

**Highways Department**

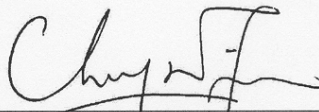
**Route 8 (previously known as Route 9) between  
Cheung Sha Wan & Sha Tin**

**Contract No. HY/2003/10 - Environmental Team for  
Lai Chi Kok Viaduct and Eagle's Nest Tunnel**

**Monthly EM&A Report  
Part I – Lai Chi Kok Viaduct (Version 1)**

September 2005

Approved By

  
\_\_\_\_\_  
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

**CINOTECH CONSULTANTS LTD**

Room 1602-1610, Delta House,  
3 On Yiu Street,

Shatin, NT, Hong Kong

Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
Introduction.....	1
Environmental Monitoring and Audit Works .....	1
Environmental Licenses and Permits.....	1
Key Information in the Reporting Month .....	1
<b>1. INTRODUCTION .....</b>	<b>3</b>
Background .....	3
Project Organizations.....	4
Construction Programme .....	4
Summary of EM&A Requirements .....	5
<b>2. AIR QUALITY .....</b>	<b>6</b>
Monitoring Requirements .....	6
Monitoring Locations .....	6
Monitoring Equipment.....	6
Monitoring Parameters, Frequency and Duration.....	6
Monitoring Methodology and QA/QC Procedure .....	7
Results and Observations.....	8
<b>3. NOISE.....</b>	<b>9</b>
Monitoring Requirements .....	9
Monitoring Locations .....	9
Monitoring Equipment.....	10
Monitoring Parameters, Frequency and Duration.....	10
Monitoring Methodology and QA/QC Procedures.....	10
Maintenance and Calibration .....	11
Results and Observations.....	11
<b>4. ENVIRONMENTAL AUDIT .....</b>	<b>12</b>
Site Audits.....	12
Review of Environmental Monitoring Procedures .....	12
Status of Environmental Licensing and Permitting .....	12
Implementation Status of Environmental Mitigation Measures .....	12
Summary of Exceedances .....	15
Implementation Status of Event Action Plans .....	16
Summary of Complaints and Prosecutions .....	16
<b>5. FUTURE KEY ISSUES .....</b>	<b>17</b>
Key Issues for the Coming Month.....	17
Monitoring Schedule for the Next Month.....	17
Construction Program for the Next Month .....	17
<b>6. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>18</b>
Conclusions.....	18
Recommendations.....	18

## **LIST OF TABLES**

Table I	Summary Table for Events Recorded in the Reporting Month
Table II	Summary Table for Key Information in the Reporting Month
Table 1.1	Key Project Contacts
Table 2.1	Locations for Air Quality Monitoring
Table 2.2	Air Quality Monitoring Equipment
Table 2.3	Impact Dust Monitoring Parameters, Frequency and Duration
Table 3.1	Noise Monitoring Stations
Table 3.2	Noise Monitoring Equipment
Table 3.3	Noise Monitoring Parameters, Frequency and Duration
Table 4.1	Summary of Environmental Licensing and Permit Status
Table 4.2	Observations and Recommendations of Site Audit

## **LIST OF FIGURES**

Figure 1	Locations of Monitoring Stations
----------	----------------------------------

## **LIST OF APPENDICES**

A	Action and Limit Levels for Air Quality and Noise
B	Copies of Calibration Certificates
C	Environmental Monitoring Schedules
D	Wind Data
E	1-hour TSP Monitoring Results and Graphical Presentations
F	24-hour TSP Monitoring Results and Graphical Presentations
G	Noise Monitoring Results and Graphical Presentations
H	Summary of Exceedance
I	Site Audit Summary
J	Event Action Plans
K	Environmental Mitigation Implementation Schedule (EMIS)
L	Construction Programme
M	Complaint Log

## ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
CEDD	Civil Engineering and Development Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
HyD	Highways Department
IEC	Independent Environmental Checker
NOE	Notification of Exceedance
QA/QC	Quality Assurance / Quality Control
RE	Resident Engineer
RH	Relative Humidity
SLM	Sound Level Meter
TSP	Total Suspended Particulates

## EXECUTIVE SUMMARY

### Introduction

- This is the twenty-second monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin, Lai Chi Kok Viaduct & Eagle’s Nest Tunnel”. This report documents the findings of EM&A Works conducted in September 2005 for Contract No. HY/2003/01, Lai Chi Kok Viaduct (the Project).
- The major site activities undertaken in the reporting month included piling works, construction of pile caps and piers, slope works and segment erection works.

### Environmental Monitoring and Audit Works

- Environmental monitoring and audit works for the Project was performed regularly as stipulated in the updated EM&A Manual and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- Summary of the events and action taken in the reporting month is tabulated in **Table I**.

**Table I Summary Table for Events Recorded in the Reporting Month**

Parameter	No. of Events		No. of Events Due to the Project	Action Taken
	Action Level	Limit Level		
1-hr TSP	1*	0	0	Notification of exceedance was issued.
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A

**Remarks:** The exceedance was recorded on 12 Sept 05. However, based on the field observation and EPD’s API records, it was considered that the exceedance was due to poor ambient air quality and not related to the Project works.

### Environmental Licenses and Permits

- Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, the Water Discharge Licenses (WDLs) and the Construction Noise Permits (CNPs). Two new CNPs were issued to the Project in the reporting month.

### Key Information in the Reporting Month

- Summary of key information in this reporting month is tabulated in **Table II**.

**Table II Summary Table for Key Information in the Reporting Month**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---
<p><b><u>Future Key Issues:</u></b> Major site activities for the coming month include:</p> <ul style="list-style-type: none"> <li>• Utility diversions;</li> <li>• Pre-drilling works;</li> <li>• Piling works;</li> <li>• Construction of abutment, pile caps and columns;</li> <li>• Bulk excavation;</li> <li>• Soil nail installation;</li> <li>• Retaining wall construction;</li> <li>• Drainage works;</li> <li>• Segment erection; and</li> <li>• Launching gantry works.</li> </ul> <p>The anticipated environmental impacts will be mainly on dust generation and construction noise impact from slope works.</p>					

## 1. INTRODUCTION

### Background

- 1.1 Route 9 (Kowloon Section) (R9K) (hereinafter call the R9K-Project) forms part of the Route 9 between Cheung Sha Wan and Sha Tin (R9-CSWST) project, which will be a new expressway connecting West Kowloon and Sha Tin. It will be the fourth external link between Sha Tin and Kowloon and will form an important link between the northeast New Territories and the west Kowloon, Lantau Island and the western New Territories. R9K is being managed and implemented by the Highways Department (HyD).
- 1.2 The engineering design of R9K is covered under Agreement No. CE 50/98 “Route 9 between Cheung Sha Wan and Sha Tin – Design Construction Assignment”. The main consultant engaged under Agreement No. CE 50/98 is Maunsell Hyder Joint Venture (MHJV), who will act as the Engineer for the construction contracts. The works of R9K mainly comprise a 1.4km dual 3-lane Lai Chi Kok Viaduct from Lai Wan Interchange to Butterfly Valley; 0.5 km of dual 3-lane at-grade carriageway linking to the 2.1 km dual 3-lane twin-bore Eagle's Nest Tunnel with associated portal buildings; a toll plaza with an administration building located with the Sha Tin valley woodland; a ventilation building and an adit; associated noise barriers, noise enclosures, drainage, slope and landscape works; and electrical and mechanical works for the whole R9-CSWST. The remainder of the R9-CSWST forms the Sha Tin Section (R9S) of the project and is being managed and implemented separately by the Civil Engineering and Development Department (CEDD).
- 1.3 The R9-CSWST project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An environmental impact assessment (EIA) report has been prepared in 1998 for the R9-CSWST project (1998 R9 EIA) to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and cultural impacts, and identify possible mitigation measures.
- 1.4 An Updated Final EIA report was subsequently completed in August 1999 for the R9-CSWST project (1999 R9 EIA), to cater for some changes in R9K portion as mentioned in paragraph 1 in the report. The 1999 R9 EIA was endorsed by Environmental Protection Department (EPD) in November 1999. The 1998 R9 EIA and the 1999 R9 EIA (R9 EIA Reports) were included in the EIA register under the EIAO as report no. EIA-135/BC and AEIAR-022/1999 respectively. An Environmental Monitoring and Audit (EM&A) Manuals for each of the R9 EIA Reports (EM&A Manuals) were also included as part of the EIA reports in the register.
- 1.5 Subsequent to the endorsement of the R9 EIA Reports by EPD in November 1999, the project programme was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the project was then separated into the R9S and R9K portion. An Environmental Permit (EP) No. EP-103/2001 was issued on 17 September 2001 for R9K to the HyD as Permit Holder and a varied EP No. EP-103/2001/A was subsequently issued on 20 May 2003 for R9K (R9K EP) to HyD as Permit Holder. A varied EP-103/2001/C was recently issued on 22 July 2005.

- 1.6 The major construction activities of two civil contracts of the R9K project, Contract No. HY/2003/01 entitled “Route 9 – Lai Chi Kok Viaduct” and Contract No. HY/2003/02 entitled “Route 9 – Eagle’s Nest Tunnel and Associated Works”, were commenced in 15<sup>th</sup> December 2003 for completion in April 2007.
- 1.7 “Route 9” was recently re-titled as “Route 8 (previously known as Route 9)”. Cinotech Consultants Limited (Cinotech) was commissioned by HyD to undertake the Environmental Monitoring and Audit works for “Route 8 between Cheung Sha Wan and Sha Tin - Environmental Team (ET) for Lai Chi Kok Viaduct and Eagle’s Nest Tunnel (Contract No. HY/2003/10)”. Dr. Priscilla CHOY of Cinotech Consultants Ltd. was appointed as the ET Leader under Condition 2.2 of the EP. Mr. David YEUNG of CH2M-IDC Hong Kong Ltd. was appointed as the IEC under Condition 2.1 of the EP. This is the twenty-second monthly EM&A report summarizing the EM&A works for the Project in September 2005.

### **Project Organizations**

- 1.8 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Major Works Project Management Office (MWPMO) of Highways Department (HyD)
  - Engineer (E) – Maunsell-Hyder Joint Venture
  - Engineer’s Representative (ER) – Maunsell-Hyder Joint Venture
  - Environmental Team (ET) – Cinotech Consultants Limited
  - Independent Environmental Checker (IEC) – CH2M-IDC Hong Kong Limited
  - Contractor – NECSO Entrecanales Cubiertas, S.A.
- 1.9 The responsibilities of respective parties are detailed in Section 1.8.3 of the EM&A Manual (1999) of the Project.
- 1.10 The key contacts of the Project are shown in **Table 1.1**.

### **Construction Programme**

- 1.11 The site activities undertaken in the reporting month were:
- Utility diversions for piling works at Slip Road C;
  - Pre-drilling works for R6;
  - Piling works for Slip Road D;
  - Construction of abutments, pile caps and columns at Slip Roads B, C and D, Lai Wan Overpass and Main Viaduct;
  - Bulk excavation works and retaining wall construction at CCR-R1;
  - Bulk excavation works and soil nails installation at slope CCR-S1;
  - Bulk excavation works at CCR-R3;
  - Drainage works at Rest Garden area;
  - Segment erection for Main Viaduct, Slip Roads A and B;
  - Bored piling work at R3; and
  - Segment erection at Main Viaduct by launching gantry at night at Piers P6 and P7.



## Summary of EM&A Requirements

1.12 The EM&A programme requires construction phase monitoring for air quality and construction noise, and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

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

**Table 1.1 Key Project Contacts**

Party	Role	Name	Position	Phone No.	Fax No.
HyD	Permit Holder	Mr. K.T. Lee	SE3/R8K	2762 3684	2714 5198
		Mr. Albert Cheung	E6/R8K	2762 3598	
		Mr. L.C. Chung	E2/R8K	2762 3613	
MHJV	Engineer	Mr. Conrad Ng	Project Manager	2605 6262	2691 2649
	Engineer's Representative	Mr. D.F. Lilliman	CRE	2959 0010	2959 0290
		Mr. Henry Liu	SRE	2991 1068	
Mr. Joseph Chi	RE	2991 1034			
Cinotech	Environmental Team	Dr. Priscilla Choy	The ET Leader	2151 2089	3107 1388
		Mr. KK Chan	Audit Team Leader	2151 2077	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
CH2M-IDC	Independent Environmental Checker	Mr. David Yeung	Independent Environmental Checker	2872 2934	2507 2293
		Mr. Billy Yu	Assistant Independent Environmental Checker	2872 2949	
NECSO	Contractor	Mr. Rafael Rubio	Project Director	2956 3300	2956 3331
		Mr. Lawrence Kwok	QA/E Manager		
24-hour Emergency Hotline				2370 9200	-

1.13 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 4 of this report.

1.14 This report presents the environmental monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely dust and noise levels and audit works for the Project in September 2005.

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 Monitoring of 1-hour and 24-hour TSP was conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

### Monitoring Locations

- 2.2 One designated monitoring station, AM2 was selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring location, which is also depicted in **Figures 1**.

**Table 2.1 Locations for Air Quality Monitoring**

Monitoring Station	Description	Location
AM2	Lai Chi Kok Park Sports Centre	Rooftop

### Monitoring Equipment

- 2.3 **Table 2.2** summarizes the equipment used for the air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Model and Make	Quantity
Calibrator	GMW25; S/N: 1536	1
HVS Sampler	Graseby GMW Model GS2310 High Volume TSP Sampler and associated equipment and shelter	1

### Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period is shown in **Appendix C**.

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

## **Monitoring Methodology and QA/QC Procedure**

### Instrumentation

- 2.5 Graseby GMW Model GS2310 TSP High Volume Sampler (HVS) was employed for 1-hour & 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in Sections 2.2 to 2.4 of the EM&A Manual (1999).

### Operating/Analytical Procedures

- 2.6 Operating/analytical procedures for the operation of HVS were as follows:
- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
  - No two samplers were placed less than 2 meters apart.
  - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
  - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
  - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
  - No furnaces or incineration flues were nearby.
  - Airflow around the sampler was unrestricted.
  - The sampler was more than 20 meters from the drip line.
  - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.7 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.8 For TSP sampling, fiberglass filters (G810) were used.
- 2.9 The power supply was checked to ensure the sampler worked properly.
- 2.10 On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.11 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

- 2.12 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.13 The shelter lid was closed and secured with the aluminum strip.
- 2.14 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.15 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.16 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than  $\pm 3^\circ\text{C}$ ; the relative humidity (RH) should be  $< 50\%$  and not vary by more than  $\pm 5\%$ . A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.17 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - High volume samplers were calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the air quality monitoring.

#### **Results and Observations**

- 2.18 All TSP monitoring was conducted as scheduled in this reporting month.
- 2.19 An Action Level exceedance was recorded for the 1-hr TSP monitoring on 12<sup>th</sup> September 2005. However, based on our field observation and EPD's monitoring data (Air Pollution Index), it was considered that the exceedance was due to the poor ambient air quality but not related to R8-LCKV construction works. The exceedance report is provided in **Appendix H**. No Limit Level exceedance was recorded.
- 2.20 No Action/Limit Level exceedance was recorded for the 24-TSP monitoring.
- 2.21 Wind data monitoring equipment has been installed in Shatin Heights for logging wind speed and wind direction. These wind data for the reporting month is summarized in **Appendix D**.
- 2.22 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F**, respectively.

### 3. NOISE

#### Monitoring Requirements

- 3.1 Monitoring and audit of construction noise levels is required to be conducted, in accordance with the EM&A Manual, to ensure that any unacceptable noise impacts could be readily detected and timely and appropriate action be undertaken to rectify the situation.
- 3.2 The construction noise levels shall be measured in terms of the A-weighted equivalent continuous sound pressure level (Leq). Leq (30min) shall be used as the monitoring parameter for the time period between 0700-1900 hours on normal weekdays. For all other time periods, Leq (5min) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. As supplementary information for data auditing, statistical results such as L<sub>10</sub> and L<sub>90</sub> shall also be obtained for reference.
- 3.3 Four designated noise monitoring stations, namely NM4, NM8a, NM8b and NM9 were selected for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Locations

- 3.4 Noise monitoring was conducted at five designated monitoring stations as summarized in **Table 3.1**. **Figures 1** show the locations of these stations.

**Table 3.1 Noise Monitoring Stations**

Stations*	Description	Location
NM4	Mei Foo Sun Chuen, Phase 5	Rooftop of Block 9
NM8a	Nob Hill	M/F of Car Park
NM8b	Nob Hill	3/F of Car Park
NM9	Hoi Lai Estate	G/F of Hoi Fai House

- (1) Renovation work was undertaken at the Lai Chi Kok Reception Centre (NM2) and the centre was found vacated. The noise monitoring was suspended since December 2004. Approval for the change of EM&A Programme was granted by EPD on 30<sup>th</sup> December 2004.
- (2) The Lai Chi Kok Hospital (NM3) was also found vacated and noise monitoring has been suspended since January 2005, as approved by EPD on 15<sup>th</sup> March 2005.

- 3.5 Stations NM8a and NM8b were installed at Nob Hill in May 2004. Station NM8b is located at 3/F of the car park of Nob Hill, which is strongly influenced by traffic noise from Ching Cheung Road. The measurement at this station is for reference purpose, but not for compliance check of construction noise. The measured noise level at Station NM8a, which is located at M/F of car park and closer to the construction site, acts as an indicator of the construction noise. Since the domestic premises are located above 5/F, noise assessment would be performed to assess the level of nuisance resulting from the construction noise at the domestic premises whenever the measured noise level at NM8a exceeds the noise limit level.

- 3.6 A new housing estate, Hoi Lai Estate, became one of the noise sensitive receivers close to the Project site. As recommended by the Regional (West) Office of EPD, noise monitoring at this location (Station NM9) was newly included in the EM&A programme. Approval for the change of EM&A programme was granted by EPD on 30<sup>th</sup> December 2004.

### Monitoring Equipment

- 3.7 **Table 3.2** summarizes the noise monitoring equipment model being used. Copies of calibration certificates are attached in **Appendix B**.

**Table 3.2 Noise Monitoring Equipment**

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	B&K Model 2238	5
Calibrator	B&K 4231	2
Wind Speed Anemometer	RS232 Integral Vane Digital Anemometer	1

### Monitoring Parameters, Frequency and Duration

- 3.8 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix C**.

**Table 3.3 Noise Monitoring Parameters, Frequency and Duration**

Stations	Parameter	Period	Frequency	Measurement
NM4	L <sub>10</sub> (30 min.)dB(A) L <sub>90</sub> (30 min.)dB(A) L <sub>eq</sub> (30 min.)dB(A)	0700-1900 hrs. on weekdays	Once per week	Façade
NM8a				Façade
NM8b				Façade
NM9				Façade

### Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was generally set on a tripod at a height of 1.2 m above the ground, depending to the actual monitoring condition.
- 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 : 30 minutes / 5 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, 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 the portable wind meter.

- At the end of the monitoring period, the  $L_{eq}$ ,  $L_{90}$  and  $L_{10}$  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 if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

### **Maintenance and Calibration**

- 3.9 The microphone head of the sound level meter and calibrator was cleaned with soft cloth regularly.
- 3.10 The meters were sent to the supplier to check and calibrate on a yearly interval.

### **Results and Observations**

- 3.11 Noise monitoring was performed at the four designated locations as scheduled in this reporting month.
- 3.12 All the Construction Noise Levels (CNLs) reported in this report, except those collected at Stations NM8a, NM8b and NM9, were adjusted with the corresponding baseline level (i.e. Measured  $L_{eq}$  – Baseline  $L_{eq}$  = Measured CNL), in order to facilitate the interpretation of the noise exceedance.
- 3.13 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.14 No noise Limit Level exceedance was recorded in the reporting month.
- 3.15 Since no public complaint on noise issue was received in the reporting month, no noise Action Level exceedance was recorded.
- 3.16 At Stations NM4, NM8a and NM8b, the major noise source identified during the monitoring exercises was mainly the road traffic noise.
- 3.17 At Station NM9, construction noise from the Project and occasionally the traffic noise were identified as the major noise source during monitoring.

#### 4. ENVIRONMENTAL AUDIT

##### Site Audits

- 4.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.
- 4.2 Site audits were conducted on 8, 14, 21 and 28 September 2005 by ET. The audit session on 8 September 2005 was conducted with the representatives of HyD, IEC, ER, the Contractor and ET.

##### Review of Environmental Monitoring Procedures

- 4.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

###### *Air Quality Monitoring*

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

###### *Noise Monitoring*

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

##### Status of Environmental Licensing and Permitting

- 4.4 All permits/licenses obtained for the Project are summarized in **Table 4.1**. Two new CNPs were issued to the Project in the reporting month.

##### Implementation Status of Environmental Mitigation Measures

- 4.5 According to the Environmental Permit and the EM&A Manuals, the mitigation measures detailed in the documents are required to be implemented. An updated summary of the EMIS is provided in **Appendix K**.



**Table 4.1 Summary of Environmental Licensing and Permit Status**

Permit No.	Valid Period		Details	Status
	From	To		
<b>Environmental Permit (EP)</b>				
EP-103/2001/C	22/7/05	N/A	<u>Construction and operation of</u> (a) All civil works (including highways, traffic, geotechnical, drainage, structural, architectural and landscaping works) for the Lai Chi Kok Viaduct, the interchange with Ching Cheung Road, the main road within Butterfly Valley and the Eagle's Nest Tunnel; (b) All E&M works (including ventilation, Traffic Control & Surveillance System (TCSS), toll collection system and lighting) for the whole Route 9 between Cheung Sha Wan and Sha Tin; (c) The permanent slope works above the northern portal of the Eagle's Nest Tunnel; (d) The architectural works (including fitting out and furnishings) of the portal buildings of the Sha Tin Heights Tunnel.	Valid
<b>Registration of Chemical Waste Producer</b>				
WPN 5213-261-N2413-04	17/11/03	N/A	N/A	Valid
<b>Water Discharge Licence</b>				
EP482/260/251/1	05/12/03	31/12/08	Discharge of industrial trade effluent arising from the construction site at Route 9 – Lai Po Road Section of Lai Chi Kok Viaduct (Contract HY/2003/01).	Valid
EP482/260/251/2	15/12/03	31/12/08	Discharge of industrial trade effluent arising from the construction site at Route 9 – Lai Chi Kok Viaduct excluding Lai Po Road Section.	Valid
<b>Construction Noise Permit (CNP)</b>				
GW-RW0211-05	07/04/05	06/10/05	<i>Location:</i> Junction of Ching Cheung Road and Castle Peak Road <i>Time Period:</i> General holidays (including Sundays) between 0700-2300 hours and any other days between 1900-2300 hours	Valid
GW-RW0226-05	14/04/05	13/10/05	<i>Location:</i> Butterfly Valley near Kwai Chung Road <i>Time Period:</i> General holidays (including Sundays) between 0700-2300 hours and any other days between 1900-2300 hours	Valid
GW-RW0296-05	09/05/05	08/11/05	<i>Location:</i> Butterfly Valley near Kwai Chung Road <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid
GW-RW0301-05	10/05/05	08/11/05	<i>Location:</i> Butterfly Valley Road near LCK Reception Centre <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RW0310-05	17/05/05	16/11/05	<i>Location:</i> Lai Po Road (Pier B3) <i>Time Period:</i> Any day not being a general holiday between 2100-0700 hours	Valid
GW-RW0354-05	08/06/05	05/11/05	<i>Location:</i> Lai Po Road (P1/L segment erection) <i>Time Period:</i> Any day not being a general holiday between 2100-0700 hours	Valid
GW-RW0401-05	27/06/05	22/12/05	<i>Location:</i> Butterfly Valley Road near LCK Interchange <i>Time Period:</i> Any day not being a general holiday between 2100-0700 hours	Valid
GW-RW0402-05	27/06/05	23/12/05	<i>Location:</i> Butterfly Valley Road near LCK Fire Station <i>Time Period:</i> Any day not being a general holiday between 2100-0700 hours	Valid
GW-RW0416-05	29/06/05	28/12/05	<i>Location:</i> Lai Po Road near Hoi Lai Estate <i>Time Period:</i> General holidays (including Sundays) between 0700-2300 hours and any other days between 1900-2300 hours	Valid
GW-RW0445-05	08/07/05	07/01/06	<i>Location:</i> Carriageway (east bound) of Kwai Chung Road near LCK Fire Station <i>Time Period:</i> General holidays (including Sundays) between 0700-2100 hours and any other days between 1900-2100 hours	Valid
GW-RW0465-05	23/7/05	20/01/06	<i>Location:</i> Butterfly Valley near LCK Reception Center <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid
GW-RW0501-05	03/08/05	02/02/06	<i>Location:</i> Hing Wah Street West (Jetty Area) <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid
GW-RW0519-05	13/08/05	12/02/06	<i>Location:</i> Butterfly Valley Road near LCK Reception Center <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid
GW-RW0526-05	14/08/05	05/02/06	<i>Location:</i> Cheung Sha Wan Road near Butterfly Valley Road <i>Time Period:</i> General holidays (including Sundays) between 0900-2300 hours	Valid
GW-RW0527-05	13/08/05	12/02/06	<i>Location:</i> Butterfly Valley near LCK Reception Center <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RW0534-05	17/08/05	16/02/06	<i>Location:</i> Lai Po Road near Yuet Lun Street <i>Time Period:</i> Whole day of general holidays (including Sundays) and any other days between 1900-0700 hours on next day	Valid
GW-RW0535-05	17/08/05	15/02/06	<i>Location:</i> Butterfly Valley Road and Kom Tsun Street <i>Time Period:</i> Any day not being a general holiday between 2100-0700 hours	Valid
GW-RW0563-05	02/09/05	01/03/06	<i>Location:</i> Ching Cheung Road near Mei Foo Sun Chuen <i>Time Period:</i> General holidays (including Sundays) between 0700-2300 hours and any other days between 1900-2300 hours	Valid
GW-RW0584-05	12/09/05	03/03/06	<i>Location:</i> Yuet Lun Street, Kwai Chung Road, Butterfly Valley Road, LCK <i>Time Period:</i> Any day not being a general holiday between 0700-2100 hours (on a day not immediately following a holiday) and 2100-2400 hours (on other day)	Valid
GW-RW0585-05	15/09/05	14/03/06	<i>Location:</i> Butterfly Valley, LCK <i>Time Period:</i> General holidays (including Sundays) between 0700-2300 hours and any other days between 1900-2300 hours	Valid

4.6 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations are summarized in **Table 4.2**.

### Summary of Exceedances

#### 1-hr TSP Monitoring

4.7 An Action Level exceedance was recorded on 12 September 2005. However, it was considered that the exceedance was not related to the construction activities of the Project. No further action was required.

4.8 No Limit Level exceedance was recorded in the reporting month.

#### 24-hr TSP Monitoring

4.9 No Action/Limit Level exceedance was recorded in the reporting month.

#### Construction Noise Monitoring

4.10 No Action/Limit Level exceedance was recorded in the reporting month.

**Table 4.2 Observations and Recommendations of Site Audits**

<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up</b>
<b>Water Quality</b>	8-Sept-05	The Contractor was recommended to construct a bund or ditch channel beside the open channel at Pier 13.	The situation was found improved / rectified during the audit on 14-Sep-05.
<b>Air Quality</b>	21-Sept-05	The contractor was reminded to ensure the impervious sheets near the public roads at Nob Hill and S1 properly maintained.	The situation was found improved / rectified during the audit on 21-Sep-05.
<b>Chemical Management</b>	14-Sept-05	A chemical drum without the drip tray was observed at Pier P13. The contractor was reminded to proper storage of fuel and chemical.	The situation was found improved / rectified during the audit on 14-Sep-05.
	21-Sept-05	Oil stained soil was observed under a dump truck at Wai Man Tsuen. The contractor was reminded to remove the oil stain properly and pay more attention during the repairing equipment.	The situation was found improved / rectified during the audit on 21-Sep-05.
	28-Sept-05	Spill of waste liquid from a rubbish bin was observed at Lai Po Road. The contractor was reminded to keep the site clean and tidy.	The situation was found improved / rectified during the audit on 5-Oct-05.
<b>Others</b>	8-Sept-05	Stagnant water was observed on the concrete block at Pier 17. The Contractor was recommended to fill the concrete block to prevent water accumulation.	The situation was found improved / rectified during the audit on 14-Sep-05.

### **Implementation Status of Event Action Plans**

4.11 The Event Action Plans for air quality and construction noise are presented in **Appendix J**.

### **Summary of Complaint and Prosecution**

4.12 No environmental complaint or prosecution was received in the reporting month.

4.13 There were 14 environmental complaints and no prosecution received since the commencement of the Project. The Complaint Log is attached in **Appendix M**.

## 5. FUTURE KEY ISSUES

### Key Issues for the Coming Month

5.1 Key issues to be considered in the coming month include:

- Dust generation from slope works, stockpiles and haul roads;
- Accumulation of stagnant water in the site;
- Nighttime construction noise from bridge segment transportation works and segment erection works;
- Construction noise generation from slope works at S1, R2 and R3;
- Maintenance of de-silting facilities at R2;
- Wastewater generation from bored-piling works.

### Monitoring Schedule for the Next Month

5.2 The tentative monitoring schedule for the next month is shown in **Appendix C**.

### Construction Program for the Next Month

5.3 The major construction activities in coming months include:

- Piling works for slip road D;
- Construction of abutment, pile caps and columns at slip roads C, D and Lai Wan Overpass and Main Viaduct;
- Bulk excavation works and soil nails installation at slopes CCR-S1;
- Bulk excavation works and retaining wall construction at CCR-R1;
- Bulk excavation works at CCR-R3;
- Drainage works at Rest Garden area;
- Segment erection by lifting frame at Main Viaduct, slip roads A and B;
- Segment erection at Main Viaduct by launching gantry at night at Pier P7 and P8;
- Bored piling work at R3.

5.4 The tentative construction program for the Project is provided in **Appendix L**.

## 6. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 6.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 6.2 No Action/Limit Level exceedance for the air quality and noise monitoring was recorded in this reporting month, except an Action Level exceedance for 1-hr TSP monitoring on 12 September 2005. However, it was considered that the exceedance was not related to the construction works of the Project.
- 6.3 No environmental complaint or prosecution was received in the reporting month.

### Recommendations

- 6.4 According to the environmental audit performed in the reporting month, the following recommendations were made:

#### *Dust Impact*

- To ensure water spray is applied for the dust emissive works, such as soil nail installation, loading and unloading of soil materials, rock breaking works.
- To cover soil stockpiles and exposed slope surface by impervious sheets or other means.

#### *Noise Impact*

- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.
- To employ quiet powered mechanical equipment if possible.
- To ensure compliance of CNP conditions during restricted-hour works.
- To space out noisy equipment and position the equipment as far away as possible from noise sensitive receivers.

#### *Water Impact*

- To review the capacity of de-silting facilities for discharge.
- To keep the sedimentation facilities well maintained and to perform de-silting regularly.
- To cover the idled slope surfaces and stockpiles during rainstorms.

#### *Waste / Chemical Management*

- To avoid accumulation of stagnant water on site.
- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste directly from the site.
- To avoid improper handling or storage of chemical wastes / oil drum on site.

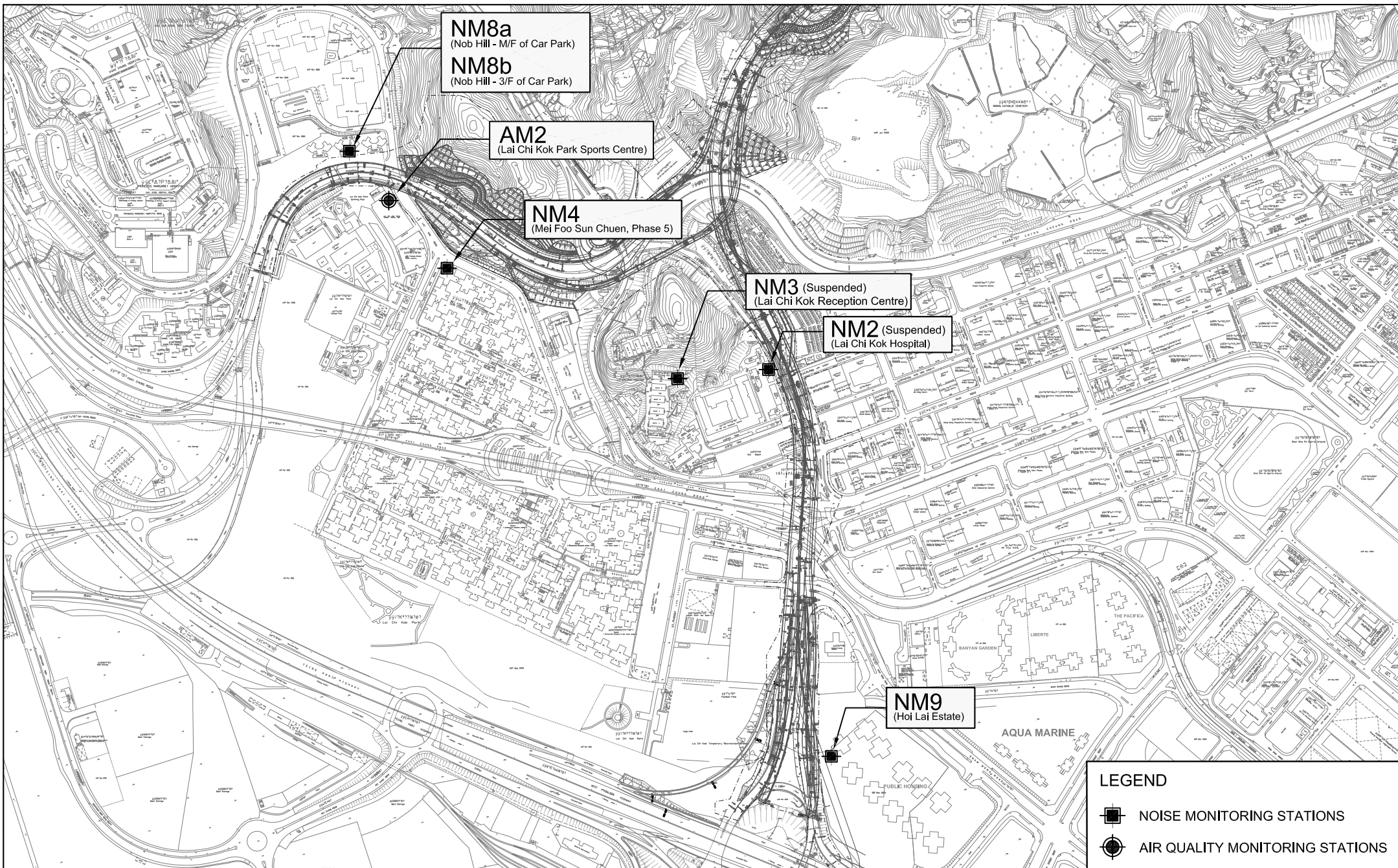
---

---

## FIGURES

---

---



Title

ROUTE 8 (PREVIOUSLY KNOWN AS ROUTE 9) BETWEEN CHEUNG SHA WAN AND SHA TIN  
CONTRACT HY/2003/01 - LAI CHI KOK VIADUCT

LOCATIONS OF MONITORING STATIONS

Scale

1 : 8000 (A4)

Date

2005

Project No.

MA3024

Figure No.

1

**CINOTECH**  
consultants limited



---

---

**APPENDIX A  
ACTION AND LIMIT LEVELS**

---

---

## Appendix A - Action and Limit Levels (LCKV)

### 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	301	500

### 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	177	260

### Construction Noise

Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)
0700-2300 hrs on holidays & 1900-2300 hrs on all other days		70* dB(A)
2300-0700 hrs of next day		55* dB(A)

(\*) The Area Sensitivity Rating for the noise monitoring stations (NM4, NM8a, NM8b and NM9) is taken as C, according to Table 1 of EPD's Technical Memorandum on Noise from Construction Work other than Percussive Piling.

---

---

**APPENDIX B  
COPIES OF CALIBRATION  
CERTIFICATES**

---

---



# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/05/50503
Date of Issue:	2005-05-03
Date Received:	2005-05-03
Date Tested:	2005-05-03
Date Completed:	2005-05-03

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description : RS232 Integral Vane Digital Anemometer  
Manufacturer : AZ Instrument  
Model No. : 451104  
Serial No. : 9020746  
Project No. : C13  
Equipment No. : A-03-01

**Test conditions:**

Room Temperature : 21 degree Celsius  
Relative Humidity : 70%  
Pressure : 100.8 kPa

**Methodology:**

The anemometer has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

**Results:**

	Reference Set Point	Instrument Readings
Measuring Air Velocity, m/s	2.00	2.00
Temperature, °C	20.0	20.1

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
*Operation Manager*

D.0403

**Andersen Instruments, Inc.**  
Orifice Transfer Standard Certification Worksheet

Date: 04/23/2005      Rootsmeter S/N: 9736553      Ta: 22.00 C  
 Operator: RA      Calibrator S/N: 1888A      Pa: 761.0 mm Hg  
 Calibrator Model #: G25A      Placed in service:

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	1.404	3.08	2.00
2	3.00	4.00	1.00	0.997	6.17	4.00
3	5.00	6.00	1.00	0.889	7.85	5.00
4	7.00	8.00	1.00	0.848	8.59	5.50
5	9.00	10.00	1.00	0.700	12.42	8.00

**Data Tabulation**

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta / Pa)}$ (y-axis)
1.007	0.717	1.422	0.996	0.709	0.881
1.003	1.006	2.011	0.992	0.995	1.246
1.000	1.125	2.248	0.990	1.113	1.393
0.999	1.179	2.358	0.989	1.166	1.461
0.994	1.420	2.844	0.984	1.405	1.762
	m =	2.0208		m =	1.2658
	b =	-0.024947		b =	-0.015460
	r =	0.999989		r =	0.999989

**Calculations**

$$Vstd = \Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$$

$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$$

$$Qa = Va / \Delta Time$$

**For subsequent flow rate calculations:**

$$Qstd = 1 / m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} \right) - b \right)$$

$$Qa = 1 / m \left( \left( \sqrt{\Delta H (Ta / Pa)} \right) - b \right)$$

Standard Conditions:

Tstd: 298.18 °K  
 Pstd: 760 mm Hg

where:

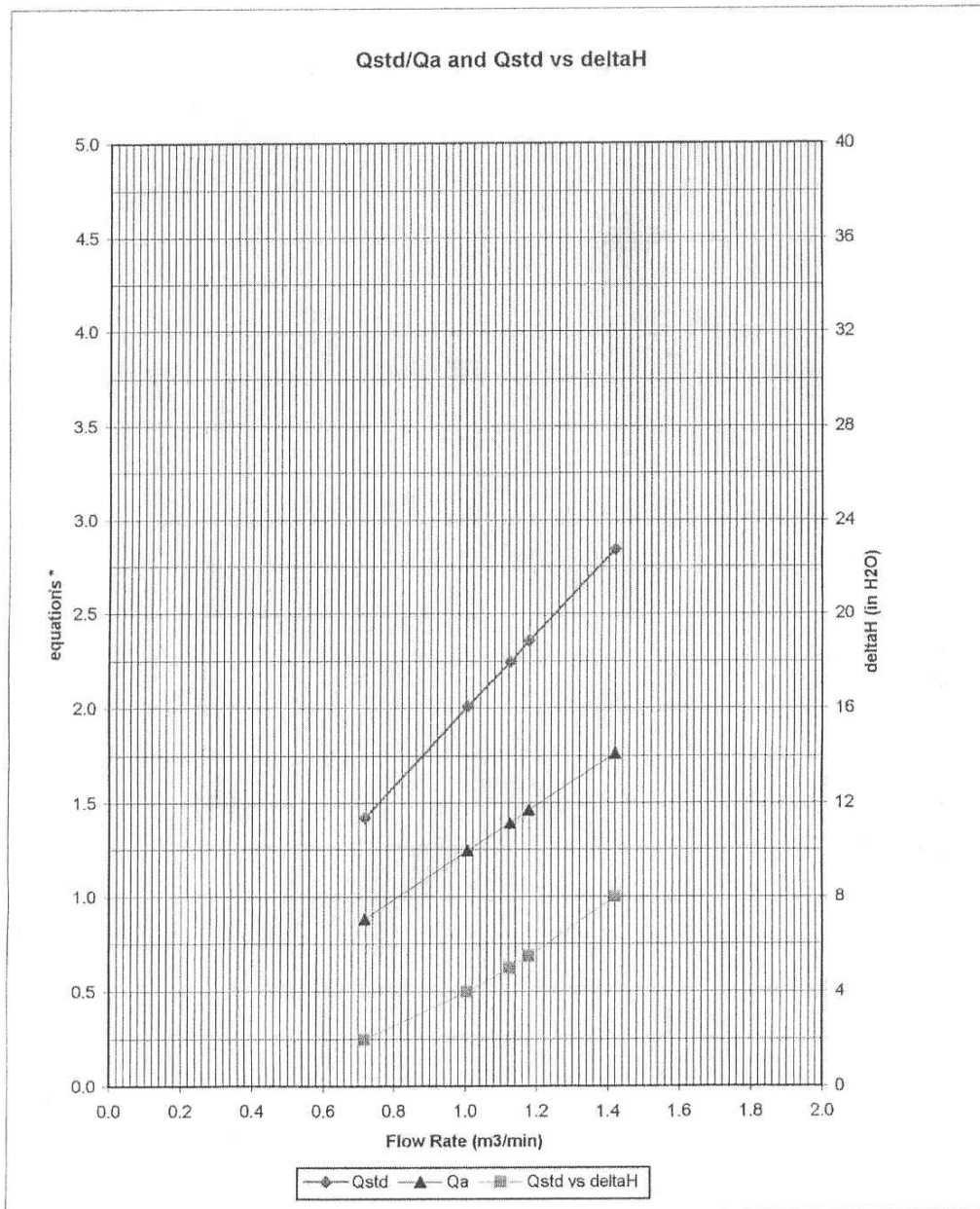
ΔH: calibrator manometer reading (in H2O)  
 ΔP: rootsmeter manometer reading (mm Hg)  
 Ta: actual absolute temperature (°K)  
 Pa: actual barometric pressure (mm Hg)  
 b: intercept  
 m: slope

For additional information consult:

- The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
- Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
- Andersen Instruments, Inc. Instruction Manual

**Notes:**

- Copies of this calibration are not kept on file.
- EPA recommends calibrators should be recalibrated after one year of use.



\* y-axis equations:

Qstd series:  $\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$

Qa series:  $\sqrt{(\Delta H(Ta / Pa))}$

# WELLAB LTD.

606 - 608 Cornell Centre,  
50 Wing Tai Road,  
Chai Wan, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1601-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/41218/1
Date of Issue:	2004-12-18
Date Received:	2004-12-17
Date Tested:	2004-12-17
Date Completed:	2004-12-18

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

#### Item for calibration:

Description	: Integrating Sound Level Meter
Manufacturer	: Brüel & Kjær
Model No.	: B&K 2238
Serial No.	: 2337665
Microphone No.	: 2289749
Equipment No.	: N-01-01

#### Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

#### Test Specifications:

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

#### Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**William Yip**  
*Laborary Manager*



# WELLAB LTD.

606 - 608 Cornell Centre,  
50 Wing Tai Road,  
Chai Wan, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1601-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/41218/1
Date of Issue:	2004-12-18
Date Received:	2004-12-17
Date Tested:	2004-12-17
Date Completed:	2004-12-18

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Integrating Sound Level Meter
Manufacturer	: Brüel & Kjær
Model No.	: B&K 2238
Serial No.	: 2337666
Microphone No.	: 2289250
Equipment No.	: N-01-02

**Test conditions:**

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

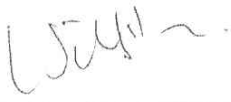
In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
\_\_\_\_\_  
**William Yip**  
Laborary Manager

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/50905-1
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-06
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

#### Item for calibration:

Description	: Integrating Sound Level Meter
Manufacturer	: Brüel & Kjær
Model No.	: B&K 2238
Serial No.	: 2359311
Microphone No.	: 2346382
Equipment No.	: N-01-03

#### Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 65%

#### Test Specifications:

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

#### Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

*Patrick*

**PATRICK TSE**  
Laborary Manager

*This test document cannot be reproduced in any way, except in full context, without the prior approval in writing of the laboratory.*

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/50905-2
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-05
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: Integrating Sound Level Meter
Manufacturer	: Brüel & Kjær
Model No.	: B&K 2238
Serial No.	: 2359303
Equipment No.	: N-01-04

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62%
Pressure	: 1006.5hPa

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

*Patrick*

**PATRICK TSE**  
Operation Manager

*This test document cannot be reproduced in any way, except in full context, without the prior approval in writing of the laboratory.*

# WELLAB LTD.

606 - 608 Cornell Centre,  
50 Wing Tai Road,  
Chai Wan, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1601-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/41013/1
Date of Issue:	2004-10-15
Date Received:	2004-10-13
Date Tested:	2004-10-14
Date Completed:	2004-10-15

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

#### Item for calibration:

Description	: Integrating Sound Level Meter
Manufacturer	: Brüel & Kjær
Model No.	: B&K 2238
Serial No.	: 2394976
Microphone No.	: 2407349
Equipment No.	: N-01-05

#### Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 60%

#### Test Specifications:

Performance checking at 94 and 114 dB

#### Methodology:

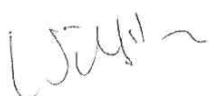
In-house method, according to manufacturer instruction manual

#### Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**William Yip**  
Laboratory Manager

# WELLAB LTD.

606 - 608 Cornell Centre,  
50 Wing Tai Road,  
Chai Wan, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1601-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/04/1115-1
Date of Issue:	2004-11-15
Date Received:	2004-11-15
Date Tested:	2004-11-15
Date Completed:	2004-11-15

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Project No.	: C13
Equipment No.	: N-02-01

### Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 65%
Pressure	: 1019.4 hPa

### Methodology:

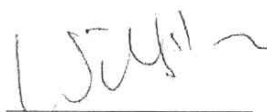
The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**WILLIAM YIP**

Laboratory Manager

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/05/50305
Date of Issue:	2005-03-05
Date Received:	2005-03-04
Date Tested:	2005-03-05
Date Completed:	2005-03-05

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2343007
Project No.	: C13
Equipment No.	: N-02-02

### Test conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 70%
Pressure	: 1020.1hPa

### Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.2 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Operation Manager

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
Tel: (852) 2898 7388  
Fax: (852) 2898 7076

## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/50905-1A
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-05
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

### Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62%
Pressure	: 1006.5hPa

### Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

*Patrick*

**PATRICK TSE**

Operation Manager

*This test document cannot be reproduced in any way, except in full context, without the prior approval in writing of the laboratory.*

---

---

**APPENDIX C  
ENVIRONMENTAL MONITORING AND  
AUDIT SCHEDULE**

---

---



**Environmental Monitoring for Lai Chi Kok Viaduct  
Air Quality and Noise Monitoring Schedule for September 2005**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>28-Aug</b>	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep
	1 hr TSP	1 hr TSP Noise	24 hrs TSP	1 hr TSP		
<b>4-Sep</b>	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep
		1 hr TSP 24 hrs TSP Noise	1 hr TSP			
<b>11-Sep</b>	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep
	1 hr TSP 24 hrs TSP	1 hr TSP Noise		1 hr TSP		24 hrs TSP
<b>18-Sep</b>	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
		1 hr TSP	1 hr TSP Noise	1 hr TSP	24 hrs TSP	
<b>25-Sep</b>	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	1-Oct
	1 hr TSP			1 hr TSP 24 hrs TSP Noise	1 hr TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

AM2      Lai Chi Kok Sports Centre  
 NM4      Mei Foo Sun Chuen, Phase 5  
 NM8a     M/F of Nob Hill  
 NM8b     3/F of Nob Hill  
 NM9      G/F, Hoi Fai House, Hoi Lai Estate

**Environmental Monitoring for Lai Chi Kok Viaduct  
Tentative Air Quality and Noise Monitoring Schedule for October 2005**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>2-Oct</b>	3-Oct	4-Oct	5-Oct	6-Oct	7-Oct	8-Oct
		1 hr TSP Noise	24 hrs TSP	1 hr TSP	1 hr TSP	
<b>9-Oct</b>	10-Oct	<b>11-Oct</b>	12-Oct	13-Oct	14-Oct	15-Oct
	1 hr TSP Noise		24 hrs TSP	1 hr TSP	1 hr TSP	
<b>16-Oct</b>	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct
	1 hr TSP Noise	24 hrs TSP	1 hr TSP	1 hr TSP		
<b>23-Oct</b>	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct
	24 hrs TSP	1 hr TSP Noise	1 hr TSP	1 hr TSP		24 hrs TSP
<b>30-Oct</b>	31-Oct	1-Nov	2-Nov	3-Nov	4-Nov	5-Nov
	1 hr TSP	1 hr TSP Noise		1 hr TSP	24 hrs TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

AM2      Lai Chi Kok Sports Centre  
 NM4      Mei Foo Sun Chuen, Phase 5  
 NM8a     M/F of Nob Hill  
 NM8b     3/F of Nob Hill  
 NM9      G/F, Hoi Fai House, Hoi Lai Estate

---

---

**APPENDIX D**  
**WIND DATA**

---

---

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Sep-2005	0:00	3.6	NE
1-Sep-2005	1:00	2.2	ESE
1-Sep-2005	2:00	1.8	N
1-Sep-2005	3:00	0.9	N
1-Sep-2005	4:00	0.4	---
1-Sep-2005	5:00	1.3	N
1-Sep-2005	6:00	0	---
1-Sep-2005	7:00	0.9	N
1-Sep-2005	8:00	1.3	N
1-Sep-2005	9:00	4	W
1-Sep-2005	10:00	5.8	W
1-Sep-2005	11:00	5.8	W
1-Sep-2005	12:00	6.7	W
1-Sep-2005	13:00	7.6	W
1-Sep-2005	14:00	7.6	W
1-Sep-2005	15:00	8.5	W
1-Sep-2005	16:00	7.2	W
1-Sep-2005	17:00	6.7	W
1-Sep-2005	18:00	4	SW
1-Sep-2005	19:00	2.2	SW
1-Sep-2005	20:00	2.7	WSW
1-Sep-2005	21:00	4.9	W
1-Sep-2005	22:00	4.9	WSW
1-Sep-2005	23:00	2.7	NE
2-Sep-2005	0:00	0.4	NE
2-Sep-2005	1:00	0	NNE
2-Sep-2005	2:00	0.4	ENE
2-Sep-2005	3:00	0.4	ENE
2-Sep-2005	4:00	0.4	NE
2-Sep-2005	5:00	0.4	N
2-Sep-2005	6:00	0	ENE
2-Sep-2005	7:00	0	NE
2-Sep-2005	8:00	0	NE
2-Sep-2005	9:00	0	NE
2-Sep-2005	10:00	0.4	W
2-Sep-2005	11:00	0	N
2-Sep-2005	12:00	0.4	NE
2-Sep-2005	13:00	1.3	N
2-Sep-2005	14:00	1.8	N
2-Sep-2005	15:00	1.3	ENE
2-Sep-2005	16:00	1.3	ENE
2-Sep-2005	17:00	0.9	ENE
2-Sep-2005	18:00	0.4	ENE
2-Sep-2005	19:00	0	E
2-Sep-2005	20:00	0	ENE
2-Sep-2005	21:00	0	SE
2-Sep-2005	22:00	0	SSE
2-Sep-2005	23:00	0	S
3-Sep-2005	0:00	0.4	SE
3-Sep-2005	1:00	0	---
3-Sep-2005	2:00	0	SW
3-Sep-2005	3:00	0.4	NNE
3-Sep-2005	4:00	0.4	N
3-Sep-2005	5:00	0.4	NW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Sep-2005	6:00	0	NE
3-Sep-2005	7:00	0.9	ENE
3-Sep-2005	8:00	0	SSE
3-Sep-2005	9:00	0	SE
3-Sep-2005	10:00	0.9	WNW
3-Sep-2005	11:00	0.4	SW
3-Sep-2005	12:00	0	WSW
3-Sep-2005	13:00	1.8	WSW
3-Sep-2005	14:00	0.9	W
3-Sep-2005	15:00	3.6	WSW
3-Sep-2005	16:00	2.2	W
3-Sep-2005	17:00	0.4	WSW
3-Sep-2005	18:00	0.9	WSW
3-Sep-2005	19:00	0.9	W
3-Sep-2005	20:00	0.9	WSW
3-Sep-2005	21:00	0.9	WSW
3-Sep-2005	22:00	1.3	WSW
3-Sep-2005	23:00	0.4	S
4-Sep-2005	0:00	0.4	SSW
4-Sep-2005	1:00	0.9	WSW
4-Sep-2005	2:00	0.4	WNW
4-Sep-2005	3:00	0.4	WNW
4-Sep-2005	4:00	1.8	W
4-Sep-2005	5:00	0.9	S
4-Sep-2005	6:00	2.2	SSW
4-Sep-2005	7:00	1.8	S
4-Sep-2005	8:00	0.9	SSW
4-Sep-2005	9:00	1.8	S
4-Sep-2005	10:00	0.9	W
4-Sep-2005	11:00	1.3	WSW
4-Sep-2005	12:00	2.2	WSW
4-Sep-2005	13:00	2.2	W
4-Sep-2005	14:00	1.8	W
4-Sep-2005	15:00	2.7	W
4-Sep-2005	16:00	2.7	W
4-Sep-2005	17:00	3.1	W
4-Sep-2005	18:00	2.7	WSW
4-Sep-2005	19:00	2.7	W
4-Sep-2005	20:00	2.2	W
4-Sep-2005	21:00	0.9	W
4-Sep-2005	22:00	1.8	W
4-Sep-2005	23:00	1.8	W
5-Sep-2005	0:00	1.8	W
5-Sep-2005	1:00	1.8	WSW
5-Sep-2005	2:00	0.9	W
5-Sep-2005	3:00	0.4	SSW
5-Sep-2005	4:00	0	SSW
5-Sep-2005	5:00	0.9	SW
5-Sep-2005	6:00	0.4	SW
5-Sep-2005	7:00	0	W
5-Sep-2005	8:00	0.4	W
5-Sep-2005	9:00	2.7	W
5-Sep-2005	10:00	2.2	W
5-Sep-2005	11:00	1.8	W

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Sep-2005	12:00	1.8	WNW
5-Sep-2005	13:00	3.1	W
5-Sep-2005	14:00	4	W
5-Sep-2005	15:00	2.7	W
5-Sep-2005	16:00	2.2	W
5-Sep-2005	17:00	2.2	W
5-Sep-2005	18:00	1.3	WSW
5-Sep-2005	19:00	0.4	W
5-Sep-2005	20:00	0	SSW
5-Sep-2005	21:00	0	---
5-Sep-2005	22:00	0	---
5-Sep-2005	23:00	0	---
6-Sep-2005	0:00	0	SSE
6-Sep-2005	1:00	0	---
6-Sep-2005	2:00	0	SSE
6-Sep-2005	3:00	0	---
6-Sep-2005	4:00	0	---
6-Sep-2005	5:00	0	SSE
6-Sep-2005	6:00	0	SSE
6-Sep-2005	7:00	0	---
6-Sep-2005	8:00	0	E
6-Sep-2005	9:00	0	W
6-Sep-2005	10:00	0.9	SW
6-Sep-2005	11:00	1.8	WSW
6-Sep-2005	12:00	3.1	W
6-Sep-2005	13:00	2.2	W
6-Sep-2005	14:00	1.8	W
6-Sep-2005	15:00	1.3	ENE
6-Sep-2005	16:00	1.3	ENE
6-Sep-2005	17:00	0.9	NE
6-Sep-2005	18:00	1.3	ENE
6-Sep-2005	19:00	0	ENE
6-Sep-2005	20:00	0	---
6-Sep-2005	21:00	0	---
6-Sep-2005	22:00	0	---
6-Sep-2005	23:00	0	---
7-Sep-2005	0:00	0	---
7-Sep-2005	1:00	0	---
7-Sep-2005	2:00	0	---
7-Sep-2005	3:00	0	---
7-Sep-2005	4:00	0	---
7-Sep-2005	5:00	0	---
7-Sep-2005	6:00	0	---
7-Sep-2005	7:00	0	---
7-Sep-2005	8:00	0	E
7-Sep-2005	9:00	0.9	W
7-Sep-2005	10:00	2.2	WNW
7-Sep-2005	11:00	3.1	W
7-Sep-2005	12:00	2.7	W
7-Sep-2005	13:00	0.9	W
7-Sep-2005	14:00	0.9	N
7-Sep-2005	15:00	1.3	N
7-Sep-2005	16:00	0.9	NNE
7-Sep-2005	17:00	0.9	NNE

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Sep-2005	18:00	0	ESE
7-Sep-2005	19:00	0.9	SSE
7-Sep-2005	20:00	1.8	WSW
7-Sep-2005	21:00	0.9	WSW
7-Sep-2005	22:00	0	NW
7-Sep-2005	23:00	0.4	WSW
8-Sep-2005	0:00	0.4	N
8-Sep-2005	1:00	0.9	WSW
8-Sep-2005	2:00	1.3	SSW
8-Sep-2005	3:00	0.4	WSW
8-Sep-2005	4:00	0	WSW
8-Sep-2005	5:00	0.4	WSW
8-Sep-2005	6:00	0.4	SSW
8-Sep-2005	7:00	0.4	SSW
8-Sep-2005	8:00	0.4	S
8-Sep-2005	9:00	1.8	SSW
8-Sep-2005	10:00	1.3	W
8-Sep-2005	11:00	2.2	WNW
8-Sep-2005	12:00	2.7	WNW
8-Sep-2005	13:00	2.7	WSW
8-Sep-2005	14:00	1.3	WSW
8-Sep-2005	15:00	1.8	W
8-Sep-2005	16:00	2.2	W
8-Sep-2005	17:00	2.2	W
8-Sep-2005	18:00	2.2	WSW
8-Sep-2005	19:00	2.2	W
8-Sep-2005	20:00	1.3	WSW
8-Sep-2005	21:00	1.3	WSW
8-Sep-2005	22:00	1.8	WSW
8-Sep-2005	23:00	1.8	SW
9-Sep-2005	0:00	1.8	WSW
9-Sep-2005	1:00	1.8	WSW
9-Sep-2005	2:00	1.3	SW
9-Sep-2005	3:00	1.8	WSW
9-Sep-2005	4:00	1.3	W
9-Sep-2005	5:00	0.4	W
9-Sep-2005	6:00	0	SW
9-Sep-2005	7:00	0.4	W
9-Sep-2005	8:00	0.9	SSW
9-Sep-2005	9:00	1.3	W
9-Sep-2005	10:00	1.8	W
9-Sep-2005	11:00	1.8	W
9-Sep-2005	12:00	2.7	W
9-Sep-2005	13:00	3.1	WSW
9-Sep-2005	14:00	2.2	W
9-Sep-2005	15:00	2.2	W
9-Sep-2005	16:00	1.8	WSW
9-Sep-2005	17:00	1.8	W
9-Sep-2005	18:00	0.9	W
9-Sep-2005	19:00	0	ESE
9-Sep-2005	20:00	0	ESE
9-Sep-2005	21:00	0	ESE
9-Sep-2005	22:00	0.4	SSW
9-Sep-2005	23:00	0	SSW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Sep-2005	0:00	0.4	SSW
10-Sep-2005	1:00	1.3	SSW
10-Sep-2005	2:00	0.4	SSW
10-Sep-2005	3:00	0.4	SSW
10-Sep-2005	4:00	0	SSW
10-Sep-2005	5:00	0	SSW
10-Sep-2005	6:00	0	---
10-Sep-2005	7:00	0	---
10-Sep-2005	8:00	0	SSW
10-Sep-2005	9:00	0.9	W
10-Sep-2005	10:00	2.2	W
10-Sep-2005	11:00	2.2	W
10-Sep-2005	12:00	1.8	W
10-Sep-2005	13:00	2.2	W
10-Sep-2005	14:00	1.3	W
10-Sep-2005	15:00	0.9	SSW
10-Sep-2005	16:00	2.7	N
10-Sep-2005	17:00	2.7	NNE
10-Sep-2005	18:00	0.9	ENE
10-Sep-2005	19:00	0	ENE
10-Sep-2005	20:00	0.4	S
10-Sep-2005	21:00	2.7	S
10-Sep-2005	22:00	0.4	E
10-Sep-2005	23:00	0	E
11-Sep-2005	0:00	0	---
11-Sep-2005	1:00	0	---
11-Sep-2005	2:00	0	---
11-Sep-2005	3:00	0	---
11-Sep-2005	4:00	0	---
11-Sep-2005	5:00	0	---
11-Sep-2005	6:00	0	---
11-Sep-2005	7:00	0	---
11-Sep-2005	8:00	0	---
11-Sep-2005	9:00	0	E
11-Sep-2005	10:00	1.8	W
11-Sep-2005	11:00	2.2	W
11-Sep-2005	12:00	2.2	W
11-Sep-2005	13:00	1.3	W
11-Sep-2005	14:00	0.9	N
11-Sep-2005	15:00	2.2	N
11-Sep-2005	16:00	1.3	N
11-Sep-2005	17:00	0.4	E
11-Sep-2005	18:00	0.4	E
11-Sep-2005	19:00	0.4	ESE
11-Sep-2005	20:00	0.4	E
11-Sep-2005	21:00	0.4	E
11-Sep-2005	22:00	0	---
11-Sep-2005	23:00	0	---
12-Sep-2005	0:00	0	---
12-Sep-2005	1:00	0	---
12-Sep-2005	2:00	0	---
12-Sep-2005	3:00	0	---
12-Sep-2005	4:00	0	---
12-Sep-2005	5:00	0	---



## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Sep-2005	6:00	0	---
12-Sep-2005	7:00	0	---
12-Sep-2005	8:00	0	E
12-Sep-2005	9:00	1.3	W
12-Sep-2005	10:00	2.2	W
12-Sep-2005	11:00	2.2	W
12-Sep-2005	12:00	2.7	WNW
12-Sep-2005	13:00	3.1	W
12-Sep-2005	14:00	3.6	W
12-Sep-2005	15:00	4	W
12-Sep-2005	16:00	4	W
12-Sep-2005	17:00	4	W
12-Sep-2005	18:00	3.6	W
12-Sep-2005	19:00	3.6	WSW
12-Sep-2005	20:00	2.7	W
12-Sep-2005	21:00	3.6	W
12-Sep-2005	22:00	4.5	W
12-Sep-2005	23:00	4.9	W
13-Sep-2005	0:00	3.6	W
13-Sep-2005	1:00	4	W
13-Sep-2005	2:00	3.6	WNW
13-Sep-2005	3:00	3.1	W
13-Sep-2005	4:00	3.1	W
13-Sep-2005	5:00	2.7	WNW
13-Sep-2005	6:00	2.7	W
13-Sep-2005	7:00	1.8	W
13-Sep-2005	8:00	1.3	WSW
13-Sep-2005	9:00	2.7	WSW
13-Sep-2005	10:00	2.7	W
13-Sep-2005	11:00	2.7	WNW
13-Sep-2005	12:00	4	W
13-Sep-2005	13:00	4	WNW
13-Sep-2005	14:00	4.5	W
13-Sep-2005	15:00	4	W
13-Sep-2005	16:00	4	W
13-Sep-2005	17:00	3.1	SW
13-Sep-2005	18:00	3.6	W
13-Sep-2005	19:00	3.6	W
13-Sep-2005	20:00	3.6	WSW
13-Sep-2005	21:00	3.1	W
13-Sep-2005	22:00	2.2	W
13-Sep-2005	23:00	2.7	W
14-Sep-2005	0:00	1.3	NNE
14-Sep-2005	1:00	0.9	WSW
14-Sep-2005	2:00	0.9	S
14-Sep-2005	3:00	0.4	S
14-Sep-2005	4:00	0	S
14-Sep-2005	5:00	0	S
14-Sep-2005	6:00	0	S
14-Sep-2005	7:00	0	---
14-Sep-2005	8:00	0.9	SW
14-Sep-2005	9:00	2.2	SSW
14-Sep-2005	10:00	1.8	W
14-Sep-2005	11:00	3.1	W

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Sep-2005	12:00	4.5	SW
14-Sep-2005	13:00	4.5	SSW
14-Sep-2005	14:00	3.6	SSW
14-Sep-2005	15:00	3.1	W
14-Sep-2005	16:00	3.1	WNW
14-Sep-2005	17:00	2.2	W
14-Sep-2005	18:00	2.2	W
14-Sep-2005	19:00	2.2	WSW
14-Sep-2005	20:00	1.8	W
14-Sep-2005	21:00	2.2	WSW
14-Sep-2005	22:00	2.2	SSW
14-Sep-2005	23:00	1.8	SSW
15-Sep-2005	0:00	2.7	SSW
15-Sep-2005	1:00	1.8	WSW
15-Sep-2005	2:00	3.1	WSW
15-Sep-2005	3:00	2.7	W
15-Sep-2005	4:00	2.7	WSW
15-Sep-2005	5:00	2.7	WSW
15-Sep-2005	6:00	3.1	W
15-Sep-2005	7:00	2.7	W
15-Sep-2005	8:00	2.2	W
15-Sep-2005	9:00	2.7	WSW
15-Sep-2005	10:00	3.1	W
15-Sep-2005	11:00	2.7	W
15-Sep-2005	12:00	3.1	W
15-Sep-2005	13:00	2.7	WSW
15-Sep-2005	14:00	2.7	WSW
15-Sep-2005	15:00	1.8	W
15-Sep-2005	16:00	1.3	SSE
15-Sep-2005	17:00	1.3	SSE
15-Sep-2005	18:00	0.9	ENE
15-Sep-2005	19:00	0.4	NE
15-Sep-2005	20:00	0	E
15-Sep-2005	21:00	0.4	S
15-Sep-2005	22:00	0.4	S
15-Sep-2005	23:00	1.8	WSW
16-Sep-2005	0:00	1.8	WSW
16-Sep-2005	1:00	1.3	SW
16-Sep-2005	2:00	1.8	WSW
16-Sep-2005	3:00	2.7	W
16-Sep-2005	4:00	2.7	W
16-Sep-2005	5:00	3.1	W
16-Sep-2005	6:00	2.2	SW
16-Sep-2005	7:00	3.1	W
16-Sep-2005	8:00	2.7	WSW
16-Sep-2005	9:00	4	WSW
16-Sep-2005	10:00	3.6	W
16-Sep-2005	11:00	3.6	WSW
16-Sep-2005	12:00	4	WSW
16-Sep-2005	13:00	3.1	W
16-Sep-2005	14:00	2.7	W
16-Sep-2005	15:00	3.1	WNW
16-Sep-2005	16:00	3.6	W
16-Sep-2005	17:00	2.7	WSW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Sep-2005	18:00	2.2	WSW
16-Sep-2005	19:00	2.7	S
16-Sep-2005	20:00	1.3	WSW
16-Sep-2005	21:00	1.3	SSW
16-Sep-2005	22:00	2.2	W
16-Sep-2005	23:00	1.8	S
17-Sep-2005	0:00	1.8	S
17-Sep-2005	1:00	3.1	W
17-Sep-2005	2:00	3.6	WSW
17-Sep-2005	3:00	3.6	WSW
17-Sep-2005	4:00	3.1	SW
17-Sep-2005	5:00	3.1	SW
17-Sep-2005	6:00	3.1	SSW
17-Sep-2005	7:00	4	SW
17-Sep-2005	8:00	4	WSW
17-Sep-2005	9:00	5.4	W
17-Sep-2005	10:00	5.4	W
17-Sep-2005	11:00	7.2	WSW
17-Sep-2005	12:00	8.5	W
17-Sep-2005	13:00	8	WSW
17-Sep-2005	14:00	7.2	W
17-Sep-2005	15:00	5.4	W
17-Sep-2005	16:00	6.7	W
17-Sep-2005	17:00	5.4	WNW
17-Sep-2005	18:00	4.5	WNW
17-Sep-2005	19:00	4.9	W
17-Sep-2005	20:00	4.9	W
17-Sep-2005	21:00	4	W
17-Sep-2005	22:00	5.4	W
17-Sep-2005	23:00	4.5	WNW
18-Sep-2005	0:00	4	W
18-Sep-2005	1:00	4.5	W
18-Sep-2005	2:00	3.6	W
18-Sep-2005	3:00	4.5	W
18-Sep-2005	4:00	6.3	WNW
18-Sep-2005	5:00	6.3	W
18-Sep-2005	6:00	6.3	W
18-Sep-2005	7:00	4.9	W
18-Sep-2005	8:00	5.8	W
18-Sep-2005	9:00	5.4	WNW
18-Sep-2005	10:00	6.7	W
18-Sep-2005	11:00	7.2	WNW
18-Sep-2005	12:00	5.8	W
18-Sep-2005	13:00	5.8	WNW
18-Sep-2005	14:00	4.5	WNW
18-Sep-2005	15:00	5.4	W
18-Sep-2005	16:00	4.9	WNW
18-Sep-2005	17:00	4.5	WNW
18-Sep-2005	18:00	2.7	S
18-Sep-2005	19:00	2.2	SSW
18-Sep-2005	20:00	2.2	SSW
18-Sep-2005	21:00	3.1	WNW
18-Sep-2005	22:00	1.8	SW
18-Sep-2005	23:00	3.6	W

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Sep-2005	0:00	4	W
19-Sep-2005	1:00	4.9	WNW
19-Sep-2005	2:00	3.6	W
19-Sep-2005	3:00	2.7	W
19-Sep-2005	4:00	3.1	WNW
19-Sep-2005	5:00	2.2	W
19-Sep-2005	6:00	0.4	S
19-Sep-2005	7:00	0.9	SW
19-Sep-2005	8:00	0.9	SSE
19-Sep-2005	9:00	0.4	S
19-Sep-2005	10:00	2.2	W
19-Sep-2005	11:00	3.1	W
19-Sep-2005	12:00	3.1	W
19-Sep-2005	13:00	3.1	W
19-Sep-2005	14:00	3.6	W
19-Sep-2005	15:00	4.5	W
19-Sep-2005	16:00	4	W
19-Sep-2005	17:00	3.6	W
19-Sep-2005	18:00	2.2	W
19-Sep-2005	19:00	1.8	W
19-Sep-2005	20:00	0.4	W
19-Sep-2005	21:00	0	W
19-Sep-2005	22:00	1.8	W
19-Sep-2005	23:00	0.4	ENE
20-Sep-2005	0:00	0	---
20-Sep-2005	1:00	0	---
20-Sep-2005	2:00	0	---
20-Sep-2005	3:00	0	---
20-Sep-2005	4:00	0	---
20-Sep-2005	5:00	0	ENE
20-Sep-2005	6:00	0	---
20-Sep-2005	7:00	0	ENE
20-Sep-2005	8:00	0	---
20-Sep-2005	9:00	0.4	NNE
20-Sep-2005	10:00	0.4	NW
20-Sep-2005	11:00	0.4	NW
20-Sep-2005	12:00	0.9	E
20-Sep-2005	13:00	0.9	NNE
20-Sep-2005	14:00	0.4	NE
20-Sep-2005	15:00	0.4	ENE
20-Sep-2005	16:00	0.4	ENE
20-Sep-2005	17:00	0	N
20-Sep-2005	18:00	0	ENE
20-Sep-2005	19:00	0	ENE
20-Sep-2005	20:00	0	---
20-Sep-2005	21:00	0	ENE
20-Sep-2005	22:00	0	ENE
20-Sep-2005	23:00	0.4	E
21-Sep-2005	0:00	0	---
21-Sep-2005	1:00	0	E
21-Sep-2005	2:00	0	---
21-Sep-2005	3:00	0	---
21-Sep-2005	4:00	0	---
21-Sep-2005	5:00	0	---

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Sep-2005	6:00	0	---
21-Sep-2005	7:00	0	---
21-Sep-2005	8:00	0	E
21-Sep-2005	9:00	0	W
21-Sep-2005	10:00	0.9	NE
21-Sep-2005	11:00	0.4	NE
21-Sep-2005	12:00	1.3	ENE
21-Sep-2005	13:00	0.9	N
21-Sep-2005	14:00	0.9	ENE
21-Sep-2005	15:00	1.3	ENE
21-Sep-2005	16:00	0.4	NE
21-Sep-2005	17:00	0.4	ENE
21-Sep-2005	18:00	0	E
21-Sep-2005	19:00	0	NE
21-Sep-2005	20:00	0	---
21-Sep-2005	21:00	0	ENE
21-Sep-2005	22:00	0	ENE
21-Sep-2005	23:00	0	ENE
22-Sep-2005	0:00	0	---
22-Sep-2005	1:00	0	---
22-Sep-2005	2:00	0	---
22-Sep-2005	3:00	0	ENE
22-Sep-2005	4:00	0	---
22-Sep-2005	5:00	0	---
22-Sep-2005	6:00	0	---
22-Sep-2005	7:00	0	---
22-Sep-2005	8:00	0	---
22-Sep-2005	9:00	0	ENE
22-Sep-2005	10:00	0.9	W
22-Sep-2005	11:00	1.8	SW
22-Sep-2005	12:00	1.8	WSW
22-Sep-2005	13:00	2.2	WSW
22-Sep-2005	14:00	2.2	SW
22-Sep-2005	15:00	2.2	SW
22-Sep-2005	16:00	1.8	WSW
22-Sep-2005	17:00	1.8	S
22-Sep-2005	18:00	0.9	S
22-Sep-2005	19:00	1.3	SSW
22-Sep-2005	20:00	1.8	SSW
22-Sep-2005	21:00	1.8	SSW
22-Sep-2005	22:00	1.8	SW
22-Sep-2005	23:00	3.6	SW
23-Sep-2005	0:00	2.7	SW
23-Sep-2005	1:00	2.2	WSW
23-Sep-2005	2:00	1.8	SW
23-Sep-2005	3:00	2.7	SW
23-Sep-2005	4:00	4	SW
23-Sep-2005	5:00	4.5	SW
23-Sep-2005	6:00	4.5	WSW
23-Sep-2005	7:00	4.5	SW
23-Sep-2005	8:00	4	SW
23-Sep-2005	9:00	4.5	WSW
23-Sep-2005	10:00	4.9	SW
23-Sep-2005	11:00	4.5	SW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Sep-2005	12:00	4	SW
23-Sep-2005	13:00	4	W
23-Sep-2005	14:00	2.7	SW
23-Sep-2005	15:00	2.7	SSW
23-Sep-2005	16:00	3.1	SW
23-Sep-2005	17:00	4	SW
23-Sep-2005	18:00	4.5	WSW
23-Sep-2005	19:00	4.5	SW
23-Sep-2005	20:00	4	SW
23-Sep-2005	21:00	3.1	SW
23-Sep-2005	22:00	2.7	SSW
23-Sep-2005	23:00	3.6	SW
24-Sep-2005	0:00	4	SW
24-Sep-2005	1:00	3.6	WSW
24-Sep-2005	2:00	4.5	SW
24-Sep-2005	3:00	4.5	SW
24-Sep-2005	4:00	4	WSW
24-Sep-2005	5:00	4.5	WSW
24-Sep-2005	6:00	4.5	SW
24-Sep-2005	7:00	4	SW
24-Sep-2005	8:00	4	SW
24-Sep-2005	9:00	4.5	SW
24-Sep-2005	10:00	4.9	SW
24-Sep-2005	11:00	6.3	SSW
24-Sep-2005	12:00	6.7	SW
24-Sep-2005	13:00	6.7	SW
24-Sep-2005	14:00	7.2	SW
24-Sep-2005	15:00	6.3	SW
24-Sep-2005	16:00	6.3	SW
24-Sep-2005	17:00	6.7	SW
24-Sep-2005	18:00	7.2	W
24-Sep-2005	19:00	8	W
24-Sep-2005	20:00	8.5	W
24-Sep-2005	21:00	8.5	W
24-Sep-2005	22:00	9.8	W
24-Sep-2005	23:00	9.4	W
25-Sep-2005	0:00	8.5	W
25-Sep-2005	1:00	7.6	W
25-Sep-2005	2:00	7.2	WSW
25-Sep-2005	3:00	5.8	W
25-Sep-2005	4:00	5.8	WNW
25-Sep-2005	5:00	6.7	W
25-Sep-2005	6:00	6.7	W
25-Sep-2005	7:00	5.4	WNW
25-Sep-2005	8:00	6.3	WNW
25-Sep-2005	9:00	7.2	W
25-Sep-2005	10:00	7.2	WNW
25-Sep-2005	11:00	6.3	W
25-Sep-2005	12:00	4.5	W
25-Sep-2005	13:00	5.4	WNW
25-Sep-2005	14:00	7.2	WNW
25-Sep-2005	15:00	6.7	WNW
25-Sep-2005	16:00	5.8	WNW
25-Sep-2005	17:00	6.7	W

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Sep-2005	18:00	5.4	W
25-Sep-2005	19:00	6.7	WNW
25-Sep-2005	20:00	6.3	WNW
25-Sep-2005	21:00	6.3	W
25-Sep-2005	22:00	6.3	WNW
25-Sep-2005	23:00	6.3	W
26-Sep-2005	0:00	6.7	WNW
26-Sep-2005	1:00	6.7	WNW
26-Sep-2005	2:00	6.3	WNW
26-Sep-2005	3:00	5.8	WNW
26-Sep-2005	4:00	5.8	W
26-Sep-2005	5:00	4	WNW
26-Sep-2005	6:00	3.1	WNW
26-Sep-2005	7:00	4.9	WNW
26-Sep-2005	8:00	2.2	WNW
26-Sep-2005	9:00	4	WNW
26-Sep-2005	10:00	2.2	W
26-Sep-2005	11:00	4	W
26-Sep-2005	12:00	3.1	W
26-Sep-2005	13:00	4	W
26-Sep-2005	14:00	3.6	W
26-Sep-2005	15:00	3.6	W
26-Sep-2005	16:00	3.6	WNW
26-Sep-2005	17:00	4	WNW
26-Sep-2005	18:00	3.6	WNW
26-Sep-2005	19:00	3.6	WNW
26-Sep-2005	20:00	4	WNW
26-Sep-2005	21:00	4.5	WNW
26-Sep-2005	22:00	3.1	WNW
26-Sep-2005	23:00	3.1	WNW
27-Sep-2005	0:00	3.6	W
27-Sep-2005	1:00	3.1	WNW
27-Sep-2005	2:00	2.7	W
27-Sep-2005	3:00	3.1	W
27-Sep-2005	4:00	3.1	W
27-Sep-2005	5:00	3.1	W
27-Sep-2005	6:00	2.2	WNW
27-Sep-2005	7:00	3.6	W
27-Sep-2005	8:00	3.6	W
27-Sep-2005	9:00	2.7	NW
27-Sep-2005	10:00	3.1	WNW
27-Sep-2005	11:00	2.7	WNW
27-Sep-2005	12:00	4	WNW
27-Sep-2005	13:00	3.1	W
27-Sep-2005	14:00	3.6	WNW
27-Sep-2005	15:00	3.6	WNW
27-Sep-2005	16:00	2.2	WNW
27-Sep-2005	17:00	1.8	WNW
27-Sep-2005	18:00	2.2	W
27-Sep-2005	19:00	2.2	W
27-Sep-2005	20:00	2.2	W
27-Sep-2005	21:00	1.8	WSW
27-Sep-2005	22:00	1.8	WSW
27-Sep-2005	23:00	1.3	SW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Sep-2005	0:00	0.9	SW
28-Sep-2005	1:00	1.3	WSW
28-Sep-2005	2:00	1.3	SSW
28-Sep-2005	3:00	1.8	WSW
28-Sep-2005	4:00	2.2	W
28-Sep-2005	5:00	2.2	W
28-Sep-2005	6:00	0.9	SSW
28-Sep-2005	7:00	1.8	W
28-Sep-2005	8:00	1.8	W
28-Sep-2005	9:00	2.7	WSW
28-Sep-2005	10:00	3.1	WNW
28-Sep-2005	11:00	3.1	WNW
28-Sep-2005	12:00	3.6	WNW
28-Sep-2005	13:00	3.6	WNW
28-Sep-2005	14:00	3.1	NW
28-Sep-2005	15:00	4	WNW
28-Sep-2005	16:00	1.3	W
28-Sep-2005	17:00	1.3	W
28-Sep-2005	18:00	0.9	W
28-Sep-2005	19:00	0.4	W
28-Sep-2005	20:00	0.4	ESE
28-Sep-2005	21:00	0.4	S
28-Sep-2005	22:00	0	---
28-Sep-2005	23:00	0	---
29-Sep-2005	0:00	0	SSW
29-Sep-2005	1:00	0	---
29-Sep-2005	2:00	0	---
29-Sep-2005	3:00	0	---
29-Sep-2005	4:00	0	---
29-Sep-2005	5:00	0	---
29-Sep-2005	6:00	0	---
29-Sep-2005	7:00	0	---
29-Sep-2005	8:00	0	---
29-Sep-2005	9:00	0	W
29-Sep-2005	10:00	1.3	W
29-Sep-2005	11:00	1.8	WNW
29-Sep-2005	12:00	2.2	W
29-Sep-2005	13:00	2.7	WNW
29-Sep-2005	14:00	1.8	W
29-Sep-2005	15:00	2.2	W
29-Sep-2005	16:00	1.8	W
29-Sep-2005	17:00	0.9	W
29-Sep-2005	18:00	0.4	W
29-Sep-2005	19:00	0	SSW
29-Sep-2005	20:00	0	---
29-Sep-2005	21:00	0	SSW
29-Sep-2005	22:00	0	---
29-Sep-2005	23:00	0	---
30-Sep-2005	0:00	0	---
30-Sep-2005	1:00	0	---
30-Sep-2005	2:00	0	SSW
30-Sep-2005	3:00	0	---
30-Sep-2005	4:00	0	---
30-Sep-2005	5:00	0	---



## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Sep-2005	6:00	0	---
30-Sep-2005	7:00	0	---
30-Sep-2005	8:00	0	SSW
30-Sep-2005	9:00	0	WNW
30-Sep-2005	10:00	0.4	W
30-Sep-2005	11:00	0.4	W
30-Sep-2005	12:00	0.4	WNW
30-Sep-2005	13:00	1.3	WNW
30-Sep-2005	14:00	0.9	NE
30-Sep-2005	15:00	1.8	NE
30-Sep-2005	16:00	1.8	NE
30-Sep-2005	17:00	0.9	NE
30-Sep-2005	18:00	1.8	ENE
30-Sep-2005	19:00	0.4	NE
30-Sep-2005	20:00	0.4	ESE
30-Sep-2005	21:00	0	E
30-Sep-2005	22:00	0	---
30-Sep-2005	23:00	0	E

---

---

**APPENDIX E  
1-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

---

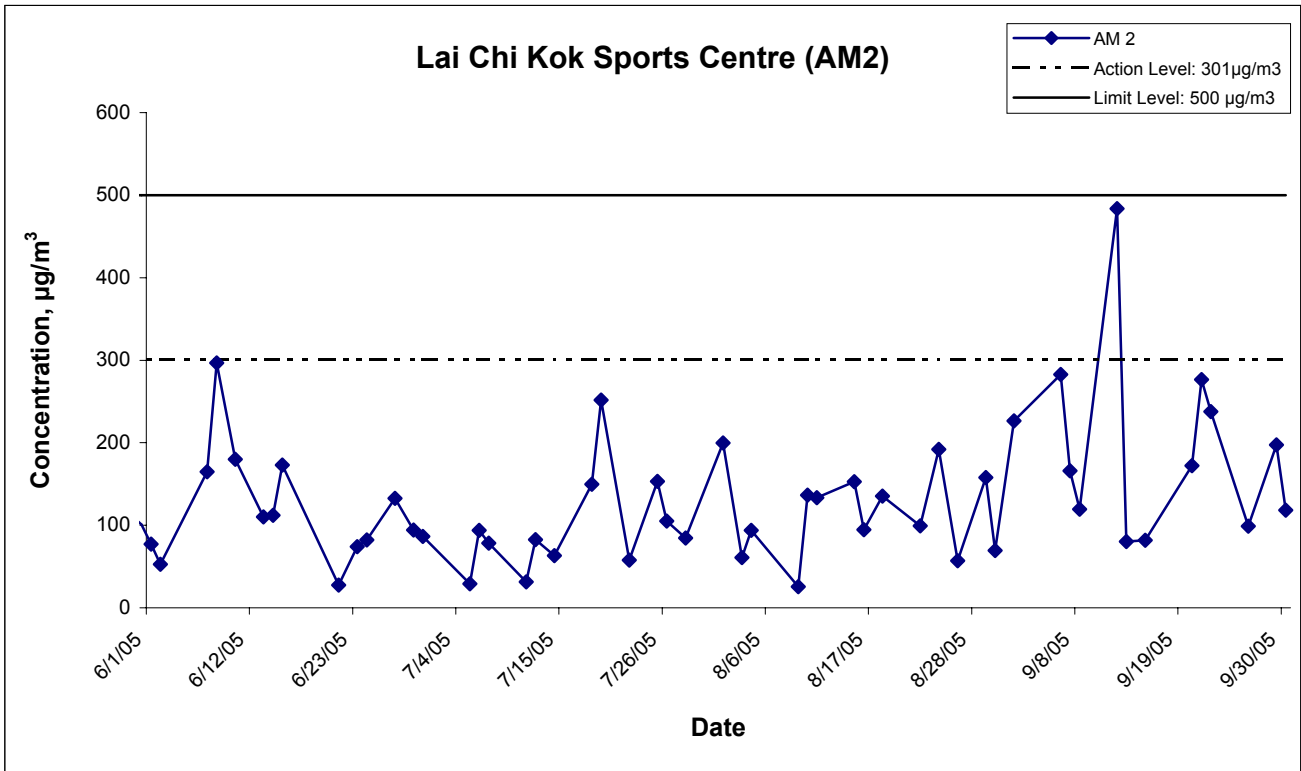
---

## Appendix E - 1-hour TSP Monitoring Results

### Location AM 2 - Lai Chi Kok Sports Centre

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
1-Sep-05	Sunny	2.8518	2.8683	1.21	1.21	3142.3	3143.3	305.6	750.9	0.0165	1.21	72.8	1.0	226.6
6-Sep-05	Cloudy	2.8634	2.8842	1.23	1.23	3143.3	3144.3	302.0	758.1	0.0208	1.23	73.6	1.0	282.7
7-Sep-05	Sunny	2.8904	2.9026	1.23	1.23	3168.3	3169.3	302.5	758.5	0.0122	1.23	73.6	1.0	165.9
8-Sep-05	Sunny	2.8576	2.8664	1.23	1.23	3169.3	3170.3	301.4	759.6	0.0088	1.23	73.7	1.0	119.4
12-Sep-05	Sunny	2.8267	2.8623	1.23	1.23	3170.3	3171.3	302.3	758.7	0.0356	1.23	73.6	1.0	<b>483.8</b>
13-Sep-05	Sunny	2.8538	2.8597	1.23	1.23	3195.3	3196.3	303.3	761.5	0.0059	1.23	73.6	1.0	80.2
15-Sep-05	Sunny	2.8520	2.8580	1.22	1.22	3201.0	3202.0	304.9	761.2	0.0060	1.22	73.4	1.0	81.8
20-Sep-05	Sunny	2.8276	2.8403	1.23	1.23	3226.0	3227.0	301.6	761.7	0.0127	1.23	73.8	1.0	172.1
21-Sep-05	Sunny	2.8285	2.8487	1.22	1.22	3227.0	3228.0	305.2	755.6	0.0202	1.22	73.1	1.0	276.4
22-Sep-05	Sunny	2.8526	2.8701	1.23	1.23	3228.0	3229.0	303.1	760.4	0.0175	1.23	73.6	1.0	237.9
26-Sep-05	Cloudy	2.8208	2.8281	1.23	1.23	3253.1	3254.1	299.7	758.6	0.0073	1.23	73.9	1.0	98.8
29-Sep-05	Sunny	2.8268	2.8414	1.23	1.23	3254.1	3255.1	301.4	762.7	0.0146	1.23	73.9	1.0	197.6
30-Sep-05	Sunny	2.8575	2.8662	1.23	1.23	3279.1	3280.1	303.5	761.2	0.0087	1.23	73.6	1.0	118.3
													Min	80.2
													Max	<b>483.8</b>
													Average	195.5

# 1-hr TSP Levels



<b>Title</b> Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/01 - Lai Chi Kok Viaduct Graphical Presentation of 1-hour TSP Impact Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> MA3024	
	<b>Date</b> Sep 05	<b>Appendix</b> E	

---

---

**APPENDIX F  
24-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

---

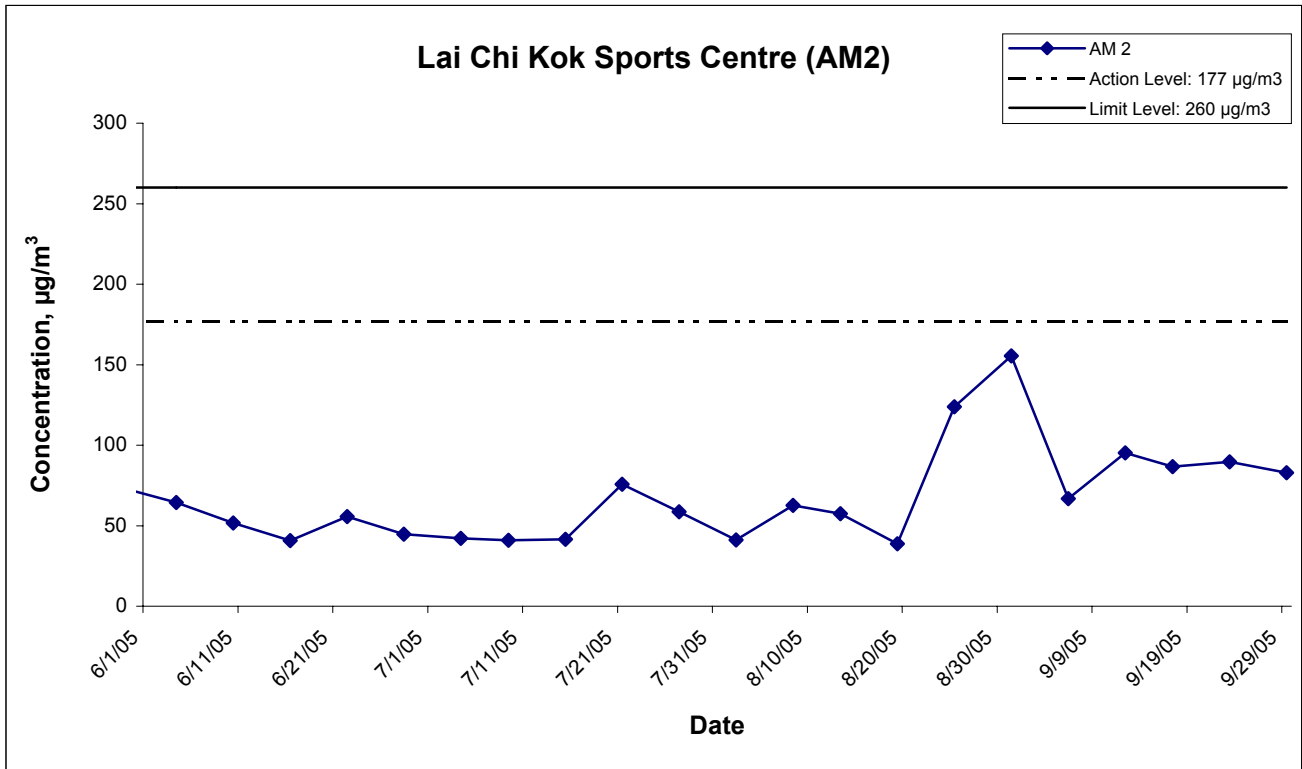
---

## Appendix F - 24-hour TSP Monitoring Results

### Location AM 2 - Lai Chi Kok Sports Centre

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
6-Sep-05	Sunny	2.8577	2.9757	1.23	1.23	3144.3	3168.3	302.2	757.9	0.1180	1.23	1766.0	24.0	66.8
12-Sep-05	Sunny	2.8677	3.0358	1.23	1.23	3171.3	3195.3	302.3	758.7	0.1681	1.23	1765.9	24.0	95.2
17-Sep-05	Sunny	2.8345	2.9874	1.23	1.23	3202.0	3226.0	302.9	759.6	0.1529	1.23	1765.2	24.0	86.6
23-Sep-05	Cloudy	2.8145	2.9729	1.23	1.23	3229.0	3253.1	301.1	756.9	0.1584	1.23	1768.2	24.0	89.6
29-Sep-05	Sunny	2.8352	2.9819	1.23	1.23	3255.1	3279.1	301.9	760.9	0.1467	1.23	1769.6	24.0	82.9
													Min	66.8
													Max	95.2
													Average	84.2

## 24-hr TSP Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/01 - Lai Chi Kok Viaduct Graphical Presentation of 24-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Sep 05	Appendix F	

---

---

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

---

---



## Appendix G - Noise Monitoring Results

Location NM4 - Mei Foo Sun Chuen, Phase 5								
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks		
			Measured Noise Level				Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>		L <sub>eq</sub>	L <sub>eq</sub>
6-Sep-05	14:20	Cloudy	76.5	78.0	74.0	Road traffic noise from Ching Cheung Road was identified as the major noise source.		
13-Sep-05	11:00	Sunny	76.6	79.0	75.0			
21-Sep-05	16:10	Sunny	75.8	77.5	73.0			
29-Sep-05	13:35	Cloudy	76.3	77.5	72.5			

Location NM8a - M/F of Nob Hill								
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks		
			Measured Noise Level				Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>		L <sub>eq</sub>	L <sub>eq</sub>
6-Sep-05	15:10	Cloudy	74.4	76.5	71.0	Road traffic noise from Ching Cheung Road was identified as the major noise source.		
13-Sep-05	13:30	Sunny	73.0	75.0	69.5			
21-Sep-05	14:55	Sunny	74.5	78.0	72.5			
29-Sep-05	14:20	Cloudy	76.0	78.0	71.5			

Location NM8b - 3/F of Nob Hill								
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks		
			Measured Noise Level				Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>		L <sub>eq</sub>	L <sub>eq</sub>
6-Sep-05	15:45	Cloudy	77.0	79.0	74.5	Road traffic noise from Ching Cheung Road was identified as the major noise source.		
13-Sep-05	14:05	Sunny	77.7	79.5	74.0			
21-Sep-05	14:20	Sunny	77.9	78.5	72.0			
29-Sep-05	15:00	Cloudy	77.8	79.5	72.5			

Location NM9 - Hoi Lai Estate								
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks		
			Measured Noise Level				Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>		L <sub>eq</sub>	L <sub>eq</sub>
6-Sep-05	16:30	Sunny	66.5	69.0	62.0			
13-Sep-05	10:10	Sunny	70.6	73.0	67.5			
21-Sep-05	13:25	Sunny	68.0	69.5	64.5			
29-Sep-05	15:48	Cloudy	66.5	68.0	63.0			

# Construction Noise Level (Leq) = Measured Noise Level (Leq) - Baseline Noise Level (Leq)

\*Bolted value indicated limit level exceedance

## Appendix G - Noise Monitoring Results

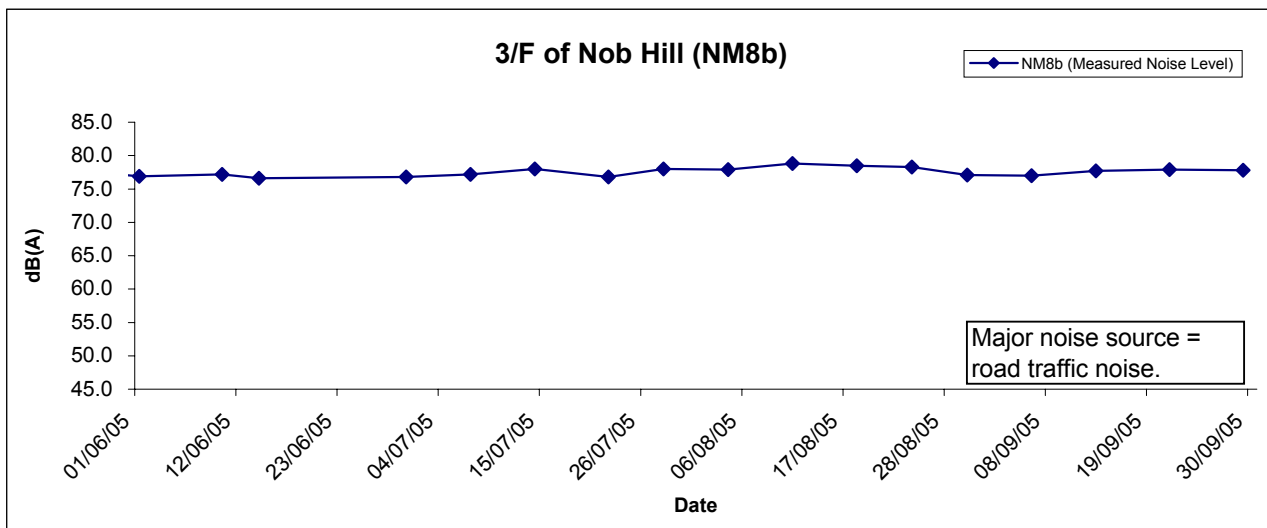
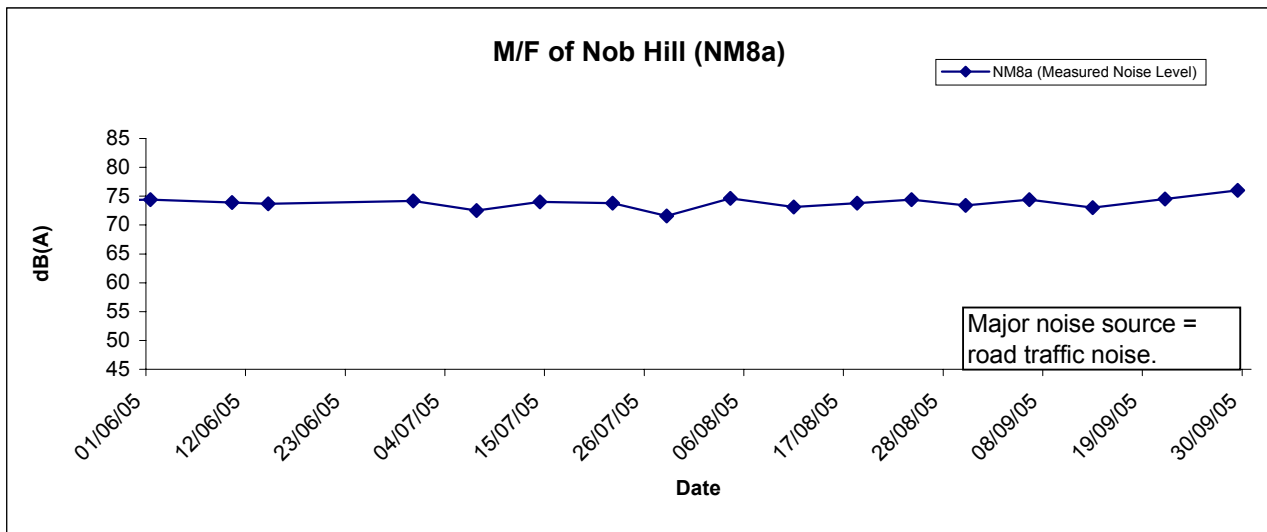
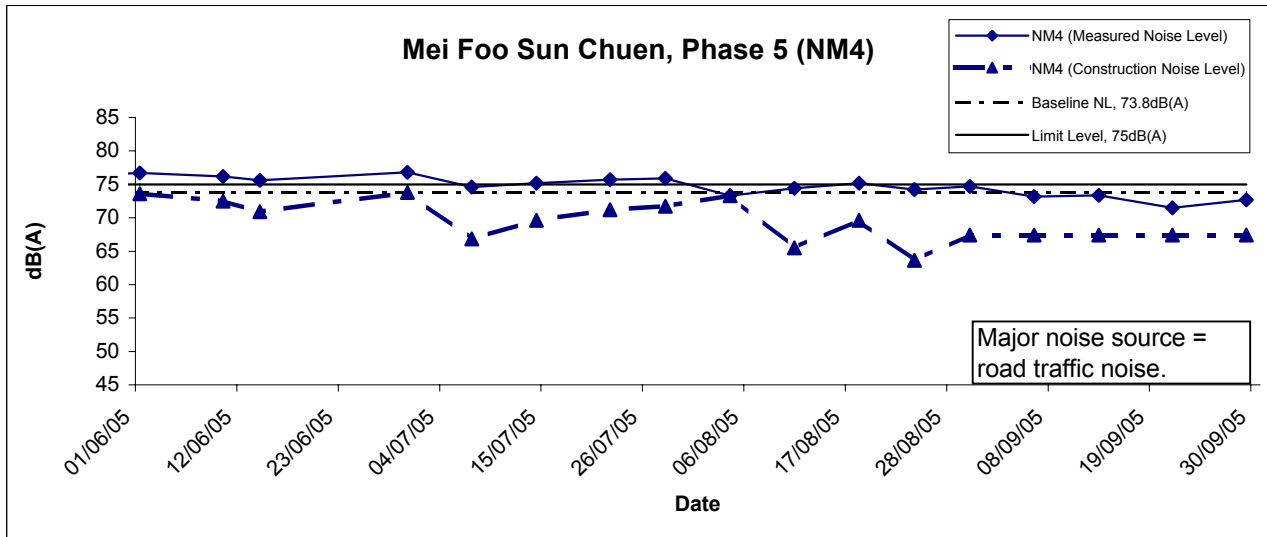
### Restricted Hours - 19:00 to 23:00 on normal weekdays

Location NM9 - Hoi Lai Estate						
Date	Time	Weather	dB (A) (5-min)			
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	Average L <sub>eq</sub>
2-Sep-05	20:07	Fine	65.7	68.0	61.0	66.1
	20:12		66.2	69.0	61.5	
	20:17		66.5	69.0	62.5	
6-Sep-05	19:50	Fine	66.0	68.0	61.5	66.1
	19:55		65.8	68.0	61.0	
	20:00		66.4	69.0	62.0	
13-Sep-05	19:05	Cloudy	66.5	69.0	63.5	66.8
	19:10		66.8	69.0	64.0	
	19:15		67.2	69.5	64.0	
22-Sep-05	19:00	Cloudy	65.5	67.5	62.0	65.6
	19:05		65.5	67.5	62.5	
	19:10		65.9	68.0	63.0	
27-Sep-05	19:15	Cloudy	65.7	68.0	60.0	65.8
	19:20		65.3	68.0	60.5	
	19:25		66.3	68.5	60.5	

# Construction Noise Level (Leq) = Measured Noise Level (Leq) - Baseline Noise Level (Leq)

\*Bolted value indicated limit level exceedance

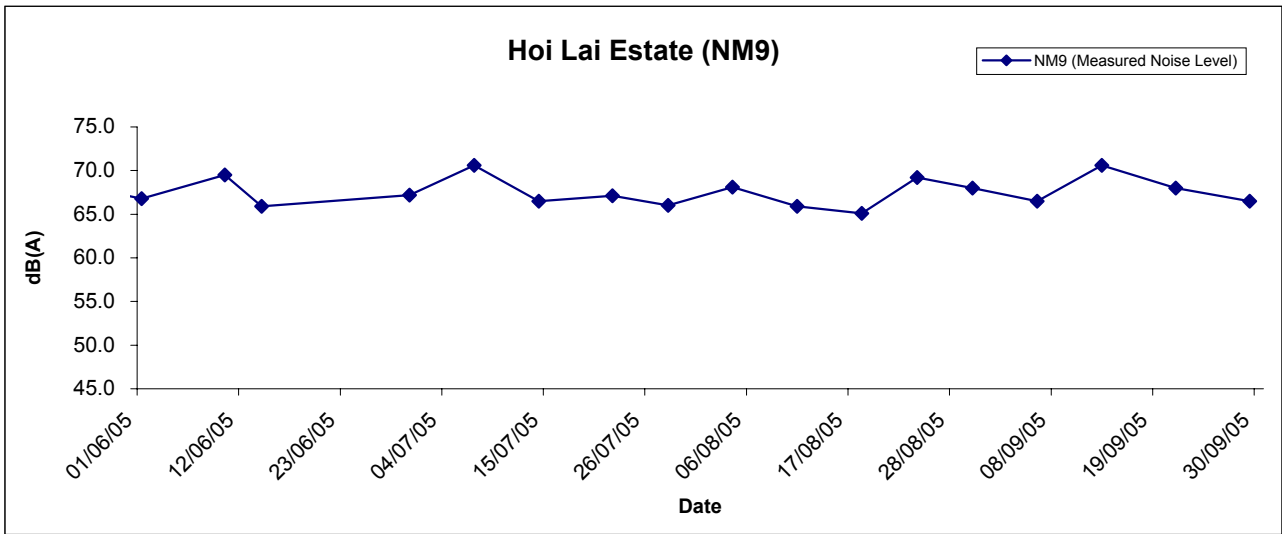
### Noise Levels



\* Construction Noise Level = Measured Noise Level - Baseline Level  
 (If the measured noise level is lower than the baseline level, the construction noise level will be taken as the measured one)

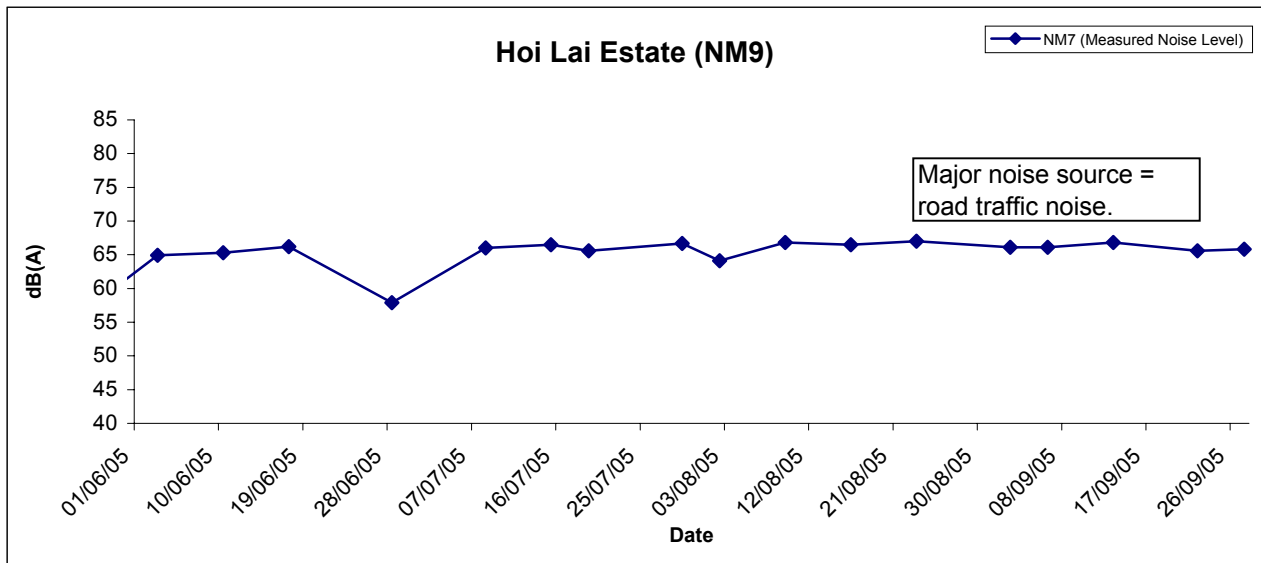
Title Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin Contract HY/2003/01 - Lai Chi Kok Viaduct  Graphical Presentation of Construction Noise Monitoring Results	Scale	Project No.	
	Date	Appendix	
	N.T.S	MA3024	
	Sep 05	G	

## Noise Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin Contract HY/2003/01 - Lai Chi Kok Viaduct  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Sep 05	Appendix G	

## Restricted Hours (19:00 to 23:00) - Noise Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Sep 05	Appendix G	

---

---

**APPENDIX H  
SUMMARY OF EXCEEDANCE**

---

---

### Summary of Exceedances Recorded in the Reporting Month

#### a) Exceedance Report for 1-hr TSP

Exceedance(s) on 12 September 2005

Station No.	Parameter	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	Level exceeded
AM2	1-hr TSP	483.8	301	500	Action
(a) Statement of exceedance(s) 1-hr TSP level at Station AM2 (Lai Chi Kok Park Sports Centre) exceeded the Action level.					
(b) Cause of exceedance(s) It was considered that the exceedance was not related to the R8-LCKV construction works based on the following observations: <ul style="list-style-type: none"> <li>Based on the EPD monitoring data, the hourly Air Pollution Index (API) from most air quality monitoring stations was ranked as high to very high. The APIs recorded at the EPD's Sham Shui Po and Kwai Chung Stations were 108 and 109 (both ranked as very high), respectively during the sampling period (0900 to 1000 hrs).</li> <li>High TSP levels were also obtained in our other EM&amp;A Projects, covering the areas of Sha Tin, Yuen Long and Lai Chi Kok, etc. Exceedances of air quality were also recorded at the monitoring stations in the above areas.</li> <li>Dust mitigation measures had been implemented by the Contractor, such as covering the exposed slope surfaces and watering of haul roads. No observable dust source was identified in the R8-LCKV construction site near the monitoring station.</li> <li>Therefore, the recorded exceedance of air quality may be due to the high ambient TSP level as a consequence of regional air pollution over Hong Kong.</li> </ul>					
(c) Action required under the action plan N/A					
(d) Action taken under the action plan N/A					
(e) ET's conclusions and recommendations for mitigation The exceedance was not due to the Project works and no further action is required.					

#### b) Exceedance Report for 24-hr TSP (NIL)

#### c) Exceedance Report for Construction Noise (NIL)

---

---

**APPENDIX I  
SITE AUDIT SUMMARY**

---

---



*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/01 - Lai Chi Kok Viaduct*

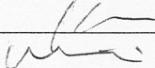
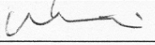
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	50908-LCKV
Date	8 September 2005 (Thu)
Time	0930 - 1200

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
50908L-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>The Contractor was recommended to construct a bund or ditch channel beside the open channel at Pier 13.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <p>No environmental deficiency was identified during the site inspection.</p> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	B5i
50908L-02	<p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>Stagnant water was observed on the concrete block at Pier 17. The Contractor was recommended to fill the concrete block to prevent water accumulation.</li> <li>The environmental deficiency identified during last audit (ref. 50831-LCKV) on 31 August 2005 was rectified / improved by the Contractor.</li> </ul>	G5

	Name	Signature	Date
Recorded by	KK Chan		9 September 2005
Checked by	Winniss Kong		9 September 2005

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/01 - Lai Chi Kok Viaduct*

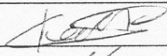
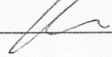
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	50914-LCKV
Date	14 September 2005 (Wed)
Time	0930 - 1125

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
50914L-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>The chemical was storage without the drip tray at Pier P13. The contractor was reminded to provide the proper storage for fuel storage and chemical.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>The environmental deficiency identified during last audit (ref. 50908-LCKV) on 8 September 2005 was rectified / improved by the Contractor.</li> </ul>	E3

	Name	Signature	Date
Recorded by	Keith Chau		14 September 2005
Checked by	KK Chan		14 September 2005

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/01 - Lai Chi Kok Viaduct*

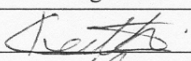
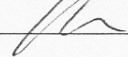
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	50921-LCKV
Date	21 September 2005 (Wed)
Time	0930 - 1125

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
50921L-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>The contractor was reminded to ensure the impervious sheets near the public roads at Nob Hill and S1 properly maintained.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	C13
50921L-02	<p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>The oil stained soil was observed under the repaired dump truck at Wai Man Tsuen. The contractor was reminded to remove the oil stained properly and pay more attention during the repairing equipment.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>The environmental deficiency identified during last audit (ref. 50914-LCKV) on 14 September 2005 was rectified / improved by the Contractor.</li> </ul>	E12

	Name	Signature	Date
Recorded by	Keith Chau		22 September 2005
Checked by	KK Chan		22 September 2005

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/01 - Lai Chi Kok Viaduct*

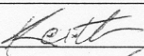
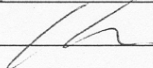
Weekly Site Inspection Record Summary

**Inspection Information**

Checklist Reference Number	50928-LCKV
Date	28 September 2005 (Wed)
Time	1330 - 1600

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
50928L-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>Spill of waste liquid from a rubbish bin was observed at Lai Po Road. The contractor was reminded to keep the site clean and tidy.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>The environmental deficiency identified during last audit (ref. 50921-LCKV) on 21 September 2005 was rectified / improved by the Contractor.</li> </ul>	E8

	Name	Signature	Date
Recorded by	Keith Chau		28 September 2005
Checked by	KK Chan		28 September 2005

---

---

**APPENDIX J**  
**EVENT ACTION PLANS**

---

---

## Appendix J - Event Action Plans

### Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> <li>2. Check monitoring data and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice</li> <li>2. Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with ER &amp; for remedial actions required</li> <li>6. If exceedance continues, arrange meeting with ER &amp; IEC</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> <li>3. Discuss with ET and Contractor on possible remedial measure</li> <li>4. Advise the ER &amp; ET on the effectiveness of the proposed remedial measures</li> <li>5. Supervise the implementation of the remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Check Contractor's working methods</li> <li>4. Discuss with ET, IEC and Contractor on proposed remedial actions</li> <li>5. Ensure remedial actions properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to ER within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if appropriate</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess effectiveness of Contractor's</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> <li>3. Discuss with ET and Contractor on possible remedial measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Check Contractor's working methods</li> <li>4. Discuss with ET, IEC and Contractor on</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to ER within 3 working days of notification</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	Contractor
	remedial actions and keep EPD and ER & IEC informed of the results	4. Advise the ER & ET on the effectiveness of the proposed remedial measures 5. Supervise the implementation of the remedial measures	proposed remedial actions 5. Ensure remedial actions properly implemented	3. Implement the agreed proposals 4. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source 2. Inform ER, IEC, Contractor and EPD the cause & actions taken for the exceedances 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Investigate the causes of exceedance 6. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented. 7. Arrange meeting with EPD, IEC and ER to discuss the remedial actions to be taken 8. Assess effectiveness of Contractor's remedial actions and keep EPD and ER & IEC informed of the results 9. If exceedance stops, cease additional monitoring	1. Checking monitoring data submitted by ET 2. Discuss amongst ER, ET and Contractor on possible remedial measures 3. Review Contractor's remedial measures whenever necessary to ensure their effectiveness and advise the ER accordingly 4. Supervise the implementation of the remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 4. Discuss amongst ET, IEC and the Contractor on proposed remedial actions 5. In consultation with IEC, agree with the contractor remedial measures to be implemented 6. Ensure remedial measure are properly implemented 7. 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	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC, ER within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event/Action Plan for Construction Noise

Exceedance	ACTION			
	ET	.IEC	ER	Contractor
Action Level	<p>1. Discuss with the IEC and ER and seek to identify potential noise source</p> <p>2. Undertake noise measurement to confirm the validity of complaint</p> <p>3. Inform ER&amp;IEC in writing Discuss remedial actions required with ER&amp;IEC if an exceedance is recorded</p> <p>4. Increase monitoring frequency to demonstrate efficacy of remedial measures</p> <p>5. If exceedance continues, meet with ER&amp;IEC to review implementation of appropriate mitigation measures.</p> <p>6. If exceedance stops, cease additional monitoring</p>	<p>1. Review the analyzed results submitted by the ET</p> <p>2. Review the proposed remedial measures by the Contractor and advise the ER &amp; ET accordingly</p> <p>3. Supervise the implementation of remedial measures</p>	<p>1. Confirm receipt of notification of complaint and notify Contractor immediately</p> <p>2. Check monitoring data trends and Contractor's working methods</p> <p>3. Remind the Contractor of his contractual obligations and discuss with ET, IEC and Contractor on proposed remedial actions</p> <p>4. Assess the efficacy of remedial actions and keep the Contractor informed</p> <p>5. Inform complainant of actions taken</p>	<p>1. Submit proposals for remedial actions to ER within three working days of notification</p> <p>2. Amend proposals if required by the Engineer</p> <p>3. Implement the remedial actions immediately upon instruction</p> <p>4. Liaise with the ER to optimize the effectiveness of the agreed mitigation</p> <p>5. Amend proposal if appropriate</p>



Exceedance	ACTION			
	ET	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings</li> <li>2. Investigate the cause of the exceedance and identify the main source(s) of impact</li> <li>3. Inform ER&amp;IEC and EPD in writing</li> <li>4. Discuss remedial actions required with ER&amp;IEC</li> <li>5. Increase monitoring frequency to demonstrate efficacy of remedial measures</li> <li>6. Assess efficacy of remedial actions and keep ER &amp; IEC informed of the results</li> <li>7. If exceedance continues, meet with ER&amp;IEC to identify appropriate mitigation measures</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Review Contractor's remedial actions to assure their effectiveness and advise the ER &amp;ET accordingly</li> <li>3. Supervise the implementation of the remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance and notify Contractor</li> <li>2. Check monitoring data trends and Contractor's working methods</li> <li>3. Discuss with ET, IEC and Contractor on proposed remedial actions to be implemented</li> <li>4. Assess the efficacy of remedial actions and keep the Contractor informed</li> <li>5. If exceedance continuous, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is aborted</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to ER immediately not more than 3 working days of notification</li> <li>3. Amend proposals if required by the ER</li> <li>4. Implement remedial actions immediately upon instruction</li> <li>5. Liaise with the ER to optimize the effectiveness of the agreed mitigation</li> <li>6. Resubmit proposals if problem still not under control</li> <li>7. Stop the relevant portion of works as determined by the ER until the exceedance is aborted</li> </ol>

---

---

**APPENDIX K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

---

---

## Appendix K - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
<p align="center"><b>Construction Dust</b></p>	<ul style="list-style-type: none"> <li>Any stockpile of dusty materials or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet.</li> </ul>	^
	<ul style="list-style-type: none"> <li>A stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Vehicle washing facilities should be provided at every exit point.</li> </ul>	^
	<ul style="list-style-type: none"> <li>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Every main haul road should be sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet.</li> </ul>	^
	<ul style="list-style-type: none"> <li>The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Any stockpile of dusty materials should be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.</li> </ul>	^
	<ul style="list-style-type: none"> <li>All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site.</li> <li>The working area of any excavation should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet.</li> </ul>	^
<p align="center"><b>Construction Noise</b></p>	<ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on –site and plant should be serviced regularly during the construction works.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Plant known to emit noise strongly in one direction, should where possible, be orientated to direct noise away from the NSRS.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Mobile plant should be sited as far away from NSRs as possible.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> <li>Use quiet plant and Working Method</li> </ul>	^
	<ul style="list-style-type: none"> <li>Reduce the number of plant operating in critical areas close NSRs.</li> <li>Construct temporary and movable noise barriers</li> </ul>	^

Types of Impacts	Mitigation Measures	Status
Water Quality	<i>Construction Runoff and Drainage</i>	
	<ul style="list-style-type: none"> <li>Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilities runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates.</li> </ul>	^
	<ul style="list-style-type: none"> <li>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporarily diverted drainage should be reinstated to its original condition when the construction works has finished or the temporary diversion is no longer required</li> </ul>	^
	<ul style="list-style-type: none"> <li>Sand silt in the wash water from the wheel washing facilities, which ensure no earth, mud and debris is deposited on roads, should be settled out the removed before discharging into storm drains. A section of the road between the wheel washing bay and the public road should be paved with backfill to prevent wash water or other site runoff form entering public road drains.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Oil interceptors should be provided in the drainage system and regularly emptied to prevent the release of oils and grease into the storm water drainage system after accidental spillage. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Silt removal facilities, channels and manholes shall be suitably maintained with the deposited silt and grit being removed at least once a week, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels shall be provided along the site boundary or at the locations agreed with the ET Leader. Rainwater pumped out from trenches or foundation excavations shall be discharged into silt removal facilities before discharge into storm drains.</li> </ul>	^
	<ul style="list-style-type: none"> <li>All generators, fuel and oil storage shall be within bunded areas. Drainage from the areas shall be connected to storm drains via a petrol interceptor.</li> </ul>	^
	<i>Tunnelling Work</i>	
	<ul style="list-style-type: none"> <li>Temporary open storage of excavated materials should be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials form the drill and blast tunnelling work should be diverted to the drainage system via appropriate sediment traps.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Ground water pumped out of tunnels should be discharged into the drainage channels which incorporated sediment traps to enhance deposition rates and to remove silt.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Spend grouts used in diaphragm wall construction should be collected in a separate slurry collection system, reconditioned and reused wherever practicable. The disposal of used grouting materials will only be permitted if it is treated to the TM standards before discharge to the storm drains or disposal to landfill.</li> </ul>	N/A

Types of Impacts	Mitigation Measures	Status
	<i>General Construction Activities</i>	
	<ul style="list-style-type: none"> <li>• Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column and cause water quality impacts.</li> <li>• All fuel tanks and storage areas will be provided with locks and be located on sealed areas (within bunds of a capacity equal to 110% of the storage capacity of the largest tank or 20% by volume of the fuel stored in that areas, whichever in the greatest).</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
	<i>Sewage Effluent</i>	
	<ul style="list-style-type: none"> <li>• Construction work force sewage discharges from fixed toilet facilities on-site should be connected to the nearby existing trunk sewer wherever feasible. However, for areas where existing trunk sewer is not available, it is recommended that appropriate and adequate on site portable chemical toilets should be provided by a licensed contractor who will be responsible for appropriate disposal and maintenance of these facilities.</li> <li>• It is considered that sewage discharges could also be treated by on-site septic tanks and soakaway. Minimum clearance away from streams and catchments and other requirements for the proposed septic tank and soakaway should be referred to EPD's Practice Note for Professional Persons, Drainage Plans.</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>
<b>Waste</b>	<i>General</i>	
	<ul style="list-style-type: none"> <li>• Training and instruction shall be given at a site to construction staff to increase awareness and draw attention to waste management issues and the need to minimise waste generation. The training requirement shall be included in the site waste management plan.</li> </ul>	<p style="text-align: center;">^</p>
	<i>Storage, Collection and Transportation of Waste</i>	
	<ul style="list-style-type: none"> <li>• Wastes shall be handled and stored in a manner to ensure that they are held securely without loss or leakage.</li> <li>• Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits.</li> <li>• Waste shall be removed on a daily basis.</li> <li>• Waste storage area shall be maintained and cleaned on a daily basis.</li> <li>• Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers.</li> <li>• Obtain necessary waste disposal permits from the appropriate authorities if they are required.</li> <li>• Wastes shall be disposed of at licensed waste disposal facilities.</li> <li>• Develop procedure such as ticketing system to facilitate tracking of loads, particularly for chemical waste, and to ensure that illegal disposal of wastes does not occur.</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
	<ul style="list-style-type: none"> <li>• Maintain records of the quantities of wastes generated, recycled and disposed.</li> </ul>	<p style="text-align: center;">^</p>
	<i>Surplus Excavated Materials</i>	
	<ul style="list-style-type: none"> <li>• Due to the high risk of loose material being washed into the existing nullah, stockpile materials should be properly compacted and covered from water erosion and located at least 10m away from the nullah wall.</li> </ul>	<p style="text-align: center;">^</p>
<i>Construction and Demolition (C&amp;D) Waste</i>		

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> <li>• Careful design, planning and good site management shall be adopted to minimise over-ordering and generation of waste materials such as concrete grouts.</li> <li>• The handling and disposal of bentonite slurries shall be undertaken in accordance with Practice Note for Professional Persons – Construction Site Drainage (ProPECC PN 1/94) on construction site drainage.</li> <li>• Construction and demolition (C&amp;D) material shall be segregated to inert and non-inert parts. The inert portion shall re-used at areas of reclamation or land formation, or to public filling area shall such allocation is deemed necessary. The non-inert portion shall be disposed of to landfill.</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p>
	<p><i>Chemical Waste</i></p> <ul style="list-style-type: none"> <li>• Chemical waste that is produce during construction shall be handled in accordance with the Cod of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> <li>• Containers used for the storage of chemical wastes should: <ul style="list-style-type: none"> <li>a. Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>b. Have a capacity of less than 450 litres unless the specifications have been approved by the EPD;</li> <li>c. Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste Regulations.</li> </ul> </li> <li>• The storage area for chemical wastes should: <ul style="list-style-type: none"> <li>a. Be clearly labelled and used solely for the storage of chemical waste;</li> <li>b. Be enclosed on at least 3 sides;</li> <li>c. 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 the area, whichever is largest;</li> <li>d. Have adequate ventilation;</li> <li>e. Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary);</li> <li>f. Be arranged so that incompatible materials are adequately separated.</li> </ul> </li> <li>• Disposal of chemical waste shall be via a licensed waste collector; and to a facility licensed to receive chemical waste; or a reuser of the waste (under approval from EPD).</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> <li>• General refuse generated on-site shall be stored in enclosed bins or compaction unit separate from C&amp;D and chemical wastes. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&amp;D and chemical wastes, on a daily for every second day basis to minimise odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law.</li> <li>• Reusable rather than disposable dishware shall be used if feasible.</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Types of Impacts	Mitigation Measures	Status
Ecology	<ul style="list-style-type: none"> <li>• A sediment barrier shall be erected to minimize stream sedimentation at downstream of the project boundary of the Toll Plaza.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>• Conduct a tree survey before commencement of the construction work.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• All measures recommended in the approved landscape proposals under Condition 2.4 in EP above shall be fully implemented in accordance with the details and time schedule set out in the submission.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Loss of the adjacent woodland due to temporary land take shall be returned to the original status immediately.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>• Wild and uncontrolled fire shall be strictly prohibited</li> <li>• Fences shall be erected along the boundary of the construction sites at the Toll Plaza before commencement of works, to prevent tipping, vehicle movements, and encroachment of personnel onto adjacent wooded areas.</li> </ul>	^ N/A
Landscape and Visual Impact	<ul style="list-style-type: none"> <li>• Landscape mitigation measure 1 (LMM1) – Construction programming and management. The periphery of the works areas at street level shall be managed so that they do not appear cluttered, untidy and unattractive and inconvenient to pedestrians. For example, all hoarding shall be colorfully designed with interesting motifs demonstrating the work of Highways Department. Hoardings with bland colours shall be avoided.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Landscape mitigation measure 2 (LMM2) – Advanced planting and erosion control works. Where possible, the transplantation of existing valuable trees, the stockpiling of topsoil, new planting and erosion control works shall be carried out as early as possible in the construction period instead of at the end. This will assist in maximizing the time for carrying out transplantation and new planting, resulting in a higher success rate for the survival of transplantation and new planting, resulting in a higher success rate for the survival of transplanted trees and the establishment of new screen trees. The stockpiling of topsoil will provide an abundant use of on-site material for growing media. During detailed design, the issue of stockpiling of topsoil in a manner that would avoid washing into the drainage scheme should be examined comprehensively.</li> </ul>	^
	<ul style="list-style-type: none"> <li>• Measurement of vibration would also be carried out on a need basis during the piling work</li> </ul>	^

Remarks:

^  
N/A

Compliance of mitigation measure;  
Not Applicable;

X

Non-compliance of mitigation measure;

•

Non-compliance but rectified by the contractor

---

---

**APPENDIX L**  
**CONSTRUCTION PROGRAMME**

---

---



Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005														
							JUL		AUG			SEP			OCT						
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24
<b>Procurement</b>																					
<b>Segmental Deck Casting (Type A Units)</b>																					
SD2600	P12/L (North)-Up - Cast 7 segs Type A	12	20JUL05	01AUG05	24MAR04	06APR04	SD2600														
SD2600A	P12/L (North)-Down - Cast 7 segs Type A	12	02AUG05	15AUG05	07APR04	20APR04	SD2600A														
SD2600B	P12/R (South)-Up - Cast 6 segs Type A	10	04AUG05	15AUG05	08MAY04	19MAY04	SD2600B														
SD2600C	P12/R (South)-Down - Cast 6 segs Type A	10	09AUG05	19AUG05	08MAY04	19MAY04	SD2600C														
SD2610A	P13/L (North)-Down - Cast 16 seg Type A	25	27JUN05A	08AUG05	27JUN05A	28APR04	SD2610A														
SD2610B	P13/R (South)-Up - Cast 17 seg Type A	27	06JUL05A	03AUG05	06JUL05A	20APR04	SD2610B														
SD2610C	P13/R (South)-Down - Cast 17 seg Type A	27	30JUN05A	30JUL05	30JUN05A	19MAY04	SD2610C														
SD2620	P14/L (North)-Up - Cast 11 seg Type A	18	09AUG05	28AUG05	29APR04	19MAY04	SD2620														
SD2620A	P14/L (North)-Down - Cast 11 seg Type A	18	16AUG05	03SEP05	21APR04	11MAY04	SD2620A														
SD2620B	P14/R (South)-Up - Cast 10 seg Type A	16	29AUG05	15SEP05	20MAY04	07JUN04	SD2620B														
SD2620C	P14/R (South)-Down - Cast 10 seg Type A	16	20AUG05	06SEP05	20MAY04	07JUN04	SD2620C														
SD2630	P15/L (North)-Up - Cast 16 seg Type A	25	05SEP05	03OCT05	12MAY04	09JUN04	SD2630														
SD2630A	P15/L (North)-Down - Cast 16 seg Type A	25	16SEP05	14OCT05	08JUN04	06JUL04	SD2630A														
SD2630B	P15/R (South)-Up - Cast 16 seg Type A	25	07SEP05	05OCT05	08JUN04	06JUL04	SD2630B														
SD2630C	P15/R (South)-Down - Cast 16 seg Type A	25	04OCT05	31OCT05	10JUN04	08JUL04	SD2630C														
SD2640	P16/L (North)-Up - Cast 6 seg Type A	11	15OCT05	26OCT05	07JUL04	19JUL04	SD2640														
SD2640A	P16/L (North)-Down - Cast 6 seg Type A	11	06OCT05	18OCT05	07JUL04	19JUL04	SD2640A														
SD2640C	P16/R (South)-Down - Cast 4 seg Type A	7	19OCT05	25OCT05	20JUL04	27JUL04	SD2640C														
<b>Segmental Deck Casting (Type B Units)</b>																					
SD3290	PA/L (North) - Cast 9 seg Type B	12	31JUL05	12AUG05	31MAR04	13APR04	SD3290														
SD3180A	B1-Down - Cast 15 seg Type B	20	28JUN05A	26JUL05	28JUN05A	16JUN04	SD3180A														
SD3260	B2-Up - Cast 12 seg Type B	17	12JUL05A	30JUL05	12JUL05A	30MAR04	SD3260														
SD3260A	B2-Down - Cast 12 seg Type B	16	20JUL05	05AUG05	14MAY04	01JUN04	SD3260A														
SD3270	B3-Up - Cast 15 seg Type B	19	27JUL05	16AUG05	17JUN04	08JUL04	SD3270														
SD3270A	B3-Down - Cast 15 seg Type B	19	15JUL05A	01AUG05	15JUL05A	05MAY04	SD3270A														
SD3300	P5/R-Up (South) - Cast 12 seg Type B	16	02AUG05	19AUG05	06MAY04	24MAY04	SD3300														
SD3280	P5/R (B4) Slip B-Up - Cast 12 seg Type B	16	06AUG05	24AUG05	10JUL04	28JUL04	SD3280														
SD3280A	P5/R (B4) Slip B-Down - Cast 12 seg Type B	16	17AUG05	02SEP05	29JUL04	16AUG04	SD3280A														
SD3350	D10 - Cast 22 seg Type B	28	20AUG05	20SEP05	25MAY04	25JUN04	SD3350														
SD3360	D9 - Cast 8 seg Type B	11	13AUG05	25AUG05	31AUG04	11SEP04	SD3360														
SD3310	P17 Slip C - Cast 18 seg Type B	23	25AUG05	19SEP05	29JUL04	24AUG04	SD3310														

Start Date  
Finish Date  
Data Date

23SEP03  
15MAY08  
20JUL05

P3 File : LU22

Sheet 1 of 19

Highways Department Contract No. HY/2003/01  
Route 8 - Lai Chi Kok Viaduct  
3 month Rolling Programme  
From 20 July 2005





Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005																
							JUL		AUG			SEP			OCT								
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24		
<b>Movement Joints</b>																							
MJ1000	Award of Sub-contract	0	20JUL05		22DEC05		◆ MJ1000																
MJ1005	Engineer's approval of Proprietary Type of M.J	0	17AUG05		21JAN06					◆ MJ1005													
MJ1010	Detailed Design & Shop Drawings	75	17AUG05	15NOV05	21JAN06	22APR06					■ MJ1010												
<b>Signage</b>																							
SG1000	Sign Gantries - Award of Sub-contract	0	20JUL05		27OCT04		◆ SG1000																
SG1010	Sign Gantries - Detailed Design & Shop Drawings	75	20JUL05	18OCT05	29MAR05	27JUN05					■ SG1010												
SG1020	Sign Gantries - Review/Appro of Design & S/Dwgs.	24	19OCT05	15NOV05	28JUN05	26JUL05																■ SG1020	
SG2000	Signage - Award of Sub-contract	0	16SEP05		24DEC04																		
SG2010	Signage - Shop Drawings	50	16SEP05	16NOV05	24DEC04	25FEB05																	
<b>High Mast Lighting</b>																							
HM1000	High Mast Lighting - Foundation Design	48	20JUL05*	13SEP05	16JUN05	11AUG05																	
HM1010	High Mast Lighting - Approval of Found'n Design	24	14SEP05	14OCT05	04NOV05	01DEC05																	
HM1100	High Mast Lighting - Mast Design & Shop Drawings	48	17AUG05	14OCT05	15JUL05	08SEP05																	
HM1110	High Mast Lighting - Approval of Mast Design	56	15OCT05	09DEC05	09SEP05	03NOV05																	
<b>Viaduct - Main Line - Piers PA to P6</b>																							
<b>Substructure</b>																							
MS0100	PA/L - Install Bearings	6	20JUL05	26JUL05	27APR04	04MAY04					■ MS0100												
MS0110	PA/R - Install Bearings	6	27JUL05	02AUG05	26MAY04	01JUN04					■ MS0110												
MS1116	P1/R (S) - Remove Temp. Props for Spans - Towers	4	14OCT05	18OCT05	21SEP05	24SEP05																■ MS1116	
MS1118	P1/R (S) - Remove Temp. Props for Spans - Towers	24	19OCT05	15NOV05	26SEP05	25OCT05																■ MS1118	
MS1240	P2/R - Upper Portal Frame (P2/R & B1)	24	20JUL05	16AUG05	14JUN04	13JUL04					■ MS1240												
MS1245	P2/R - Upper Portal Frame - Cure & Strike F/work	14	17AUG05	01SEP05	14JUL04	29JUL04																	
MS1370	B2 - Upper Portal Frame (P3/R & B2)	24	11MAY05A	30JUL05	11MAY05A	11MAY04					■ MS1370												
MS1375	B2 - Upper Portal Frame - Cure & Strike F/work	14	01AUG05	16AUG05	12MAY04	27MAY04																	
<b>Main Line - Segmental Deck Construction (Crane)</b>																							
MD1115	P2/L (North) - 28 seg Type B	14	30MAY05A	22JUL05	30MAY05A	22JUN05					■ MD1115												
MD1125	P1/L (North) - 22 seg Type B	11	12JUL05A	01AUG05	12JUL05A	04MAY04					■ MD1125												
MD1127	P1/L - P2/L (North) Insitu Stitch	3	02AUG05	04AUG05	23JUN05	25JUN05					■ MD1127												
MD1130	PA/L (North) - 9 seg Type B on scaff	6	02SEP05	08SEP05	05MAY04	11MAY04																	
MD1135	PA/L -P1/L (North) Insitu Stitch	3	09SEP05	12SEP05	23JUN05	25JUN05																	
MD1050	P1/R (South) - 1st. Pair - 2 seg Type C	3	09SEP05	12SEP05	12MAY04	14MAY04																	
MD1055	P1/R (South) - 30 seg Type C	15	13SEP05	30SEP05	15MAY04	01JUN04																	

Start Date 23SEP03  
 Finish Date 15MAY08  
 Data Date 20JUL05

P3 File : LU22 Sheet 3 of 19

Highways Department Contract No. HY/2003/01  
 Route 8 - Lai Chi Kok Viaduct  
 3 month Rolling Programme  
 From 20 July 2005







Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005														
							JUL			AUG			SEP			OCT					
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24
MS2270	P9/R - Portal Frame (P9/L & P9/R)	38	30APR05A	04AUG05	30APR05A	16MAR04	■ MS2270														
MS2271	P9/R - Portal Frame - Cure & Strike Form/Falsewk	12	05AUG05	18AUG05	17MAR04	30MAR04	■ MS2271														
MS2272	P9/R - Temporary Props for Spans - Foundations	36	20JUL05	30AUG05	28FEB04	10APR04	■ MS2272														
MS2274	P9/R - Temporary Props for Spans - Towers	12	31AUG05	13SEP05	12APR04	24APR04	■ MS2274														
MS2310	P10/L - Backfill & Remove Temporary Works	4	18APR05A	21JUL05	18APR05A	15MAY08	■ MS2310														
MS2385	P10/R - Portal Frame -Cure & Strike Form/Falsewk	14	19JUL05A	30JUL05	19JUL05A	26APR04	■ MS2385														
<b>Main Line - Segmental Deck Construction (Gantry)</b>																					
MD2000	Launch Gantry to P6/P7/P8	1	20JUL05	20JUL05	27FEB04	27FEB04	■ MD2000														
MD2010	P7/R (South) - 1st. Pair - 1 Type A & 1 Type B	3	09JUL05A	21JUL05	09JUL05A	03MAR04	■ MD2010														
MD2015	P7/R (South) - 9 seg Type A & 9 Seg Type B	20	26JUL05	17AUG05	04MAR04	26MAR04	■ MD2015														
MD2020	P7 Slip B - 1st. seg Type B	3	05JUL05A	21JUL05	05JUL05A	03MAR04	■ MD2020														
MD2025	P7 Slip B - 9 seg Type B	20	26JUL05	17AUG05	04MAR04	26MAR04	■ MD2025														
MD2030	P7/L (North) - 1st. Pair - 1 Type A & 1 Type B	3	09JUL05A	21JUL05	09JUL05A	03MAR04	■ MD2030														
MD2035	P7/L (North) - 9 seg Type A & 9 seg Type B	20	26JUL05	17AUG05	04MAR04	26MAR04	■ MD2035														
MD2040	P7 Slip A - 1st. seg Type B	4	16JUL05A	21JUL05	16JUL05A	03MAR04	■ MD2040														
MD2045	P7 Slip A - 9 seg Type B	20	26JUL05	17AUG05	04MAR04	26MAR04	■ MD2045														
MD2047	P6-P7 Insitu Stitches	3	18AUG05	20AUG05	27MAR04	30MAR04	■ MD2047														
MD2050	Launch Gantry to P7/P8/P9	1	22AUG05	22AUG05	31MAR04	31MAR04	■ MD2050														
MD2060	P8/L (North) - 1st. Pair - 2 seg Type A	3	20JUL05	22JUL05	27FEB04	01MAR04	■ MD2060														
MD2065	P8/L (North) - 30 seg Type A	17	25AUG05	13SEP05	03APR04	23APR04	■ MD2065														
MD2070	P8/R (South) - 1st. Pair - 2 seg Type A	4	21JUL05	25JUL05	28FEB04	03MAR04	■ MD2070														
MD2075	P8/R (South) - 30 seg Type A	17	25AUG05	13SEP05	03APR04	23APR04	■ MD2075														
MD2077	P7-P8 Insitu Stiches	2	14SEP05	15SEP05	24APR04	26APR04	■ MD2077														
MD2080	Launch Gantry to P8/P9/P10	1	16SEP05	16SEP05	27APR04	27APR04	■ MD2080														
MD2090	P9/R (South) - 1st. Pair - 2 seg Type A	4	14SEP05	17SEP05	26APR04	29APR04	■ MD2090														
MD2095	P9/R (South) - 28 seg Type A	14	21SEP05	07OCT05	30APR04	17MAY04	■ MD2095														
MD2100	P9/L Nth - 1st. Pair - 2 seg Type A	3	22AUG05	24AUG05	31MAR04	02APR04	■ MD2100														
MD2105	P9/L Nth - 24 seg Type A	14	21SEP05	07OCT05	30APR04	17MAY04	■ MD2105														
MD2107	P8-P9 Insitu Stiches	2	08OCT05	10OCT05	18MAY04	19MAY04	■ MD2107														
MD2110	Launch Gantry to P9/P10/P11	1	12OCT05	12OCT05	20MAY04	20MAY04	■ MD2110														
MD2120	P10/L (North) - 1st. Pair - 2 seg Type A	3	16SEP05	20SEP05	27APR04	29APR04	■ MD2120														
MD2125	P10/L (North) - 26 seg Type A	9	15OCT05	25OCT05	24MAY04	02JUN04	■ MD2125														
MD2130	P10/R (South) - 1st. Pair - 2 seg Type A	4	17SEP05	22SEP05	19MAY04	22MAY04	■ MD2130														

Start Date  
Finish Date  
Data Date

23SEP03  
15MAY08  
20JUL05


P3 File : LU22

Sheet 6 of 19

Highways Department Contract No. HY/2003/01  
Route 8 - Lai Chi Kok Viaduct  
3 month Rolling Programme  
From 20 July 2005





Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005														
							JUL		AUG			SEP			OCT						
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24
SA2000	Kom Tsun St. & Bus Terminal - St/water Drainage	54	14FEB05A	09SEP05	14FEB05A	04APR05	SA2000														
<b>Utilities &amp; Roadworks</b>																					
SR2000	Castle Peak Road - Roadworks Reinstatement	17	13OCT05	01NOV05	06MAY05	25MAY05	SR2000														
SR3000	Kom Tsun Street L/H C/Way - Excavate & Formation	12	03SEP05	16SEP05	29MAR05	12APR05	SR3000														
SR3010	Kom Tsun Street L/H C/Way - Sub-base	12	17SEP05	03OCT05	13APR05	26APR05	SR3010														
SR3020	Kom Tsun Street L/H C/Way - Kerbs	18	04OCT05	25OCT05	27APR05	18MAY05	SR3020														
SR3200	Kom Tsun Street Bus Stn. - Excavate & Formation	18	10SEP05	03OCT05	06APR05	26APR05	SR3200														
SR3210	Kom Tsun Street bus Stn. - Sub-base	18	26SEP05	18OCT05	20APR05	11MAY05	SR3210														
SR3220	Kom Tsun Street Bus Stn. - Kerbs	24	12OCT05	08NOV05	05MAY05	01JUN05	SR3220														
SR4000	Kwai Chung Road (Pier 7) - Reinstatement	24	17SEP05	18OCT05	05JUL05	01AUG05	SR4000														
<b>Viaduct - Main Line - Piers P11 to P15</b>																					
<b>Substructure</b>																					
MS3055	P11 - Pier Head - Cure & Strike Form/Falsework	14	30JUN05A	21JUL05	30JUN05A	18MAY04	MS3055														
MS3115	P12 - Bearings	7	20JUL05	27JUL05	15MAR04	22MAR04	MS3115														
MS3117	P12 - Insitu Deck Segments at Movement Joint	48	28JUL05	22SEP05	23MAR04	19MAY04	MS3117														
MS3118	P12 - Cure & Strike Formwork/Falsework	14	23SEP05	10OCT05	20MAY04	04JUN04	MS3118														
MS3171	P13 - Pier Head - Cure & Strike Form/Falsework	14	28JUN05A	21JUL05	28JUN05A	21JUN04	MS3171														
MS3172	P13 - Temporary Props for Spans - Foundations	24	20JUL05	16AUG05	12MAY04	08JUN04	MS3172														
MS3174	P13 - Temporary Props for Spans - Towers	18	13OCT05	02NOV05	09JUN04	30JUN04	MS3174														
MS3225	P14 - Pier Hammer Head	24	30MAY05A	05AUG05	30MAY05A	19APR04	MS3225														
MS3230	P14 - Pier Insitu Deck Segment	48	06AUG05	03OCT05	20APR04	15JUN04	MS3230														
MS3235	P14 - Pier Head - Cure & Strike Form/Falsework	14	04OCT05	20OCT05	16JUN04	03JUL04	MS3235														
MS3285	P15 - Pier Hammer Head	48	14JUL05A	03SEP05	14JUL05A	21APR04	MS3285														
MS3290	P15 - Pier Insitu Deck Segment	60	05SEP05	16NOV05	22APR04	03JUL04	MS3290														
MS3292	P15 - Temporary Props for Spans - Foundations	24	20JUL05	16AUG05	10JUN04	09JUL04	MS3292														
<b>Main Line - Segmental Deck Construction (Gantry)</b>																					
MD3010	P11 Sth - 1st pair - 2 segs Type A	3	12OCT05	14OCT05	20MAY04	22MAY04	MD3010														
MD3020	P11 Nth - 1st pair - 2 segs Type A	3	12OCT05	14OCT05	20MAY04	22MAY04	MD3020														
<b>At Grade Works - Wai Man Tsuen</b>																					
<b>Temporary Traffic Management Schemes</b>																					
VT2100	TTMS MainLine Deck@ CC Rd W/B-Prepare for Review	12	20JUL05	02AUG05	03MAY04	15MAY04	VT2100														
VT2110	TTMS MainLine Deck@ CC Rd W/B - CRE Endorsement	6	22AUG05	27AUG05	06JUL04	12JUL04	VT2110														
VT2120	TTMS MainLine Deck@ CC Rd W/B - Roadworks Advice	12	29AUG05	10SEP05	13JUL04	26JUL04	VT2120														
Start Date	23SEP03	P3 File : LU22		Sheet 8 of 19																	
Finish Date	15MAY08	Highways Department Contract No. HY/2003/01 Route 8 - Lai Chi Kok Viaduct 3 month Rolling Programme From 20 July 2005																			
Data Date	20JUL05																				
© Primavera Systems, Inc.																					





Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005											
							JUL			AUG			SEP			OCT		
							18	25	1	8	15	22	29	5	12	19	26	3
<b>Viaduct - Main Line - Piers P16 to P18</b>																		
<b>Substructure</b>																		
MS4030	P16/L - Backfill & Remove Temporary Works	4	08JUL05A	23JUL05	08JUL05A	17JAN05	■ MS4030											
MS4040	P16/L - Pier	12	11JUL05A	21JUL05	11JUL05A	27APR04	■ MS4040											
MS4050	P16/L - Pier Hammer Head	18	16SEP05	08OCT05	06MAY04	26MAY04	■ MS4050											
MS4055	P16/L - Install Bearings	6	10OCT05	17OCT05	27MAY04	02JUN04	■ MS4055											
MS4057	P16/L - Insitu Deck at Movement Joint	36	18OCT05	28NOV05	03JUN04	16JUL04	■ MS4057											
MS4115	P16/R - Install Bearings	6	01AUG05	06AUG05	03APR04	10APR04	■ MS4115											
MS4117	P16/R - Insitu Deck at Movement Joint	36	11JUL05A	23AUG05	11JUL05A	10APR04	■ MS4117											
MS4118	P16/R - Cure & Strike Formwork & Falsework	14	24AUG05	08SEP05	12APR04	27APR04	■ MS4118											
MS4200	P17/R - Backfill & Remove Temporary Works	4	20JUL05	23JUL05	21MAR08	25MAR08	■ MS4200											
MS4205	P17 - Form Platform for Pier/Portal Construction	24	25JUL05	20AUG05	26MAR08	23APR08	■ MS4205											
MS4210	P17/R - Pier	12	20JUL05A	01AUG05	20JUL05A	11JUN04	■ MS4210											
MS4220	P17/L & P17/R - Portal Frame	48	02AUG05	27SEP05	12JUN04	09AUG04	■ MS4220											
MS4225	P17/L & P17/R - Cure & Strike Form/Falsework	16	28SEP05	18OCT05	10AUG04	27AUG04	■ MS4225											
MS4330	P18/L & P18/R - Portal Frame	30	08APR05A	30JUL05	08APR05A	13AUG04	■ MS4330											
MS4335	P18/L & P18/R - Cure & Strike Form/Falsework	14	01AUG05	16AUG05	14AUG04	30AUG04	■ MS4335											
<b>Viaduct - Main Line - Piers 19 to Abutment M</b>																		
<b>Enabling &amp; Piling Works</b>																		
MP5160	Abutment M - Pile Testing	12	30JUL05	12AUG05	30NOV04	13DEC04	■ MP5160											
<b>Substructure</b>																		
MS5045	P19 - Pier Hammer Head	24	12MAY05A	09AUG05	12MAY05A	16NOV04	■ MS5045											
MS5050	P19 - Pier Insitu Deck Segment	48	10AUG05	06OCT05	17NOV04	13JAN05	■ MS5050											
MS5055	P19 - Pier Head - Cure & Strip Falsework	20	07OCT05	31OCT05	14JAN05	05FEB05	■ MS5055											
MS5058	P20 - 2nd. Site Access from ENT Contractor	0	20JUL05*		16MAY08		◆ MS5058											
MS5070	P20 - Excavate, Strut & Break Down Piles	24	03JUN05A	04AUG05	03JUN05A	25SEP04	■ MS5070											
MS5080	P20 - Footing & Pier Kicker	12	05AUG05	18AUG05	27SEP04	12OCT04	■ MS5080											
MS5090	P20 - Backfill & Remove Temporary Works	4	19AUG05	23AUG05	13OCT04	16OCT04	■ MS5090											
MS5095	P20 - 3rd. Site Access from ENT Contractor	0	24AUG05*		18OCT04		◆ MS5095											
MS5100	P20 - Pier	18	24AUG05	13SEP05	18OCT04	08NOV04	■ MS5100											
MS5105	P20 - Pier Hammer Head	18	14SEP05	06OCT05	09NOV04	29NOV04	■ MS5105											
MS5110	P20 - Pier Insitu Deck Segment	42	07OCT05	25NOV05	30NOV04	19JAN05	■ MS5110											
MS5150	P21 - Backfill & Remove Temporary Works	4	20JUL05	23JUL05	26MAR08	29MAR08	■ MS5150											

Start Date 23SEP03  
 Finish Date 15MAY08  
 Data Date 20JUL05

P3 File : LU22 Sheet 10 of 19

Highways Department Contract No. HY/2003/01  
 Route 8 - Lai Chi Kok Viaduct  
 3 month Rolling Programme  
 From 20 July 2005



Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005														
							JUL			AUG			SEP			OCT					
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24
MS5155	P21 - Perm. Filling to Slope & Working Platform	38	25JUL05	06SEP05	31MAR08	15MAY08	MS5155														
MS5165	P21 - Pier Hammer Head	18	20JUL05	09AUG05	04DEC04	24DEC04	MS5165														
MS5170	P21 - Pier Insitu Deck Segment	42	10AUG05	28SEP05	27DEC04	17FEB05	MS5170														
MS5175	P21 - Pier Head - Cure & Strip Falsework	18	29SEP05	21OCT05	18FEB05	10MAR05	MS5175														
MS5180	Abutment M - Install Temporary Sheet Piles	12	13AUG05	26AUG05	14DEC04	28DEC04	MS5180														
MS5190	Abutment M - Excavate, Strut & Break Down Piles	24	27AUG05	24SEP05	29DEC04	26JAN05	MS5190														
MS5200	Abutment M - Pile Cap & Wall Kicker	24	26SEP05	25OCT05	27JAN05	26FEB05	MS5200														
<b>At Grade Works - Butterfly Valley</b>																					
<b>Temporary Traffic Management Schemes</b>																					
QT1040	TTA Butterfly Valley (CCR-S6) - Implementation	448*	07FEB04A	01AUG05	07FEB04A	14MAY05	QT1040														
QT2000	TTMS MainLine Deck@ CC Rd E/B-Prepare for Review	12	20JUL05	02AUG05	10MAY04	22MAY04	QT2000														
QT2010	TTMS MainLine Deck@ CC Rd E/B - CRE Endorsement	6	22AUG05	27AUG05	31JUL04	06AUG04	QT2010														
QT2020	TTMS MainLine Deck@ CC Rd E/B - Roadworks Advice	12	29AUG05	10SEP05	07AUG04	20AUG04	QT2020														
QT2030	TTMS MainLine Deck@ CC Rd E/B - Site Preparation	6	12SEP05	17SEP05	21AUG04	27AUG04	QT2030														
QT2100	TTMS Slip RdD Deck@ CC Rd E/B-Prepare for Review	18	20JUL05	09AUG05	03MAY04	22MAY04	QT2100														
QT2110	TTMS Slip Rd D Deck@ CC Rd E/B - CRE Endorsement	6	22AUG05	27AUG05	08SEP04	14SEP04	QT2110														
QT2120	TTMS Slip RdD Deck@ CC Rd E/B - Roadworks Advice	12	29AUG05	10SEP05	15SEP04	28SEP04	QT2120														
QT2130	TTMS Slip RdD Deck@ CC Rd E/B - Site Preparation	6	14SEP05	21SEP05	04OCT04	09OCT04	QT2130														
<b>Earthworks &amp; Slope Works - CCR-S6</b>																					
QE1220	Slope CCR-S6 - Slope Drainage +48.5 to +36.0mPD	50	07JUN05A	25JUL05	07JUN05A	07MAY05	QE1220														
QE1300	Slope CCR-S6 - Slope Finishes	75	04MAR05A	01AUG05	04MAR05A	14MAY05	QE1300														
<b>Utilities &amp; Roadworks</b>																					
QR1040	WSD Acces Road - Divert Junction to Clear P16/L	6	09SEP05	15SEP05	28APR04	05MAY04	QR1040														
<b>Landscape Works</b>																					
QX1020	Landscape - Planting on Slope CCR-S6	75	20JUL05*	18OCT05	04MAY05	01AUG05	QX1020														
QX1100	Landscape Establishment Works	301	19OCT05	18OCT06	04NOV06	03NOV07	QX1100														
<b>Viaduct - Slip Road C</b>																					
<b>Enabling &amp; Piling Works</b>																					
CP1030	Abutment C - Pile Testing	6	19JUL05A	22JUL05	19JUL05A	21APR05	CP1030														
<b>Substructure</b>																					
CS1100	Abutment C - Install Temporary Sheet Piles	6	23JUL05	29JUL05	22APR05	28APR05	CS1100														
CS1110	Abutment C - Excavate, Strut & Break Down Piles	18	30JUL05	19AUG05	29APR05	20MAY05	CS1110														

Start Date 23SEP03  
 Finish Date 15MAY08  
 Data Date 20JUL05

P3 File : LU22

Sheet 11 of 19

Highways Department Contract No. HY/2003/01  
 Route 8 - Lai Chi Kok Viaduct  
 3 month Rolling Programme  
 From 20 July 2005





Activity ID	Activity Description	Orig. Durn.	Early Start	Early Finish	Late Start	Late Finish	2005														
							JUL			AUG			SEP			OCT					
							18	25	1	8	15	22	29	5	12	19	26	3	10	17	24
DP1390	D10 - Piling	40	13JUL05A	29AUG05	13JUL05A	08MAY04	DP1390														
DP1400	D10 - Pile Testing	6	10SEP05	16SEP05	21MAY04	27MAY04	DP1400														
<b>Substructure</b>																					
DS1030	Abutment D - Backfill & Remove Temporary Works	8	20JUL05	28JUL05	13AUG04	21AUG04	DS1030														
DS1040	Abutment D - Bearing Shelf & Walls	18	29JUL05	18AUG05	20DEC04	11JAN05	DS1040														
DS1060	D1 - Install Sheet Temporary Piles	6	20JUL05	26JUL05	04JUN04	10JUN04	DS1060														
DS1070	D1 - Excavate, Strut & Break Down Piles	18	27JUL05	16AUG05	11JUN04	03JUL04	DS1070														
DS1080	D1 - Pile Cap & Pier Kicker	12	17AUG05	30AUG05	05JUL04	17JUL04	DS1080														
DS1090	D1 - Backfill & Remove Temporary Works	6	31AUG05	06SEP05	19JUL04	24JUL04	DS1090														
DS1100	D1 - Pier	12	07SEP05	21SEP05	26JUL04	07AUG04	DS1100														
DS1110	D1 - Pier Head	12	22SEP05	06OCT05	09AUG04	21AUG04	DS1110														
DS1120	D2 - Install Sheet Temporary Piles	6	20JUL05	26JUL05	04JUN04	10JUN04	DS1120														
DS1130	D2 - Excavate, Strut & Break Down Piles	18	27JUL05	16AUG05	11JUN04	03JUL04	DS1130														
DS1140	D2 - Pile Cap & Pier Kicker	12	17AUG05	30AUG05	05JUL04	17JUL04	DS1140														
DS1150	D2 - Backfill & Remove Temporary Works	6	31AUG05	06SEP05	19JUL04	24JUL04	DS1150														
DS1160	D2 - Pier	12	07SEP05	21SEP05	26JUL04	07AUG04	DS1160														
DS1170	D2 - Pier Head	12	22SEP05	06OCT05	09AUG04	21AUG04	DS1170														
DS1180	D3 - Install Sheet Temporary Piles	6	03SEP05	09SEP05	15JUL04	21JUL04	DS1180														
DS1190	D3 - Excavate, Strut & Break Down Piles	18	10SEP05	03OCT05	22JUL04	11AUG04	DS1190														
DS1200	D3 - Pile Cap & Pier Kicker	12	04OCT05	18OCT05	12AUG04	25AUG04	DS1200														
DS1210	D3 - Backfill & Remove Temporary Works	6	19OCT05	25OCT05	26AUG04	01SEP04	DS1210														
DS1270	D4 - Backfill & Remove Temporary Works	6	18APR05A	21JUL05	18APR05A	15MAY08	DS1270														
DS1290	D4 - Pier Head	6	06JUN05A	20JUL05	06JUN05A	02OCT04	DS1290														
DS1295	D4 - Install Bearings	6	21JUL05	27JUL05	04OCT04	09OCT04	DS1295														
DS1297	D4 - Pier Head - Insitu Deck Segment	30	28JUL05	31AUG05	11OCT04	15NOV04	DS1297														
DS1299	D4 - Pier Head - Cure & Strike Fmwk/Falsework	12	01SEP05	14SEP05	16NOV04	29NOV04	DS1299														
DS1355	D5 - Install Bearings	6	20JUL05	26JUL05	21SEP04	27SEP04	DS1355														
DS1357	D5 - Pier Head - Insitu Deck Segment	30	27JUL05	30AUG05	28SEP04	04NOV04	DS1357														
DS1359	D5 - Pier Head - Cure & Strike Fmwk/Falsework	12	31AUG05	13SEP05	05NOV04	18NOV04	DS1359														
DS1390	D6 - Backfill & Remove Temporary Works	5	11JUL05A	21JUL05	11JUL05A	15MAY08	DS1390														
DS1410	D6 - Pier Head	18	20JUL05	09AUG05	21AUG04	10SEP04	DS1410														
DS1460	D7 - Pier	42	30MAY05A	27JUL05	30MAY05A	03SEP04	DS1460														
DS1470	D7 - Pier Head	30	28JUL05	31AUG05	04SEP04	11OCT04	DS1470														

Start Date 23SEP03  
 Finish Date 15MAY08  
 Data Date 20JUL05

P3 File : LU22

Sheet 13 of 19

Highways Department Contract No. HY/2003/01  
 Route 8 - Lai Chi Kok Viaduct  
 3 month Rolling Programme  
 From 20 July 2005

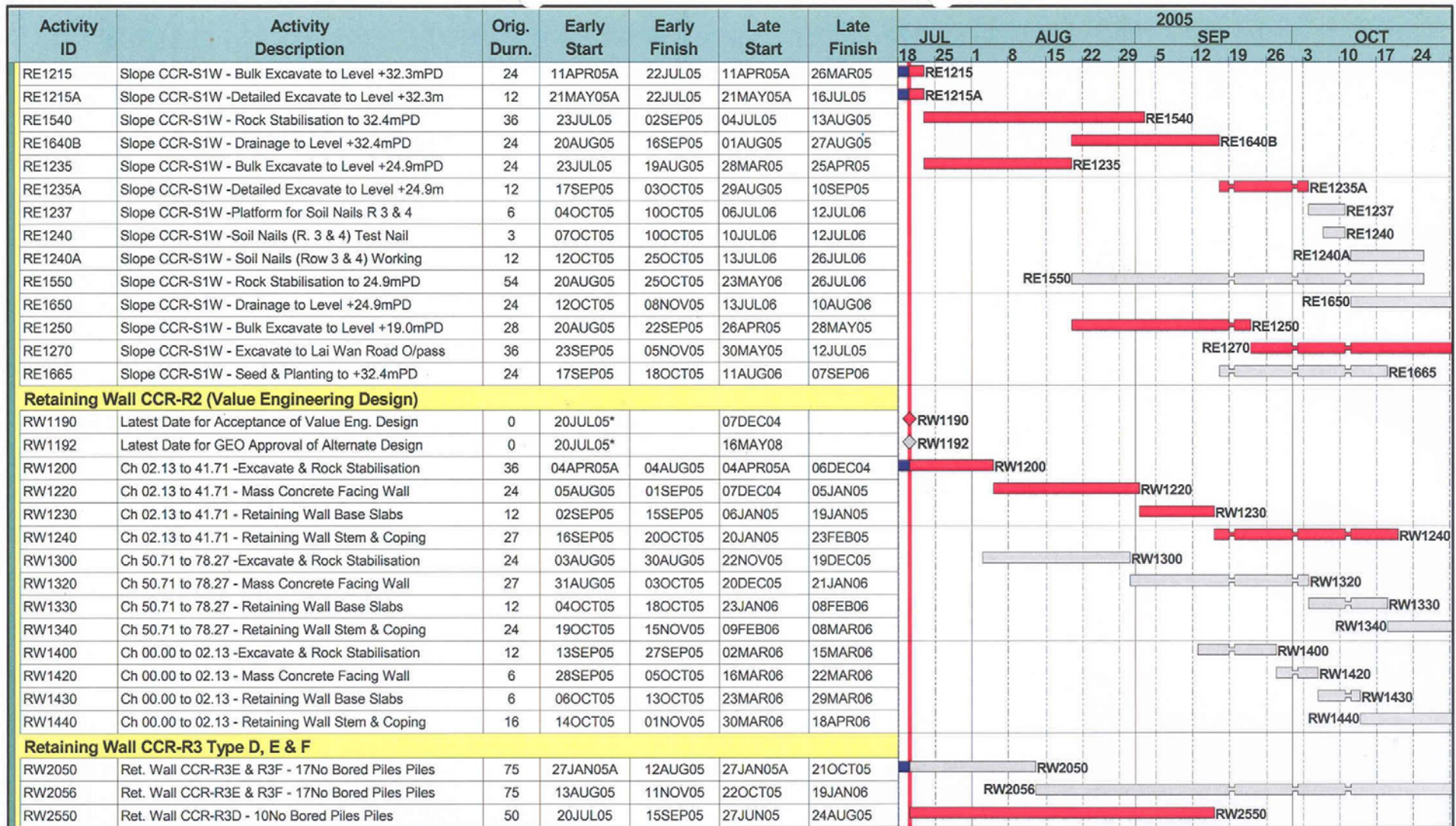












Start Date 23SEP03  
 Finish Date 15MAY06  
 Data Date 20JUL05

P3 File : LU22

Sheet 17 of 19

Highways Department Contract No. HY/2003/01  
 Route 8 - Lai Chi Kok Viaduct  
 3 month Rolling Programme  
 From 20 July 2005







---

---

**APPENDIX M  
COMPLAINT LOG**

---

---

## Appendix M - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40318	Nob Hill	18 March 2004	<p>Kwai Tsing District Officer (KTDO) recently received a public noise complaint about construction noise generated from the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project, near Nob Hill, Lai Chi Kok. KTDO referred the complaint to the Highways Department (HyD) on the same day. HyD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 18 March 2004.</p> <p>The complaint was raised by the Citybase Property Management Ltd. (the management company of Nob Hill) and the Secretary of Nob Hill Owners Committee (Mr. Kevin Tse) about construction noise generated from the R8-LCKV Project at the work areas near Nob Hill. Mr. Kevin Tse mentioned that residents living in Nob Hill have greatly been affected by the noise impacts generating from the R8-LCKV construction works. He also requested relevant government departments to consider installing noise barrier along Ching Cheung Road and to work out possible measures to minimize the noise nuisances to the residents living in the vicinity.</p>	<p>Based on the information provided by the ER, the construction activities conducted in the vicinity of Nob Hill in the period between 2 and 18 March 2004 were:</p> <ul style="list-style-type: none"> <li>▪ Item 1 – Breaking off existing planter and excavate trial trench to expose underground utilities (using one to two backhoes)</li> <li>▪ Item 2 – Erect rock fall fence &amp; forming platform for pre-drilling (using one backhoe and occasionally one crane lorry)</li> <li>▪ Item 4 – Excavate further to expose all underground utilities (using hand tools)</li> <li>▪ Item 5 – Pre-drilling works (using one drilling rig)</li> </ul> <p>Considering the scale of work and the PMEs adopted, the ET believed that the construction noise impact at Nob Hill from the above construction activities of R8-LCKV was not significant.</p> <p>The bored piling work (Item 3) using one crawler crane and one oscillator was started on 19 March 2004, which was two days after the issue date of this complaint, so this activity was not considered in this report.</p> <p>According to the EM&amp;A Manuals, Nob Hill was not selected as Noise Monitoring Location (NML) for the Project. Therefore, no direct noise monitoring data could be provided for the complaint investigation. However, there was no noise level exceedance recorded at the nearby NML (NM4 – Mei Foo Sun Chuen, Phase 5) since the commencement of the project according to ET's inventory.</p> <p>During ET's weekly environmental site inspections on 3, 10, 17 March 2004, no serious noise nuisance induced by the Project works was observed at the sites near Nob Hill.</p> <p>Based on the joint site visit with the representative of HyD, IEC, RSS and ET to the Nob Hill on 30 March 2004, the major noise</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>source at Nob Hill was identified as traffic noise on Ching Cheung Road, which is located very close to this building, especially at or above the Podium Floor (i.e. 5/F).</p> <p>Based on the information obtained, this noise complaint is not considered due to the construction activities of the Project. Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise, such as:</p> <ul style="list-style-type: none"> <li>• To space out noisy equipment and position it as far away as possible from the sensitive receivers;</li> <li>• To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>• To ensure the equipment are maintaining in good operation condition; and</li> <li>• To turned off any idle equipment on site.</li> </ul> <p>Adding to that, ET is proposed to install one to two noise monitoring stations at Nob Hill in order to monitor the noise impact generated from the R8-LCKV Project to the resident of Nob Hill or the nearby buildings.</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40330	Site Areas near Nob Hill	30 March 2004	<p>Highways Department (HyD) recently received a public noise complaint about construction noise generated from the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project, near Nob Hill, Lai Chi Kok. HyD referred the complaint to the RSS and subsequently referred to the ET Leader of the Project on 30 March 2004.</p> <p>The complaint was raised by Mr. Yau, the Office of DCV Member Mr. Cheung Wing Shum, regarding the high pitch construction noise generated at the R8-LCKV site which cause serious nuisance to the residents at Mei Foo.</p>	<p>Based on the information provided by the RSS, the Contractor was not aware of any high pitched construction noise arising from plant employed for their works. The noise complaint referred to may be originated from the damage of a gas main valve on the afternoon of 29 March 2004 in the vicinity of the junction of Mai Lai Road with Lai King Hill Road. The high pitched whistle apparently resulted from the damage which was repaired by TownGas in that afternoon.</p> <p>Based on the information obtained, this noise complaint is considered not due to the construction activities of the Project. Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise, such as:</p> <ul style="list-style-type: none"> <li>• To space out noisy equipment and position it as far away as possible from the sensitive receivers;</li> <li>• To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>• To ensure the equipment are maintaining in good operation condition; and</li> <li>• To turned off any idle equipment on site.</li> </ul>	Closed
40402	Nob Hill	06 April 2004	<p>A public noise complaint was received by the Contractor (NECSO) on 02 April 2004 regarding the noise generated from the Ching Cheung Road Widening Works of the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project, near Nob Hill, Lai Chi Kok.</p> <p>NECSO referred the complaint to the RSS and subsequently referred to the ET Leader of the Project on 6 April 2004</p>	<p>The complaint was raised by Ms Wong, regarding the noise generated from the Ching Cheung Road Widening Works of the R8-LCKV Project, which cause serious nuisance to her.</p> <p>Based on the information provided by the RSS, the plants employed by the Contractor for carrying out bored piling works in front of Nob Hill should not generate excessive noise. The RSS had also checked against the site records that no piling works was in progress in front of Nob Hill on 1-3 April 2004.</p> <p>According to telephone communication between the complainant (Ms Wong) and the RSS on 8 April 2004, the RSS reported that Ms Wong was not complaining about the construction noise generated by the R8-LCKV Project. She was actually complaining about the traffic noise she anticipated to be generated after completion of widening work at Ching Cheung</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Road in front of Nob Hill.</p> <p>During ET's weekly environmental site inspections on 17, 24 &amp; 31 March 2004 and 7 April 2004, no serious noise nuisance induced by the Project works was observed at the construction sites near Nob Hill.</p> <p>Based on the joint site visit with the representative of HyD, IEC, RSS and ET to the Nob Hill on 30 March 2004, the major noise source at Nob Hill was identified as traffic noise on Ching Cheung Road, which is located very close to this building, especially at or above the Podium Floor (i.e. 5/F).</p> <p>Based on the information obtained, this noise complaint is considered not due to the construction activities of the Project.</p> <p>Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise, such as</p> <ul style="list-style-type: none"> <li>• To space out noisy equipment and position it as far away as possible from the sensitive receivers;</li> <li>• To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>• To ensure the equipment are maintaining in good operation condition; and</li> <li>• To turned off any idle equipment on site.</li> </ul>	
40710	Pier P7 in Portion E1	10 July 2004	<p>A public complaint was raised on 30<sup>th</sup> June 2004 regarding the washout of muddy water from the site area of the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project, at Pier P7 onto Lai Chi Kok Road.</p> <p>The complaint was referred to the RSS on 3<sup>rd</sup> July 2004 and subsequently referred to the ET Leader of the Project on 10<sup>th</sup> July 2004.</p>	<p>Based on the information provided by the RSS, the spillage of muddy water was in fact due to a burst in a temporary water pipe being utilized in the piling operations at Pier P7 in Portion E1.</p> <p>Emergency remedial works were undertaken preventing further spillage of muddy water. The remaining ponding water within the works area arising from the burst was all removed from the area on 5<sup>th</sup> July 2004.</p> <p>During ET's weekly environmental site inspection on 14<sup>th</sup> July 2004, no serious water quality nuisance induced by the Project works was observed at the construction sites near Pier P7. It was</p>	Closed



Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>The complaint was raised by Mr. Chan, regarding the washout of muddy water from the works area of the R8-LCKV Project onto Lai Chi Kok Road. The washout caused nuisance to the drivers utilizing the road, and may also cause danger to the motorbikes.</p>	<p>also noted that the back of profile barriers along the site boundary had been sealed up by cement as preventive measures.</p> <p>During ET's weekly environmental site inspections on 17, 24 &amp; 31 March 2004 and 7 April 2004, no serious noise nuisance induced by the Project works was observed at the construction sites near Nob Hill.</p> <p>Based on the information obtained, the complaint is considered due to the construction activities of the Project. Emergency remedial works had been taken by the Contractor to rectify the situation and preventive measures had also been implemented.</p> <p>Nevertheless, the Contractor was recommended to adopt the following measures to avoid re-occurrence of similar incidents:</p> <ul style="list-style-type: none"> <li>• to enhance surface runoff control measures along the site boundary;</li> <li>• to provide adequate training to the frontline workers; and</li> <li>• to regularly inspect temporary water supply equipment, such as hose pipe to make sure the equipment is in good condition.</li> </ul>	
40809	Ching Cheung Road area near Nob Hill	<p>22-Jul-04 (by EPD)</p> <p>09-Aug-04 (by ET Leader)</p>	<p>EPD received a public noise complaint on 22 July 2004 about construction noise and dust generated from Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project, at the Ching Cheung Road Area near Nob Hill. EPD subsequently referred the complaint to the ET Leader of the Project on 9 August 2004.</p> <p>The complaint was about the construction noise and dust observed at the Ching Cheung Road area near Nob Hill. The locations of the works areas being concerned by the complainant include:</p> <p>1. <b>Area A:</b> Works area between Nob</p>	<p><b>Information Provided by RSS</b></p> <p>Information (construction activities and equipment adopted) in a 2-week period before the date of complaint, i.e. 7 to 21 July 2004, was obtained from the Resident Site Staff.</p> <p><b>Area A:</b></p> <ul style="list-style-type: none"> <li>▪ Item 1 – Drainage works by using 1 x backhoe;</li> <li>▪ Item 2 – Bored piling works by using 1 x crawler crane, 1 x air compressor, 1 x reverse circulation drill and 1 x power pack;</li> <li>▪ Item 3 – Trial trench excavation by man power;</li> <li>▪ Item 4 – Gas main diversion by 1 x backhoe (performed by TGC's Contractor)</li> </ul> <p><b>Area B:</b> No construction activity was undertaken in the concerned period.</p> <p><b>Review of Environmental Monitoring Results</b></p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>Hill and Lai Chi Kok Park Swimming Pool</p> <p>2. <b>Area B:</b> Works area between Ching Cheung Road and Mei Lai Road / Lai Wan Road opposite to Mei Foo Sun Cheung (Phase 5) and Lai Chi Kok Public Library.</p>	<p>The routine monitoring stations, which are in the vicinity of the concerned works areas, include:</p> <p><u>Noise Monitoring</u>            NM4: R/F of Mei Foo Sun Chuen (Phase 5)            NM8a: M/F of Nob Hill            NM8b: 3/F of Nob Hill</p> <p><u>Air Quality (1-hr TSP / 24-hr TSP) Monitoring</u>            AM2: R/F of Lai Chi Kok Sports Centre</p> <p>No Action / Limit level exceedance was identified in July 2004.</p> <p><b>Environmental Site Inspection</b>            During the ET site inspections on 8<sup>th</sup>, 14<sup>th</sup> and 20<sup>th</sup> July 04, no major environmental deficiency with regard to noise and air quality was identified by the auditors.</p> <p><b>Conclusions</b>            Based on the RSS's information, environmental monitoring results as well as the observations made during site inspections, this complaint is considered to be invalid and not due to the construction activities of the Project. Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise and dust impacts, such as:</p> <ul style="list-style-type: none"> <li>• To space out noisy equipment and position it as far away as possible from the sensitive receivers;</li> <li>• To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>• To ensure the equipment are maintaining in good operation condition;</li> <li>• To turn off any idle equipment on site.</li> <li>• To cover excavated dusty materials by impervious sheeting;</li> <li>• To provide water spray for haul roads, loading/unloading and concrete breaking operations;</li> <li>• To perform wheel wash for every vehicle immediately before leaving the site.</li> </ul>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50215	Mei Foo Sun Chuen, Phase 5 (Retaining Wall CC-R3)	15-Feb-05 (by ET Leader)	<p>A public complaint was raised on 8<sup>th</sup> Feb 2005 regarding construction noise from the site area of the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project near Mei Foo Sun Chuen. The complaint was referred to the Resident Site Staff on 14<sup>th</sup> Feb 2005 and subsequently referred to the ET Leader of the Project on 15<sup>th</sup> Feb 2005.</p> <p>The complaint was raised by a resident in Mei Foo Sun Chuen, regarding the noise generation from the piling work at Retaining Wall CC-R3, adjacent to Po Leung Kuk Tong Nai Kan College.</p>	<p><b>Construction Activities</b></p> <p>During the weekly site inspection on 17 Feb 05, piling work was being conducted at the concerned. The major powered mechanical equipment (PME) in operation included a mobile crane, an air compressor, a reverse circulation drill and a generator.</p> <p>In view of the separation of the site area and the residential building (around 40 m) and also the high traffic noise from Ching Cheung Road as well as Mei Lai Road, the noise generated from the operation of the PME was believed to be insignificant.</p> <p><b>Environmental Monitoring</b></p> <p>The noise monitoring results at Station NM4 (Mei Foo Sun Chuen, Phase 5) for the last 3 months were reviewed in order to evaluate the noise impact from the Project on the noise sensitive receiver. The measured noise levels in last three threes were ranged from 70.8 to 75.8 dB(A). It was observed that the measured noise levels were well within the range of baseline noise levels (69.2 to 75.8 dB(A)).</p> <p>The corrected construction noise levels were found to be ranged from 63.5 to 71.5 dB(A), which were well below the noise criterion of 75 dB(A).</p> <p><b>Conclusions</b></p> <p>Based on the information obtained and the noise monitoring results, this complaint is considered to be invalid and not due to the construction activities of the Project.</p> <p>Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise impacts.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50322	Seung Lai House, Wah Lai Estate (Slope S1)	11-Mar-05 (by EPD) 22-Mar-05 (by ET Leader)	<p>Environmental Protection Department (EPD) received a public noise complaint on 11 Mar 05 about daytime construction noise generation from R8-LCKV. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 22 Mar 05.</p> <p>The complaint was raised by a resident of Seung Lai House of Wah Lai Estate, regarding the daytime (0800-1800 hrs) construction noise generated from the slope work and road work of R8-LCKV Project. As advised by EPD, the complainant is living on 20/F or above in Seung Lai House.</p>	<p><b>Construction Activities</b></p> <p>As advised by the RSS, the major construction work during 25 Feb 05 to 11 Mar 05 (2 weeks before the date of complaint) in the vicinity of Wah Lai Estate included excavation work, soil nail work and installation of u-channel and manholes. The major powered mechanical equipment included excavators, drilling machine and air compressor.</p> <p>In view of the separation of the site area (Slope S1) and the Seung Lai House (around 140 m) and also the traffic noise from Ching Cheung Road, the noise generated from the construction activities at Slope S1 was believed to be insignificant.</p> <p><b>Environmental Monitoring</b></p> <p>Ad-hoc noise measurement was conducted at Seung Lai House on 30<sup>th</sup> Mar 05 and the measured noise level (Leq-30min) was 66.9 dB(A), which was well below the criterion for daytime construction noise of 75 dB(A). The construction noise level (with reduction of background noise level) is expected to be even lower.</p> <p><b>Conclusion</b></p> <p>Based on the information obtained and the noise measurement results, this complaint is considered not justifiable. Nevertheless, the Contractor was recommended to adopt good site practice to minimize the construction noise impact.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50330, 50331, 50404 & 50407	Wah Lai Estate	30-Mar-05, 31-Mar-05, 4-Apr-05 & 7-Apr-05 (by ET Leader via RSS)	<p>Four public complaints were lodged by the residents of Wah Lai Estate regarding the construction noise from the site area of the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project near Wah Lai Estate. The complaints were referred by the Resident Site Staff to the Environmental Team (ET) Leader on 30<sup>th</sup>, 31<sup>st</sup> March, 4<sup>th</sup> and 7<sup>th</sup> April 2005, respectively.</p>	<p><b>Construction Activities</b></p> <p>The site of concern was likely to be Slope S1, which is around 140 m away from Wah Lai Estate. The major construction work at Slope S1 included trimming of slope, soil nail work and erection of u-channels and step channels.</p> <p><b>Environmental Monitoring</b></p> <p>Ad-hoc noise measurement was conducted at Seung Lai House on 30<sup>th</sup> Mar 05 and 7<sup>th</sup> Apr 05 and the measured noise levels (Leq-30min) were ranged from 66.9 to 69.1 dB(A), which were well below the criterion for daytime construction noise of 75 dB(A). The construction noise level (with reduction of background noise level) is expected to be even lower.</p> <p><b>Conclusion</b></p> <p>Based on the results of the ad-hoc noise measurements at Wah Lai Estate, no exceedance of daytime noise criterion of 75 dB(A) was recorded. The complaints lodged are therefore considered not justifiable.</p> <p><b>Mitigation</b></p> <p>The Contractor agreed to arrange the noisy activities to commence after 8:00 am. This arrangement could effectively reduce the disturbance to the residents within the more sensitive time period (7:00 am to 8:00 am).</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50404-v2	Mei Foo Sun Chuen	4-Apr-05 (by ET Leader via RSS)	<p>A public complaint was raised on 1<sup>st</sup> April 2005 regarding construction noise from the site area of the Route 8 – Lai Chi Kok Viaduct (R8-LCKV) Project near Mei Foo Sun Chuen. The complaint was referred to the Resident Site Staff and the ET Leader on 4<sup>th</sup> April 2005.</p>	<p><b>Construction Activities</b></p> <p>The site of concern was likely to Retaining Wall CC-R3, adjacent to Po Leung Kuk Tong Nai Kan College. The major construction works at this area included bored piling works and excavation works.</p> <p><b>Environmental Monitoring</b></p> <p>According to the EM&amp;A Manual, Mei Foo Sun Chuen, Phase 5 (NM4) is designated as one of the noise monitoring stations.</p> <p>Since the commencement of the impact monitoring programme, the construction noise levels recorded at this station were all below the noise criterion.</p> <p><b>Conclusion</b></p> <p>Based on the noise monitoring results at Station NM4 (Mei Foo Sun Chuen), no exceedance of daytime noise criterion of 75 dB(A) was recorded since the commencement of the impact monitoring programme. The complaint lodged is therefore considered not justifiable.</p> <p><b>Mitigation</b></p> <p>The Contractor has agreed to arrange the noisy activities to commence after 8:00 am. This arrangement could effectively reduce the disturbance to the residents within the more sensitive time period (7:00 am to 8:00 am). The Contractor also agreed to provide some temporary noise barriers for the noisy machinery if found necessary.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50613	Mei Foo Sun Chuen	<p>7-Jun-05 (by EPD)</p> <p>13-Jun-05 (by ET Leader)</p>	<p>According to EPD, the complaint was raised by a resident of Mei Foo Sun Chuen (Block 7, Phase 5) on 7 June 2005. It was about construction dust emitted intermittently from the slope works undertaken on the other side of Mei Lai Road.</p> <p>The complainant was particularly concerned about the fugitive dust emission during rock / concrete breaking activities.</p>	<p><i>Site Activities</i></p> <p>The site of concern was likely to be CCR-R3. Bored piling works and demolition of existing retaining walls were undertaken at this area in the period between 1 and 7 June 2005. It was believed that the demolition of existing retaining wall, which involved concrete breaking, was the activity of concern.</p> <p><i>Observations</i></p> <p>On 1 Jun 05, one of the environmental deficiencies noted by the ET was about fugitive dust emission from breaking activities at CCR-R3. The Contractor was reminded to provide sufficient dust mitigation measures for the breaking works. Immediate action was taken by the Contractor to apply water spray for the works as observed during the audit session.</p> <p>On 9 Jun 05, the breaking works were still being taken at CCR-R3. Water spray as a dust mitigation measure was being adopted by the Contractor during the audit. No observable dust emission was noted from the breaking works or other site activities.</p> <p>On 15 Jun 05, the same area was re-inspected due to the receipt of the complaint from EPD. The demolition works had been finished and no other dust emissive activity was being taken. No other dust source from the construction site was observed during the inspection.</p> <p><i>Conclusion</i></p> <p>Based on the observations noted during our site inspections, this complaint is considered to be valid and related to the construction activities of the Project.</p> <p>However, corrective action had been taken by the Contractor and the situation was found improved during the follow-up inspections.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50721	Hei Lai House, Wah Lai Estate	21-Jul-05 (by ET Leader)	<p>The complaint was lodged by a resident of Hei Lai House of Wah Lai Estate through a Legislative Council member. The complaint was about construction noise nuisance caused by rock breaking work, which claimed to be started from 8:30am daily, carried out at Ching Cheung Road near Wah Lai Estate.</p> <p>The complainant hoped that the rock breaking work could start later i.e. be carried out from noon to afternoon and the site could be fully enclosed.</p> <p>The Environmental Team (ET) of the Project received the complaint on 21 July 2005 and forwarded it to the Resident Site Staff (RSS) to obtain necessary information.</p>	<p><i>Site Activities</i></p> <p>The slope work at Slope S1 was likely to be the activity of concern. The work at Slope S1 recently included the operation of excavator mounted breakers, excavators and dump trucks.</p> <p>The time period of concern was within normal working hours (7am to 7pm) on a weekday not being a public holiday. The noise criterion is 75 dB(A) for domestic premises.</p> <p><i>Noise Measurement</i></p> <p>Ad-hoc measurements were carried out on the roof of Hei Lai House on 25 July 2005.</p> <p>The results show that the measured noise level is well below the noise criterion of 75 dB(A). The construction noise level (with reduction of background noise) is expected to be even lower.</p> <p><i>Conclusion</i></p> <p>Since the noise measurement results at Wah Lai Estate were below 75 dB(A), the complaint was considered not justifiable.</p> <p>Nevertheless, noise mitigation measures have been implemented by the Contractor to minimize the noise impact arising from the breaking activities:</p> <ol style="list-style-type: none"> <li>1. Employment of silenced-type breakers;</li> <li>2. Temporary noise barriers, attached with sound adsorption materials, were erected to screen the site of breaking from sensitive receivers</li> <li>3. While the permitted hours for construction works are 7am to 7pm on non-holidays, the Contractor has commenced the rock breaking activity after 8:30am.</li> </ol>	Closed