T.S. | Project No. S07904 | |
| | Date 2005 | Appendix G | |

**APPENDIX H
SUMMARY OF WEEKLY ENVIRONMENTAL
SITE INSPECTION OBSERVATIONS**

Appendix H — Summary of Weekly Environmental Site Inspection Observations**Inspection Information**

| | |
|------|--------------------|
| Date | 2 February 2005 |
| Time | 09:30 – 10:15 a.m. |

Remarks/Observations*Water Quality*

1. The Contractor indicated that application for effluent discharge license was in progress. Wastewater treatment facility was inspected by EPD on 27 January 2005.

Air Quality

2. Fugitive dust generated by wind was observed near the Chemical Storage Area. The Contractor was reminded to remove the dry soil deposited on the paved area and dampen the unpaved area to avoid dust generation.

Noise

3. No violation was observed in this site inspection.

Waste/Chemical Management

4. Gate with lock was erected for the Chemical Waste Storage Area. Proper label in both English and Chinese would be provided soon.

Landscape and Visual

5. No violation was observed in this site inspection.

Others

6. No violation was observed in this site inspection.

Inspection Information

| | |
|------|-----------------|
| Date | 7 February 2005 |
| Time | 14:30 – 15:15 |

Remarks/Observations*Water Quality*

7. The Contractor indicated that application for effluent discharge license was in progress.

Air Quality

8. Water spray was provided to unpaved areas during the site inspection.
9. Stockpile of sand located next to the Chemical Waste Storage Area, which was not in use, was not covered nor provided with water spray. The Contractor was reminded to cover it with tarpaulin.

Noise

10. No violation was observed in this site inspection.

Waste/Chemical Management

11. Proper label in both English and Chinese was provided to the Chemical Waste Storage Area.

Landscape and Visual

12. No violation was observed in this site inspection.

Others

13. The Contractor was reminded to post a copy of the Environmental Permit of the Project at the site entrance.

Inspection Information

| | |
|------|-------------------|
| Date | 16 February 2005 |
| Time | 9:30 – 10:15 a.m. |

Remarks/Observations*Water Quality*

14. The Contractor indicated that application for effluent discharge license was in progress.

Air Quality

15. Stockpile of sand located next to the Chemical Waste Storage Area was covered. The stockpile at the temporary stockpiling area was generally covered. Water spray was being applied for the remaining exposed surface.

Noise

16. No violation was observed in this site inspection.

Waste/Chemical Management

17. No violation was observed in this site inspection.

Landscape and Visual

18. No violation was observed in this site inspection.

Others

19. The Environmental Permit of the Project was posted at the site entrance.

Inspection Information

| | |
|------|-------------------|
| Date | 23 February 2005 |
| Time | 9:30 – 10:15 a.m. |

Remarks/Observations*Water Quality*

20. The Contractor indicated that application for effluent discharge license was in progress.

Air Quality

21. No violation was observed in this site inspection.

Noise

22. No violation was observed in this site inspection.

Waste/Chemical Management

23. The Contractor was reminded to clean up the concrete debris left at roadside as soon as possible.

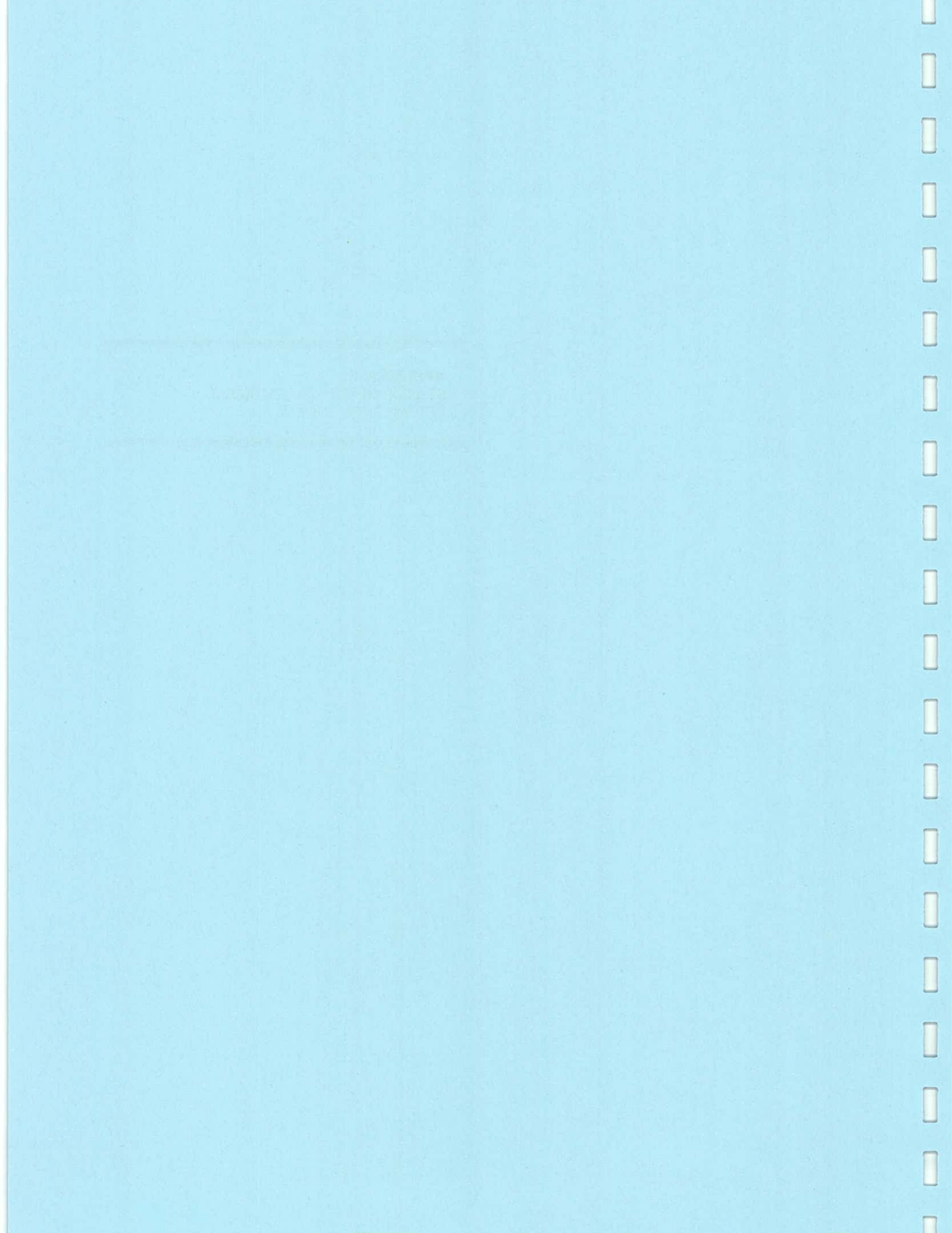
Landscape and Visual

24. No violation was observed in this site inspection.

Others

25. No violation was observed in this site inspection.

**APPENDIX I
STATUS OF ENVIRONMENTAL
PERMITS/LICENCES**



Appendix I Status of Environmental Permits/Licenses

| Permit No. | Valid Period | | Section | Status |
|--|----------------|-----|---|--------|
| | From | To | | |
| Environmental Permit & Further Environmental Permit | | | | |
| EP-179/2004 | 3 Apr 2004 | N/A | Reprovisioning of Diamond Hill Crematorium | Valid |
| Chemical Waste Registration | | | | |
| 5213-288-C3108- 10 | 13 Nov 2004 | N/A | Reprovisioning of Diamond Hill Crematorium | Valid |



**APPENDIX J
IMPLEMENTATION SCHEDULE OF
MITIGATION MEASURES**

Appendix J – Environmental Mitigation Implementation Schedule

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|---------------------|--|--|--------|
| Air Quality Mitigation Measures Special air pollution control systems shall be installed and operate to reduce the emissions of air pollutants to acceptable levels | New cremators in New Crematorium | Arch SD | Design, Construction, Demolition and Operation stage | BPM/APCO | ✓ |
| FEHD shall apply for a Specified Process License under the APCO | New Cremators in the New Crematorium / prior to operation | FEHD | Construction, Demolition and Operation stage | APCO | N/A |
| The efflux velocity of chimney shall be at least 15 m/s, the design diameter of the chimneys shall be 0.22 m and 0.30 m, the design chimney height shall be 101mP.D. (28.5m above ground), for 170 kg and 250 kg cremators respectively if the interior wall of existing cremators and chimney are confirmed dioxins contaminated, special precautions shall be taken avoid fugitive emissions of dioxin contaminated materials | Chimney of New Crematorium / design and construction stages Cremator room and chimney in Existing Crematorium / demolition | Arch SD | Design and Construction stage | BPM/APCO | N/A |
| Sufficient water spraying should be applied during the construction work, the fugitive dust generated from general construction dust would be reduced by 90% | Project site / construction and demolition stages | Arch SD, contractor | Demolition stage | | N/A |
| Carry out a confirmatory test of dioxins in the depositions on chimney wall, flue gas ducting and combustion chambers when the existing Crematorium is shut down | Chimney, flue and cremators in Existing Crematorium / decommissioning | FEHD, Arch SD | Construction and Demolition stage | APCO | • |
| If the dioxin level of surface deposition is between 1 and 10 ppb I-TEQ, it is classified as moderately contaminated with dioxins. The demolition work site should be covered up to avoid emission of fugitive dust during demolition | Chimney, flue and cremators in Existing Crematorium / decommissioning | Arch SD 3 | Demolition stage | | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|--|---|---|---|
| <p>If the dioxin level of surface deposition exceeds 10 pb I-TEQ, it is classified as severely dioxin-contaminated waste. If it is confirmed that the existing facilities are severely contaminated with dioxins, a special decommissioning method – Containment method – would be adopted</p> <p>If the demolition waste would be carefully handled, sealed and treated as chemical waste. The waste collector shall be responsible for preventing fugitive dust emission when handling the demolition waste</p> <p>Employ a registered asbestos contractor to remove asbestos containing material during the demolition of the existing crematorium building</p> <p>Submit a formal AIR and Asbestos Abatement plan signed by a registered asbestos consultant to the Authority for approval under APCO 18 days prior to the start of any asbestos abatement work.</p> <p>When removing asbestos containing materials, enclosure of the work area; containment and sealing for the asbestos containing waste; provision of personal decontamination facility; use of personal respiratory/protection equipment; use of vacuum cleaner equipped with high efficiency air particulate (HEPA) filter for cleaning up the work area; and carry out air quality monitoring during the asbestos abatement work</p> <p>Appoint qualified personnel to carry out the asbestos containing material removal work, including a registered asbestos contractor to carry out the work; a registered asbestos supervisor to supervise</p> | <p>Chimney, flue and cremators in Existing Crematorium / decommissioning</p> <p>Chimney, flue and cremators in Existing Crematorium / demolition stage</p> <p>Cremator room in Existing Crematorium / decommissioning</p> <p>Cremator room in Existing Crematorium / decommissioning</p> <p>Cremator room in Existing Crematorium / decommissioning</p> | <p>Arch SD 3</p> <p>Arch SD, contractor</p> <p>Arch SD, contractor</p> <p>Arch SD, consultant</p> <p>Arch SD, consultant</p> | <p>Demolition stage</p> <p>Demolition stage</p> <p>Demolition stage</p> <p>Demolition stage</p> <p>Demolition stage</p> | <p>APCO</p> <p>APCO</p> <p>APCO</p> <p>APCO</p> | <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|--------------------------|--|---|--------|
| <p>work; a registered asbestos laboratory to monitor air quality, and a registered asbestos consultant to advise and certify the asbestos abatement work.</p> <p>erect a site barrier with the height of no less than 2.4m to enclose the construction site</p> <p>apply frequent water spraying to ensure the surface of construction site sufficiently wet to reduce fugitive dust due to wind erosion and transportation on paved haul road</p> <p>cover up stockpiles of fill material and dusty material</p> <p>install a vehicle-cleaning system at the main entrance of the construction site to clean up the vehicles before leaving the site</p> <p>use Air Pollution Control (Construction Dust) Regulation shall be followed for fugitive dust control</p> | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | APCO, Air Pollution Control (Construction Dust) Regulation | • |
| <p>more than 6 cremators (including both the existing and new ones) are in operation during commissioning test of new cremators.</p> <p>commissioning test of each new cremator shall be recorded by a log book</p> | Existing and new cremators in Existing and New Crematorium / text and commissioning | Arch SD/FEHD/ Contractor | Construction stage | | N/A |
| <p>special air pollution control systems shall be installed and operate to reduce the emissions of pollutants to acceptable levels</p> | New cremators in New Crematorium / all stages | Arch SD | Design, Construction, Demolition and Operation stage | BPM/APCO | N/A |
| <p>conduct baseline and regular 1-hour and 24-hour TSP monitoring.</p> | A8 and A17 / baseline monitoring prior to Phase I & II works and regular monitoring throughout Phase I & II works | Contractor | Construction and Demolition stage | APCO, EM&A Guidelines for Development Projects in Hong Kong | √ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|------------------------------------|---|--------|
| When the demolition material is confirmed to have CM, monitoring for asbestos fibre would be carried out at the boundary of the construction site for assurance purposes as per the requirement of future cause for asbestos abatement, though it is not expected that asbestos fibre would be liberated from the demolition of the Existing Crematorium building. | Construction site boundary / demolition | Contractor | Demolition stage | Asbestos Study Report, AIR and AAP to be submitted under APCO, future licence for asbestos abatement (if any) | N/A |
| Noise Mitigation Measures elect quiet plant, which is defined as PME with a sound power level lower than that specified in GW-M. Examples of quiet plant can be referred to those listed in British standard BS5228. | Project site / construction and demolition stages | Contractor | Construction and Demolition stages | GW-TM | N/A |
| Where practicable, use movable barriers of 3 to 5 m height with a small cantilevered upper portion and kid footing can be located within a few metres from a stationary plant (e.g. generator, compressor, etc.) and within about 5 m for a mobile equipment (e.g. breaker, excavator, etc.), especially in the vicinity of SR3, SR4 and SR6. The purpose-built noise barriers or screens shall be constructed of appropriate materials with a minimum superficial density of 15kg/m ² . | Project site / construction and demolition stages | Contractor | Construction and Demolition stages | NCO | N/A |
| Only well-maintained plant should be operated on site and plant should be regularly serviced during the construction works Plant that is used intermittently should be turned off or throttled down when not in active use Plant that is known to emit noise strongly in one direction should be oriented to face away from NSRs | Project site / construction and demolition stages | Contractor | Construction and Demolition stages | NCO | ✓ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------|--------------------|--|--------|
| <ul style="list-style-type: none"> Silencers, mufflers and enclosures for plant should be used where possible and maintained adequately throughout the works Where possible mobile plant should be sited away from NSRs Stockpiles of excavated materials and other structures such as site buildings should be used effectively to screen noise from the works | | | | | |
| <p>Liaise with the school and the Examination Authority to ascertain the dates and times of examination periods during the course of the construction/ demolition works so as to avoid any noisy activities during these periods. Programme of the on-site works should hence be well programmed such that the noisier construction activities would not be coincided with the examination of the schools.</p> | Project site / construction and demolition stages | Contractor | Demolition stage | NCO | N/A |
| <p>Conduct regular noise monitoring.</p> | SR 3, SR 4 and SR 6 / Phase I & II works | Contractor | Demolition stage | NCO, EM&A Guidelines for Development Projects in Hong Kong | √ |
| <p>Land Contamination Mitigation Measures Additional site investigations in areas of the site that are currently in use and cannot be readily accessed. These investigations will be carried out once the existing facility has been decommissioned. The additional site investigations are required in the vicinity of the existing CLP secondary substation, and around the cremators and flues inside the crematorium building. Once access to these areas is available, a sampling and analysis plan will be</p> | CLP secondary substation and cremator room/ demolition stage (Phase I – CLP secondary substation; Phase II – cremator room) | Contractor | Demolition stage | ProPECC PN 3/94 | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|-------------------|-------------------------|--|------------|
| <p>prepared for approval by EPD, additional investigations will take place, and the need for remedial works will be determined. Any remedial works required will be in addition to those described in this current report.</p> <p>Once the Existing Crematorium has ceased operating during Phase II, confirmatory surface samples will be taken from the sample points S1 to S6 at a depth of 0.1m, and these samples will be analysed for the same suite of determinands i.e. dioxins, metals and PAH) in order to confirm that no further contamination has occurred. The Remediation Action Plan will be revised on the basis of these results.</p> | <p>Locations S1 to S6 specified in the CAP/demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94</p> | <p>N/A</p> |
| <p>The underground fuel storage tank and associated pipework will be removed as part of the site formation works. The base of the excavations will be inspected during and after tank removal by a suitably experienced environmental specialist in order to determine whether there is any visual or olfactory evidence of fuel contamination. If such contamination is suspected, then confirmatory soil sampling will be carried out, and the samples analysed for TPH.</p> | <p>Underground fuel storage tank/during and after tank removal</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p> | <p>N/A</p> |
| <p><i>Summary of remediation works at locations S3 and S5:</i></p> | | | | | |
| <p>1. Mark out 5m radius around S3 and S5 2. Excavate to depth of 0.5m 3. Transport to landfill site for final disposal 4. Take 4 samples from edges of excavation and one sample from base of excavation, analyse for lead and tin 5. If the results exceed Dutch B Levels, extend excavation to a further 5 m radius and 0.5 m</p> | <p>Locations S3 and S5 specified in CAP/demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN3/94</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|--|-------------------|--------------------|---|--------|
| <p>depth in the quadrant where the contaminated samples encountered and repeat steps 3 and 4. If the results less than Dutch B Levels, then remediation completed. During removal of the underground fuel storage tank, appropriate precautions should be taken to avoid contamination. All fuel tanks and associated pipework should be emptied prior to any demolition work being undertaken. Any remaining sludge or sediment in the tanks or pipework should be removed and disposed of as chemical waste in accordance with the appropriate regulations for disposal of such material.</p> | Underground fuel storage tank / Phase II demolition | Agent Contractor | Demolition stage | ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops | N/A |
| <p>should contamination be encountered beneath the fuel tank or the CLP secondary substation, further remedial work will be required. Such potential contamination would consist of either TPH (in the case of the fuel tank) or PCBs (in the case of the CLP secondary substation). As a realistic worst-case estimate, the PCB contaminated soil at CLP secondary substation may require stabilisation with cement prior to disposal to landfill. A realistic worst case estimate is that the volume of TPH contaminated soil at underground storage tank would require landfill disposal.</p> | CLP secondary substation /Phase I demolition and underground fuel tank / Phase II demolition | Contractor | Demolition stage | ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops | N/A |
| <p>Health and Safety Precautions during Remedial Works The site workers engaged in the remedial works should be provided with adequate personal protective equipment, which should include: • Protective footwear; • Gloves; • Dust masks; and • Overalls. A clean area should be provided, equipped with</p> | All areas requiring remedial works in Project site / demolition during Phases I and II | Contractor | Demolition stage | ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------------|-------------------------|--|------------|
| <p>washing facilities. Eating, drinking and smoking should only be permitted within designated "clean" areas after washing. Excavated material should not be stockpiled, but should immediately be treated/transported to landfill on a daily basis ..</p> | | | | <p>Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p> | |
| <p>Avoidance of Impacts on Water Quality during Remedial Works In order to avoid impacts on water quality during remedial works, care will be taken to minimise the mobilisation of sediment during excavation and transport. Measures to be adopted will be based on the recommendations set out in Practice Note for Professional Persons ProPECC PNI/94 'Construction Site Drainage'. The results of the site investigation suggest that there is unlikely to be any requirement for dewatering of excavations, since groundwater was not encountered in any of the exploratory holes. The contractor carrying out the remedial works will be required to submit a method statement detailing the measures to be taken to avoid water quality impacts. Typical measures would include;</p> <ul style="list-style-type: none"> • Carry out the works during the dry season (i.e. October to March) if possible; • Use bunds or perimeter drains to prevent run-off water entering excavations; • Sheet or otherwise cover excavations whenever rainstorms are expected to occur; • Minimise the requirements for stockpiling of material and ensure any stockpiles are covered; • Temporary on-wit stockpiling of contaminated materials should be avoided, and all excavated contaminated soils/materials should be disposed of on a daily basis; • Ensure that any discharges to storm drains pass | <p>All areas requiring remedial works in Project site / demolition during Phases I and II</p> | <p>Agent Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94, ProPECC PNI/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------------|-------------------------|---|------------|
| <p>through an appropriate silt trap.</p> <p>Waste Disposal Requirements during Remedial Works</p> <p>An application for permission to dispose of excavated material should be made to the Facilities Management Group of EPD three months prior to disposal. A "trip-ticket" system should be implemented. Each load of contaminated soil despatched to landfill should be accompanied by an admission ticket. Vehicles leaving the site should be adequately sheeted to prevent dispersion of contaminated material during transport. The wheels of vehicles should be cleaned prior to leaving site, to prevent contaminated material leaving site on the wheels of vehicles.</p> | <p>All areas requiring remedial works in Project site / demolition during Phases I and II</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94, Waste Disposal Ordinance (Cap. 354), WBTC No. 21/2002 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p> | <p>N/A</p> |
| <p>Compliance Report for Remedial Works</p> <p>Following completion of remediation works, a Remediation Report should be compiled and submitted, to demonstrate that the remediation works have been carried out in accordance with the Remediation Action Plan. The Remediation Report should include details of the excavation works carried out, records of material taken to landfill, and results of confirmatory testing, and should be submitted to EPD for approval before the commencement of building works.</p> | <p>All areas requiring remedial works in Project site / after completion of remediation works</p> | <p>Agent Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p> | <p>N/A</p> |
| <p>Land Contamination Mitigation Measures</p> <p>Conduct supplementary site investigation for TPH and PCB in soil samples.</p> | <p>CLP substation / after decommissioning</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>CAR, RAP, future sampling and analysis plan</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|-------------------|--|--|--------|
| Conduct confirmatory testing of PAH, dioxins and metals (the "Dutch List") in soil samples. | but prior to demolition during Phase I work | | | | |
| If fuel contamination underneath the underground fuel tank is suspected, confirmatory soil sampling will be carried out for analysis of TPH. | S1 to S6 / Phase II work | Contractor | Construction and Demolition stages | CAR, RAP, future sampling and analysis plan | N/A |
| Conduct confirmatory testing of tin and lead in soil samples to confirm all contaminated soil has been excavated. | Underneath the underground fuel tank / Phase II S3 and S5 / during Phase II work following excavation at each location | Contractor | Demolition stages | CAR, RAP, future sampling and analysis plan | N/A |
| Waste Management Mitigation Measures | | | | | |
| Good Site Practice Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354) and the Land (Miscellaneous Provision) Ordinance (Cap. 28) <ul style="list-style-type: none"> • Prepare a Waste Management Plan approved by the Engineers / Supervising Officer of the Project in accordance with Environment, Transport and Works Bureau Technical Circular (Works) (ETWBTC(W) 15/2003, Waste Management On Construction Sites • Nominate an approved person, such as site manager, to be responsible for good site practice, arrangements for collection and effective disposal of all types of wastes generated on-site to appropriate facility • Use waste haulier authorized or licensed to collect specific category of waste • Establish trip ticket system as contractual requirement (with reference to Works Branch | Project site/ design, construction and demolition stages | Contractor | Design, Construction and Demolition stages | Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354) Land (Miscellaneous Provision) Ordinance (Cap. 28) WDO, ETWBTC(W) 15/2003, WBTC No. 21/2002 | ✓ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|--|-------------------------|---|--|----------|
| <p>Technical Circular (WBTC) No. 21/2002) for monitoring of public fill and C&D waste at public filling facilities and landfills. Such activities should be monitored by the Environmental Team</p> <p>Provide training to site staff in terms of proper waste management and chemical waste handling procedures</p> <p>Separate chemical wastes for special handling and dispose them at licensed facility for treatment</p> <p>Establish routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors</p> <p>Provide sufficient waste disposal points and regular collection for disposal</p> <p>Adopt measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers</p> <p>Establish recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</p> | | | | | |
| <p>Waste Management Plan The contractor should submit the Waste Management Plan to Engineer/Supervising Officer of the Project for approval. The Waste Management Plan should describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the activities of the Project and indicate the disposal location(s) of all waste. A trip ticket system shall be included in the Waste Management Plan.</p> | <p>Project site / design, construction and demolition stages</p> | <p>Contractor</p> | <p>Design, Construction and Demolition stages</p> | <p>Waste Disposal Ordinance (Cap. 354)</p> | <p>✓</p> |
| <p>Waste Reduction Measures • Minimize the damage or contamination of construction material by proper storage and site practices</p> <p>• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste • Prior to disposal of</p> | <p>Project site / construction and demolition stages</p> | <p>Agent Contractor</p> | <p>Construction and Demolition stages</p> | <p>WBTC No. 32/92, 5/98 and 19/99</p> | <p>✓</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|--|--|--------|
| <p>C&D waste, wood, steel and other metals should be separated for reuse and / or recycling to minimize the quantity of waste to be disposed of to landfill.</p> <ul style="list-style-type: none"> Minimize use of wood and reuse non-timber formwork to reduce the amount of C&D waste Recycle any unused chemicals or those with remaining functional capacity as far as practicable As far as practicable, segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal Encourage collection of aluminum cans, plastic bottles and packaging material (e.g. carton boxes) and office paper by individual collectors, separate labeled bins should be provided to help segregate this waste from other general refuse generated by the work force <p>Excavated Material Rock and soil generated from excavation should be reused for site formation as far as possible. In addition, excavated material from foundation work can be reused for landscaping as far as practicable to avoid disposal off-site.</p> <p>Construction and Demolition Material Careful design, planning and good site management can minimize over-ordering and generation of waste materials such as concrete, mortar and cement grouts. Standard formwork should be used as far as practicable, wooden formwork should be replaced by metal ones whenever possible. Alternatives such as plastic fencing and reusable site office structures can also minimize C&D waste generation. The contractor should recycle as much as possible of the C&D material on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Materials such as concrete and masonry can be</p> | | | | | |
| | Project site / construction and demolition stages | Contractor | Construction and Demolition stages | WBTC 12/2000 | ✓ |
| | Project site / construction and demolition stages | Contractor | Design, Construction and Demolition stages | WBTC 5/98 and 19/99 | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|------------------------------------|--------------------------|--|------------|
| <p>rushed and used as fill and steel reinforcing bar can be used by scrap steel mills. Different areas of sites should be designated for such segregation and storage. To maximize landfill life, government policy discourages the disposal of C&D materials with more than 20% inert material by volume (or 30% inert material by weight) at landfill. Inert C&D material (public fill) should be directed to an approved public filling area, where it has the added benefit of offsetting the need for removal of materials from borrow areas for reclamation purposes.</p> | | | | | |
| <p>Contaminated Material – Further Contamination investigation After decommissioning but prior to demolition of the Existing Crematorium, further contamination investigation should be carried out to confirm the quality and quantity of ash waste, building structures and contaminated soil requiring treatment and disposal. Further contamination investigation shall provide information on the extent of contamination (DCM / HMCM / PAHCM) at cremators / flues / chimney as well as the quantity of contaminated materials requiring treatment and disposal. Regarding ACM, future AIR, AMP/AAP should be submitted to EPD for approval under the APCO. Asbestos investigation / abatement (including the preparation of AIR and AAP) should be carried out by registered asbestos consultant and contractor. A summary of requirement is given below:</p> | <p>CLP secondary substation / prior to Phase I demolition; cremator room in Existing Crematorium / prior to Phase II demolition</p> | <p>Contractor</p> | <p>Demolition stages</p> | <p>ProPECC PN 3/94</p> | <p>N/A</p> |
| <p>Location</p> | <p>Investigation Parameter</p> | <p>Investigation Period</p> | | | |

| Recommended Mitigation Measures | | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|---------------------|-------------------|--------------------|--|--------|
| remotors/ ue/chimney id rrounding reas | Asbestos (building structure) | Phase II | | | | |
| LP :condary :bstation | PCB, TPH (soil samples) | Phase I | | | | |
| remotors/ ue/chimney id rrounding reas | Dioxins, heavy metals, PAH (ash waste) | Phase II | | | | |
| urface soil round xisting :rematorim | Dioxins, heavy metals, PAH (soil sample) | Phase II | | | | |
| urther contamination investigation shall provide information on the extent of contamination t cremators /flues / chimney as well as the quantity of ontaminated materials requiring reatment and disposal. | | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|-------------------------|--|------------|
| <p>Samples of ash/particulate matters should be collected from within the cremators (including the bottom ash), chimney walls, flues and surrounding area of the Existing Crematorium for analysis of dioxin, heavy metals and PAHs by a HOKLAS accredited laboratory. A consultant experienced in the abatement of chemical wastes particularly the handling of DCM, should be appointed in order to assist with the evaluation of the information and prepare an abatement plan for the ash waste. Such a plan shall be submitted to EPD and the Labour Department (LD) to establish an acceptable and safe method for these potentially hazardous wastes. The abatement plan should identify the method of abatement, the performance criteria for the protection of workers and the environment and any emergency procedures and contingency measures required.</p> | <p>Cremator room in Existing Crematorium / before demolition and after decommission</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>ProPECC PN 3/94</p> | <p>N/A</p> |
| <p>It must be ensured that the treatment of ash wastes will comply with all routine construction site safety procedures would apply as well as statutory requirements under the Occupational Safety and Health Ordinance and Factories and Industrial Undertakings Ordinance. Due to the difficulties in establishing permanent and effective engineering controls, the protection of workers is likely to be at the worker level. A safe system of work must be provided, and training and suitable personal protective equipment as well as hygienic decontamination facilities should be provided. It is recommended that the methods to be adopted by the contractor for disposal of the ash waste should be agreed with LD and EPD.</p> <p>Sufficient time should be allocated to abate all ash</p> | | | | <p>ProPECC PN 3/94</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|-------------------|--------------------|---|--------|
| <p>aste with DCM/HMCM/PAHCM. The contractor should ensure the implications of dust containing DCM/HMCM on air quality and workers health during the clean up work are mitigated. Since DCM is chemically related to Polychlorinated biphenyl (PCB) wastes, the requirements of the <i>Code of Practice on the Handling, Transportation and Disposal of (PCB) Wastes</i> should be referenced when developing the abatement plan.</p> | | | | Code of Practice on the Handling, Transportation and Disposal of (PCB) Wastes | |
| <p>land contamination site investigation was carried out under this EIA to determine disposal requirements for contaminated soil. Further site investigation on soil around CLP secondary substation is needed when decommissioned, which will be during Phase I of the works. In addition, confirmatory testing on DCM level in locations S1 to S6 will be required to identify the appropriate remediation and disposal requirements during Phase II of the works.</p> | Locations S1 to S6 in CAP / prior to Phase II demolition | | Demolition stage | | N/A |
| <p>Asbestos Containing Materials (ACM) further asbestos assessment should be carried out when access to the cremators /flue chimney is accessible after decommissioning and before demolition. An AMP should be prepared. The AAP should be prepared and submitted to EPD for approval prior to commencement of demolition works in accordance to the APCO. It is preferable to remove all ACM before actual demolition. A registered asbestos removal contractor should be employed to remove all ACM in accordance with the approved AAP which will be prepared in due course in accordance with the <i>Code of Practice (COP) on Asbestos Control for Safe</i></p> | Cremator room in Existing Crematorium / before demolition and after decommission | Contractor | Demolition stage | Code of Practice (COP) on Asbestos Control for Safe Handling of Low Risk ACM and Asbestos Work Using Full Containment or Mini Containment Method COP on Handling, Transportation and Disposal of | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|--|-------------------|--------------------|---|----------------------------|
| <p><i>Handling of Low Risk ACM and Asbestos Work Using Full Containment or Mini Containment Method</i> published by EPD. A registered asbestos consultant should also be employed to supervise abatement works. For the disposal of ACM, the contractor should observe the <i>COP in Handling, Transportation and Disposal of Asbestos Waste</i> under the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>.</p> <p>Dioxin Containing Materials (DCM) / Heavy Metal Containing Materials (HMCM) / Polycyclic Aromatic Hydrocarbon Containing Materials (PAHCM) from Demolition of the Existing Crematorium</p> <p>Proposed Contamination Classification for Ash Waste with DCM/HMCM</p> | <p>Crematorium room in Existing Crematorium / before demolition and after decommission</p> | <p>Contractor</p> | <p>Demolition</p> | <p>Asbestos Waste under the Waste Disposal (Chemical Waste) (General) Regulation APCO</p> <p>ProPECC PN3/94 USEPA dioxin assessment criterion</p> | <p>N/A</p> |
| <p>Classification of Contamination</p> | <p>Dioxin Level in Ash Waste</p> <p>Heavy Metal Level in Ash Waste</p> | | | | |
| <p>Low/Non Contaminated by DCM / HMCM / PAHCM</p> | <p>< 1 ppb TEQ</p> | | | | <p>< Dutch "B" List</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|-----------------------------------|-------------------|-------------------------|--|------------|
| <p>moderately severely contaminated AHCM</p> <p>AHCM</p> | <p>≥ Dutch "B" List</p> | | | | |
| <p>moderately contaminated AHCM</p> | <p>≥ 1 and <10 ppb TEQ</p> | | | | |
| <p>moderately contaminated AHCM</p> | <p>Any level</p> | | | | |
| <p>moderately contaminated AHCM</p> | <p>≥ 10 ppb TEQ</p> | | | | |
| <p>moderately contaminated AHCM</p> | <p>Any level</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>APCO</p> | <p>N/A</p> |

Demolition, Handling, Treatment and Disposal of Low/Non-Contaminated DCM / AHCM / AHCM from Demolition of Existing Crematorium

Where the ash waste contains low/non contaminated DCM/AHCM/PAHCM, the contractor should avoid ash waste becoming airborne during demolition. General dust suppression measures mentioned in Section 4 should be followed. All such ash waste can be directly disposed of at landfill.

Subject to the findings of the further asbestos investigation, building structures where such ash waste is found but contaminated with asbestos should be dealt in accordance to 7.7.16.

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|-------------------|-------------------------|---|------------|
| <p><i>Demolition, Handling, Treatment and Disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM / PAHCM from Demolition of the Existing Crematorium</i></p> <p>Procedure on demolition, handling, treatment and disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM PAHCM is listed below</p> | <p>Crematorium room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |
| <p>Item</p> | <p>Procedure</p> | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---------------------|-------------------|--------------------|--|--------|
| <p>ite reparation</p> <p>The contractor should ensure the impacts of dust containing dioxin and/or heavy metals on air quality and workers health during the handling and transportation of the contaminated materials are mitigated. Except the cremators/flue/chimney, all removable items where moderately/severely DCM or moderately/severely contaminated HMCM / PAHCM is identified should be removed as far as practicable to avoid obstructing the decontamination activities. Preliminary site decontamination of all debris shall be carried out using HEPA vacuum cleaner. The top portion of the chimney above the roof shall be enclosed by a chamber with three layers of polyethene sheets. At the entrance to the cremators /flues /chimney, a 3-chamber decontamination unit shall be constructed for entry and exit from the work area. The 3-chamber decontamination unit shall comprise a dirty room, a shower room and a clean room of at least 1m x 1m base each with 3 layers of fire retardant polyethene sheet where all workers shall carry out decontamination procedures before leaving the work area. Warning signs in both Chinese and <i>English should be put up in conspicuous areas.</i></p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|--|-------------------|-------------------------|---|------------|
| <p>All workers shall wear full protective equipment, disposable protective coverall (such as Tyvek) (with hood and shoe covers), nitrile gloves, rubber boots (or boot covers), and full-face positive pressure respirators equipped with a combination cartridge that filters particulate and removes organic vapour. The organic vapour protection is an added protection against the unlikely exposure to any vapour.</p> | | | | | |
| <p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMC/M / PAHCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.10) should be implemented prior to the above site preparation.</p> | | | | | |
| <p>Decontamination, demolition and handling</p> | <p>Crematorium room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>landfill site.</p> <p>After completion of removal, decontaminate all surfaces by HEPA vacuum.</p> <p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMCM / PAHCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.16) should be implemented prior to the above decontamination, demolition and handling measures.</p> | | | | | |
| <p>Treatment</p> <p>The ash waste contains dioxin/heavy metals and in its untreated state would be classified as a chemical waste under the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>. While the quantity of DCM/HMCM is not expected to be significant, the levels of dioxin and heavy metals would affect the treatment option. Immobilization of the contaminated materials by mixing with cement followed by disposal at landfill (if landfill disposal criteria can be met) would be the most preferable option.</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---------------------|-------------------|--------------------|--|--------|
| <p>Rather than treating the already incinerated ash waste by incineration, the ash waste with moderately contaminated DCM or moderately/severely contaminated HMCM / PAHCM should be collected and stabilized to meet landfill disposal criteria of the Facilities Management Group (FMG) of EPD.</p> <p>In this case it is envisaged that the process would involve collection and mixing of the ash waste with cement. Pilot mixing and TCLP tests should be carried out to establish the appropriate ratio of cement to ash waste to the satisfaction of EPD. It is envisaged that the pilot tests would involve the mixing of say 5%, 10% and 15% ratios of cement to ash waste and three replicate of 300 mm cube blocks for each ratio. TCLP tests should then be used to establish the correct ratio of cement to ash waste to the satisfaction of EPD.</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|-------------------------|---|------------|
| <p>disposal</p> <p>After immobilization of the ash waste by mixing with cement in the correct ratio as determined by the pilot mixing and TCLP test, the waste materials should be placed inside polyethylene lined steel drums for disposal at landfill.</p> <p>Transparent plastic sheeting of 0.15 mm thickness low-density polyethene or PVC should be employed. The drums should be 16 gauge steel or thicker and fitted with double bung fixed ends adequately sealed and well labelled in new or good condition. The drums should be clearly marked 'DANGEROUS CHEMICAL WASTE' in English and Chinese. Prior agreement of the disposal criteria from the FMG of EPD and agreement to disposal from the landfill operator must be obtained.</p> <p>As a fall back option, if the landfill disposal criteria cannot be met after immobilization of the ash waste, disposal at the CWTC should be considered.</p> <p>The building structures will be disposal of at landfill.</p> | <p>Cremator room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|-------------------|-------------------------|---|------------|
| <p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMC/M / PAH/M is found, relevant disposal measures for building structures described in the AAP (see 7.7.16) should be implemented instead.</p> <p><i>Demolition, Handling, Treatment and Disposal of Severely Contaminated DCM from Demolition of the Existing Crematorium</i></p> <p>Procedure for demolition, handling, treatment and disposal of Severely Contaminated DCM is listed below</p> | <p>Crematorium room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |
| <p>Item Site Preparation</p> <p>Procedure Except the cremators/flue/chimney, all removable items where severely contaminated DCM is identified should be removed from the crematorium room as far as practicable to avoid obstructing the decontamination activities. Preliminary site decontamination of all debris shall be carried out using HEPA vacuum cleaner. The walls, floor and ceiling of the crematorium room where severely contaminated DCM located shall be lined with 3 layers of fire retardant polyethylene sheets. The top portion of the chimney above the roof shall be enclosed by a chamber with</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---------------------|-------------------|--------------------|--|--------|
| <p>three layers of polyethylene sheets. At the entrance to the cremators/flues/chimney, a 3-chamber decontamination unit shall be constructed for entry and exit from the work area. The 3-chamber decontamination unit shall comprise a dirty room, a shower room and a clean room of at least 1m x 1m base each with 3 layers of fire retardant polyethylene sheet where all workers shall carry out decontamination procedures before leaving the work area. Warning signs in both Chinese and English should be put up in conspicuous areas.</p> | | | | | |
| <p>Air movers should be installed at the cremator room, and at the bottom of the chimney to exhaust air from the work area. A stand-by air mover shall also be installed with each of the air movers. Sufficient air movement shall be maintained to give a minimum of 6 air changes per hour to the work area, and maintain a negative pressure of 0.05-0.15 inches of water within the work area throughout the entire course of the decommissioning works. A pressure monitor with printout records and audible alarm shall be installed at an easily</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------|-------------------------|---|------------|
| <p>accessible location to demonstrate that negative pressure is maintained. New pre-filters and HEPA filters shall be used on the air movers.</p> <p>A copy of the maintenance records of the air movers should be kept on site for inspection upon request. The appointed contractor shall also check the differential pressure of the air mover to make sure the filter is not blocked.</p> <p>A differential pressure above 0.2 inches of water indicates that the filters would need to be changed.</p> | | | | | |
| <p>Smoke Test: before commencement of the decommissioning work, a smoke test with non-toxic smoke shall be carried out to ensure the air-tightness of the containment. Also check whether there are stagnant air pockets indicated by an aggregate of smoke that cannot effectively be extracted. After a successful test, switch on the air mover to exhaust smoke from the containment and to give a minimum of 6 air changes per hour, and check visually to see that the filters screen out the smoke effectively and if the pressure gauges read normal. If</p> | <p>Cremator room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>not, the air mover shall be sealed up and returned to the supplier workshop for necessary servicing, and replaced by a tested air mover. The normal reading pressure range for maintaining 6 air changes per hour shall be 1.5-4 mm/0.05-0.15 inches of water or equivalent (negative pressure). The audible alarm's integrity should also be checked and the trigger shall be at <1.5 mm/0.05 inches of water (negative pressure). Otherwise securely seal up all openings before switching off the air mover.</p> | | | | | |
| <p>Treatment of Waste/Workers Safety Protection: the contractor shall be required to register as a Chemical Waste Producer. All workers shall wear full protective equipment, disposable protective coverall (such as Tyvek) (with hood and shoe covers), nitrile gloves, rubber boots (or boot covers), and full-face positive pressure respirators equipped with a combination cartridge that filters particulate and removes organic vapour. The organic vapour protection is an added protection against the unlikely</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|-------------------------|---|------------|
| <p>exposure to any vapour as a necessary measure.</p> <p>If ACM is identified in building structures where severely contaminated DCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.16) should be implemented prior to the above site preparation.</p> | | | | | |
| <p>The cremators/flue/chimney shall be removed from top down starting from the chimney. Any ash or residues attaching to the cremators/flue/chimney or any other building structures shall be removed by scrubbing and HEPA vacuuming.</p> <p>The detached sections of the building structures where severely contaminated DCM is located shall be wrapped with 2 layers of fire retardant polyethylene sheets. A third layer shall then be wrapped and secured with duct tape. Decontaminate the outer layer of the wrapped flue sections by wet wiping.</p> | <p>Cremator room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |
| <p>Wastes generated from the containment or decontamination unit including the fire retardant polyethylene sheets, protection clothing of the workers such as the coverall, nitrile glove, rubber boots</p> | <p>Cremator room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>and materials used for wet wiping shall be disposed of at landfill site.</p> <p>The quantity of wastewater generated from the decontaminated process will be very small but the contractor should take precautionary measures as to minimize the quantity of contaminated water arising. Nevertheless, if any contaminated wastewater needs to be discharged out of the site, it has to be properly treated to WPCO requirements with prior agreement from EPD on discharge standards.</p> | | | | | |
| <p>After completion of removal, decontaminate the surface where severely contaminated DCM was located, including the wrapped incinerator furnace and flue sections left within the containment, by wet wiping and HEPA vacuum.</p> <p>Then spray the innermost layer of the fire retardant polyethylene sheet covering the wall, ceiling and floor with PVA. Upon drying, peel off this innermost layer of the polyethylene sheet covering the containment and dispose of at landfill site.</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------|-------------------------|---|------------|
| <p>Repeat the above decontamination procedure for the second innermost layer of fire retardant polyethene sheet by wet wiping and HEPA vacuuming. After spraying with PVA, peel off this second innermost layer of the polyethene sheet covering the wall, ceiling and floor and dispose of at landfill site. Finally, the last layer of polyethene sheet shall then be taken down after spraying with PVA and be disposed as contaminated wastes.</p> | | | | | |
| <p>If ACM is identified in building structures where severely contaminated DCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.16) should be implemented prior to the above decontamination, demolition and handling measures.</p> | | | | | |
| <p>Treatment and disposal</p> | <p>Cremator room in Existing Crematorium / demolition</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>Waste Disposal (Chemical Waste) (General) Regulation</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>Waste to be Disposed of at Landfill: other wastes including the building structures and its associated panels as well as wastes generated from this decommissioning works are also considered as contaminated waste and shall be disposed of at a designated landfill. Wastes generated from this decommissioning works refer to the polyethene wrapping sheets for the building structures, waste generated from the dismantlement of the containment and decontamination units, and cloth used in wet wrapping, etc. as previously described in this section. They shall be placed into appropriate containers such as drums, jerricans, or heavy duty and leak-proof plastic as a prudent approach. A disposal permit has to be obtained from the Authority. The disposal trip ticket is required to be made available as record after disposal.</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------|--------------------|--|--------|
| <p>If ACM is identified in building structures where severely contaminated DCM is found, relevant disposal measures for building structures described in the AAP (see 7.7.16) should be implemented in prior to the above disposal measures.</p> | | | | | |
| <p><i>Dioxin Containing Materials (DCM) / Heavy Metal Containing Materials (HMCM)</i> <i>Polyaromatic Hydrocarbon Containing Materials (PAHCM) / Total Petroleum Hydrocarbon Containing Materials (TPHCM) / Polychlorinated Biphenyls Containing Materials (PCBCM) from Soil Remediation at the Project Site</i> According to the CAR and RAP, less than 100 mg of soil would require disposal at landfill. Relevant health and safety procedure, waste disposal requirements and compliance report are as detailed in Figure 6.3. Mitigation measures to avoid fugitive dust emission mentioned in 5.4.7.2 should also be observed.</p> | Locations S3 and S5 of CAP / demolition | Contractor | Demolition stage | ProPECC PN3/94 APCO | N/A |
| In addition, after decommissioning but before demolition of the Existing Crematorium, further investigations during Phase I of the works at the vicinity of CLP secondary substation should also be carried out to determine if additional remediation (in addition to the current RAP) is required. Confirmatory test on levels of DCM, HMCM and PAHCM in locations S1 to S6 during Phase II of the works is also required to determine any further remediation /treatment/disposal. In addition, the ash waste in cremator/chimney/flues should also be | CLP secondary substation / after decommission and before demolition | Contractor | Demolition stage | ProPECC PN3/94 | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|------------------------------|-------------------|--------------------|--|--------|
| <p>lected for the testing of DCM/HMCM/PAHCM ring Phase II of the works. The mping and analysis plan should be prepared and mitted to EPD for approval.</p> | | | | | |
| <p>l the aforementioned ACM / DCM / HMCM / AHCM / TPHCM / PCB CM are classified chemical waste. In addition to the measures entioned above, the packaging, labelling d storage practices of chemical waste as stipulated the following paragraphs should also applied to these contaminated materials.</p> | Project site / demolition | Contractor | Demolition stage | Waste Disposal (Chemical Waste) (General) Regulation | N/A |
| <p>emical Waste l the chemical waste should be handled according to e <i>Code of Practice on the ckaging, Labelling and Storage of Chemical astes</i>. The Contractor should register as a emical waste producer. The chemical waste should stored and collected by an approved ntractor for disposal at a licensed facility in cordance with the <i>Waste Disposal (Chemical aste) (General) Regulation</i>. Containers used for the range of chemical waste should:</p> | Project site / demolition | Contractor | Demolition stage | Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Waste Disposal (Chemical Waste) (General) Regulation. | ✓ |
| <p>Be suitable for the substance they are holding, resistant to corrosion, maintained in good condition, and securely closed; Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and Display a label in English and Chinese in accordance with instructions prescribed in <i>Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation</i>.</p> | | | | | • |
| <p>ie storage area for chemical waste should: Be clearly labeled and used solely for the storage of chemical waste;</p> | | | | | |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|-----------------------------------|--|--------|
| <ul style="list-style-type: none"> Be enclosed on at least 3 sides; Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; Have adequate ventilation; Be covered to prevent rainfall from entering (water collected within the bund must be tested and disposal as chemical waste if necessary); and Be properly arranged so that incompatible materials are adequately separated. <p>The chemical waste should be disposed of by:</p> <ul style="list-style-type: none"> A licensed waste collector; A facility licensed to receive chemical waste, such as the CWTC at Tsing Yi, which offers chemical waste collection service and can supply the necessary storage containers; and/or A waste recycling plant as approved by EPD. | Project site / demolition | Contractor | Demolition stage | Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Waste Disposal (Chemical Waste) (General) Regulation. | N/A |
| <p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separated from C&D and chemical wastes. A reliable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D and chemical wastes, on a daily or every second day basis to minimize odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law. Aluminum cans are often recovered from the waste stream by individual collectors if they are</p> | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | | √ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|---------------------------------|--|--|------------|
| <p>segregated or easily accessible. Therefore, separately labeled bins for deposit of these cans should be provided if feasible. Similarly, plastic bottles and carton package material generated on-site should be separated for recycling as far as practicable. Site office waste should be reduced through recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered if one is available.</p> | | | | | |
| <p>Conduct supplementary site investigation for asbestos in building structures and for dioxins, metals (the "Dutch List") and PAH in ash/particular matter samples.</p> | <p>Around existing cremators, chimney and flues inside cremator room / after decommissioning but prior to demolition during Phase II work</p> | <p>Contractor</p> | <p>Demolition stage</p> | <p>AIR, AMP/AAP to be submitted under APCO, future supplementary site investigation plan</p> | <p>N/A</p> |
| <p>Landscape and Visual Mitigation Measures</p> | | | | | |
| <p>The identification of the landscape and visual impacts will highlight those sources of conflict requiring design solutions or modifications to reduce the impacts and, if possible, blend the development with the surrounding landscape. The proposed landscape mitigation measures will be described and illustrated by means of site plans and photomontage and take into account factors including:</p> <ul style="list-style-type: none"> • Screen planting • Transplanting of mature trees with good amenity value where appropriate • Conservation of topsoil for reuse | <p>Project site / design, construction and demolition stages</p> | <p>Contractor/FEH D/Arch SD</p> | <p>Construction and Demolition stage</p> | <p>EIAO-TM</p> | <p>N/A</p> |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|--|--------------------|-----------------------------------|--|--------|
| <ul style="list-style-type: none"> • Sensitive alignment of structures to minimise disturbance to surrounding vegetation • Reinstatement of areas disturbed during construction • The design and finishes / colours of architectural and engineering structures such as terminals and pylons • Existing views, views of the development with no mitigation, views with mitigation at day one of operation and after 10 years of operation | | | | | |
| <p>Tree transplanting: The tree survey has identified the trees which will be affected by the development and which could be considered for transplanting prior to commencement of construction work. Felling is considered as a last resort and every effort should be made to transplant the many good trees of high amenity value to either nearby suitable sites within the cemetery or to available space in FEHD's Wo Hop Shek Crematorium pending identification of an alternative site. The feasibility of transplanting will depend on a number of factors such as size, health and species of the tree. Adequate time (a minimum of 4 months) should be allowed for preparing trees for transplanting. Weekly inspection of tree protection measures as well as monitoring of tree transplant operations during both phases should be implemented. Particular care should be taken to save the 9 nos. mature and semi-mature protected tree species and 12 nos. protected shrub and immature tree species identified. To give the protected species the best possible chance of survival it is recommended that they are relocated to sheltered and well maintained planted</p> | Project site / construction and demolition as well as operation stages | Contractor/Arch SD | Construction and Demolition stage | WBTC 7/2002, WBTC 14/2002, EIAO-TM | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|--|---|-------------------|-----------------------------------|--|--------|
| <p>areas within the cemetery. The following measures for tree transplanting should be adopted:</p> <p>(a) Appoint a landscape contractor for the establishment and maintenance of the transplanted trees as well as any new tree planting for 12 months upon completion of the works.</p> <p>(b) Careful co-ordination of Phase I and II works to allow tree transplanting from Phase II site directly to Phase I site.</p> | | | | | |
| <p>Tree protection: Trees to be retained adjacent to works areas will be carefully protected by strong hoarding and if necessary additional protection to individual tree trunks to avoid damage by machinery. The hoarding will also prevent contractors from compacting soil around tree roots or dumping materials. Reference should be made to the guidelines for tree protection in the Government publication "Tree Planting and Maintenance in Hong Kong".</p> | Project site / upon construction and demolition stages | Arch SD | Construction and Demolition stage | WBTC 7/2002, WBTC 14/2002, EIAO-TM | N/A |
| <p>Topsoil conservation: Any topsoil excavated during construction will be carefully saved and stored to one side of the works area for reuse upon completion.</p> | Project site / upon completion of construction works for each phase | Arch SD | Construction and Demolition stage | WBTC 7/2002, WBTC 14/2002, EIAO-TM | N/A |
| <p>Replanting: Upon completion planting of ornamental trees and shrubs will be provided to the periphery of the new crematorium building to help screen and soften the overall appearance of the structure. In addition, a reprovisioned memorial garden with a lotus pond and ornamental planting will be incorporated in the deck area of the building. Since the majority of the new planting will be on the deck structure the selection of species will be more limited</p> | Project site / upon completion of construction works for each phase | Arch SD | Construction and Demolition stage | WBTC 7/2002, WBTC 14/2002, EIAO-TM | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-----------------------------|-----------------------------------|---|--------|
| <p>with emphasis on smaller trees and ornamental shrubs comply with loading restrictions. Notwithstanding this site constraint on tree selection, a minimum of 1.2m soil depth will be provide for tree planting on the podium / roof structure for healthy establishment of the new tree planting.</p> <p>Weekly inspections of tree protection measures as well as monitoring of tree transplant operations.</p> | Project site / Phase I & II works | Project Landscape Architect | Construction and Demolition stage | Landscape Master Plan, Tree Planting and Maintenance in Hong Kong | N/A |
| <p>Water Quality Mitigation Measures</p> <p>Construction and Demolition Phases – General</p> <p>To safeguard the water quality of the WSRs potentially affected by the Project works, the Contractor should implement appropriate mitigation measures with reference to the <i>Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94)</i> published by EPD. Such measures are highlighted as follows.</p> | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | ✓ |
| <p>Construction and Demolition Phases - Construction and Demolition Run-off and Drainage</p> <p>Exposed soil areas should be minimized to reduce the potential for increased siltation, contamination of run-off and erosion. Any effluent discharge from the Project site is subject to the control of Water Pollution Control Ordinance (WPCO) discharge license and should be obtained to meet the discharge standard set out in the relevant license. In addition, no site run-off should enter the stream on the eastern side of the Project site. Run-off impacts associated with the construction and demolition</p> | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | ✓ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>activities can be readily controlled through the use of appropriate mitigation measures, which include:</p> <ul style="list-style-type: none"> • Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond • Boundaries of earthworks should be marked and surrounded by dykes • Open material storage stockpiles should be covered with tarpaulin or similar fabric to prevent material washing away • Exposed soil areas should be minimized to reduce the potential for increased siltation and contamination of run-off • Earthwork final surfaces should be well compacted and subsequent permanent work should be immediately performed • Use of sediment traps wherever necessary • Maintenance of drainage systems to prevent flooding and overflow | | | | | |
| <p>All temporary drainage pipes and culverts provided to facilitate run-off discharge should be adequately designed to facilitate rapid discharge of storm flows. All sediment traps should be regularly cleaned and maintained. The temporarily inverted drainage should be reinstated to its original condition, when the construction/demolition work is completed.</p> | | | | | √ |
| <p>Sand and silt in wash water from wheel washing facilities should be settled out and removed from discharge into temporary drainage pipes or culverts. A section of the haul road between the wheel washing bay and the public road should be paved with backfill to prevent wash</p> | | | | | N/A |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---|-------------------|-----------------------------------|--|--------|
| water or other site run-off from entering public road drains. | | | | | |
| Oil interceptors should be provided in the drainage system downstream of any significant oil and grease sources. They should be regularly maintained to prevent the release of oil and grease into the storm water drainage system after accidental spillage. The interceptor should have a bypass to prevent flooding during periods of heavy rain, as specified in <i>ProPECC PN 1/94</i> . | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | N/A |
| Construction and Demolition Phases - General Construction and Demolition Activities All the solid waste and chemical waste generated on site should be collected, handled and disposed of properly to avoid affecting the water quality of the nearby WSRs. The proper waste management measures are detailed in S.7.7.5-S.7.7.6. | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | ✓ |
| Construction and Demolition Phases - Sewage Generated from On-site Workforce The sewage from construction work force is expected to be handled by portable chemical toilets if the existing toilets in the Project site are not adequate. Appropriate and adequate portable toilets should be provided by licensed contractors who will be responsible for appropriate disposal and maintenance of these facilities. | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | ✓ |
| Construction and Demolition Phases - Soil Remediation Activities Mitigation measures will need to be implemented during the currently identified soil remediation activities. If further land contamination investigation results (at CLP secondary | Project site / construction and demolition stages | Contractor | Construction and Demolition stage | ProPECC PN 1/94 | ✓ |

| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>substation during Phase I and at locations S1 to S6 during Phase II) confirm the needs for further soil remediation prior to demolition of the Existing Crematorium, relevant water quality mitigation measures (in addition to the current RAP) will need to be identified and implemented by the contractor. In addition, the mitigation measures recommended for minimizing water quality impacts for construction and demolition run-off and drainage as well as for general construction and demolition activities should also be adopted where applicable.</p> <p>In order to avoid impacts on water quality during further remedial works, care will be taken to minimise the mobilisation of sediment during excavation and transport. Measures to be adopted will be based on the recommendations set out in <i>Practice Note for Professional Persons ProPECC PNI/94 "Construction Site Drainage"</i>. The results of the site investigation suggest that there is unlikely to be any requirement for dewatering of excavations, since groundwater was not encountered in any of the exploratory holes.</p> <p>The contractor carrying out the remedial works will be required to submit a method statement detailing the measures to be taken to avoid water quality impacts. Typical measures would include:</p> <ul style="list-style-type: none"> • Carry out the works during the dry season (i.e. October to March) if possible • Use bunds or perimeter drains to prevent run-off water entering excavations • Sheet or otherwise cover excavations whenever | | | | | |

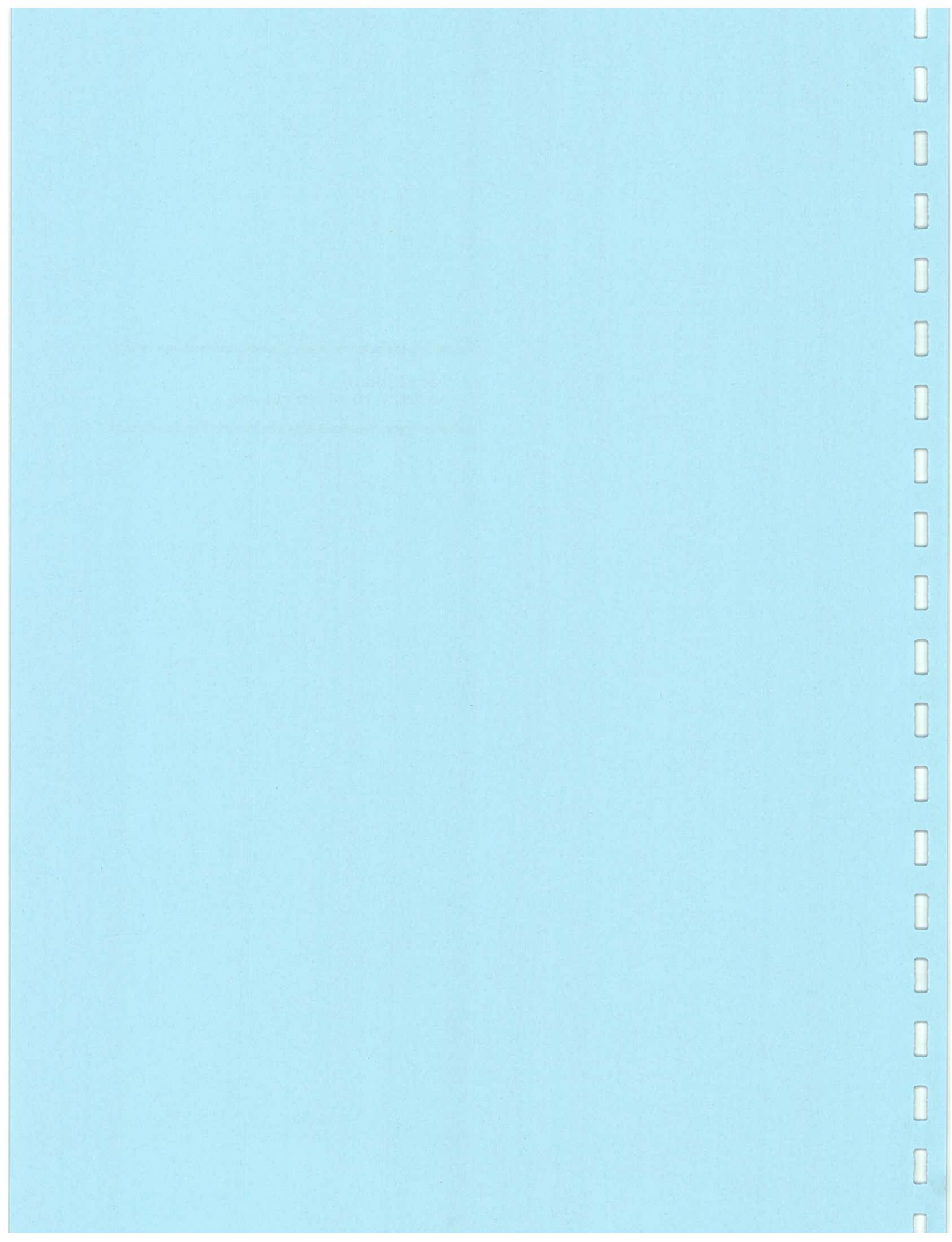
| Recommended Mitigation Measures | Location and Timing | Who to Implement? | When to Implement? | What Requirements or Standards to Achieve? | Status |
|---|---------------------|-------------------|--------------------|--|--------|
| <p>rainstorms are expected to occur</p> <ul style="list-style-type: none"> • Minimise the requirements for stockpiling of material and ensure any stockpiles are covered • Temporary on-site stockpiling of contaminated materials should be avoided, all excavated contaminated soils/materials should be disposed of on a daily basis • Ensure that any discharges to storm drains pass through an appropriate silt trap | | | | | |

Note:

- √ Compliance of mitigation measure
- × Non-compliance of mitigation measures
- Non-compliance but rectified by the contractor
- N/A Not applicable



APPENDIX K
EVENT AND ACTION PLANS



Appendix K — Event and Action Plans

Table K.1 Event and Action Plan for Air Quality

| EVENT | ACTION | | | CONTRACTOR |
|---|---|--|---|--|
| | ET | IEC | AR | |
| ACTION LEVEL | | | | |
| 1. Exceedance for one sample | <ol style="list-style-type: none"> Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC and AR; Repeat measurement to confirm finding; Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works. | <ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method. | <ol style="list-style-type: none"> Notify Contractor. | <ol style="list-style-type: none"> Rectify any unacceptable practice; Amend working methods if appropriate. |
| 2. Exceedance for two or more consecutive samples | <ol style="list-style-type: none"> Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC and AR; Repeat measurements to confirm findings; Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and AR; If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the AR on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. | <ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate. |
| LIMIT LEVEL | | | | |
| 1. Exceedance for one sample | <ol style="list-style-type: none"> Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC, AR and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; Assess effectiveness of Contractor's remedial actions and keep IEC, AR and EPD informed of the results. | <ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the AR on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. | <ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate. |
| 2. Exceedance for two or more consecutive samples | <ol style="list-style-type: none"> Notify Contractor, IEC, AR and EPD; Identify source, investigate the cause of exceedance and propose remedial measures; Repeat measurement to confirm findings; Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; | <ol style="list-style-type: none"> Discuss amongst AR, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the AR accordingly; Supervise the implementation of remedial measures. | <ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly | <ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Resubmit proposals if problem |

| EVENT | ACTION | | | | CONTRACTOR |
|---|--------|---|--|---|------------|
| ET | IEC | AR | | | |
| 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and AR to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, AR and EPD informed of the results; 8. If exceedance stops, cease additional monitoring. | | 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. | | still not under control; 5. Stop the relevant portion of works as determined by the AR until the exceedance is abated. | |

Table K.2 Event and Action Plan for Construction Noise

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

