

Highways Department

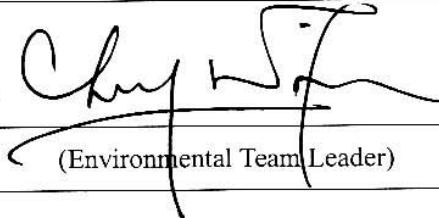
**Route 8 (previously known as Route 9) between
Cheung Sha Wan & Sha Tin**

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

**Monthly EM&A Report
Part II – Eagle's Nest Tunnel & Associated Works
(Version 1.0)**

May 2007

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.

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
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
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
TSP	Total Suspended Particulates
TDD	Territory Development Department
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan

EXECUTIVE SUMMARY**Introduction**

- This is the 42nd 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 May 2007 for Contract No. HY/2003/02, Eagle’s Nest Tunnel and Associated Works (the Project).
- The major site activities for civil works undertaken in the reporting month included:
 - Louvre / Cladding, Door & Hand Rail Installation;
 - Vent Shaft Construction (Louvre / Cladding & Heat Resisting Period);
 - Screeding;
 - Earth works;
 - Rendering;
 - Shotcreting;
 - Vent Shaft erection;
 - Tunnel Ventilation System;
 - T&C for HV, LV cable & switchboard;
 - Plumbing & Drainage;
 - Mechanical Ventilation Air Conditioning; and
 - Drainage Works & Road works.
- The major site activities for Traffic Control and Surveillance System (TCSS) works undertaken in the reporting month included:
 - Cable Laying;
 - Field Equipment Installation; and
 - Equipment Cabinet Delivery.

Environmental Monitoring and Audit Works

- Environmental monitoring and audit works for the Project was performed regularly as stipulated in the 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 events and actions taken in the reporting month is tabulated in **Table I**.

Table I Summary of Events Recorded in the Reporting Month

<i>Parameter</i>	<i>No. of Events</i>		<i>No. of Events Due to the Project</i>	<i>Action Taken</i>
	<i>Action Level</i>	<i>Limit Level</i>		
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A

Environmental Licenses and Permits

- Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Registration of Chemical Waste Producer (RCWP), Construction Noise Permits (CNP) and Water Discharge Licenses (WDLs). 1 new CNP was issued to the Project by EPD 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	---
<u>Future Key Issues:</u>					
<p>Major site activities for civil works in the coming months include:</p> <ul style="list-style-type: none"> • Door & Hand Rail Installation; • Tunnel Ventilation System; • T&C for Tunnel Ventilation System; • Plumbing & Drainage; • Slope Stabilization; • Construction of Car Park Shelter no. 2-4; • Mechanical Ventilation Air Conditioning; and • Drainage Works & Road works. <p>Major site activities for TCSS works in the coming months include:</p> <ul style="list-style-type: none"> • Cable Laying; • Field Equipment Installation; • Control Equipment Installation; • Antenna Installation; • TCSS Cabinet Installation; • PA Installation; and • Emergency Telephone Installation. <p>The anticipated environmental issues will be mainly on surface runoff during rainy season, dust impact from drainage and road 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 acts 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 of 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 on 15th December 2003 for completion in April 2007.
- 1.7 “Route 9” was recently re-tiled 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 (previously known as Route 9) 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 HILL Hong Kong Ltd. was appointed as the IEC under Condition 2.1 of the EP. This is the 42nd monthly EM&A report summarizing the EM&A works for the Project in May 2007.

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 / Engineer’s Representative (E/ER) – Maunsell-Hyder Joint Venture (MHJV)
 - Environmental Team (ET) – Cinotech Consultants Limited
 - Independent Environmental Checker (IEC) – CH2M HILL Hong Kong Ltd.
 - Contractor – Leighton-Kumagai Joint Venture (LKJV)
 - Engineer’s Representative for TCSS works – Ove Arup & Partners Hong Kong Limited
 - Contractor for TCSS works – Delcan-Imtech-Gtech Joint Venture
- 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

The major site activities for civil works undertaken in the reporting month included Door & Hand Rail Installation, Tunnel Ventilation System, T&C for Tunnel Ventilation System, Fire Services, Mechanical Ventilation Air Conditioning, and Drainage Works & Road works.

- 1.11 The major site activities for TCSS works undertaken in the reporting month included:
- Cable Laying;
 - Field Equipment Installation; and
 - Equipment Cabinet Delivery.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
HyD	Permit Holder	Mr. Kroc Leung	SE2/R8K	2762 3662	2714 5198
		Mr. George Law	E4/R8K	2762 3675	
MHJV	Engineer	Mr. Conrad Ng	Project Manager	2605 6262	2691 2649
	Engineer's Representative	Mr. Peter Poon	CRE	3552 2500	2743 9200
		Mr. Eric Wong	RE (S & EP)	3552 2551	
		Ms. Sammie Chan	TO (EN)	3552 2605	
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	3107 1388
		Mr. Jesse Yuen	Project Manager	2151 2091	
		Mr. Edmond Wu	Audit Team Leader	2151 2092	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
CH2M	Independent Environmental Checker	Mr. Kenneth Luk	Independent Environmental Checker	2507 2209	2507 2293
		Mr. Billy Yu	Deputy Independent Environmental Checker	2872 2949	
LKJV	Contractor	Mr. Ray Brewster	Project Director	9092 6128	2743 1600
		Mr. Danny Cheng	QA/E Manager	3552 2113	
ARUP	Engineer's Representative (TCSS)	Mr. Donald Leung	RE	2436 7489	2436 1803
		Mr. Ivy Kong	ARE	2436 7435	
DIGJV	Contractor (TCSS)	Ms. Joyce Chan	Quality Manager	2123 0845	2123 0889
Enquiries Hotline				3552 2226	-
Complaint Hotline				3552 2380	-

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.
- 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 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 the reporting month.

2. AIR QUALITY

Monitoring Requirements

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

Monitoring Locations

- 2.2 Three designated monitoring stations, AM1, AM3 and AM4 was selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1a** and **1b**.

Table 2.1 Locations for Air Quality Monitoring

Station	Description	Location
AM1 ⁽¹⁾	Yew Chung International School / PLK Choi Kai Yau School	Rooftop
AM3	Slope no. 07SW-D/FR4 near Garden Villa	On Ground
AM4	Government Quarters	Ground Floor ⁽²⁾

Note: ⁽¹⁾ Yew Chung International School / PLK Choi Kai Yau School had ceased operated and been demolished since February 2007. The air monitoring at AM1 has been suspended since February 2007, as approved by EPD on 26th April 2007.

⁽²⁾ The HVS was installed on the ground floor, which is close to the refuse collection station of the Government Quarters.

Monitoring Equipment

- 2.3 **Table 2.2** summarizes the equipment used in the impact air monitoring programme. 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	3

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 – 2.4 of the Updated 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 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. For TSP sampling, fiberglass filters (G810) were used.
- 2.8 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.9 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.

- 2.10 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.
- 2.11 The shelter lid was closed and secured with the aluminum strip. 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). After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.12 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

- 2.13 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

- 2.14 All TSP monitoring was conducted as scheduled the reporting month.
- 2.15 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP was recorded in the reporting month.
- 2.16 Wind data monitoring equipment has been installed in Shatin Heights for logging wind speed and wind direction. These wind data is summarized in Appendix D.
- 2.17 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 (L_{eq}). L_{eq} (30min) shall be used as the monitoring parameter for the time period between 0700-1900 hours on normal weekdays. For all other time periods, L_{eq} (5min) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. As supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.
- 3.3 Three designated noise monitoring stations, namely NM1, NM5 & NM6 were selected for impact monitoring in accordance to the EM&A manual (1999) and the subsequent EPD approval of the relocations.
- 3.4 Noise monitoring is also required to be conducted at station NM7 in accordance with the EM&A Manual (1998). The noise monitoring at the station is required to be conducted under CEDD's construction Contract No. ST 89/02 "Sha Tin Heights Tunnel and Approaches" in accordance with the requirement of Environmental Permit No. EP104/2001/A. The impact noise monitoring results at station NM7 are also presented in this report.
- 3.5 **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.6 Noise monitoring was conducted at three designated monitoring stations as summarized in Table 3.1. Figures 1a & 1b show the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Station	Description	Location
NM1 ⁽¹⁾	Yew Chung International School / PKL Choi Kai Yau School	Rooftop
NM5	Villa Carlton	Ground Floor ⁽²⁾
NM6	Government Quarters	Rooftop of Refuse Collection Station
NM7	Garden Villa	Rooftop

Note: ⁽¹⁾ Yew Chung International School / PLK Choi Kai Yau School had ceased operated and been demolished since February 2007. The noise monitoring at NM1 has been suspended since February 2007, as approved by EPD on 26th April 2007.

⁽²⁾ The noise measurement was taken at 2.3m above the ground floor of Villa Carlton, where has a line of sight of the construction site in the opposite.

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

Station	Parameter	Period ¹	Frequency	Measurement
NM1	L ₁₀ (30 min.)dB(A) L ₉₀ (30 min.)dB(A) L _{eq} (30 min.)dB(A)	(a) 0700-1900 hrs. on weekdays (b) 1900-2300 hrs. on weekdays (c) 0700-2300 hrs. on holidays (d) 2300-0700 hrs on any days	Once per week	Façade
NM5				Façade
NM6				Free Field
NM7				Façade

Note: ¹(b), (c) and (d) will only be conducted if construction works are undertaken during these periods.

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.
- For free field measurement (if any), the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- 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}, L₉₀ and L₁₀ 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. The meters were sent to the supplier to check and calibrate on a yearly interval.

Results and Observations

- 3.10 Noise monitoring was performed at the three designated locations as scheduled for the daytime period (0700-1900 hours) in this reporting month. Restricted-hour monitoring was also conducted at NM5, NM6 and NM7.
- 3.11 All the Construction Noise Levels (CNLs), except the monitoring (0700-1900 on weekdays) at NM6, reported in this report were adjusted with the corresponding baseline level (i.e. Measured Leq – Baseline Leq = Measured CNL), in order to facilitate the interpretation of the noise exceedance.
- 3.12 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.13 No Action/Limit Level exceedance for noise monitoring was recorded in the reporting month.

4. ENVIRONMENTAL AUDIT

Site Audits

- 4.1 Site audits were carried out on a 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 provided in **Appendix I**.
- 4.2 Site audits for Civil contract were conducted on 2nd, 8th, 16th, 23rd and 31st May 2007 by ET. Site audits for TCSS contract were conducted on 8th and 31st May 2007 by ET. No environmental deficiency was recorded for TCSS contract during site inspections. A joint site audit for Civil works and TCSS works was conducted on 8th and 31st May 2007 with representatives from 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 valid permits/licenses obtained for the Project are summarized in **Table 4.1**. 1 new CNP was issued to the Project by EPD 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		
Environmental Permit (EP)				
EP-103/2001/C	22/07/05	N/A	Construction and operation of (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
Registration of Chemical Waste Producer				
WPN 5213-761-L2595-01	26/01/04	N/A	Regulation for disposal of spent oil and waste batteries arising from construction activities in all project areas.	Valid
Water Discharge Licence				
EP482/261/0327/I	03/05/04	31/05/09	Discharge of industrial trade effluent and effluent arising from construction activities at the construction site at Ventilation Adit on Tai Po Road (behind Shell Filling Station) opposite Pinehill Development Highways.	Valid
EP482/261/0326/I	01/04/04	30/04/09	Discharge of industrial trade effluent and effluent arising from construction activities at the construction site at Mui Kong Tsuen, Butterfly Valley, Lai Chi Kok, Kowloon.	Valid
No. 3156	23/02/04	22/02/09	Discharge of industrial trade effluent and all other wastewater arising from the works areas at North Portal of Route 9 – Eagle's Nest Tunnel and Associated Works (Contract HY/2003/02).	Valid
Construction Noise Permit (CNP)				
GW-RN0492-06	11/11/06	10/5/07	<i>Location:</i> Administration Building <i>Time Period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Expired
GW-RN0564-06	7/12/06	6/6/07	<i>Location:</i> SHT – South Portal Tunnel near Garden Villa <i>Time Period:</i> Any day between 2300-0700 on next day.	Valid
GW-RN0575-06	7/12/06	6/6/07	<i>Location:</i> SHT – South Portal Tunnel near Tai Po Road and Keng Hau Road <i>Time Period:</i> Any day between 2300-0700 on next day.	Valid
GW-RN0600-06	18/12/06	17/6/07	<i>Location:</i> SHT - South Portal near Garden Villa <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday).	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RW0016-07	4/2/07	3/8/07	<i>Location:</i> Butterfly Valley <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday).	Valid
GW-RW0017-07	6/2/07	5/8/07	<i>Location:</i> Construction site adjacent to Tai Po Road Shell Petrol Filling Station and opposite to Villa Carlton <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday).	Valid
GW-RW0082-07	20/3/07	19/9/07	<i>Location:</i> Mui Kong Tsuen <i>Time Period:</i> 0700-2400 (general holiday including Sundays) and 1900-2400 (any day not being a general holiday).	Valid
GW-RW0089-07	25/3/07	24/9/07	<i>Location:</i> SHT-North Portal <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday).	Valid
GW-RN0102-07	9/4/07	8/10/07	<i>Location:</i> SHT-North Portal near Garden Villa <i>Time Period:</i> Any day between 2300-0700 on next day	Valid
GW-RN0104-07	9/4/07	8/10/07	<i>Location:</i> SHT-South Portal at Butterfly Valley <i>Time Period:</i> Anyday between 2300-0700 on next day	Valid
GW-RN0103-07	10/4/07	9/10/07	<i>Location:</i> SHT-South Portal at Butterfly Valley <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday)	Valid
GW-RN0105-07	10/4/07	9/10/07	<i>Location:</i> SHT-North Portal near Garden Villa <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday)	Valid
GW-RN0185-07	11/5/07	10/11/07	<i>Location:</i> Tunnel North Portal site near Garden Villa <i>Time Period:</i> 0700-2300 (general holiday including Sundays) and 1900-2300 (any day not being a general holiday).	Valid

4.6 Spot checks on truck overloading were also conducted during the site inspections since June 2006. No overloading incident was observed during the site inspections in the reporting month.

4.7 No non-conformance was identified during the site inspections in the reporting month. The observations and recommendations are summarized in **Table 4.2**.

Table 4.2 Observations and Recommendations of Site Audit for Civil Works

Parameters	Date	Observations / Recommendations	Remedial Actions / Remarks
------------	------	--------------------------------	----------------------------

Water Quality	02/05/07	<i>Reminder</i> - Accumulation of silt was observed in the u-channel near the Aquased in Toll Plaza. The Contractor was reminded to remove the accumulated silt.	Rectification / improvement was observed during the follow-up site inspection.
	02/05/07	<i>Reminder</i> - Standing water was observed at the footing of the long sign gantry in the Toll Plaza. The Contractor was reminded to spray larvicide oil on the footing of the sign gantry.	Rectification / improvement was observed during the follow-up site inspection.
	08/05/07	<i>Reminder</i> - Broken tarpaulin was observed at Slope SPS3. The Contractor was reminded to cover the exposed slope properly.	Rectification / improvement was observed during the follow-up site inspection.
	16/05/07	<i>Reminder</i> - Accumulated sand and sediment were observed on the step channel. The Contractor was reminded to clean it up as soon as possible.	Water discharge from the reservoir upstream of the step channel is processing by Water Services Department (WSD). For the safety reason, Contractor was not able to clear the accumulated silt and sediment due to the high flow rate in the step channel. The Contractor was reminded to clear the accumulated silt and sediment as soon as possible.

4.8 The observations and recommendations arising from pervious month and followed up in the reporting month are summarized in **Table 4.3**.

Table 4.3 Observations and Recommendations of Site Audits Followed up for Pervious Month for Civil Works

Parameters	Date	Observations / Recommendations	Remedial Actions
-	-	-	-

Summary of Exceedances

1-hr and 24-hr TSP Monitoring

4.9 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP was recorded in the reporting month.

Construction noise

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

Implementation Status of Event Action Plans

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

Summary of Complaints and Prosecutions

- 4.12 No environmental related complaint or prosecution was received in the reporting month.
- 4.13 There were no environmental complaints and no prosecution received since the commencement of the Project. The updated Complaint Log is shown in **Appendix M**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

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

- Surface runoff at works area during rainy season;
- Accumulation of standing water after heavy rainfall.
- Potential dust emission from drainage and road works.

Monitoring Schedule for the Next Month

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

Construction Program for the Next Month

5.3 The tentative construction program for civil works is provided in **Appendix L**. The major construction activities for civil works in the coming months include:

ENT Tunnel

- VE panel, E&M cabling, T&C for Tunnel ventilation system, fire services, and T&C for equipment.

Butterfly Valley

- Road and drainage works, diverted DN200, recreated stream, slope stabilization (e.g. hydro mulching stone pitching), gabion wall, and step/u-channel

South Portal Building

- Door & Hand Rail installation, Tunnel Ventilation System, mechanical ventilation air condition, T&C for equipment, and fire services.

North Portal Building

- Door & Hand Rail installation, Plumbing & Drainage, Tunnel Ventilation System, mechanical ventilation air condition, fire services, and T&C for equipment.

Toll Plaza's Structures and Administration Building

- Road works (including EVA Road & Loop Road No.2), Footbridge (metal cladding), construction of car park shelter no.2- 4 (concrete pavement), tiles (external wall & internal floor), false ceiling, mechanical ventilation air condition, plumbing & drainage, T&C for equipment, lift installation, fire services, and installation of toll collection system.

Ventilation Building & Tai Po Road

- Drainage works, utility, mechanical ventilation air condition, Tunnel Ventilation System, T&C for equipment, and fire services.

SHT – South Portal Building

- Hand rail installation, fire services, mechanical ventilation air conditioning, tunnel ventilation system, and T&C for equipment.

SHT – North Portal Building

- Hand rail installation, mechanical ventilation air conditioning, tunnel ventilation system, fire services, T&C for equipment.

SHT Tunnel & Remaining SHT/T3 Area

- Lighting installation, fire services, tunnel ventilation system, and cabling works.

5.4 The tentative construction program for TCSS works is provided in **Appendix L**. The major site activities for TCSS works in the coming months include:

- Cable laying, field equipment installation, TCSS cabinet installation and emergency telephone installation at Tunnel
- Cable laying, field equipment installation and TCSS cabinet installation at Butterfly Valley
- Cable laying, equipment cabinets installation, control equipment at Kiosk K3, K4
- Cable laying, equipment cabinets installation, antenna installation and PA installation at South Portal Building
- Cable laying, equipment cabinets installation, antenna installation and PA installation at North Portal Building
- Cable laying, field equipment installation and PA installation at Toll Plaza
- Cable laying, equipment cabinets installation, antenna pole installation and PA installation at Administration Building
- Cable laying, equipment cabinets installation, antenna pole installation and PA installation at Ventilation Building

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 1-hour TSP and 24-hours TSP was recorded in the reporting month.
- 6.3 No Action/Limit Level exceedance for noise monitoring was recorded in the reporting month.
- 6.4 No environmental complaint or prosecution was received in the reporting month.

Recommendations

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

Water Impact

- To review and implement temporary drainage system especially for the areas at Butterfly Valley and Toll Plaza.
- To closely monitor the capacity of existing de-silting facility on site, especially for the discharge at the site in Butterfly Valley and Toll Plaza.
- To keep the sedimentation facilities well maintained and perform de-silting regularly.
- To avoid accumulation of stagnant water on site.

Dust Impact

- To ensure that adequate water spray or other dust suppression measures are applied for slope cutting and the haul roads and stockpile on site.
- To cover idle soil slope surface and stockpile of dusty materials to prevent wind erosion.
- To ensure that all vehicles carrying dusty materials are properly covered before leaving the site.

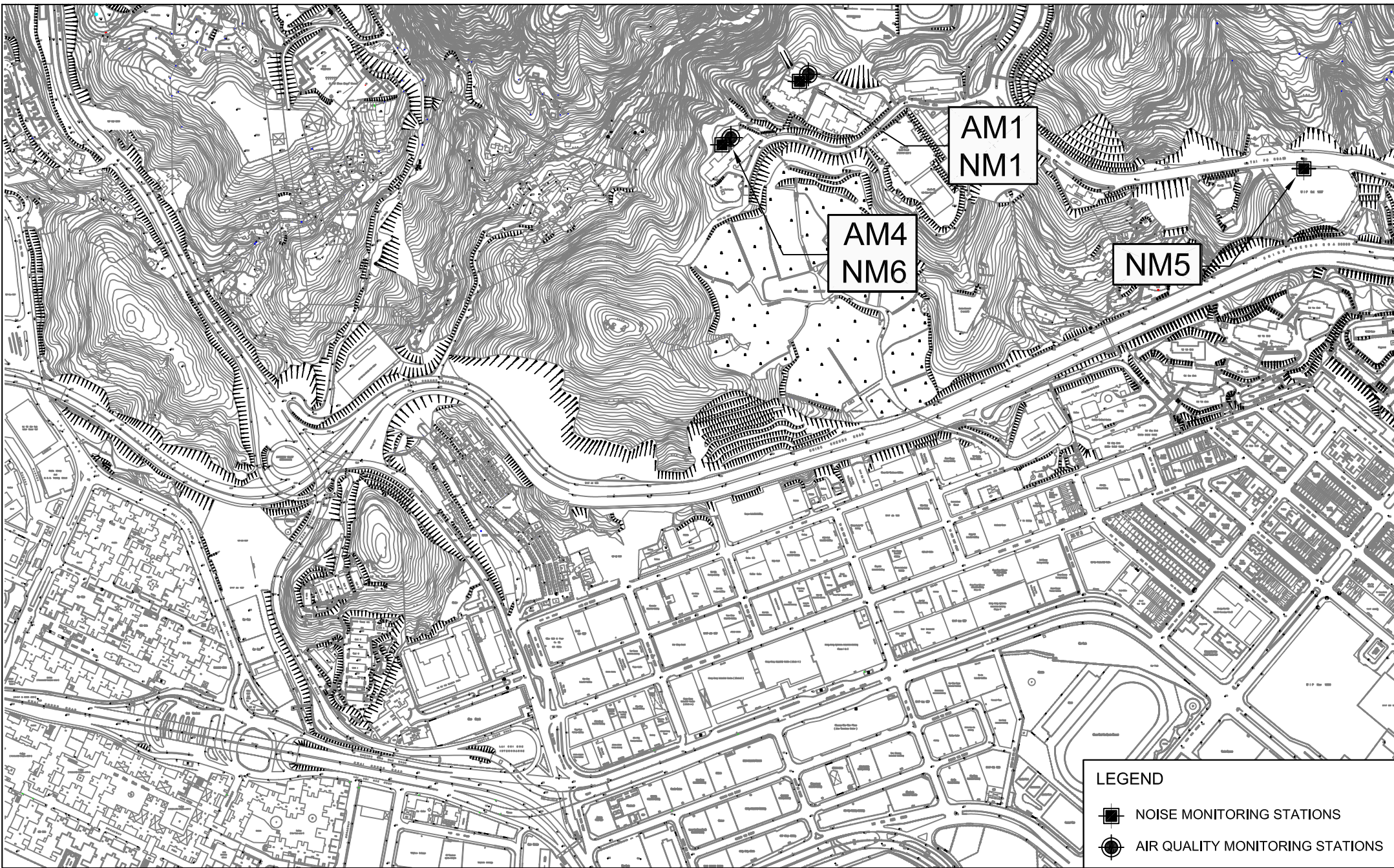
Noise Impact

- To provide temporary noise barriers for noisy activities (such as breaking works).
- To reduce the number of noisy equipment in concurrent operation.

Waste/Chemical Management

- To ensure proper storage of chemical and chemical waste on site.
- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly.

FIGURES



LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

Title

ROUTE 8 (PREVIOUSLY KNOWN AS ROUTE 9) BETWEEN CHEUNG SHA WAN AND SHA TIN
 CONTRACT NO. HY/2003/02 - EAGLE'S NEST TUNNEL AND ASSOCIATED WORKS

LOCATIONS OF MONITORING STATIONS

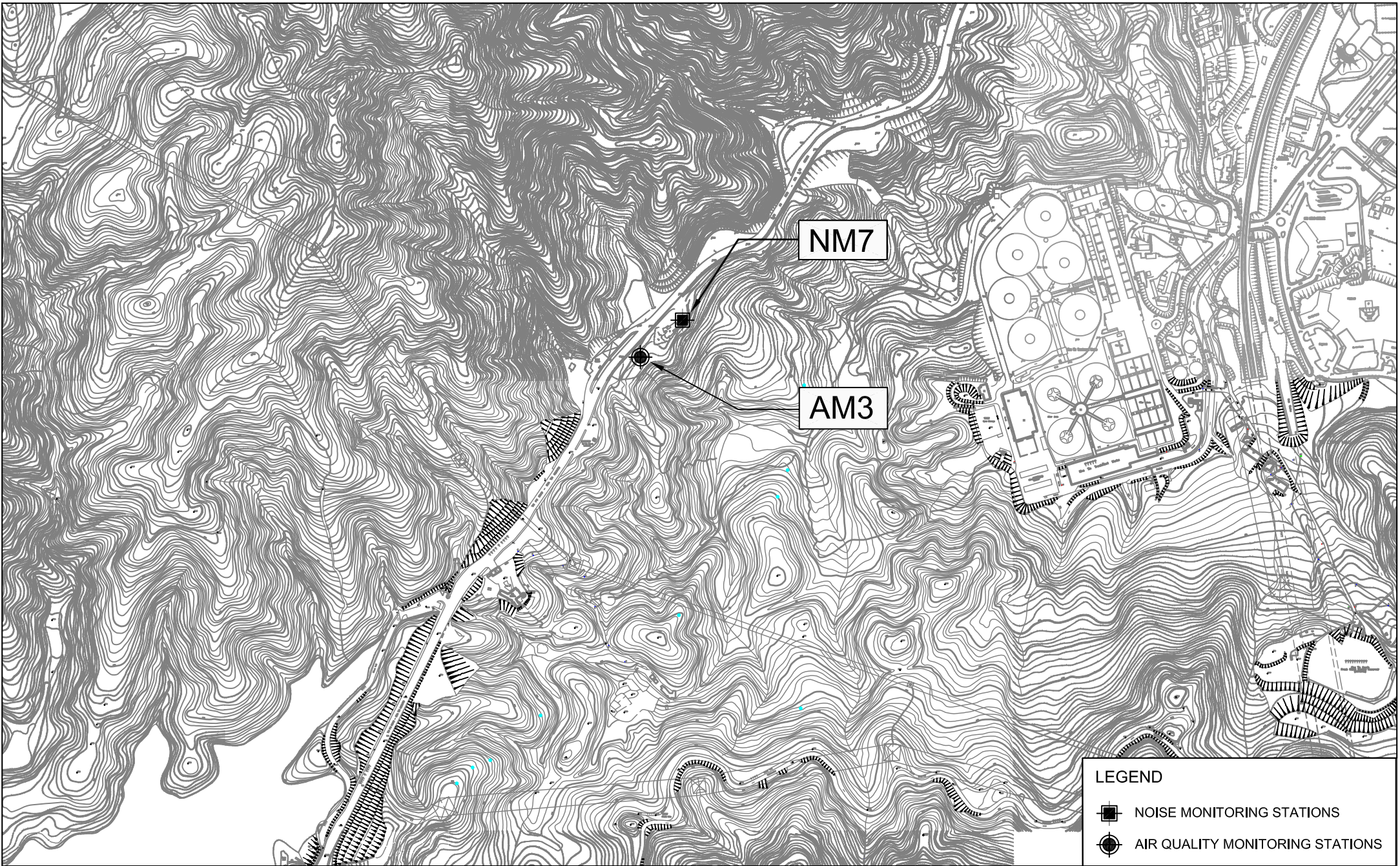
Scale
1 : 6500 (A4)

Date
2006

Project No.
MA3024

Figure No.
1a





LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

Title

ROUTE 8 (PREVIOUSLY KNOWN AS ROUTE 9) BETWEEN CHEUNG SHA WAN AND SHA TIN
 CONTRACT NO. HY/2003/02 - EAGLE'S NEST TUNNEL AND ASSOCIATED WORKS

LOCATIONS OF MONITORING STATIONS

Scale
 1 : 6500 (A4)

Date
 2006

Project No.
 MA3024

Figure No.
 1b



**APPENDIX A
ACTION AND LIMIT LEVELS**

Appendix A - Action and Limit Levels (ENT)

1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	296	500
AM3	350	
AM4	294	

24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	168	260
AM3	200	
AM4	170	

Construction Noise

Period	Action Level	Limit Level, dB(A)			
	for all stations	NM1	NM5	NM6	NM7
0700-1900 hrs on normal weekdays	When one documented complaint is received	70/65*	75	75	75
0700-2300 hrs on holidays & 1900-2300 hrs on all other days		-	70	65	60
2300-0700 hrs of next day		-	55	50	45

- (*) Since NM1 is an educational institution, the noise Limit Level (0700-1900 hrs on normal days) is taken as 70 dB(A). The Limit Level will be reduced to 65 dB(A) during school examination periods.

**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/06/60502
Date of Issue:	2006-05-02
Date Received:	2006-05-01
Date Tested:	2006-05-01
Date Completed:	2006-05-02

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
Equipment No. : A-03-01

Test conditions:

Room Temperature : 21 degree Celsius
Relative Humidity : 66%
Pressure : 1018.4 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	21.0	21.0

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
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Shatin, Hong Kong.
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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/07/70502
Date of Issue:	2007-05-02
Date Received:	2007-05-01
Date Tested:	2007-05-01
Date Completed:	2007-05-02

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
Equipment No. : A-03-01

Test conditions:

Room Temperature : 21 degree Celsius
Relative Humidity : 65%
Pressure : 101.3 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	21.0	21.0

PREPARED AND CHECKED BY:

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



PATRICK TSE

Senior Chemist



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 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 12, 2007 Rootsmeter S/N 9833640 Ta (K) - 294
 Operator Tisch Orifice I.D. - 0999 Pa (mm) - 746.76

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3890	3.2	2.00
2	NA	NA	1.00	0.9850	6.3	4.00
3	NA	NA	1.00	0.8810	7.8	5.00
4	NA	NA	1.00	0.8410	8.6	5.50
5	NA	NA	1.00	0.6950	12.5	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9917	0.7139	1.4113	0.9957	0.7168	0.8874
0.9876	1.0026	1.9959	0.9916	1.0067	1.2549
0.9854	1.1185	2.2315	0.9894	1.1231	1.4030
0.9844	1.1706	2.3405	0.9884	1.1753	1.4715
0.9792	1.4090	2.8227	0.9832	1.4147	1.7747
Qstd slope (m) = 2.03154			Qa slope (m) = 1.27212		
intercept (b) = -0.03970			intercept (b) = -0.02496		
coefficient (r) = 0.99999			coefficient (r) = 0.99999		

y axis = SQRT[H2O(Pa/760)(298/Ta)]

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

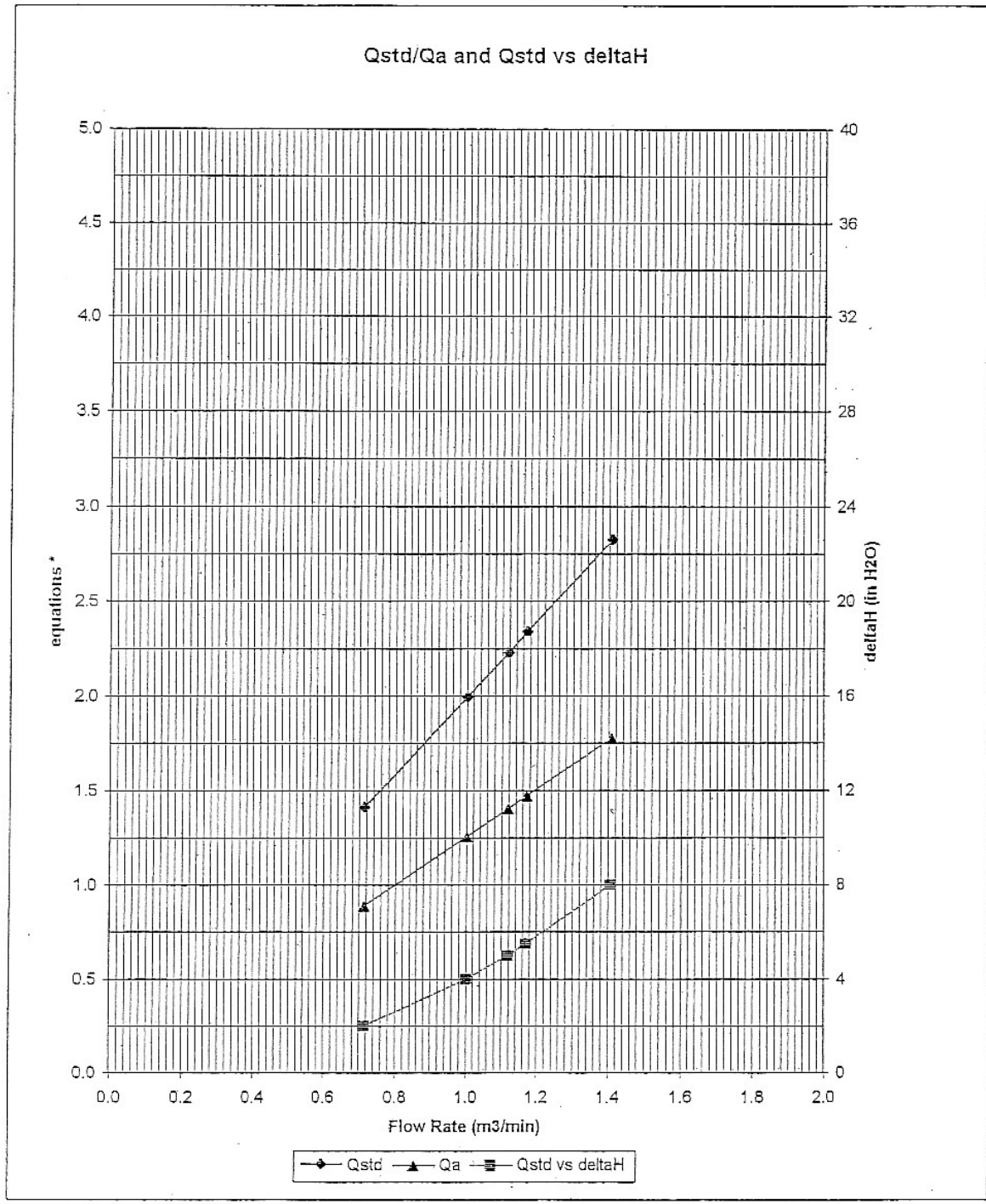
For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))] - b}
 Qa = 1/m{[SQRT H2O(Ta/Pa)] - b}



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AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series:
$$\sqrt{\Delta H \left(\frac{P_a}{P_{std}} \right) \left(\frac{T_{std}}{T_a} \right)}$$

Qa series:
$$\sqrt{(\Delta H (T_a / P_a))}$$

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TEST REPORT

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

Test Report No.:	C/N/61215/1
Date of Issue:	2006-12-15
Date Received:	2006-12-14
Date Tested:	2006-12-15
Date Completed:	2006-12-15
Next Due Date:	2007-12-14

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	: 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.**



PATRICK TSE
Operation Manager

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TEST REPORT

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

Test Report No.:	C/N/61116/1
Date of Issue:	2006-11-16
Date Received:	2006-11-15
Date Tested:	2006-11-15
Date Completed:	2006-11-16
Next Due Date:	2007-11-15

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.	: 2337666
Microphone No.	: 2289750
Equipment No.	: N-01-02

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 59%

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 TSE

Operation Manager

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TEST REPORT

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

Test Report No.:	C/N/60904-1
Date of Issue:	2006-09-04
Date Received:	2006-09-02
Date Tested:	2006-09-02
Date Completed:	2006-09-04
Next Due Date:	2007-09-03

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	: 23 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.**

Patrick

PATRICK TSE
Laborary Manager

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TEST REPORT

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

Test Report No.:	C/N/60904-2
Date of Issue:	2006-09-04
Date Received:	2006-09-02
Date Tested:	2006-09-02
Date Completed:	2006-09-04
Next Due Date:	2007-09-03

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	: 23 degree Celsius
Relative Humidity	: 63%
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:

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Operation Manager

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TEST REPORT

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

Test Report No.:	C/N/61014/1
Date of Issue:	2006-10-14
Date Received:	2006-10-13
Date Tested:	2006-10-14
Date Completed:	2006-10-14
Next Due Date:	2007-10-13

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	: 21 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:

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PATRICK TSE

Operation Manager

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TEST REPORT

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

Test Report No.:	C/N/61116/2
Date of Issue:	2006-11-16
Date Received:	2006-11-15
Date Tested:	2006-11-15
Date Completed:	2006-11-16
Next Due Date:	2007-11-15

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	: 59%
Pressure	: 1015.2 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.**

Patrick .

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/06/70305
Date of Issue:	2007-03-05
Date Received:	2007-03-03
Date Tested:	2007-03-03
Date Completed:	2007-03-05
Next Due Date:	2008-03-04

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 : 20 degree Celsius
Relative Humidity : 65%
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.

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/60904-3
Date of Issue:	2006-09-04
Date Received:	2006-09-02
Date Tested:	2006-09-02
Date Completed:	2006-09-04
Next Due Date:	2007-09-03

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	: 23 degree Celsius
Relative Humidity	: 63%
Pressure	: 1020.1hPa

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 TSE
Operation Manager

**APPENDIX C
ENVIRONMENTAL MONITORING AND
AUDIT SCHEDULE**

**Environmental Monitoring for Eagle's Nest Tunnel
Tentative Air Quality and Noise Monitoring Schedule for May 2007**

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

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

AM3 Garden Villa
AM4 Government Quarters

NM5 Villa Carlton
NM6 Government Quarters
NM7 Garden Villa

**Environmental Monitoring for Eagle's Nest Tunnel
Tentative Air Quality and Noise Monitoring Schedule for June 2007**

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

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

AM3 Garden Villa
AM4 Government Quarters

NM5 Villa Carlton
NM6 Government Quarters
NM7 Garden Villa

APPENDIX D
WIND DATA

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
1-May-2007	00:00	0.0	---
1-May-2007	01:00	0.0	---
1-May-2007	02:00	0.0	---
1-May-2007	03:00	0.0	---
1-May-2007	04:00	0.0	---
1-May-2007	05:00	0.0	SSE
1-May-2007	06:00	0.0	---
1-May-2007	07:00	0.0	SSE
1-May-2007	08:00	0.0	---
1-May-2007	09:00	2.7	WNW
1-May-2007	10:00	2.7	WNW
1-May-2007	11:00	2.2	WNW
1-May-2007	12:00	2.7	WNW
1-May-2007	13:00	2.7	WNW
1-May-2007	14:00	2.2	WNW
1-May-2007	15:00	3.1	NNE
1-May-2007	16:00	3.1	NE
1-May-2007	17:00	2.7	NE
1-May-2007	18:00	1.8	NE
1-May-2007	19:00	0.4	NE
1-May-2007	20:00	0.0	E
1-May-2007	21:00	0.0	ESE
1-May-2007	22:00	0.0	---
1-May-2007	23:00	0.0	ESE
2-May-2007	00:00	0.4	E
2-May-2007	01:00	0.0	E
2-May-2007	02:00	0.0	---
2-May-2007	03:00	0.0	---
2-May-2007	04:00	0.0	---
2-May-2007	05:00	0.0	---
2-May-2007	06:00	0.0	---
2-May-2007	07:00	0.0	---
2-May-2007	08:00	0.0	---
2-May-2007	09:00	0.0	---
2-May-2007	10:00	0.4	WNW
2-May-2007	11:00	0.9	WNW
2-May-2007	12:00	2.2	WNW
2-May-2007	13:00	1.8	WNW
2-May-2007	14:00	1.8	WNW
2-May-2007	15:00	2.2	NNE
2-May-2007	16:00	1.8	NE
2-May-2007	17:00	1.3	NE
2-May-2007	18:00	1.3	NNE
2-May-2007	19:00	0.4	NE
2-May-2007	20:00	0.9	NNE
2-May-2007	21:00	0.0	E
2-May-2007	22:00	0.0	E
2-May-2007	23:00	0.0	---
3-May-2007	00:00	0.0	---
3-May-2007	01:00	0.0	---
3-May-2007	02:00	0.0	---
3-May-2007	03:00	0.0	---
3-May-2007	04:00	0.0	---
3-May-2007	05:00	0.0	---

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
3-May-2007	06:00	0.0	---
3-May-2007	07:00	0.0	---
3-May-2007	08:00	0.0	---
3-May-2007	09:00	0.0	WNW
3-May-2007	10:00	0.4	WNW
3-May-2007	11:00	1.8	WNW
3-May-2007	12:00	1.8	WNW
3-May-2007	13:00	2.2	WNW
3-May-2007	14:00	2.2	W
3-May-2007	15:00	2.2	W
3-May-2007	16:00	2.2	W
3-May-2007	17:00	2.7	W
3-May-2007	18:00	1.3	W
3-May-2007	19:00	0.0	NNE
3-May-2007	20:00	0.0	ENE
3-May-2007	21:00	0.0	ESE
3-May-2007	22:00	0.0	---
3-May-2007	23:00	0.0	---
4-May-2007	00:00	0.0	ESE
4-May-2007	01:00	0.0	NNE
4-May-2007	02:00	0.0	ENE
4-May-2007	03:00	0.0	---
4-May-2007	04:00	0.0	---
4-May-2007	05:00	0.0	---
4-May-2007	06:00	0.0	---
4-May-2007	07:00	0.0	---
4-May-2007	08:00	0.0	SSW
4-May-2007	09:00	0.0	W
4-May-2007	10:00	0.0	NW
4-May-2007	11:00	0.0	N
4-May-2007	12:00	0.0	---
4-May-2007	13:00	0.0	ESE
4-May-2007	14:00	0.0	E
4-May-2007	15:00	0.0	ESE
4-May-2007	16:00	0.0	---
4-May-2007	17:00	0.0	---
4-May-2007	18:00	0.0	---
4-May-2007	19:00	0.0	---
4-May-2007	20:00	0.0	---
4-May-2007	21:00	0.0	---
4-May-2007	22:00	0.0	---
4-May-2007	23:00	0.0	---
5-May-2007	00:00	0.0	---
5-May-2007	01:00	0.0	---
5-May-2007	02:00	0.0	---
5-May-2007	03:00	0.0	---
5-May-2007	04:00	0.0	SSE
5-May-2007	05:00	0.0	NE
5-May-2007	06:00	0.0	N
5-May-2007	07:00	1.3	NE
5-May-2007	08:00	1.8	ENE
5-May-2007	09:00	1.8	ENE
5-May-2007	10:00	0.9	ENE
5-May-2007	11:00	1.3	ENE

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
5-May-2007	12:00	1.8	ENE
5-May-2007	13:00	2.2	ENE
5-May-2007	14:00	0.9	ENE
5-May-2007	15:00	1.8	NNE
5-May-2007	16:00	0.9	NNE
5-May-2007	17:00	1.3	NNE
5-May-2007	18:00	1.8	NE
5-May-2007	19:00	0.9	NE
5-May-2007	20:00	1.3	E
5-May-2007	21:00	0.9	E
5-May-2007	22:00	0.0	E
5-May-2007	23:00	0.0	E
6-May-2007	00:00	0.0	---
6-May-2007	01:00	0.0	---
6-May-2007	02:00	0.0	---
6-May-2007	03:00	0.0	---
6-May-2007	04:00	0.0	---
6-May-2007	05:00	0.0	---
6-May-2007	06:00	0.0	---
6-May-2007	07:00	0.0	S
6-May-2007	08:00	1.3	W
6-May-2007	09:00	2.7	WNW
6-May-2007	10:00	3.6	WNW
6-May-2007	11:00	4.5	WNW
6-May-2007	12:00	3.6	WNW
6-May-2007	13:00	4.0	WSW
6-May-2007	14:00	2.7	W
6-May-2007	15:00	1.8	W
6-May-2007	16:00	2.2	WNW
6-May-2007	17:00	2.7	W
6-May-2007	18:00	1.8	SW
6-May-2007	19:00	0.4	SSW
6-May-2007	20:00	0.0	---
6-May-2007	21:00	0.0	---
6-May-2007	22:00	0.0	---
6-May-2007	23:00	0.0	---
7-May-2007	00:00	0.0	---
7-May-2007	01:00	0.0	---
7-May-2007	02:00	0.0	---
7-May-2007	03:00	0.0	---
7-May-2007	04:00	0.0	---
7-May-2007	05:00	0.0	---
7-May-2007	06:00	0.0	---
7-May-2007	07:00	0.0	---
7-May-2007	08:00	0.0	---
7-May-2007	09:00	0.0	WNW
7-May-2007	10:00	2.2	WNW
7-May-2007	11:00	3.1	WNW
7-May-2007	12:00	3.1	WSW
7-May-2007	13:00	3.1	WNW
7-May-2007	14:00	3.6	NW
7-May-2007	15:00	4.5	WNW
7-May-2007	16:00	3.6	NW
7-May-2007	17:00	3.1	WNW

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
7-May-2007	18:00	2.2	S
7-May-2007	19:00	1.8	SW
7-May-2007	20:00	1.8	SSW
7-May-2007	21:00	0.9	SW
7-May-2007	22:00	0.9	SSW
7-May-2007	23:00	0.0	SSW
8-May-2007	00:00	0.9	S
8-May-2007	01:00	1.8	SSW
8-May-2007	02:00	0.0	SW
8-May-2007	03:00	0.0	---
8-May-2007	04:00	0.0	SSE
8-May-2007	05:00	0.0	---
8-May-2007	06:00	0.4	SW
8-May-2007	07:00	0.4	WNW
8-May-2007	08:00	1.8	W
8-May-2007	09:00	2.2	WNW
8-May-2007	10:00	2.7	WNW
8-May-2007	11:00	2.7	WNW
8-May-2007	12:00	3.1	WNW
8-May-2007	13:00	4.0	NW
8-May-2007	14:00	4.9	WNW
8-May-2007	15:00	4.0	NW
8-May-2007	16:00	4.0	NW
8-May-2007	17:00	3.1	WNW
8-May-2007	18:00	2.2	NW
8-May-2007	19:00	1.8	W
8-May-2007	20:00	2.7	WNW
8-May-2007	21:00	2.7	W
8-May-2007	22:00	2.7	W
8-May-2007	23:00	2.7	WNW
9-May-2007	00:00	3.1	WNW
9-May-2007	01:00	3.1	WNW
9-May-2007	02:00	3.1	WNW
9-May-2007	03:00	4.0	WNW
9-May-2007	04:00	3.1	WNW
9-May-2007	05:00	1.8	W
9-May-2007	06:00	2.7	W
9-May-2007	07:00	1.8	WNW
9-May-2007	08:00	3.6	WNW
9-May-2007	09:00	4.0	WNW
9-May-2007	10:00	4.0	WNW
9-May-2007	11:00	4.0	WNW
9-May-2007	12:00	4.5	WNW
9-May-2007	13:00	4.5	WNW
9-May-2007	14:00	4.9	WNW
9-May-2007	15:00	4.9	WNW
9-May-2007	16:00	5.8	WNW
9-May-2007	17:00	3.6	WNW
9-May-2007	18:00	3.6	WNW
9-May-2007	19:00	3.6	W
9-May-2007	20:00	2.7	W
9-May-2007	21:00	4.0	WNW
9-May-2007	22:00	4.9	WNW
9-May-2007	23:00	3.1	NW

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
10-May-2007	00:00	4.0	W
10-May-2007	01:00	4.5	WNW
10-May-2007	02:00	4.5	WNW
10-May-2007	03:00	3.6	WNW
10-May-2007	04:00	3.1	WNW
10-May-2007	05:00	2.7	WNW
10-May-2007	06:00	2.2	WNW
10-May-2007	07:00	2.7	WNW
10-May-2007	08:00	2.2	WNW
10-May-2007	09:00	2.2	W
10-May-2007	10:00	3.1	WNW
10-May-2007	11:00	3.6	WNW
10-May-2007	12:00	4.0	WNW
10-May-2007	13:00	4.9	WNW
10-May-2007	14:00	4.9	WNW
10-May-2007	15:00	5.8	WNW
10-May-2007	16:00	6.3	WNW
10-May-2007	17:00	4.9	WNW
10-May-2007	18:00	4.9	WNW
10-May-2007	19:00	4.0	W
10-May-2007	20:00	3.6	W
10-May-2007	21:00	3.6	W
10-May-2007	22:00	3.6	W
10-May-2007	23:00	2.7	WSW
11-May-2007	00:00	3.6	W
11-May-2007	01:00	4.0	WNW
11-May-2007	02:00	2.2	WSW
11-May-2007	03:00	2.2	SW
11-May-2007	04:00	3.1	W
11-May-2007	05:00	3.6	WNW
11-May-2007	06:00	3.6	WNW
11-May-2007	07:00	4.0	W
11-May-2007	08:00	2.7	WNW
11-May-2007	09:00	3.1	WNW
11-May-2007	10:00	2.7	WNW
11-May-2007	11:00	3.1	WNW
11-May-2007	12:00	4.0	WNW
11-May-2007	13:00	4.9	NW
11-May-2007	14:00	5.8	WNW
11-May-2007	15:00	4.9	WNW
11-May-2007	16:00	4.9	WNW
11-May-2007	17:00	4.5	WNW
11-May-2007	18:00	2.7	WNW
11-May-2007	19:00	1.8	WNW
11-May-2007	20:00	1.3	W
11-May-2007	21:00	3.1	WNW
11-May-2007	22:00	2.2	W
11-May-2007	23:00	2.2	W
12-May-2007	00:00	3.1	W
12-May-2007	01:00	1.8	W
12-May-2007	02:00	1.8	WSW
12-May-2007	03:00	1.3	W
12-May-2007	04:00	0.9	SW
12-May-2007	05:00	0.4	WSW

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
12-May-2007	06:00	0.4	SSW
12-May-2007	07:00	0.4	SW
12-May-2007	08:00	1.8	WNW
12-May-2007	09:00	2.2	WNW
12-May-2007	10:00	2.2	WNW
12-May-2007	11:00	1.8	WNW
12-May-2007	12:00	1.3	WNW
12-May-2007	13:00	0.9	NE
12-May-2007	14:00	1.3	N
12-May-2007	15:00	2.2	N
12-May-2007	16:00	3.1	N
12-May-2007	17:00	1.3	NNE
12-May-2007	18:00	1.3	ENE
12-May-2007	19:00	0.4	E
12-May-2007	20:00	0.4	NE
12-May-2007	21:00	0.9	NE
12-May-2007	22:00	0.4	NE
12-May-2007	23:00	0.0	---
13-May-2007	00:00	0.0	---
13-May-2007	01:00	0.0	---
13-May-2007	02:00	0.0	---
13-May-2007	03:00	0.0	---
13-May-2007	04:00	0.0	NE
13-May-2007	05:00	0.0	NE
13-May-2007	06:00	0.0	SSW
13-May-2007	07:00	0.0	W
13-May-2007	08:00	2.2	WNW
13-May-2007	09:00	3.1	WNW
13-May-2007	10:00	3.1	WNW
13-May-2007	11:00	3.6	WNW
13-May-2007	12:00	2.2	WNW
13-May-2007	13:00	2.2	WSW
13-May-2007	14:00	3.1	WNW
13-May-2007	15:00	3.1	WNW
13-May-2007	16:00	3.1	WNW
13-May-2007	17:00	2.7	W
13-May-2007	18:00	2.7	WSW
13-May-2007	19:00	2.2	WSW
13-May-2007	20:00	2.2	W
13-May-2007	21:00	3.1	W
13-May-2007	22:00	3.1	W
13-May-2007	23:00	2.7	WNW
14-May-2007	00:00	3.6	WNW
14-May-2007	01:00	2.2	W
14-May-2007	02:00	1.8	WSW
14-May-2007	03:00	1.8	W
14-May-2007	04:00	2.2	W
14-May-2007	05:00	1.8	WSW
14-May-2007	06:00	1.3	W
14-May-2007	07:00	1.3	WNW
14-May-2007	08:00	1.8	WNW
14-May-2007	09:00	0.9	WNW
14-May-2007	10:00	1.3	WNW
14-May-2007	11:00	1.8	WNW

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
14-May-2007	12:00	1.3	NNE
14-May-2007	13:00	2.2	NNE
14-May-2007	14:00	1.8	N
14-May-2007	15:00	2.2	N
14-May-2007	16:00	2.2	N
14-May-2007	17:00	2.2	NNE
14-May-2007	18:00	1.3	NNE
14-May-2007	19:00	1.3	E
14-May-2007	20:00	0.0	E
14-May-2007	21:00	0.0	---
14-May-2007	22:00	0.0	---
14-May-2007	23:00	0.0	ESE
15-May-2007	00:00	0.0	E
15-May-2007	01:00	0.0	E
15-May-2007	02:00	0.0	---
15-May-2007	03:00	0.0	---
15-May-2007	04:00	0.0	---
15-May-2007	05:00	0.0	---
15-May-2007	06:00	0.0	---
15-May-2007	07:00	0.0	---
15-May-2007	08:00	0.0	---
15-May-2007	09:00	0.0	ESE
15-May-2007	10:00	0.4	N
15-May-2007	11:00	1.3	N
15-May-2007	12:00	2.2	N
15-May-2007	13:00	2.7	NE
15-May-2007	14:00	2.2	N
15-May-2007	15:00	2.7	NE
15-May-2007	16:00	2.2	NE
15-May-2007	17:00	2.2	N
15-May-2007	18:00	1.8	ENE
15-May-2007	19:00	1.8	E
15-May-2007	20:00	1.3	ENE
15-May-2007	21:00	1.3	NNE
15-May-2007	22:00	1.3	NNE
15-May-2007	23:00	0.4	E
16-May-2007	00:00	0.4	E
16-May-2007	01:00	0.0	NE
16-May-2007	02:00	0.4	E
16-May-2007	03:00	0.9	E
16-May-2007	04:00	0.0	E
16-May-2007	05:00	0.0	E
16-May-2007	06:00	0.0	E
16-May-2007	07:00	0.4	NE
16-May-2007	08:00	2.2	NNE
16-May-2007	09:00	2.2	NNE
16-May-2007	10:00	2.7	NNE
16-May-2007	11:00	3.1	NNE
16-May-2007	12:00	4.0	NNE
16-May-2007	13:00	3.6	NE
16-May-2007	14:00	3.1	NE
16-May-2007	15:00	3.1	NE
16-May-2007	16:00	3.6	NE
16-May-2007	17:00	3.1	NE

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
16-May-2007	18:00	2.7	NE
16-May-2007	19:00	1.8	NE
16-May-2007	20:00	1.8	ENE
16-May-2007	21:00	1.8	E
16-May-2007	22:00	0.4	E
16-May-2007	23:00	1.3	WSW
17-May-2007	00:00	0.0	SW
17-May-2007	01:00	0.0	SE
17-May-2007	02:00	0.0	NE
17-May-2007	03:00	0.0	---
17-May-2007	04:00	0.0	---
17-May-2007	05:00	0.0	---
17-May-2007	06:00	0.0	NE
17-May-2007	07:00	0.0	---
17-May-2007	08:00	0.0	---
17-May-2007	09:00	0.0	WNW
17-May-2007	10:00	0.4	WNW
17-May-2007	11:00	1.8	WNW
17-May-2007	12:00	1.3	W
17-May-2007	13:00	2.7	NNE
17-May-2007	14:00	2.2	NNE
17-May-2007	15:00	3.6	NE
17-May-2007	16:00	3.1	NE
17-May-2007	17:00	2.7	ENE
17-May-2007	18:00	1.8	E
17-May-2007	19:00	0.9	E
17-May-2007	20:00	0.4	ENE
17-May-2007	21:00	0.0	E
17-May-2007	22:00	0.4	E
17-May-2007	23:00	0.4	ENE
18-May-2007	00:00	0.4	ENE
18-May-2007	01:00	1.3	ENE
18-May-2007	02:00	0.9	E
18-May-2007	03:00	1.3	NE
18-May-2007	04:00	0.9	NE
18-May-2007	05:00	1.3	NE
18-May-2007	06:00	1.3	NE
18-May-2007	07:00	2.2	NE
18-May-2007	08:00	2.2	NE
18-May-2007	09:00	2.2	NE
18-May-2007	10:00	4.0	NE
18-May-2007	11:00	4.0	NE
18-May-2007	12:00	4.0	NNE
18-May-2007	13:00	4.0	NNE
18-May-2007	14:00	4.9	NNE
18-May-2007	15:00	4.0	NNE
18-May-2007	16:00	4.9	NNE
18-May-2007	17:00	4.9	NNE
18-May-2007	18:00	3.1	NNE
18-May-2007	19:00	0.4	NE
18-May-2007	20:00	0.0	E
18-May-2007	21:00	0.4	E
18-May-2007	22:00	0.0	---
18-May-2007	23:00	0.0	NE

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
19-May-2007	00:00	0.0	---
19-May-2007	01:00	0.0	---
19-May-2007	02:00	0.0	---
19-May-2007	03:00	0.0	---
19-May-2007	04:00	0.0	---
19-May-2007	05:00	0.0	---
19-May-2007	06:00	0.0	NE
19-May-2007	07:00	1.3	W
19-May-2007	08:00	0.0	W
19-May-2007	09:00	0.9	W
19-May-2007	10:00	0.9	W
19-May-2007	11:00	1.8	W
19-May-2007	12:00	1.8	W
19-May-2007	13:00	1.3	WNW
19-May-2007	14:00	1.8	W
19-May-2007	15:00	2.7	W
19-May-2007	16:00	1.8	W
19-May-2007	17:00	0.4	S
19-May-2007	18:00	1.8	WNW
19-May-2007	19:00	0.0	NW
19-May-2007	20:00	0.9	SW
19-May-2007	21:00	1.8	SW
19-May-2007	22:00	1.8	W
19-May-2007	23:00	2.7	W
20-May-2007	00:00	1.8	SW
20-May-2007	01:00	0.9	SSW
20-May-2007	02:00	1.3	W
20-May-2007	03:00	1.3	W
20-May-2007	04:00	1.3	WNW
20-May-2007	05:00	1.8	WSW
20-May-2007	06:00	1.8	WSW
20-May-2007	07:00	4.5	WSW
20-May-2007	08:00	4.9	WSW
20-May-2007	09:00	3.6	WSW
20-May-2007	10:00	2.2	WSW
20-May-2007	11:00	2.7	WSW
20-May-2007	12:00	1.8	WNW
20-May-2007	13:00	1.3	WNW
20-May-2007	14:00	0.9	WSW
20-May-2007	15:00	1.3	WNW
20-May-2007	16:00	1.3	WNW
20-May-2007	17:00	0.4	WNW
20-May-2007	18:00	0.4	WNW
20-May-2007	19:00	0.4	W
20-May-2007	20:00	0.4	W
20-May-2007	21:00	0.4	WNW
20-May-2007	22:00	1.3	WNW
20-May-2007	23:00	0.9	WSW
21-May-2007	00:00	1.3	SW
21-May-2007	01:00	1.3	SW
21-May-2007	02:00	2.2	SW
21-May-2007	03:00	2.7	WSW
21-May-2007	04:00	2.2	SW
21-May-2007	05:00	1.8	WSW

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
21-May-2007	06:00	2.2	W
21-May-2007	07:00	2.2	SW
21-May-2007	08:00	2.7	WSW
21-May-2007	09:00	2.2	WSW
21-May-2007	10:00	2.2	W
21-May-2007	11:00	2.7	WSW
21-May-2007	12:00	2.7	W
21-May-2007	13:00	2.7	W
21-May-2007	14:00	1.8	WSW
21-May-2007	15:00	0.9	S
21-May-2007	16:00	0.0	W
21-May-2007	17:00	1.3	WNW
21-May-2007	18:00	0.4	WNW
21-May-2007	19:00	0.9	WSW
21-May-2007	20:00	2.7	WSW
21-May-2007	21:00	3.1	WSW
21-May-2007	22:00	2.7	WSW
21-May-2007	23:00	2.2	SW
22-May-2007	00:00	2.2	SW
22-May-2007	01:00	1.8	SW
22-May-2007	02:00	1.3	SW
22-May-2007	03:00	0.4	SW
22-May-2007	04:00	0.9	SSW
22-May-2007	05:00	0.9	SW
22-May-2007	06:00	0.4	SW
22-May-2007	07:00	0.9	SW
22-May-2007	08:00	2.2	WSW
22-May-2007	09:00	0.9	SSW
22-May-2007	10:00	0.9	NE
22-May-2007	11:00	1.3	NE
22-May-2007	12:00	0.4	ENE
22-May-2007	13:00	0.4	ENE
22-May-2007	14:00	0.0	ESE
22-May-2007	15:00	0.4	E
22-May-2007	16:00	1.3	N
22-May-2007	17:00	0.4	N
22-May-2007	18:00	0.0	SSW
22-May-2007	19:00	0.4	NNE
22-May-2007	20:00	1.3	NE
22-May-2007	21:00	0.0	ENE
22-May-2007	22:00	0.4	NE
22-May-2007	23:00	0.4	S
23-May-2007	00:00	0.0	---
23-May-2007	01:00	0.0	SSW
23-May-2007	02:00	0.4	S
23-May-2007	03:00	0.0	---
23-May-2007	04:00	0.4	S
23-May-2007	05:00	0.0	S
23-May-2007	06:00	0.4	S
23-May-2007	07:00	0.0	S
23-May-2007	08:00	0.0	W
23-May-2007	09:00	1.3	E
23-May-2007	10:00	0.0	WNW
23-May-2007	11:00	0.4	NE

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
23-May-2007	12:00	2.2	NE
23-May-2007	13:00	2.7	NE
23-May-2007	14:00	4.0	NE
23-May-2007	15:00	4.0	NNE
23-May-2007	16:00	4.0	NNE
23-May-2007	17:00	3.6	NNE
23-May-2007	18:00	4.0	NNE
23-May-2007	19:00	3.6	NNE
23-May-2007	20:00	3.1	NE
23-May-2007	21:00	2.2	NE
23-May-2007	22:00	1.8	E
23-May-2007	23:00	0.4	E
24-May-2007	00:00	0.9	NE
24-May-2007	01:00	1.3	E
24-May-2007	02:00	0.4	ESE
24-May-2007	03:00	0.9	E
24-May-2007	04:00	0.4	ESE
24-May-2007	05:00	0.0	E
24-May-2007	06:00	0.4	E
24-May-2007	07:00	0.9	E
24-May-2007	08:00	1.3	NE
24-May-2007	09:00	2.7	NNE
24-May-2007	10:00	2.2	NE
24-May-2007	11:00	3.1	NNE
24-May-2007	12:00	3.1	NE
24-May-2007	13:00	3.6	NNE
24-May-2007	14:00	4.0	NNE
24-May-2007	15:00	4.5	NNE
24-May-2007	16:00	3.6	NNE
24-May-2007	17:00	3.6	NE
24-May-2007	18:00	3.6	NE
24-May-2007	19:00	3.6	NNE
24-May-2007	20:00	2.7	NE
24-May-2007	21:00	2.7	NE
24-May-2007	22:00	1.8	NNE
24-May-2007	23:00	1.8	NNE
25-May-2007	00:00	2.2	NE
25-May-2007	01:00	2.7	NE
25-May-2007	02:00	3.6	NE
25-May-2007	03:00	3.6	NE
25-May-2007	04:00	2.2	ENE
25-May-2007	05:00	1.3	ENE
25-May-2007	06:00	1.3	NE
25-May-2007	07:00	1.3	ENE
25-May-2007	08:00	3.6	N
25-May-2007	09:00	3.6	NE
25-May-2007	10:00	3.6	NE
25-May-2007	11:00	4.0	NNE
25-May-2007	12:00	3.6	NNE
25-May-2007	13:00	4.5	NNE
25-May-2007	14:00	4.0	NE
25-May-2007	15:00	3.6	NNE
25-May-2007	16:00	3.6	NNE
25-May-2007	17:00	2.7	NNE

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
25-May-2007	18:00	2.7	NE
25-May-2007	19:00	1.8	NE
25-May-2007	20:00	1.3	ENE
25-May-2007	21:00	1.3	E
25-May-2007	22:00	0.9	E
25-May-2007	23:00	1.3	E
26-May-2007	00:00	2.2	E
26-May-2007	01:00	1.3	E
26-May-2007	02:00	1.8	ENE
26-May-2007	03:00	1.3	NE
26-May-2007	04:00	1.8	ENE
26-May-2007	05:00	1.3	NE
26-May-2007	06:00	0.0	E
26-May-2007	07:00	0.0	E
26-May-2007	08:00	1.3	NE
26-May-2007	09:00	1.8	NE
26-May-2007	10:00	2.2	NE
26-May-2007	11:00	1.8	NE
26-May-2007	12:00	2.2	NE
26-May-2007	13:00	2.7	NE
26-May-2007	14:00	3.1	NE
26-May-2007	15:00	3.6	NE
26-May-2007	16:00	2.2	ENE
26-May-2007	17:00	1.3	E
26-May-2007	18:00	1.3	E
26-May-2007	19:00	0.9	E
26-May-2007	20:00	0.4	E
26-May-2007	21:00	0.9	E
26-May-2007	22:00	0.4	ENE
26-May-2007	23:00	0.4	N
27-May-2007	00:00	0.9	E
27-May-2007	01:00	0.0	E
27-May-2007	02:00	0.0	ENE
27-May-2007	03:00	0.0	ENE
27-May-2007	04:00	0.9	E
27-May-2007	05:00	0.9	E
27-May-2007	06:00	0.9	NNE
27-May-2007	07:00	2.2	E
27-May-2007	08:00	0.4	ESE
27-May-2007	09:00	0.0	ESE
27-May-2007	10:00	0.0	ESE
27-May-2007	11:00	1.8	NE
27-May-2007	12:00	1.8	NE
27-May-2007	13:00	1.8	E
27-May-2007	14:00	1.8	ENE
27-May-2007	15:00	3.6	ENE
27-May-2007	16:00	0.0	---
27-May-2007	17:00	0.4	NNE
27-May-2007	18:00	0.4	SSW
27-May-2007	19:00	0.4	W
27-May-2007	20:00	0.4	E
27-May-2007	21:00	0.4	E
27-May-2007	22:00	0.0	ENE
27-May-2007	23:00	0.0	---

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
28-May-2007	00:00	0.0	---
28-May-2007	01:00	0.0	---
28-May-2007	02:00	0.0	---
28-May-2007	03:00	0.0	---
28-May-2007	04:00	0.0	---
28-May-2007	05:00	0.0	---
28-May-2007	06:00	0.0	---
28-May-2007	07:00	0.0	E
28-May-2007	08:00	0.0	WSW
28-May-2007	09:00	0.0	WNW
28-May-2007	10:00	0.4	WNW
28-May-2007	11:00	0.4	WNW
28-May-2007	12:00	0.9	ENE
28-May-2007	13:00	3.1	NE
28-May-2007	14:00	2.7	ENE
28-May-2007	15:00	1.3	E
28-May-2007	16:00	0.0	ENE
28-May-2007	17:00	0.9	E
28-May-2007	18:00	0.9	E
28-May-2007	19:00	0.0	ENE
28-May-2007	20:00	0.0	---
28-May-2007	21:00	0.0	---
28-May-2007	22:00	0.0	---
28-May-2007	23:00	0.0	---
29-May-2007	00:00	0.0	---
29-May-2007	01:00	0.0	---
29-May-2007	02:00	0.0	---
29-May-2007	03:00	0.0	---
29-May-2007	04:00	0.0	---
29-May-2007	05:00	0.0	---
29-May-2007	06:00	0.0	---
29-May-2007	07:00	0.0	ENE
29-May-2007	08:00	0.0	---
29-May-2007	09:00	0.4	E
29-May-2007	10:00	0.9	NNE
29-May-2007	11:00	2.7	NNE
29-May-2007	12:00	1.8	NNE
29-May-2007	13:00	2.7	NE
29-May-2007	14:00	2.2	NNE
29-May-2007	15:00	2.2	NE
29-May-2007	16:00	2.7	NE
29-May-2007	17:00	1.8	NE
29-May-2007	18:00	1.3	E
29-May-2007	19:00	0.9	ENE
29-May-2007	20:00	0.4	NNE
29-May-2007	21:00	0.0	---
29-May-2007	22:00	0.0	---
29-May-2007	23:00	0.0	ENE
30-May-2007	00:00	0.0	NE
30-May-2007	01:00	0.0	---
30-May-2007	02:00	0.0	E
30-May-2007	03:00	0.0	E
30-May-2007	04:00	0.0	---
30-May-2007	05:00	0.0	---

Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
30-May-2007	06:00	0.0	---
30-May-2007	07:00	0.0	---
30-May-2007	08:00	0.4	WNW
30-May-2007	09:00	1.3	WNW
30-May-2007	10:00	1.8	WNW
30-May-2007	11:00	0.9	NW
30-May-2007	12:00	0.9	NNE
30-May-2007	13:00	2.2	N
30-May-2007	14:00	2.2	NW
30-May-2007	15:00	2.2	N
30-May-2007	16:00	1.3	NW
30-May-2007	17:00	1.3	W
30-May-2007	18:00	0.9	W
30-May-2007	19:00	1.3	W
30-May-2007	20:00	0.4	WNW
30-May-2007	21:00	0.0	SSE
30-May-2007	22:00	0.0	WNW
30-May-2007	23:00	0.0	WNW
31-May-2007	00:00	0.4	WNW
31-May-2007	01:00	0.9	S
31-May-2007	02:00	0.4	N
31-May-2007	03:00	0.0	W
31-May-2007	04:00	0.0	ESE
31-May-2007	05:00	0.4	S
31-May-2007	06:00	0.0	SSW
31-May-2007	07:00	0.0	---
31-May-2007	08:00	0.0	SSW
31-May-2007	09:00	0.4	W
31-May-2007	10:00	0.0	---
31-May-2007	11:00	0.0	---
31-May-2007	12:00	0.0	---
31-May-2007	13:00	1.3	NNE
31-May-2007	14:00	2.2	NE
31-May-2007	15:00	2.2	NE
31-May-2007	16:00	2.7	ENE
31-May-2007	17:00	2.7	NE
31-May-2007	18:00	1.8	ENE
31-May-2007	19:00	1.8	E
31-May-2007	20:00	1.3	E
31-May-2007	21:00	0.9	E
31-May-2007	22:00	0.4	E
31-May-2007	23:00	0.4	E

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

Appendix E - 1-hour TSP Monitoring Results

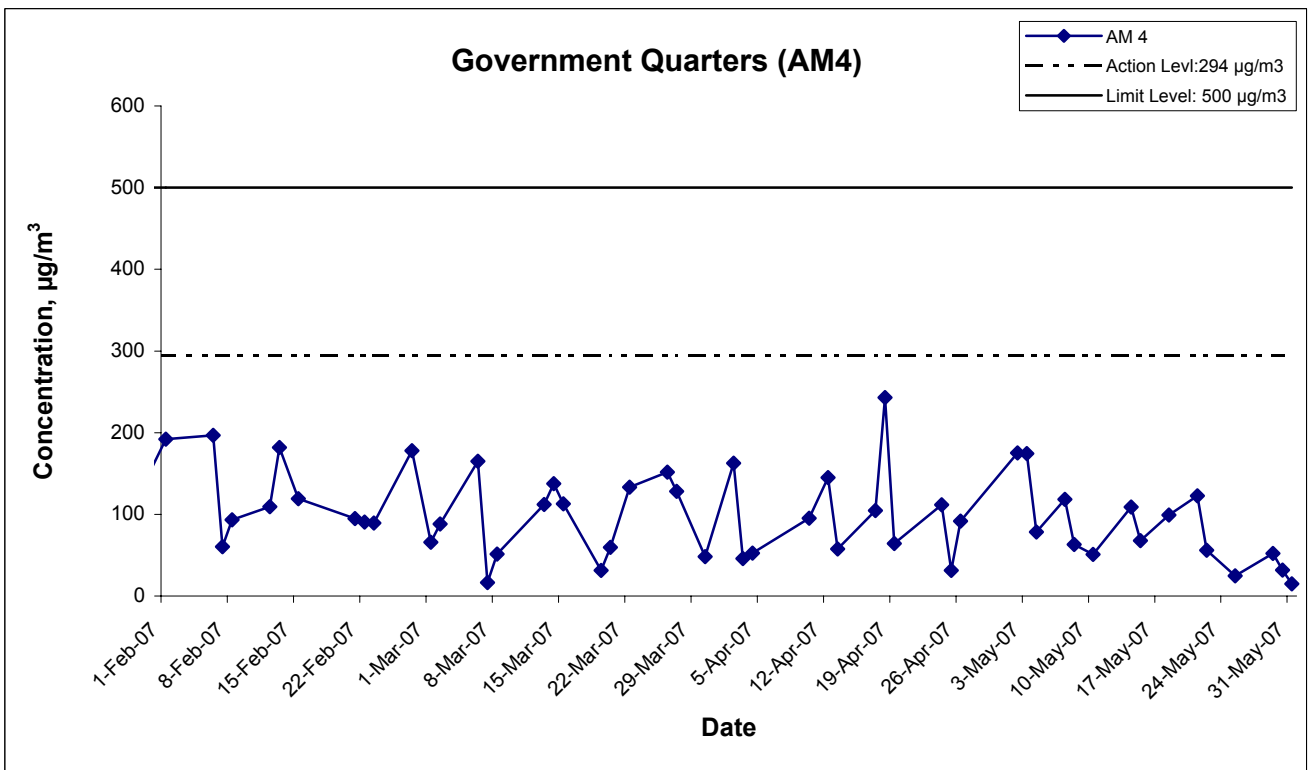
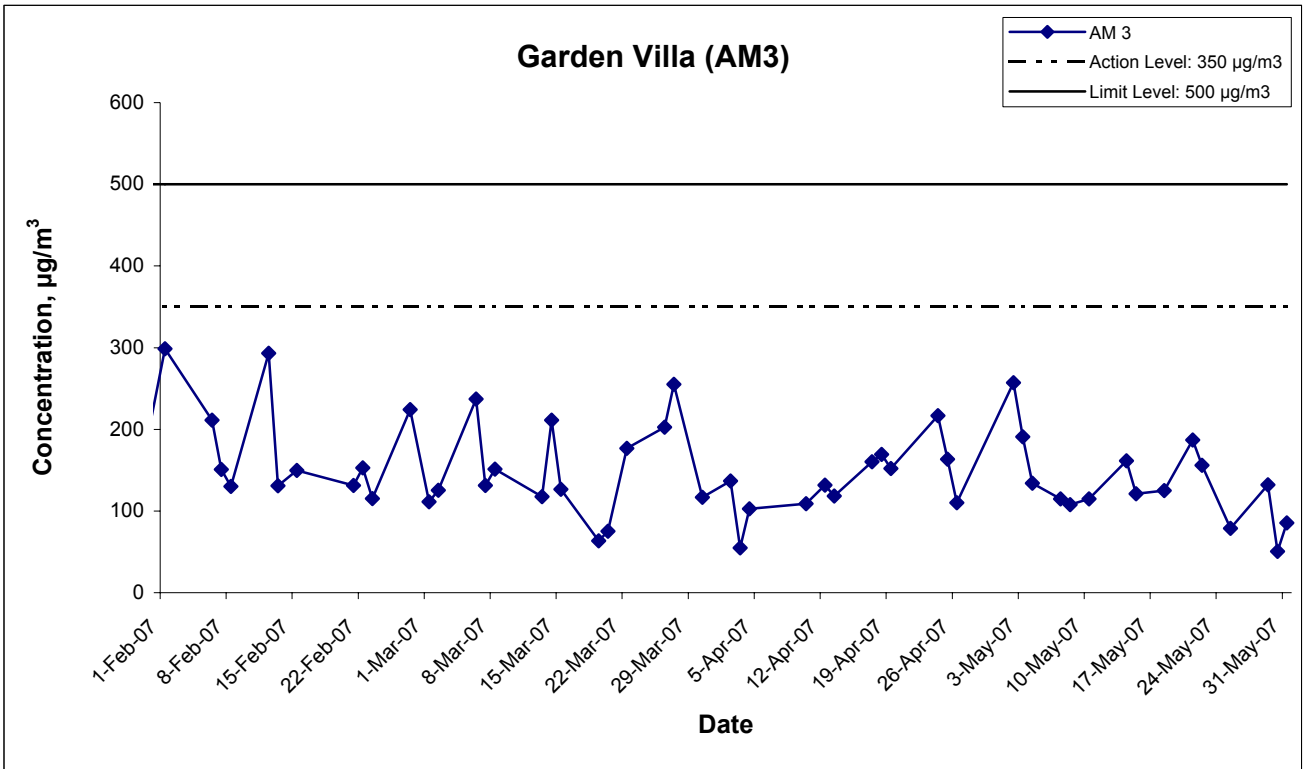
Location AM 3 - Garden Villa

Date	Weather Condition	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	Sampling Time(hrs.)	Conc. (µg/m ³)	
		Initial	Final	Initial	Final	Initial	Final								
2-May-07	Sunny	2.9051	2.9239	1.21	1.21	5760.0	5761.0	300.3	761.7	0.0188	1.21	73.1	1.0	257.2	
3-May-07	Sunny	2.8642	2.8782	1.22	1.22	5761.0	5762.0	297.3	762.8	0.0140	1.22	73.4	1.0	190.8	
4-May-07	Cloudy	2.8642	2.8740	1.22	1.22	5762.0	5763.0	298.6	761.6	0.0098	1.22	73.2	1.0	133.9	
7-May-07	Sunny	2.8717	2.8801	1.22	1.22	5787.0	5788.0	299.1	760.4	0.0084	1.22	73.1	1.0	114.9	
8-May-07	Sunny	2.7870	2.7949	1.22	1.22	5788.0	5789.0	297.9	762.6	0.0079	1.22	73.3	1.0	107.8	
10-May-07	Sunny	2.7607	2.7691	1.22	1.22	5789.0	5790.0	299.3	762.7	0.0084	1.22	73.2	1.0	114.8	
14-May-07	Sunny	2.8191	2.8309	1.22	1.22	5814.0	5815.0	1349.6	761.3	0.0118	1.22	73.1	1.0	161.5	
15-May-07	Sunny	2.7811	2.7899	1.21	1.21	5815.0	5816.0	302.4	761.1	0.0088	1.21	72.8	1.0	121.0	
18-May-07	Sunny	2.7811	2.7902	1.21	1.21	5840.0	5841.0	302.1	759.3	0.0091	1.21	72.7	1.0	125.2	
21-May-07	Cloudy	2.7626	2.7763	1.22	1.22	5841.0	5842.0	296.6	758.4	0.0137	1.22	73.3	1.0	187.0	
22-May-07	Cloudy	2.7886	2.8000	1.22	1.22	5842.0	5843.0	298.1	756.7	0.0114	1.22	73.0	1.0	156.1	
25-May-07	Sunny	2.7644	2.7701	1.21	1.21	5867.0	5868.0	303.3	756.9	0.0057	1.21	72.5	1.0	78.6	
29-May-07	Sunny	2.8093	2.8189	1.21	1.21	5868.0	5869.0	303.1	760.1	0.0096	1.21	72.6	1.0	132.2	
30-May-07	Sunny	2.9110	2.9147	1.22	1.22	5893.0	5894.0	303.2	759.7	0.0037	1.22	73.4	1.0	50.4	
31-May-07	Sunny	2.7799	2.7862	1.23	1.23	5894.0	5895.0	299.1	759.5	0.0063	1.23	73.8	1.0	85.3	
														Min	50.4
														Max	257.2
														Average	134.4

Location AM 4 - Government Quarters

Date	Weather Condition	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	Sampling Time(hrs.)	Conc. (µg/m ³)	
		Initial	Final	Initial	Final	Initial	Final								
2-May-07	Sunny	2.8021	2.8148	1.21	1.21	5796.5	5797.5	300.3	761.7	0.0127	1.21	72.5	1.0	175.2	
3-May-07	Sunny	2.8117	2.8244	1.21	1.21	5797.5	5798.5	297.3	762.8	0.0127	1.21	72.8	1.0	174.4	
4-May-07	Sunny	2.7538	2.7595	1.21	1.21	5798.5	5799.5	298.6	761.6	0.0057	1.21	72.6	1.0	78.5	
7-May-07	Sunny	2.8037	2.8123	1.21	1.21	5823.5	5824.5	299.1	760.4	0.0086	1.21	72.6	1.0	118.5	
8-May-07	Sunny	2.8094	2.8140	1.21	1.21	5824.5	5825.5	297.9	762.6	0.0046	1.21	72.7	1.0	63.2	
10-May-07	Sunny	2.7812	2.7849	1.21	1.21	5825.5	5826.5	299.3	762.7	0.0037	1.21	72.6	1.0	51.0	
14-May-07	Sunny	2.7974	2.8053	1.21	1.21	5850.5	5851.5	299.6	761.3	0.0079	1.21	72.5	1.0	108.9	
15-May-07	Sunny	2.7959	2.8008	1.20	1.20	5851.5	5852.5	302.4	761.1	0.0049	1.20	72.3	1.0	67.8	
18-May-07	Sunny	2.8304	2.8376	1.21	1.21	5876.5	5877.5	303.7	758.7	0.0072	1.21	72.7	1.0	99.1	
21-May-07	Sunny	2.7917	2.8007	1.22	1.22	5877.5	5878.5	296.6	743.4	0.0090	1.22	73.4	1.0	122.6	
22-May-07	Cloudy	2.9175	2.9216	1.22	1.22	5878.5	5879.5	298.1	756.7	0.0041	1.22	73.2	1.0	56.0	
25-May-07	Sunny	2.7467	2.7485	1.21	1.21	5903.5	5904.5	303.3	756.9	0.0018	1.21	72.6	1.0	24.8	
29-May-07	Sunny	2.7493	2.7531	1.21	1.21	5904.5	5905.5	303.1	760.1	0.0038	1.21	72.8	1.0	52.2	
30-May-07	Sunny	2.7562	2.7585	1.21	1.21	5929.5	5930.5	303.2	759.7	0.0023	1.21	72.8	1.0	31.6	
31-May-07	Sunny	2.7610	2.7621	1.22	1.22	5930.5	5931.5	299.1	759.5	0.0011	1.22	73.2	1.0	15.0	
														Min	15.0
														Max	175.2
														Average	82.6

1-hr TSP 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 1-hour TSP Impact Monitoring Results

Scale
N.T.S
Date
May 07

Project No.
MA3024
Appendix E



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

Appendix F - 24-hour TSP Monitoring Results

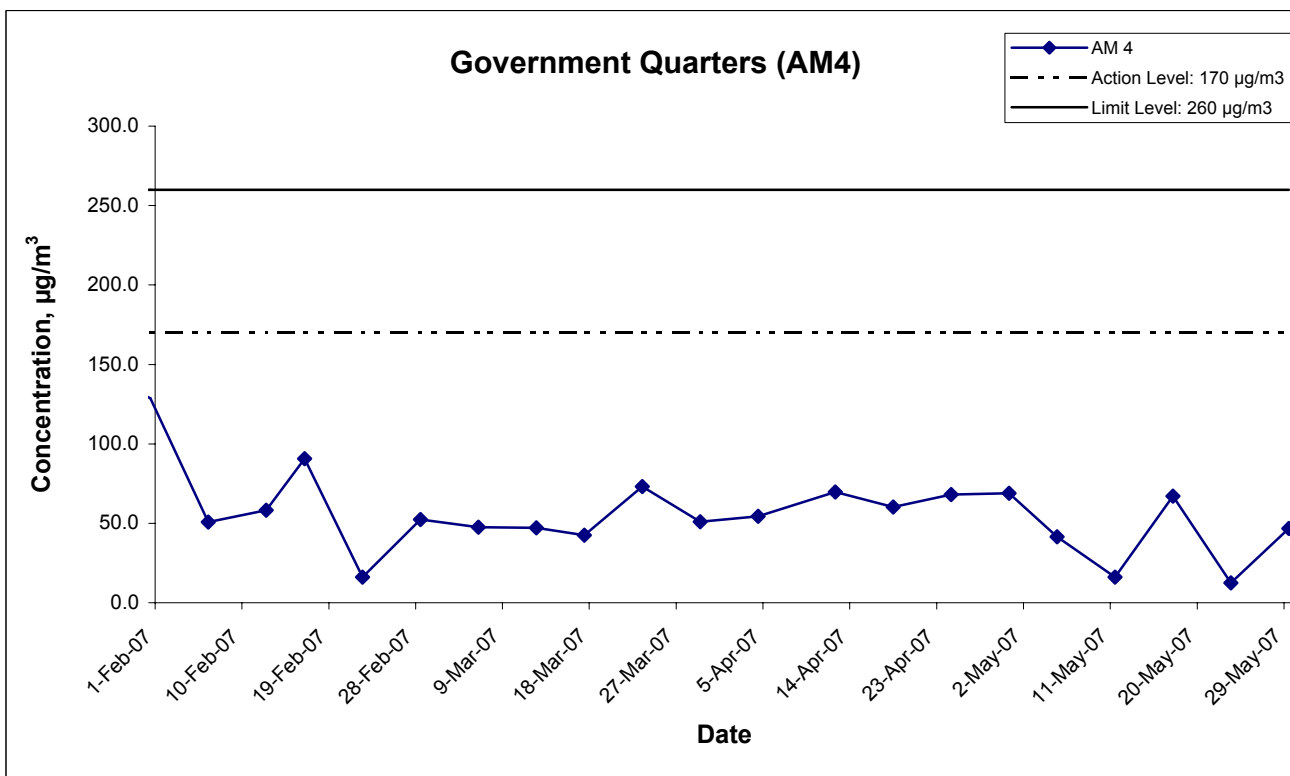
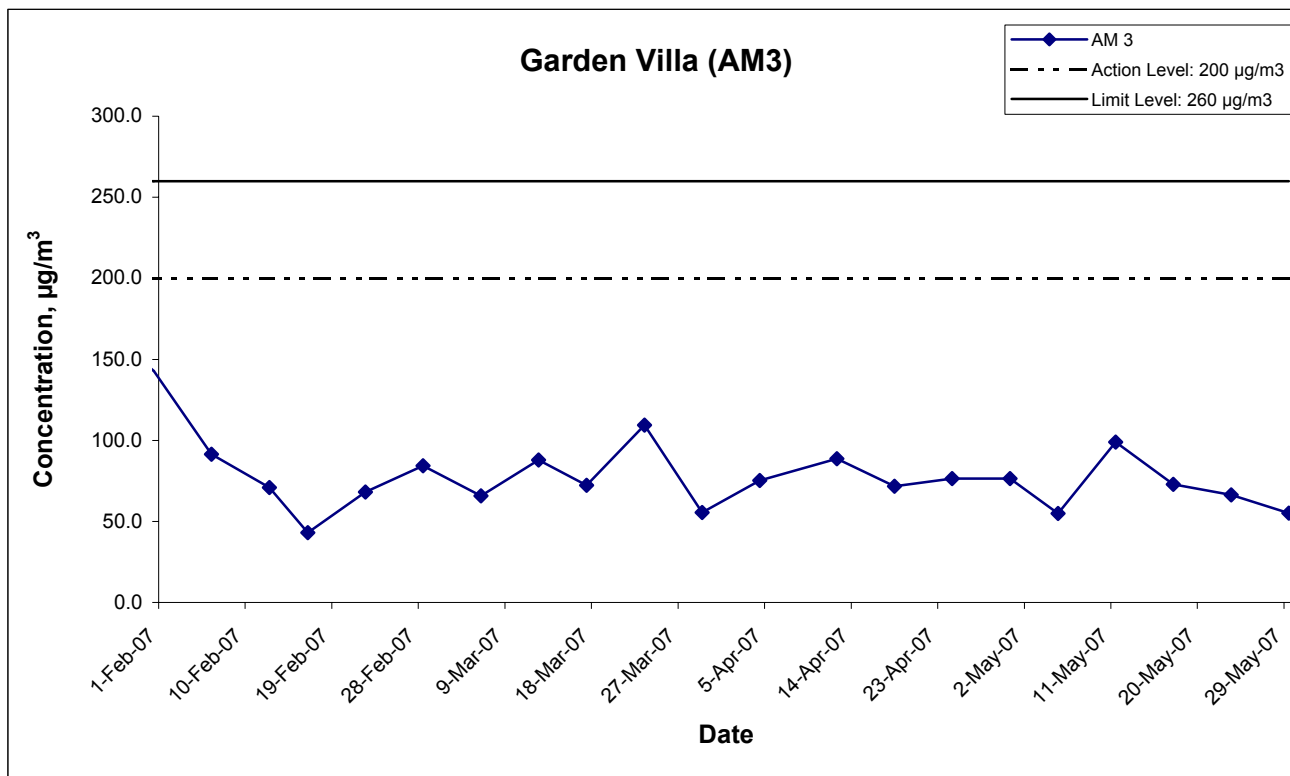
Location AM 3 - Garden Villa

Date	Weather Condition	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	Sampling Time(hrs.)	Conc. (µg/m ³)
		Initial	Final	Initial	Final	Initial	Final							
5-May-07	Sunny	2.7897	2.8861	1.22	1.22	5763.0	5787.0	297.4	758.7	0.0964	1.22	1756.7	24.0	54.9
11-May-07	Sunny	2.8187	2.9928	1.22	1.22	5790.0	5814.0	297.6	763.3	0.1741	1.22	1760.9	24.0	98.9
17-May-07	Sunny	2.8121	2.9397	1.22	1.22	5816.0	5840.0	301.1	761.6	0.1276	1.22	1750.0	24.0	72.9
23-May-07	Sunny	2.7344	2.8504	1.22	1.22	5843.0	5867.0	299.1	756.6	0.1160	1.22	1750.1	24.0	66.3
29-May-07	Sunny	2.8894	2.9866	1.22	1.22	5869.0	5893.0	303.3	759.9	0.0972	1.22	1760.9	24.0	55.2
													Min	54.9
													Max	98.9
													Average	69.6

Location AM 4 - Government Quarters

Date	Weather Condition	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	Sampling Time(hrs.)	Conc. (µg/m ³)
		Initial	Final	Initial	Final	Initial	Final							
5-May-07	Sunny	2.7842	2.8564	1.21	1.21	5799.5	5823.5	297.4	758.7	0.0722	1.21	1743.6	24.0	41.4
11-May-07	Sunny	2.8004	2.8285	1.21	1.21	5826.5	5850.5	297.6	763.3	0.0281	1.21	1747.2	24.0	16.1
17-May-07	Sunny	2.7732	2.8910	1.22	1.22	5852.5	5876.5	301.1	761.6	0.1178	1.22	1753.3	24.0	67.2
23-May-07	Cloudy	2.7627	2.7846	1.22	1.22	5879.5	5903.5	299.1	756.6	0.0219	1.22	1753.3	24.0	12.5
29-May-07	Sunny	2.6836	2.7653	1.21	1.21	5905.5	5929.5	303.3	759.9	0.0817	1.21	1746.1	24.0	46.8
													Min	12.5
													Max	67.2
													Average	36.8

24-hr TSP 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 24-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date May 07	Appendix F	

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

Appendix G - Noise Monitoring Results

Location NM5 - Villa Carlton								
Date	Time	Weather	Unit: dB (A) (30-min)					Remarks
			Measured Noise Level			Baseline Level	Construction Noise Level	
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	
4-May-07	10:16	Sunny	72.9	74.5	68.5	77.1	72.9, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.
10-May-07	09:54	Sunny	70.5	73.5	69.0		70.5, Measured ≤ Baseline	
18-May-07	11:40	Sunny	73.3	76.0	70.0		73.3, Measured ≤ Baseline	
25-May-07	10:30	Sunny	76.4	78.5	69.5		76.4, Measured ≤ Baseline	
31-May-07	16:00	Sunny	74.2	77.5	73.0		74.2, Measured ≤ Baseline	

Location NM6 - Government Quarters						
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks
			Measured Noise Level			
			L _{eq}	L ₁₀	L ₉₀	
4-May-07	09:27	Sunny	56.2	61.5	48.5	-
10-May-07	10:56	Sunny	50.5	51.5	47.5	
18-May-07	14:35	Sunny	54.7	58.0	51.0	
25-May-07	11:25	Sunny	62.7	65.5	60.0	
31-May-07	16:40	Sunny	56.3	58.5	53.5	

Location NM7 - Garden Villa								
Date	Time	Weather	Unit: dB (A) (30-min)					Remarks
			Measured Noise Level			Baseline Level	Construction Noise Level	
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	
4-May-07	09:00	Cloudy	67.2	70.5	63.0	59.0	66.5	-
10-May-07	09:00	Sunny	60.1	62.0	57.0		53.6	
18-May-07	09:00	Sunny	70.6	74.0	62.0		70.3	
25-May-07	09:00	Sunny	69.3	71.5	61.5		68.9	
31-May-07	09:00	Sunny	71.0	73.5	69.0		70.7	

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 NM5 - Villa Carlton										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	19:00	Cloudy	72.1	75.0	68.5	72.2	75.8	72.2, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.	
	19:05		72.1	75.0	68.5					
	19:10		72.3	75.0	68.5					
10-May-07	19:00	Cloudy	73.7	76.0	69.5	73.3				73.3, Measured ≤ Baseline
	19:05		73.2	76.0	69.0					
	19:10		73.0	75.5	69.0					
18-May-07	19:00	Cloudy	73.9	76.5	69.5	73.7				73.7, Measured ≤ Baseline
	19:05		73.5	76.0	69.0					
	19:10		73.8	76.5	69.5					
25-May-07	19:00	Cloudy	73.2	76.0	69.5	73.3				73.3, Measured ≤ Baseline
	19:05		73.4	76.0	69.5					
	19:10		73.4	76.0	69.5					
31-May-07	19:00	Cloudy	73.7	76.0	70.0	73.9	73.9, Measured ≤ Baseline			
	19:05		73.6	76.0	70.0					
	19:10		74.3	76.5	70.5					

Location NM6 - Government Quarters										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	19:45	Cloudy	54.7	58.5	50.0	54.6	56.1	54.6, Measured ≤ Baseline	-	
	19:50		54.7	58.5	50.0					
	19:55		54.3	58.0	50.0					
10-May-07	19:30	Cloudy	54.2	59.0	51.0	54.3				54.3, Measured ≤ Baseline
	19:35		54.4	59.0	51.0					
	19:40		54.2	59.0	51.0					
18-May-07	19:30	Cloudy	54.4	58.5	50.5	54.6				54.6, Measured ≤ Baseline
	19:35		54.6	59.0	50.5					
	19:40		54.9	59.0	50.5					
25-May-07	19:40	Cloudy	52.8	56.0	48.5	52.8				52.8, Measured ≤ Baseline
	19:45		52.9	56.0	49.0					
	19:50		52.8	56.0	49.0					
31-May-07	19:30	Cloudy	54.2	57.0	51.0	54.2	54.2, Measured ≤ Baseline			
	19:35		54.3	57.0	51.0					
	19:40		54.2	57.0	51.0					

Location NM7 - Garden Villa										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	20:15	Cloudy	54.3	58.5	51.0	54.2	58.3	54.2, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.	
	20:20		54.4	58.5	51.0					
	20:25		54.0	58.5	50.5					
10-May-07	20:00	Cloudy	57.3	61.0	52.5	57.2				57.2, Measured ≤ Baseline
	20:05		57.2	61.0	52.0					
	20:10		57.0	61.0	52.0					
18-May-07	20:10	Cloudy	56.7	59.5	51.0	56.5				56.5, Measured ≤ Baseline
	20:15		56.6	59.5	51.0					
	20:20		56.1	59.0	50.5					
25-May-07	20:15	Cloudy	55.9	59.0	51.0	55.9				55.9, Measured ≤ Baseline
	20:20		56.1	59.5	52.0					
	20:25		55.7	59.0	51.0					
31-May-07	20:10	Cloudy	57.1	61.0	52.5	57.2	57.2, Measured ≤ Baseline			
	20:15		57.2	61.0	52.5					
	20:20		57.4	61.5	53.0					

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 - 23:00 to 07:00 on normal weekdays

Location NM5 - Villa Carlton										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	23:00	Cloudy	72.3	76.0	68.5	72.5	74.3	72.5, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.	
	23:05		72.6	76.5	69.0					
	23:10		72.6	76.5	69.0					
10-May-07	23:00	Cloudy	73.1	76.5	70.0	72.9				
	23:05		72.8	76.0	69.5					
	23:10		72.9	76.0	69.5					
18-May-07	23:00	Cloudy	72.8	75.0	68.5	72.4				
	23:05		72.2	75.0	68.0					
	23:10		72.3	75.0	68.0					
25-May-07	23:00	Cloudy	72.6	76.0	68.0	72.9				
	23:05		72.7	76.0	68.0					
	23:10		73.4	76.5	69.0					
31-May-07	23:00	Cloudy	73.0	76.0	69.5	72.8				
	23:05		72.6	76.0	69.0					
	23:10		72.9	76.0	69.5					

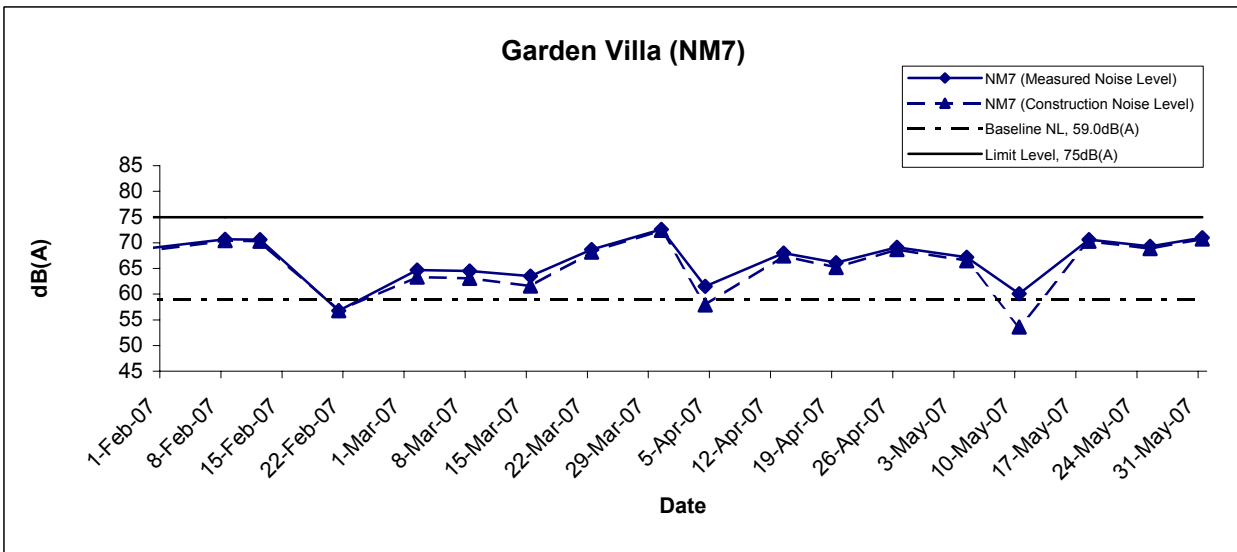
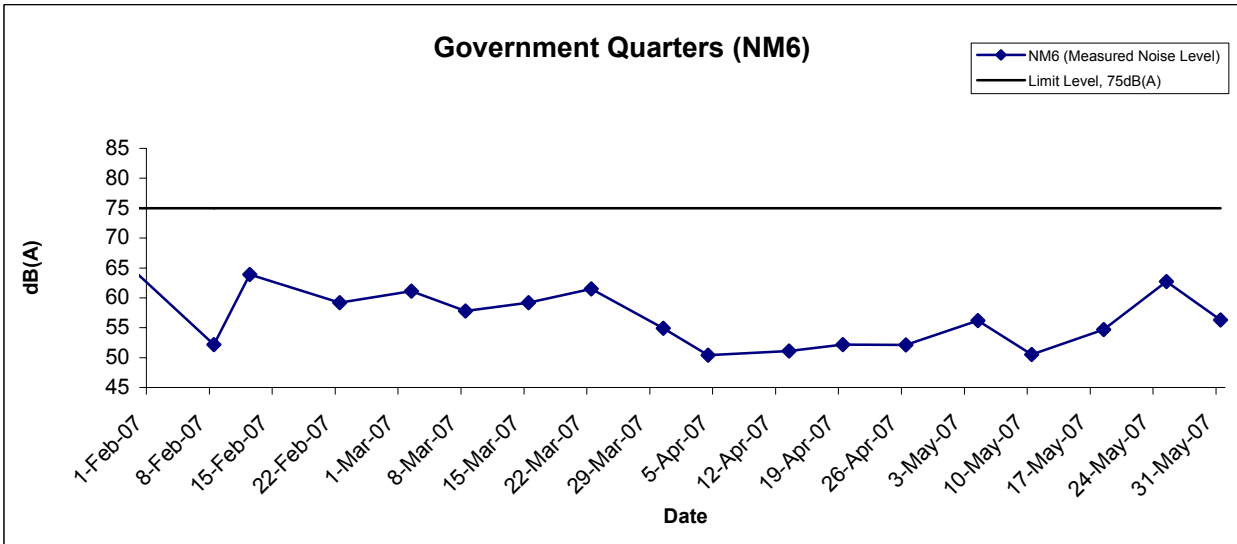
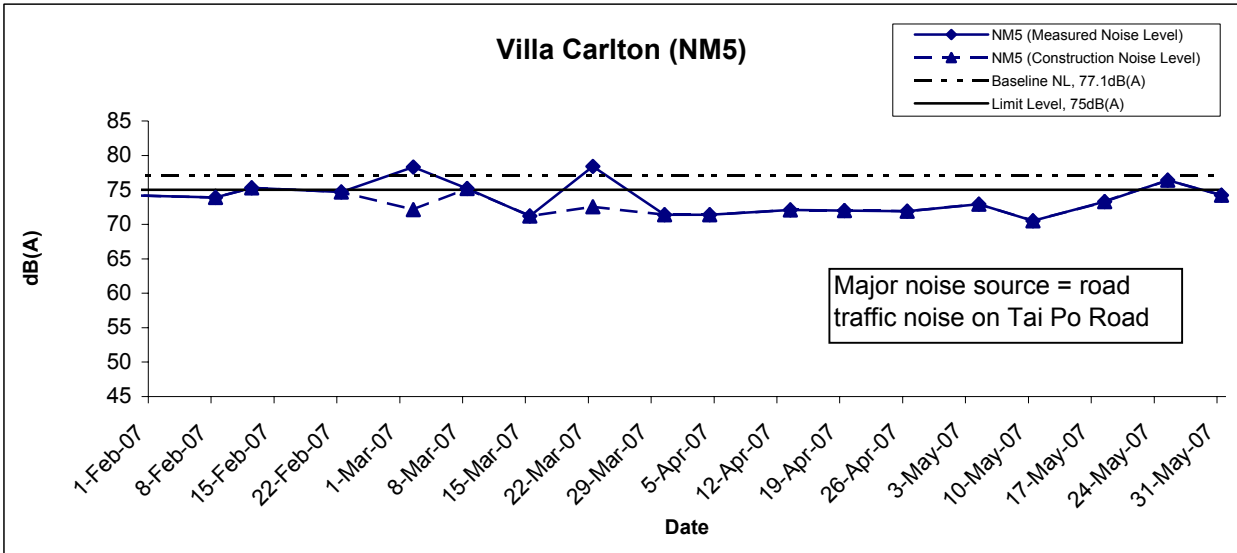
Location NM6 - Government Quarters										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	23:25	Cloudy	51.4	54.5	46.5	51.5	52.8	51.5, Measured ≤ Baseline	The noise monitoring results are well within the range of Baseline Monitoring Level and there is no evidence showing that the dominant noise was generated from the construction activities.	
	23:30		51.4	54.5	47.0					
	23:35		51.7	55.0	47.5					
10-May-07	23:25	Cloudy	50.6	53.5	47.0	50.6				
	23:30		50.5	53.5	47.0					
	23:35		50.7	53.5	47.0					
18-May-07	23:25	Cloudy	51.3	54.5	47.0	51.4				
	23:30		51.2	54.5	47.0					
	23:35		51.6	55.0	47.5					
25-May-07	23:25	Cloudy	51.6	54.5	47.0	51.9				
	23:30		52.0	55.0	47.5					
	23:35		52.2	55.5	47.5					
31-May-07	23:25	Cloudy	50.9	53.5	47.5	51.2				
	23:30		51.3	54.0	48.0					
	23:35		51.4	54.0	48.0					

Location NM7 - Garden Villa										
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level	Remarks
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}		
4-May-07	23:50	Cloudy	53.0	58.5	49.0	53.2	56.5	53.2, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.	
	23:55		53.3	58.5	49.5					
	00:00		53.4	58.5	49.5					
10-May-07	23:55	Cloudy	54.7	58.5	51.0	54.4				
	00:00		54.2	58.0	51.0					
	00:05		54.2	58.0	51.0					
18-May-07	23:50	Cloudy	54.9	58.5	51.0	55.0				
	23:55		55.0	59.0	51.5					
	00:00		55.2	59.0	51.5					
25-May-07	23:50	Cloudy	55.1	58.5	51.0	55.1				
	23:55		55.3	58.5	51.0					
	00:00		55.0	58.0	51.0					
31-May-07	23:50	Cloudy	54.6	58.5	52.0	54.6				
	23:55		54.3	58.0	51.5					
	00:00		54.8	58.5	52.0					

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

*Bolted value indicated limit level exceedance

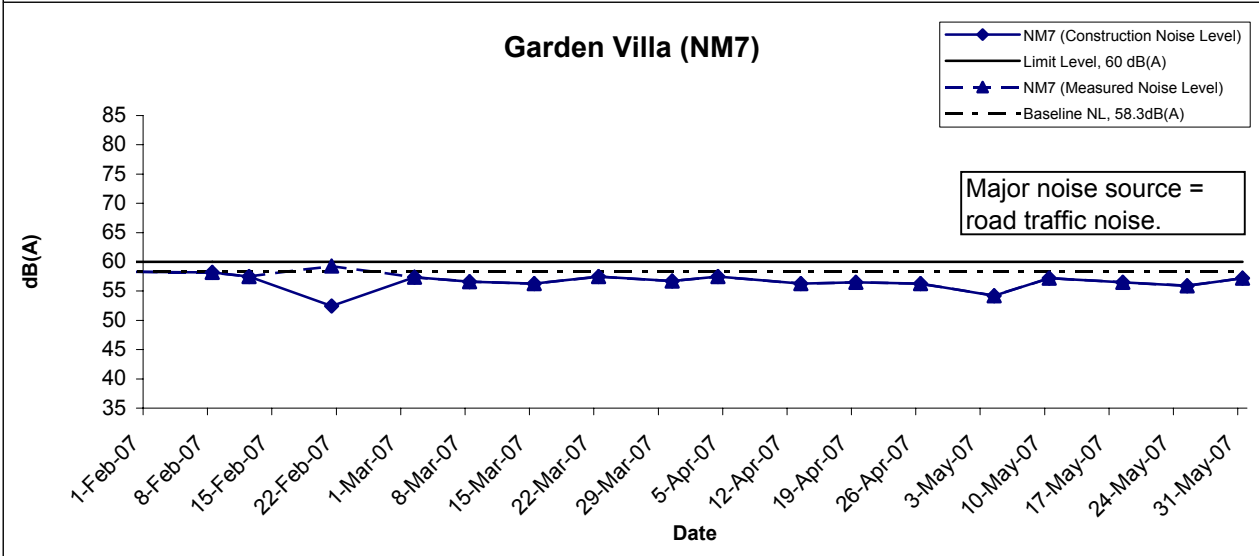
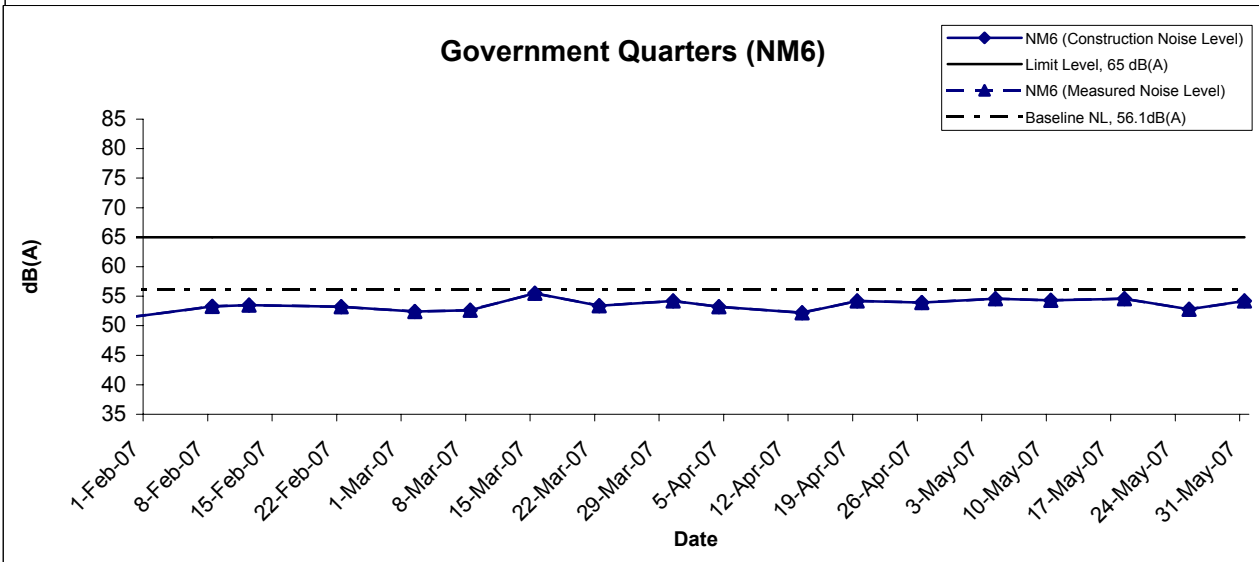
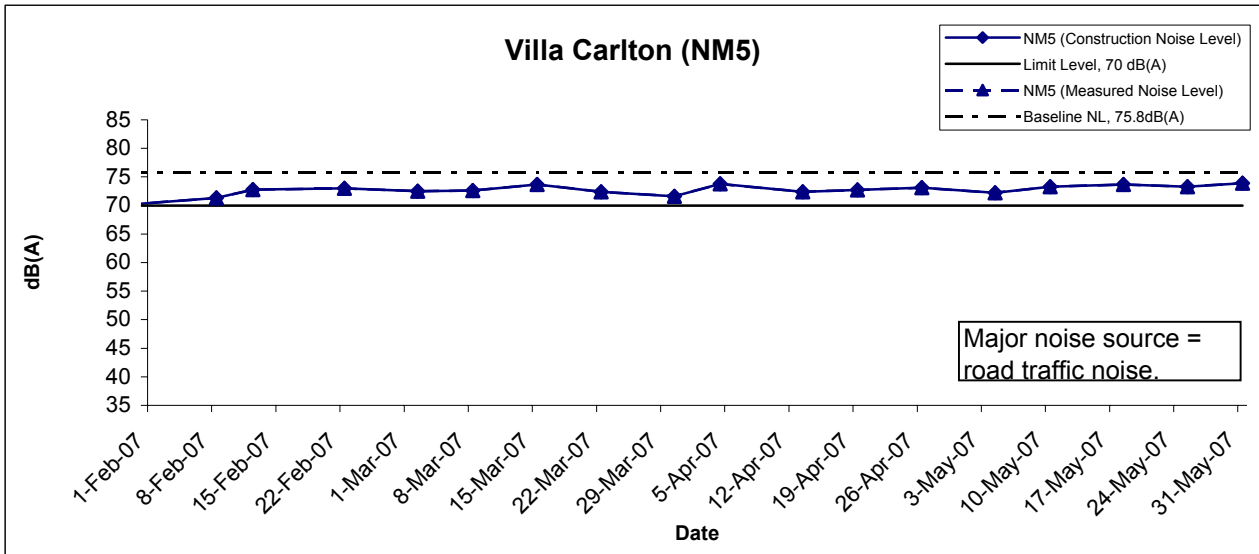
Noise Levels



* 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 & 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 May 07	Appendix G	

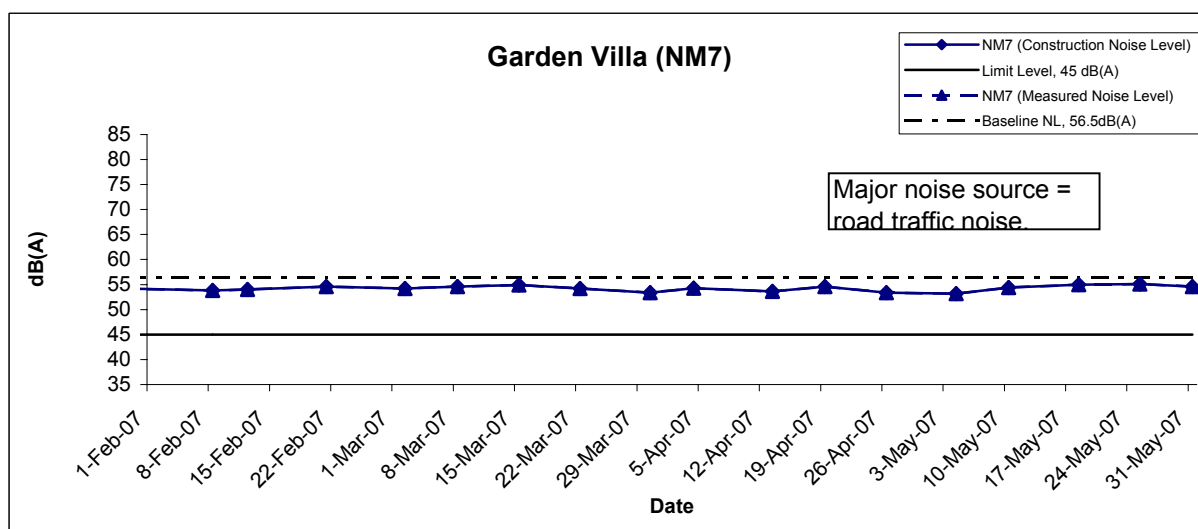
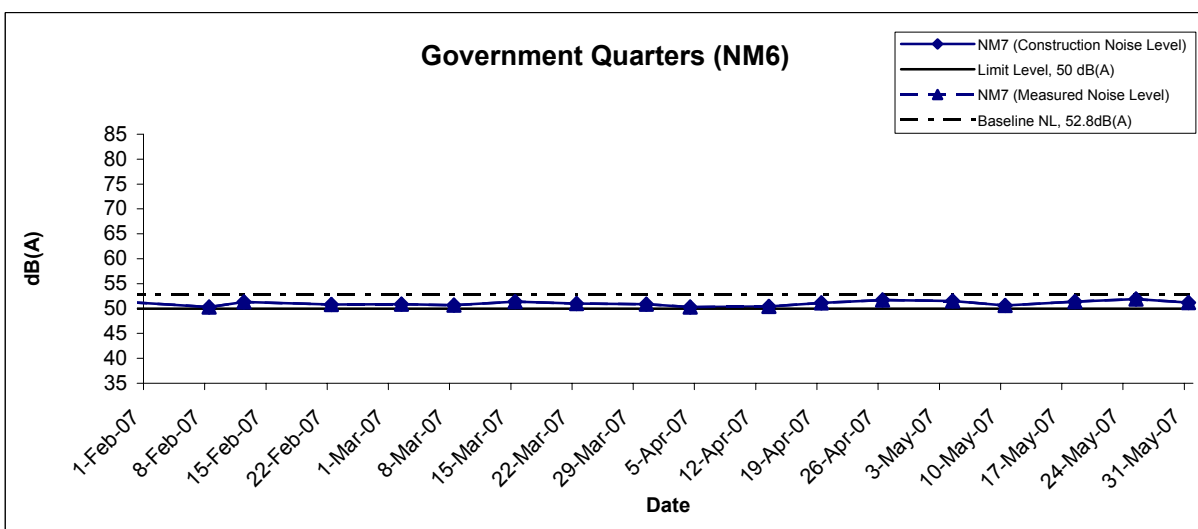
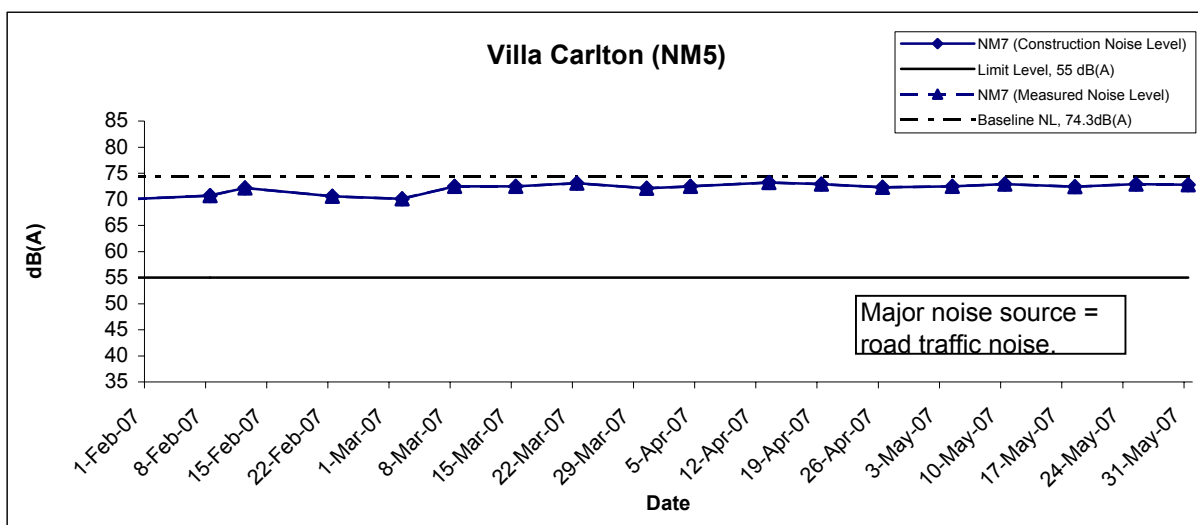
Restricted Hours (19:00 to 23:00) - Noise Levels



* 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 & 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	CINOTECH
	Date May 07	Appendix G	

Restricted Hours (23:00 to 07:00) - 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 & 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	CINOTECH
	Date May 07	Appendix G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Summary of Exceedances Recorded in the Reporting Month

- a) Exceedance Report for 1-hr TSP: (NIL)**
- b) Exceedance Report for 24-hr TSP: (NIL)**
- c) Exceedance Report for Construction Noise: (NIL)**
 - No Action/Limit Level exceedance was recorded in the reporting month.

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/2003/02 – Eagle's Nest Tunnel and Associated Works**



Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70502-ENT
Date	2 May 2007 (Wednesday)
Time	10:30 – 11:45

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

Ref. No.	Remarks/Observations	Related Item No.
70502E-01R	<p>A. Water Quality</p> <ul style="list-style-type: none"> Accumulation of silt was observed in the u-channel near the Aquasud in Toll Plaza. The Contractor was reminded to remove the accumulated silt. 	B8iii
70502E-02R	<ul style="list-style-type: none"> Standing water was observed at the footing of the long sign gantry in the Toll Plaza. The Contractor was reminded to spray larvicide oil on the footing of the sign gantry. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit (Ref. No.: 70425-ENT), no environmental deficiency was observed during site inspection. Spot checking for dump truck (loaded) was carried out during site inspection. No dump truck leaving the construction site was observed during the site inspection. 	B14 & G5

	Name	Signature	Date
Recorded by	Edmond Wu		3 May 2007
Checked by	Dr. Priscilla Choy		3 May 2007

**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/2003/02 – Eagle's Nest Tunnel and Associated Works**

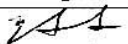
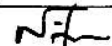
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70508-ENT
Date	8 May 2007 (Tuesday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
70508E-01R	<p>A. Water Quality</p> <ul style="list-style-type: none"> Broken tarpaulin was observed at Slope SPS3. The Contractor was reminded to cover the exposed slope properly. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit (Ref. No.: 70502-ENT), no environmental deficiency was observed during site inspection. Spot checking for dump truck (loaded) was carried out during site inspection. No dump truck leaving the construction site was observed during the site inspection. 	B9

	Name	Signature	Date
Recorded by	Edmond Wu		9 May 2007
Checked by	Dr. Priscilla Choy		9 May 2007

Route 8 - Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel
Contract No. HY/2003/05 – Traffic Control and Surveillance System

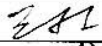
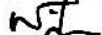
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70508-ENT-TCSS
Date	8 May 2007 (Tuesday)
Time	10:45-11:15

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

Ref. No.	Remarks/Observations	Related Item No.
	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up for previous audit session (Ref. No.: 70329-ENT-TCSS), no environmental deficiency was identified during the site inspection. 	

	Name	Signature	Date
Recorded by	Edmond Wu		9 May 2007
Checked by	Dr. Priscilla Choy		9 May 2007

**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/2003/02 – Eagle's Nest Tunnel and Associated Works**

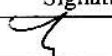

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70516-ENT
Date	16 May 2007 (Wednesday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
70516E-01R	<p>A. Water Quality</p> <ul style="list-style-type: none"> • Many sand and sediment were accumulated on the step channel. The Contractor was reminded to clean it up as soon as possible. <p>B. Air Quality</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> • Follow-up on previous audit (Ref. No.: 70508-ENT), all environmental deficiency was rectified during site inspection. • Spot checking for dump truck (loaded) was carried out during site inspection. No dump truck leaving the construction site was observed during the site inspection. 	B9

	Name	Signature	Date
Recorded by	Tommy Ho		21 May 2007
Checked by	Dr. Priscilla Choy		21 May 2007

**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/2003/02 – Eagle's Nest Tunnel and Associated Works**

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70523-ENT
Date	23 May 2007 (Wednesday)
Time	09:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit (Ref. No.: 70516-ENT), water discharge from the reservoir upstream of the step channel is processing by Water Services Department (WSD). For the safety reason, Contractor was not able to clear the accumulated silt and sediment due to the high flow rate in the step channel. The Contractor was reminded to clear the accumulated silt and sediment as soon as possible. The item will be followed up in the next site inspection. Covering of loaded truck leaving the site was checked during the site inspection. No truck leaving the construction site was observed during the site inspection. 	

	Name	Signature	Date
Recorded by	Stanley Liu	<i>Stanley</i>	23 May 2007
Checked by	Dr. Priscilla Choy	<i>PJC</i>	23 May 2007

**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/2003/02 – Eagle's Nest Tunnel and Associated Works**

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70531-ENT
Date	31 May 2007 (Thursday)
Time	14:15 – 15:30

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

Ref. No.	Remarks/Observations	Related Item No.
	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit (Ref. No.: 70523-ENT), no environmental deficiency was observed during site inspection. Covering of loaded truck leaving the site was checked during the site inspection. No truck leaving the construction site was observed during the site inspection. 	

	Name	Signature	Date
Recorded by	Stanley Liu	<i>Stanley</i>	31 May 2007
Checked by	Dr. Priscilla Choy	<i>WJ</i>	31 May 2007

Route 8 - Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel
Contract No. HY/2003/05 - Traffic Control and Surveillance System

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70531-ENT-TCSS
Date	31 May 2007 (Thursday)
Time	14:00-14:30

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

Ref. No.	Remarks/Observations	Related Item No.
	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>F. Others</p> <ul style="list-style-type: none"> Follow-up for previous audit session (Ref No.: 70508-ENT-TCSS), no environmental deficiency was identified during the site inspection. 	

	Name	Signature	Date
Recorded by	Stanley Liu	<i>Stanley</i>	31 May 2007
Checked by	Dr. Priscilla Choy	<i>Wif</i>	31 May 2007

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

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

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

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

Appendix K - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Construction Dust	<ul style="list-style-type: none"> • 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. • A stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones. • Vehicle washing facilities should be provided at every exit point. • 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. • 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. • Every main haul road should be sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet. • 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. • 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. • 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. • Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site. • 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. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
Construction Noise	<ul style="list-style-type: none"> • Only well-maintained plant should be operated on –site and plant should be serviced regularly during the construction works. • Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction, should where possible, be orientated to direct noise away from the NSRS. • Mobile plant should be sited as far away from NSRs as possible. • Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. • Use quiet plant and Working Method • Reduce the number of plant operating in critical areas close NSRs. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> Construct temporary and movable noise barriers 	^
Water Quality	<i>Construction Runoff and Drainage</i>	
	<ul style="list-style-type: none"> Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow. 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. 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 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. 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. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks. 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. 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. 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. 	^ ^ ^ ^ ^ ^ ^ ^
	<i>Tunnelling Work</i>	
	<ul style="list-style-type: none"> 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. 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. 	^ ^

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> • Spent 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. 	N/A
	<i>General Construction Activities</i>	
	<ul style="list-style-type: none"> • Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column and cause water quality impacts. • 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). 	^ ^
	<i>Sewage Effluent</i>	
	<ul style="list-style-type: none"> • 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. • 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. 	^ N/A
	<i>General</i>	
Waste	<ul style="list-style-type: none"> • 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. 	^
	<i>Storage, Collection and Transportation of Waste</i>	
	<ul style="list-style-type: none"> • Wastes shall be handled and stored in a manner to ensure that they are held securely without loss or leakage. • Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits. • Waste shall be removed on a daily basis. • Waste storage area shall be maintained and cleaned on a daily basis. • Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers. • Obtain necessary waste disposal permits from the appropriate authorities if they are required. • Wastes shall be disposed of at licensed waste disposal facilities. • 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. • Maintain records of the quantities of wastes generated, recycled and disposed. 	^ ^ ^ ^ ^ ^ ^ ^

Types of Impacts	Mitigation Measures	Status
	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> General refuse generated on-site shall be stored in enclosed bins or compaction unit separate from C&D and chemical wastes. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&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. Reusable rather than disposable dishware shall be used if feasible. 	<p>^</p> <p>^</p>
<p>Ecology</p>	<ul style="list-style-type: none"> A sediment barrier shall be erected to minimize stream sedimentation at downstream of the project boundary of the Toll Plaza. Conduct a tree survey before commencement of the construction work. 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. Loss of the adjacent woodland due to temporary land take shall be returned to the original status immediately. Wild and uncontrolled fire shall be strictly prohibited 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. 	<p>N/A</p> <p>^</p> <p>N/A</p> <p>N/A</p> <p>^</p> <p>N/A</p>
<p>Landscape and Visual Impact</p>	<ul style="list-style-type: none"> 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. 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. Measurement of vibration would also be carried out on a need basis during the piling work 	<p>^</p> <p>^</p> <p>^</p>

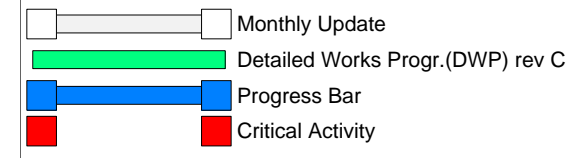
Remarks:

- | | | | |
|-----|-----------------------------------|---|--|
| ^ | Compliance of mitigation measure; | X | Non-compliance of mitigation measure; |
| N/A | Not Applicable; | • | Non-compliance but rectified by the contractor |

APPENDIX L
CONSTRUCTION PROGRAMME

Data Date: 20MAY07
Run Date: 26MAY07 12:11

3 MONTH ROLLING PROGRAMME



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY			JUN			JUL			AUG			SEP	
										12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16
GENERAL																												
Contract defined dates, stages and sections																												
Sections of the Works																												
KD14	KD14 - Compl the Works in Portions J2 & J3 (SHT)	0		19JUN07	0	0	0	-207	-140																			
KD12	KD12 - Complete all Toll Plaza Works	0		26JUN07	0	0	0	-119	-152																			
KD09	KD09 - Complete All BV (Ex KD17 & 20) (25Nov06)	0		30JUN07	0	0	0	-80	-203																			
KD10	KD10 - Complete All Works in F2	0		30JUN07	0	0	0	-156	-141																			
KD11	KD11 - Complete All Works in F3,F5,G and H4)	0		30JUN07	0	0	0	-217	-173																			
Submittals & Approvals																												
Drawing Submittal & Approval																												
8034	Prep. & Sub. Independ't Serv. Dwgs for SHT&T3&LCK	48	04AUG04A	04JUN07	98	98	12	120	-310																			
8024	Engineer Comment / Approve ENT ISD Submissions	18	06AUG04A	30MAY07	85	85	8	-31	-310																			
8030	Res-sub. & Approv of ENT ISD	24	06SEP04A	04JUN07	70	70	12	-31	-310																			
8035	Engineer Comment / Approve SHT&T3LCK ISD Sub.	24	13SEP04A	04JUL07	85	85	36	120	-310																			
8032	Engineer Comment / Approve SHT&T3&LCK CSD Sub.	18	25OCT04A	07JUN07	90	90	15	120	-310																			
8036	Re-sub. & Approv of SHT & T3 & LCK ISD	36	31MAR05A	04JUL07	70	70	36	120	-310																			
8033	Re-sub. & Approv. of SHT & T3 & LCK CSD	24	28JUN05A	18JUN07	60	60	24	120	-310																			
8022	Engineer Comment / Approve ENT CSD Submissions	12	21MAY07	04JUN07	0	0	12	120	-310																			
8029	Re-sub. & Approv. of ENT CSD	24	05JUN07	04JUL07	0	0	24	120	-310																			
Testing & Commissioning																												
EM1240	Submit FSI 501 to FSD (SP Bldg)	0		30APR07A	100	0	0		-71																			
EM2460	Submit FSI 501 to FSD (Vent Bldg)	0		07JUN07*	0	0	0	-173	-108																			
EM3840	Submit FSI 501 to FSD (NP Bldg)	0		30MAY07*	0	0	0	-166	-94																			
EM3890	Submit FSI 501 to FSD (Admin Bldg)	0		06JUN07*	0	0	0	-166	-101																			
EM6520	Submit FSI 501 to FSD (SHT SP)	0		30MAY07*	0	0	0	-166	-94																			
EM7740	Submit FSI 501 to FSD (SHT NP)	0		09MAY07A	100	0	0		-84																			
EM5060	Submit Form 501 to FSD (RC Enc. & T3)	0		04JUL07	0	0	0	-194	-169																			
EM5020	ENT Tunnel FSD Insp(Tunnel System) <Anticipated>	6	24JUL07	30JUL07	0	0	6	-198	-116																			
EM5030	SHT Tunnel Issue, endorse & submit Form 501 to F	3	07AUG07	09AUG07	0	0	3	-225	-203																			
EM3900	Submit FSI 501 to FSD (TP, Ft Bridge, Subway)	0		27JUL07	0	0	0	-196	-146																			
LAI CHI KOK VIADUCT																												
CONTRACT DEFINED DATES, STAGES & SECTIONS																												
PORTION ACCESS & VACATION																												
ACS_M2	Access to Portions - M2	0		25MAY07*	0	0	0	183	-387																			
ACS_M3	Access to Portions - M3	0		25MAY07*	0	0	0	-403	-387																			
ACS_M1	Access to Portions - M1	0		09JUN07*	0	0	0	-152	-402																			
ACS_M12	Forecast Delay in Access to Portion M2	30	28APR06A	25MAY07	0	0	4	152	0																			
ACS_M13	Forecast Delay in Access to Portion M3	30	28APR06A	25MAY07	0	0	4	-327	0																			



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LEIGHTON - KUMUGAI JV
R8 - EAGLES' NEST TUNNEL
CONTRACTORS TARGET PROGRAMME REV.1

Proj. Name: W31E
Layout: 3 MONTHS ROLLING PROGRAMME
Filter: 3 MONTH ROLLING PROGRAMME
Current Proj: W31E
Target 1 Proj: BE02
Sheet 1 of 14

LKVJ/ENT/DWP/B			
Date	Revision	Checked	Approved
20FEB07	Prog update Feb 07	GW	RB

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR				MAY				JUN			JUL			AUG			SEP	
										42	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23
Construction Works																														
LCK Viaduct Noise Enclosure 1																														
8322	LckVd NE1-Elect Works 1st Fix	36	11JUN07*	24JUL07	0	0	36	-93	-327																					
8332	LckVd NE1-Elect Works 2nd Fix	30	25JUL07	28AUG07	0	0	30	-93	-327																					
LCK Viaduct Noise Enclosure 2																														
7400	LckVd NE2-Elect Works 1st Fix	36	11JUN07*	24JUL07	0	0	36	-93	-327																					
7410	LckVd NE2-Elect Works 2nd Fix	30	25JUL07	28AUG07	0	0	30	-93	-327																					
LCK Viaduct Noise Enclosure 3																														
6737	LckVd NE3 & Elect Works 1st Fix	72	11JUN07*	04SEP07	0	0	72	-122	-327																					
6747	LckVd NE3 Elect Works 2nd Fix	60	25JUL07	04OCT07	0	0	60	-122	-327																					
CMCS Leased Lines at Pump Houses																														
6827	E&M at Wai Man Tsuen Pump House	6	26MAR07A	25MAY07	80	0	4	30	-282																					
6807	E&M at Lai Wan Overpass Pump House	6	15MAY07A	25MAY07	80	0	4	30	-294																					
6817	E&M at Lai Po Rd Pump House	6	15MAY07A	25MAY07	80	0	4	30	-288																					
BUTTERFLY VALLEY																														
Contract Key Dates & Milestones																														
Area Access & Vacation Dates																														
ACS_A	Access to Portions - A	0	20OCT03A		100	100	0		-381																					
Construction Works																														
BUTTERFLY VALLEY 3RD PARTY WORKS																														
Noise Barrier Works by ACCIONA																														
S2562	Access for 7m N.B. Works by Acciona at BV South	77	23JUN06A	14JUL07	30	0	45	111	-244																					
S2612	Access for S-Enclosure Works (Primary Elements)	90	08JUL06A	17JUL07	0	0	47	-225	-225																					
S2662	1Access for 5m N.B. Works by Acciona at BV South	90	27SEP06A	08AUG07	0	0	66	90	-220																					
BUTTERFLY VALLEY E&M WORKS																														
Noise Enclosure 6 at South Portal Area																														
8372	LckVd NE6 - Elect Works 1st Fix	30	21MAY07*	28JUL07	0	0	30	-225	-215																					
8382	LckVd NE6 - Elect Works 2nd Fix	24	05JUN07	04AUG07	0	0	24	-225	-215																					
8392	LckVd NE6 - Elect Cabling ENT SPB to N.E.	9	27JUN07	11AUG07	0	0	9	-225	-215																					
8402	LckVd NE6 - Elect Works Fin Fix	12	27JUN07	11AUG07	0	0	12	-225	-215																					
8412	LckVd NE6 - Ready for Energization	0		13AUG07	0	0	0	-225	-215																					
108347	NE 6 (Excision) - Elect T&C	18	14AUG07	31AUG07	0	0	18	-279	-268																					
Butterfly Valley Miscellaneous E&M Works																														
8410	Butterfly valley - Elect Works Fin Fix	24	22JAN07A	04JUN07	60	0	12	-57	-168																					
8420	Butterfly Valley - Cabling	24	25JAN07A	23MAY07	98	0	3	-48	-159																					
8400	Butterfly Valley - Ready for Energization	0		05JUN07	0	0	0	-57	-168																					
EARTHWORKS & SLOPEWORKS																														
SLOPE SP-S2 & SP-S3																														
S2370	Remaining Works to Slopes SP-S3 & SP-S2	24	19JUL06A	13JUN07	4	0	20	-52	-288																					
SLOPE BV-S2																														
<small>20.500.130.180.035</small>																														
103811	BV-S2 Berm 9 hydro-seeding & tensar mat	12	24OCT06A	18MAY07A	100	0	0		-285																					
103812	BV-S2 Berm 10 hydro-seeding & tensar mat	12	24OCT06A	18MAY07A	100	0	0		-273																					
SURFACE DRAINAGE																														
103697	BV-S2 Berm 10 Surface drainage	14	01MAR06A	06JUN07	70	0	14	-46	-300																					
SLOPE BV-S4																														
SLOPE FINISHES																														
102380	BV-S4/3a-4a & 5 hydro-seeding & tensarmat	12	12SEP05A	22JUN07	90	70	17	-211	-307																					
SURFACE DRAINAGE																														
103706	BV-S4/4 Surface Drainage	12	07SEP05A	07JUN07	95	5	15	-211	-307																					

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY			JUN			JUL			AUG			SEP	
										42	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9
SLOPE SP-S1																												
SURFACE DRAINAGE																												
103711	Sp-S1/4 Surface Drainage	7	06JUL04A	07JUN07	95	40	15	-47	-318																			
ROADWORKS - North End of BV																												
Stormwater Drainage																												
S2430	West Loop Rd. Drainage	20	19JAN06A	04JUN07	90	30	12	-62	-265																			
Road Pavement & Associated Work																												
S2252	BV North - Bitu Pavement to Sth Bnd Carrig'way	24	29SEP06A	22MAY07	95	0	2	-56	-161																			
S2540	BV North - Kerbs & CPB to Nrth Bound Carriageway	36	13NOV06A	07MAY07A	100	0	0		-154																			
S2242	BV North - Bitu. Pavement to Nrth Bnd Carrig'way	24	20JAN07A	29MAY07	75	0	7	-63	-166																			
S2920	Road Works to East Loop Rd Typ III (EVA)	13	15FEB07A	01JUN07	30	0	10	-42	-271																			
S2930	Road Works to West Loop Road Typ III (EVA)	13	10APR07A	26JUN07	50	0	12	-62	-240																			
S3010	Installation of Road Signage (Sign Plates Only)	24	21MAY07	18JUN07	0	0	24	-56	-171																			
S2900	Road Marking & White Lining (Staged for Access)	24	30MAY07	27JUN07	0	0	24	-63	-178																			
S3660	NEW ACTIVITY - Road Pavement Friction Course	12	30MAY07	12JUN07	0	0	12	-51	0																			
Miscellaenous Works																												
S2690	Installation of Drip Feed Irrigation System	12	24MAR07A	01JUN07	80	0	10	-42	-163																			
S3000	Construct Recreated Stream	25	01JUN07*	30JUN07	0	0	25	-66	-257																			
ROADWORKS - South End of BV																												
Road Pavement & Associated Work																												
S2970	BV Sth - Bitu. Pavement to Sth Bnd Carrig'way	20	20SEP06A	01JUN07	90	0	10	-60	-166																			
S2980	BV Sth - Bitu. Pavement to Nrth Bnd Carrig'way	23	06NOV06A	01JUN07	90	0	10	-78	-161																			
S2990	Road Marking & White Lining (Staged Access)	18	02JUN07	23JUN07	0	0	18	-60	-161																			
S3190	Installation of Road Signage (Sign Plates Only)	18	02JUN07	23JUN07	0	0	18	-60	-161																			
S3670	NEW ACTIVITY - Road Pavement Friction Course	12	02JUN07	15JUN07	0	0	12	-54	0																			
Miscellaneous Works																												
S2780	Install & Commission Weighbridge	24	02JUN07	30JUN07	0	0	24	-78	-161																			
DSD MAINTENANCE ROAD																												
DSD Maintenance Rd DSD1-1 (Acciona Interface)																												
S3570	WSD Slope Reinstatement	18	21MAY07	11JUN07	0	0	18	-50	-268																			
S2380	Complete DSD1-1 Surface Drainage & CP's	18	20MAR07A	08JUN07	50	0	16	-66	-194																			
S3140	Complete Sub-base & kerbs at DSD1-1	12	14APR07A	21JUN07	25	0	12	-66	-192																			
S3150	Complete Surfacing at DSD1-1 (Type IV)	8	22JUN07	30JUN07	0	0	8	-66	-192																			
DSD Maintenance Rd DSD1 (Parallel to Channel)																												
S3210	2 No. Cross Rd Pipes & Roadside Gullies	12	01MAR06A	17MAY07A	100	80	0		-304																			
S3390	Complete Formation at DSD1	6	02DEC06A	22MAY07	70	0	2	-59	-263																			
S2730	Construct Recreated Stream	45	27MAR07A	22JUN07	40	0	25	-59	-184																			
S3120	DN 200 Watermain Diversion EB18 - EB70	40	10APR07A	22JUN07	40	0	25	-59	-248																			
S2700	Access rd DSD1 -barrier footings	12	21MAY07	04JUN07	0	0	12	-56	-267																			
S3220	Subbase & Kerbs	18	15DEC06A	26MAY07	60	0	5	-44	-165																			
S2720	Access rd DSD1 - Barriers	12	05JUN07	18JUN07	0	0	12	-56	-267																			
S3160	REINSTATE BV ACCESS	0		30JUN07	0	0	0	-66	-192																			
S3230	Surfacing (Type IV)	12	21MAY07	04JUN07	0	0	12	-44	-166																			
Terrain Mitigation																												
NTMM - BV-S2																												
102350	NTMM - Afforestation of Area	60	22MAR06A	11JUN07	60	5	18	-50	-302																			
Landscaping & Establishment																												
101476	BV - Soft Landscaping & Planting	100	03JUN06A	22JUN07	70	0	20	-98	-54																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY				JUN			JUL			AUG			SEP	
										42	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16
Landscaping & Establishment																													
101475	BV - Hard Landscaping	90	03JAN07A	28MAY07	60	0	6	-160	-196																				
101477	BV - Establishment works	365	23JUN07	21JUN08	0	0	365	-210	-63																				
ENT SOUTH PORTAL VENTILATION BUILDING																													
SUBMITTALS & APPROVALS																													
E&M EQPT. & MATERIAL APPROVALS																													
1919	SP.Bldg. - Approve doors details	24	07MAY05A	26MAY07	80	80	5	-146	-306																				
PROCUREMENT - MATERIAL																													
ABWF WORKS																													
2018	SP.Bldg. - Initial deliver fall arrest roof syst	0	21MAY07*		0	0	0	-49	-263																				
2019	SP.Bldg. - Initial deliver of slate cladding	0	21MAY07*		0	0	0	-20	-238																				
2030	SP.Bldg. - Initial deliver balust & metal works	0	21MAY07*		0	0	0	-49	-263																				
2025	SP.Bldg- Initial deliver exp metal mesh cladding	0	07MAY07A		100	0	0		-213																				
CONSTRUCTION																													
South Portal Bldg. - CIVIL & ABWF WORKS																													
ABWF WORKS																													
SB Bldg - Internal Works GF																													
T2760	GF - Paint touch up & Doors	12	22NOV06A	18MAY07A	100	0	0		-221																				
SP Bldg - Internal Works 1F & LP																													
T2770	1F & LP - Paint touch up & Doors	12	11DEC06A	12MAY07A	100	0	0		-252																				
SP Bldg - Internal Works 2F																													
T2780	2F - Paint touch up & Doors	12	29NOV06A	16MAY07A	100	0	0		-178																				
SP Bldg - Internal Works 3/F																													
T2800	3F - Paint touch up & Doors	12	06FEB07A	14MAY07A	100	0	0		-214																				
SP Bldg - Internal Works 4F & Above																													
T2790	4F - Paint touch up & Doors	7	21MAY07	29MAY07	0	0	7	-39	-148																				
Roof & External Facade																													
T2710	Ent SPB - Install Aluminum louvres & doors	90	26JUL06A	20APR07A	100	0	0		-135																				
T2400	Ent SPB - Alum. Comp Panel Cladding to Ext Walls	60	20JAN07A	04JUN07	95	0	12	-44	-164																				
T2360	Ent SPB - GMS,S/S Channel, Balustrade & Railing	24	24MAR07A	09JUN07	50	0	17	-49	-197																				
T2365	Ent SPB - Removed Ext Scaffolding (excl slate)	12	03APR07A	04MAY07A	100	0	0		-127																				
T2390	Ent SPB - Expanded metal cladding to Ext Walls	30	25JUN07	30JUL07	0	0	30	-48	-247																				
T2540	Ent SPB - Slate Cladding above NB/SB Carriageway	36	25JUN07*	06AUG07	0	0	36	-48	-266																				
ENT South Portal Bldg. - BUILDING SERVICES																													
E & M WORKS																													
Testing and Commissioning																													
EM1130	Genset Termination + T&C	12	21FEB07A	22MAY07	90	0	2	-148	-210																				
EM1190	Integrated E&M System T&C	52	22MAR07A	09MAY07A	100	0	0		-78																				
Statutory Inspection & Issued Certificates																													
EM1320	Submit Form WWO46 for Water Supply to WSD	30	17MAR07A	07JUN07	50	0	15	-173	-252																				
EM1340	Water Supply Certificate issued	0		07JUN07	0	0	0	-173	-252																				
EM1260	Bldg FSD insp. (Excl. Tunnel System) (SP Bldg)	3	21MAY07	23MAY07	0	0	3	-146	-62																				
EAGLES NEST TUNNEL																													
Contract defined dates, stages & sections																													
Area access & vacation dates																													
ACS_F1	Access to Portions - F1 (U/Gnd Sth Portal)	0	20OCT03A		100	100	0		-381																				
ACS_F2	Access to Portions - F2 (U/Gnd Sth Tunnel)	0	20OCT03A		100	100	0		-381																				
Construction Works																													
Tunnel Drive North Bound																													
Tunnel Finishing Works																													
1443	NB Cleaning/Inspection & Install Induction Loop	12	16JUN07	30JUN07	0	0	12	122	-123																				

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY			JUN			JUL			AUG			SEP	
										42	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16
Fire Protection System																												
278035	Ent SB - Install detection system @ Ceiling Lvl	42	20SEP06A	30APR07A	100	0	0		-208																			
278039	Ent SB - FS Wiring and Terminations	30	10OCT06A	01JUN07	95	0	10	-201	-198																			
278040	Ent SB - FS Testing and T&C	24	21MAY07	09JUL07	0	0	24	-201	-204																			
Electrical Works Below OHVD																												
278056	Ent SB - Lighting / Equip Testing and T&C	60	15JAN07A	30JUN07	70	0	30	-195	-188																			
278096	Place Covers on C. Trough	18	10APR07A	24APR07A	100	0	0		-139																			
278054	Ent SB-Install CCTV,Camera,Eqpt @C/Lvl (by TCSS)	72	21MAY07	15AUG07	0	0	72	-191	-274																			
Vent Adit Tunnel / Cross Passage 7																												
ENT CROSS PASSAGE CP07 - (E&M) BUILDING SERVICES																												
Fire Protection System																												
278063	CP7 - FS Termination & Test	24	07FEB07A	30APR07A	100	0	0		-170																			
ENT Cross Passages																												
CROSS PASSAGES (CP1-CP6 & CP8-CP21) - (E&M) WORK																												
Electrical Works																												
278075	(CP1-CP21) - Conduit,light,Signage fixt,Switches	60	17JUL06A	30APR07A	100	0	0		-234																			
278076	(CP1-CP21) - Cabling, Wiring, Termination & Test	36	15AUG06A	30APR07A	100	0	0		-198																			
278080	(CP1-CP21) - Cables Testing and T&C	36	01NOV06A	27APR07A	100	0	0		-121																			
VENTILATION ADIT & BUILDING																												
PROCUREMENT																												
ARCHITECTURAL																												
2026	VA Bldg. - Procure expanded metal mesh cladding	60	06JUN05A	31MAY07	50	50	9	-84	-310																			
2031	VA Bldg. - Initial delivery slate cladding	0	21MAY07*		0	0	0	124	-225																			
2034	VA Bldg. - Initial delivery fall arrest roof sys	0	21MAY07*		0	0	0	-164	-256																			
2035	VA Bldg. - Initial delivery balust & metal works	0	21MAY07*		0	0	0	-164	-256																			
2043	VA Bldg. - Initial deliv exp metal mesh cladding	0	09JUL07		0	0	0	-84	-264																			
CONSTRUCTION WORKS																												
EXTERNAL WORKS																												
Drainage																												
S1960	Storm Drain at West Side	24	01MAR07A	25MAY07	85	0	4	-174	-273																			
S1970	Storm Drain & Gullies at Access Apron	24	14APR07A	04JUN07	10	0	12	123	-257																			
Ducting & Drawpits																												
S1910	Ducting & Drawpits	18	26MAY07	15JUN07	0	0	18	-174	-225																			
S1980	HGC Ducting & Drawpits	18	16APR07A	11JUN07	20	0	18	-180	-203																			
Watermain Works																												
S1950	Watermain & Valve Chambers at Building Apron	24	21MAY07	18JUN07	0	0	24	123	-245																			
S1990	Irrigation Pipework	14	21MAY07	06JUN07	0	0	14	-172	-217																			
Road Pavement & Associated Work																												
S1920	Preparation and Block Paving	22	05JUN07	30JUN07	0	0	22	-180	-171																			
S1930	Signage, furniture and finishes	24	20JUN07	18JUL07	0	0	24	-145	-161																			
VENTILATION BUILDING																												
VA Building - Structure																												
T3130	Installation of Earth mat	24	30JAN07A	30MAY07	70	0	8	-166	-241																			
VA Building - ABWF																												
T3050	ABWF - Fan Rooms & Plenums Touch Up & Doors	12	20MAR07A	01JUN07	90	0	10	-149	-178																			
T3030	ABWF - GL Paint Touch Up & Doors	12	14APR07A	04JUN07	80	0	10	-151	-180																			
T3040	ABWF - 1FL Paint Touch Up & Doors	12	14APR07A	04JUN07	80	0	10	-151	-180																			
VA Building - External Finishes																												
T3110	VA Bldg. - Install Aluminum louvres & doors	60	11NOV06A	02JUN07	85	0	11	-169	-219																			
T3070	VA Bldg. - External Wall Painting	22	18DEC06A	30MAY07	95	0	8	-172	-253																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY			JUN			JUL			AUG			SEP													
										42	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10				
NP Bldg - Roofing & External Facade																																								
T1770	Ent NPB - Expanded metal cladding to Ext Walls	36	09JUL07	18AUG07	0	0	36	81	-264																															
ENT North Portal Bldg. - BUILDING SERVICES																																								
E & M WORKS																																								
ENT North Portal Bldg (2F/Silencer) - E & M Work																																								
EM2860	E&M Works in Corridors 2/F	24	17JUL06A	10MAY07A	100	0	0		-266																															
ENT North Portal Bldg (3F/ Fan Rm) - E & M Works																																								
EM2880	E&M Works in Corridors 3/F	24	17JUL06A	10MAY07A	100	0	0		-264																															
Testing and Commissioning																																								
EM2680	MCC, LCC Termination + T&C	30	06JAN07A	15MAY07A	100	0	0		-226																															
EM2840	Genset Termination + T&C	12	01MAR07A	23MAY07	95	0	3	-151	-235																															
EM2960	Integrated E&M System T&C	18	02JUN07	23JUN07	0	0	18	-158	-114																															
Statutory Inspection & Issued Certificates																																								
EM3100	Bldg FSD insp. NP Bldg (Excl. Tunnel System)	6	14JUN07	21JUN07	0	0	6	-166	-84																															
TOLL PLAZA & ANCILLIARY STRUCTURES																																								
Construction Works																																								
TOLL PLAZA EAST SIDE																																								
S1420	Road Pavement Surfacing (Flex & Rigid)	56	18OCT06A	02JUN07	60	0	11	127	-180																															
K1192	East Loop Road - Formation & Roadworks	36	12JAN07A	04JUN07	90	0	12	-77	-156																															
S1140	Furniture, signage (face only), white lining	18	04JUN07	25JUN07	0	0	18	127	-180																															
TOLL PLAZA WEST SIDE																																								
S1510	FW Waterminam Centre to Admin Bldg & FH12, FH13	24	10JUL06A	23MAY07	99	0	3	-196	-242																															
K1221	Main Carriageway - West Subbase & kerbs	54	14OCT06A	04JUN07	90	0	9	-196	-164																															
S1310	Road Pavement Surfacing	57	07MAR07A	23JUN07	45	0	12	110	-164																															
K1171	West Loop road - Roadworks	36	12MAR07A	11JUN07	25	0	18	-83	-253																															
S1410	Furniture, signage (face only), white lining	18	25JUN07	16JUL07	0	0	18	110	-164																															
TOLL PLAZA - works adjacent to building																																								
S1427	Admin Bldg & Wshop - Drainage & ducting	36	07MAR06A	22MAY07	95	25	2	-79	-295																															
S1400	ENT NPB - Kerbs & Rwks & misc Finishes	12	15NOV06A	23MAY07	80	0	3	-68	-293																															
S1417	SHT SPB - Kerbs & Rwks & misc finishes	12	06MAR07A	01JUN07	50	0	10	-75	-298																															
S1437	Admin Bldg & Wshop - kerbs, Rwks & misc finishes	30	22MAR07A	06JUN07	25	0	12	-79	-238																															
TOLL PLAZA COLLECTOR'S SUBWAY																																								
ABWF																																								
S1290	Toll Subway - E&M	54	20NOV06A	30APR07A	100	0	0		-190																															
TOLL PLAZA FOOTBRIDGE																																								
ABWF																																								
S1264	Installation of Aluminium Cladding	38	01MAR07A	11JUN07	50	0	18	-188	-282																															
S1250	Toll Ftbrdge - Finishes	54	12JUN07	15AUG07	0	0	54	84	-252																															
E & M WORKS																																								
S1200	Toll Plaza Footbridge - Lift Installation	72	24MAR07A	31MAY07	90	0	9	-170	-223																															
S1450	Toll Plaza Footbridge - Lift Commissioning	24	01JUN07	24JUN07	0	0	24	-212	-274																															
S1470	E&M Installation at Footbridge	30	14APR07A	26JUN07	75	0	18	-188	-264																															
S1500	E&M Footbridge T&C	18	27JUN07	18JUL07	0	0	18	-188	-264																															
TOLL PLAZA BOOTHS																																								
S1300	Toll Booths All E&M, CMCS & TCS	54	05MAY07A	28JUN07	70	0	32	-196	-146																															
S1460	Toll Booths E&M - T&C	24	29JUN07	27JUL07	0	0	24	-196	-146																															
ADMIN.BLDG. - WORKSHOP																																								
S1350	Workshop - External Finishes	60	03AUG06A	11JUN07	95	0	18	-83	-226																															
S1320	Workshop - Remaining internal Finishes	36	20AUG06A	29MAY07	95	0	7	-72	-215																															

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR		APR			MAY			JUN			JUL			AUG			SEP																	
										42	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10								
LANDSCAPING & ESTABLISHMENT WORKS																																												
S1480	Planting Works at Toll Plaza	24	10APR07A	16JUN07	10	0	24	-93	-69																																			
S1490	Establishment Works at Toll Plaza	365	17JUN07	15JUN08	0	0	365	-204	-80																																			
ADMINISTRATION BUILDING																																												
SUBMITTALS & APPROVALS																																												
ABWF. MTRL SUBMITTALS																																												
1885	Admin.Bldg. - Prep & submit wood ceiling details	24	20NOV04A	04JUN07	50	50	12	96	-310																																			
1881	Admin.Bldg. - Prep & sub GRP water tank details	24	12JAN05A	04JUN07	50	50	12	90	-310																																			
1888	Admin.Bldg. - Approve suspended ceiling details	24	02APR07A	30MAY07	0	0	8	88	-282																																			
1882	Admin.Bldg. - Approve GRP water tank details	24	05JUN07	04JUL07	0	0	24	90	-310																																			
1886	Admin.Bldg. - Approve wood ceiling details	24	05JUN07	04JUL07	0	0	24	96	-310																																			
E&M EQPT. / MTRL. SUBMITTALS																																												
8248	AdmBldg-Engineer to provide Cater'g equip detail	0	07APR05A		100	100	0		-310																																			
PROCUREMENT - MATERIAL																																												
ABWF WORKS																																												
1938	Admin.Bldg. - Initial delivery glass canopy	0	21MAY07*		0	0	0	-176	-289																																			
2056	Admin.Bldg. - Initial delivery sheet decking	0	21MAY07		0	0	0	156	-268																																			
2059	Admin.Bldg.- Initial deliv fall arrest roof syst	0	21MAY07*		0	0	0	-44	-263																																			
2060	Admin.Bldg. - Initial deliver balust & metal wks	0	21MAY07*		0	0	0	-44	-263																																			
CONSTRUCTION																																												
TCSS Access at Admin Bldg																																												
T3350	TCSS Works Within Admin Bldg / Tunnel & Ext	140	15SEP06A	23JUL07	0	0	52	-198	-173																																			
T2930	ALL TCSS COMPLETE FOR FSD INSPECTION	0		23JUL07	0	0	0	-198	-173																																			
CIVIL & ABWF WORKS																																												
ABWF																																												
Admin Bldg (G/F) - Internal Work @ Grid 1 to 21																																												
T1682	AB (G/F to 1/F) - Staircase Finishing Works	30	18APR06A	31MAY07	90	5	9	-164	-291																																			
T1685	AB G/F (Grid 1-21) - Wall Plaster & Flr Screed	20	19APR06A	22MAY07	99	10	2	-166	-298																																			
T1680	AB G/F (Grid 1-21) - Windows & door frames	18	24APR06A	22MAY07	95	56	2	-166	-304																																			
T2990	AB G/F (Grid 1-21) - Tileworks & Sanitary Fixt	30	15SEP06A	30MAY07	80	0	6	-164	-288																																			
T2150	AB G/F (Grid 1-21) - Door Leaf & Final Paints	12	02JAN07A	18JUN07	85	0	3	-89	-231																																			
T1970	AB G/F (Grid 1-21) - Install Ceiling Grids	18	10APR07A	06JUN07	80	0	6	-89	-256																																			
T2160	AB G/F (Grid 1-21) - Install Ceiling Panels	10	07JUN07	18JUN07	0	0	10	-89	-245																																			
Admin Bldg (1/F) - Internal Work @ Grid 1 to 18																																												
T1982	AB (1/F to 2/F) - Staircase Finishing Works	30	18APR06A	31MAY07	90	5	9	-74	-291																																			
T1985	AB 1/F (Grid 1-18) - Wall Plaster & Flr Screed	24	18APR06A	19MAY07A	100	35	0		-295																																			
T1980	AB 1/F (Grid 1-18) - Wdws & Door Frames	18	24APR06A	28MAY07	95	56	6	-182	-307																																			
T2165	AB 1/F (Grid 1-18) - Install Skirting	14	15JUN06A	04JUN07	90	0	2	-77	-206																																			
T2010	AB 1/F (Grid 1-18) - Tileworks & Sanitary Fixt	21	20SEP06A	04JUN07	75	0	9	-182	-301																																			
T2170	AB 1/F (Grid 1-18) - Door Leaf & Final Paints	12	02JAN07A	04JUN07	80	0	4	-77	-208																																			
T3000	AB 1/F (Grid 1-18) - Install Ceiling Grids	18	18APR07A	11JUN07	80	0	6	-87	-248																																			
T2012	AB 1/F (Grid 10-18) - Proprietary Toilet Cubicle	18	21MAY07	11JUN07	0	0	18	-182	-295																																			
T2185	AB 1/F (Grid 1-18) - Install Ceiling Panels	10	06JUN07	16JUN07	0	0	10	-88	-243																																			
T3015	AB 1/F (Grid 1-18) - Floor Carpets	12	12JUN07	26JUN07	0	0	12	126	-238																																			
Admin Bldg (2/F) - Internal Work @ Grid 1 to 18																																												
T2060	AB 2/F (Grid 1-18) - Wdws & Door Frames	12	11APR06A	22MAY07	99	50	2	-185	-306																																			
T2062	AB (2/F to Rf/Lvl) - Staircase Finishing Works	30	18APR06A	31MAY07	90	5	9	-185	-291																																			
T2065	AB 2/F (Grid 1-18) - Wall Plaster & Flr Screed	24	01JUN06A	19MAY07A	100	0	0		-286																																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	MAR			APR			MAY			JUN			JUL			AUG			SEP	
										42	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23
SHATIN HEIGHTS SOUTH PORTAL BUILDING																													
CONTRACT DEFINED DATES & SECTIONS																													
AREA ACCESS & VACATION DATES																													
ACS_J2	Access to - J2 (T.Plate & above) SH-S.Vent.Bldg.	0	10DEC05A		100	100	0		-381																				
ACS_D8	Access to Portion - D8	0	03JAN06A		100	100	0		-381																				
PROCUREMENT - MATERIAL																													
ABWF WORKS																													
2085	SHT SPB - Initial deliv expanded metal cladding	0	07MAY07A		100	0	0		-226																				
CONSTRUCTION																													
CIVIL & ABWF WORKS																													
ABWF																													
AB6022	Remedy SHT Contractor Defects	25	12DEC05A	23MAY07	95	90	3	-191	-308																				
ABWF at GF																													
AB6042	G/F Paint Touch Up & Doors	12	22JAN07A	01JUN07	80	0	10	-150	-178																				
ABWF at 1F & LP																													
AB5995	Initial Finishes to Lower Plenum	12	10APR06A	31MAY07	95	15	5	-158	-302																				
AB6032	1F & LP Paint Touch Up & Doors	12	03NOV06A	28MAY07	90	0	6	-146	-174																				
ABWF at 2F																													
AB6052	2/F Paint Touch Up & Doors	12	11NOV06A	28MAY07	85	0	6	-146	-174																				
ABWF at 3F																													
AB6062	3/F Paint Touch Up & Doors	12	11NOV06A	28MAY07	85	0	6	-146	-174																				
ABWF at 4F and above																													
AB6004	Initial Finishes to 4/F and above	24	13APR06A	31MAY07	95	10	9	-151	-284																				
AB6072	4/F and above Paint Touch Up & Doors	12	21FEB07A	04JUN07	85	0	12	-152	-180																				
Roof & External Facade																													
AB6067	Sht SPB - Install Aluminum louvres & doors	75	15MAR06A	07JUN07	90	0	14	-167	-249																				
AB6077	Sht SPB - Alum. composite cladding to ext walls	60	07AUG06A	07JUN07	90	0	9	-173	-183																				
AB6047	Sht SPB - GMS, S/S Channel, Balustrade & Railing	18	14AUG06A	27JUN07	50	0	14	125	-261																				
AB6037	Sht SPB - Roof Waterproofing & Test	12	15DEC06A	31MAY07	60	0	7	-161	-293																				
AB6057	Sht SPB - 25thk Roof Screed & Roofing Tiles	18	25JAN07A	14JUN07	20	0	6	-161	-275																				
AB6007	Sht SPB - Slate Cladding above NB/SB Carriageway	36	12FEB07A	14JUL07	10	0	36	111	-281																				
AB6027	Sht SPB - External Wall Painting	30	13MAR07A	12JUN07	95	0	4	-165	-267																				
AB6034	Sht SPB - Expanded metal cladding to ext walls	30	01JUN07	07JUL07	0	0	30	-137	-247																				
AB6048	Sht SPB - Removed Ext Scaffolding (excl slate)	12	08JUN07	22JUN07	0	0	12	-173	-183																				
SHT South Portal Bldg. - BUILDING SERVICES																													
E & M WORKS																													
SHT South Portal Bldg (2F/Silencer) - E & M Work																													
EM6300	E&M Works in Corridors 2/F	24	17JUL06A	10MAY07A	100	0	0		-249																				
SHT South Portal Bldg (3F/Fan Rm) - E & M Work																													
EM6320	E&M Works in Corridors 3/F	24	14JUL06A	10MAY07A	100	0	0		-249																				
Testing and Commissioning																													
EM6280	Genset Termination + T&C	12	15JAN07A	22MAY07	95	0	2	-150	-229																				
EM6420	Integrated E&M System T&C	18	08JUN07	29JUN07	0	0	18	-163	-119																				
Statutory Inspection & Issued Certificates																													
EM6560	Bldg FSD insp. (Excl. Tunnel System) (SHT SP)	6	23JUN07	29JUN07	0	0	6	-173	-91																				
SHT TUNNEL																													
CONSTRUCTION																													
SHT NORTHBOUND TUNNEL																													
(E & M) BUILDING SERVICES																													
MVAC / Tunnel Ventillation System Above OHVD																													
207008	Sht NB - MVAC/TVF Testing and T&C	53	04JUN07*	06AUG07	0	0	53	-225	-280																				
Plumbing and Drainage																													
214030	Sht NB - Pipe Testing & T&C	12	15MAY06A	22MAY07	95	0	2	-181	-272																				

**APPENDIX M
COMPLAINT LOG**

Appendix M - Complaint Log

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40426	Butterfly Valley	26 April 2004	<p>A public noise complaint was recently received by EPD. The complaint was related to the noise generated from the Route 8 – ENT site near Butterfly Valley at the night time on 21 April 2004. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 23 April 2004.</p>	<p><u>Noise at night time</u> The information provided by the RSS indicated that no works were undertaken by the Contractor during the concerned period. The concerned noise might probably be due to a burglary case occurred at same night.</p> <p><u>Noise during day-time</u> It is believed that the day-time noise complaint was due to the site formation works of the Project. Considering the powered mechanical equipment used at the Butterfly Valley and the echo effect of the valley, ET believe that the day-time construction noise from the site at Butterfly Valley might cause nuisance to the nearby resident to some extent, though there was no noise level exceedance at the Government Quarters during our routine monitoring in last three months.</p> <p>The Contractor agreed to implement mitigation measures, including good site practices, selecting quieter plant and working methods and reduction in numbers of noisy plant operating currently, in order to mitigate noise impacts at the NSRs.</p>	Closed
40914	Garden Villa	<p>13-Sep-04 (by EPD)</p> <p>14-Sep-04 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 13 September 2004 about construction noise generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 14 September 2004.</p> <p>The complaint was about general construction noise generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. As informed by EPD,</p>	<p><u>Environmental Permits</u> A Construction Noise Permit (No. GW-RN0405-04) was obtained by the Contractor for the use of powered mechanical equipment (PME) in the concerned works area and use of TAR no.1 during restricted hours.</p> <p><u>Blasting Works</u> According to the information provided by the Resident Site Staff (RSS), for carrying out blasting works, a blasting permit should be issued by the Mines Division of Civil Engineering and Development Department (CEDD), but not under the jurisdiction of EPD. The CNP issued by EPD only specified the use of PME but not the blasting works during restricted hours.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>the complainant was particularly concerned of two issues:</p> <ol style="list-style-type: none"> 1. The complainant was informed by the Contractor (Leighton – Kumagai Joint Venture) that blasting works would be conducted during restricted hours. He worried about the noise nuisance would be induced by the blasting works. 2. Noise nuisance from some site vehicles traveling on the Temporary Access Road (TAR no.1) near Garden Villa was noted by the complainant during restricted hours. 	<p>As advised by the RSS, the Contractor did intend to apply for a permit to the Mines Division of CEDD for blasting works during restricted hours. However, up to the time of preparation of this report, the Contractor still had not obtained the approval from the Mines Division and therefore, no blasting works were performed by the Contractor during restricted hours.</p> <p><u>Use of TAR no.1</u> According to Condition 3d of the above-mentioned CNP, there was restriction on the use of site vehicles traveling on TAR no.1.</p> <p>The usage of site vehicles on TAR no.1 in a 2-week period before the date of complaint, i.e. 30th August to 12th September 2004 showed that the only vehicle type using TAR no.1 for the concerned period was concrete truck and the number of vehicle pass was limited to 4 times per hour, which was in compliance with the above CNP's conditions.</p> <p>Regular noise monitoring was undertaken by ET at Garden Villa on 30th August and 6th September 2004 during restricted hours (1900 – 2300 hours). The monitoring results were 58.7 dB(A) and 58.6 dB(A), respectively, which were below the noise limit level of 60 dB(A). However, it should be noted that site vehicles were not used by the Contractor on TAR no.1 during restricted hours on these two monitoring day.</p> <p>Based on the information obtained, the validity for the noise complaint in associated with night-time blasting works could not be concluded under ET's investigation, since no blasting works had been performed by the Contractor during restricted hours at the time of the report preparation. Also, it should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the control of EPD.</p> <p>For the use of TAR no.1, the RSS's records showed that the number of vehicle pass in the period between 30th August and 12th September 2004 was complied with the CNP's conditions. It should be noted that only a maximum of 3 concrete trucks</p>	

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>passing the site entrance was recorded. Therefore, it was considered that the nuisance noted by the complainant was not due to the site vehicles adopted by the Contractor (LKJV).</p> <p>Nevertheless, the Contractor was reminded to ensure the compliance of the CNP conditions and adopt good site practice to minimize the construction noise.</p>	
41021	Garden Villa	<p>09-Oct-04 (by EPD)</p> <p>21-Oct-04 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 9 October 2004 about construction noise generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 21 October 2004.</p> <p>The complaint was about nighttime construction noise generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. As informed by EPD, the complainant was particularly concerned of two issues:</p> <ul style="list-style-type: none"> • Construction works undertaken by the Contractor (Leighton–Kumagai Joint Venture) were noted after 2300 hour. • Some workers were noted leaving the site through Temporary Access Road (TAR) no.1 at around 2 am, causing nuisance to the residents in Garden Villa. 	<p>According to the information provided by the RSS, no construction activity was undertaken in the nighttime period (2300 – 0700 hours) at the concerned site area.</p> <p>LKJV did admit that some vehicles had been operating at midnight for transporting LKJV’s survey workers from the site. Inconsiderate behaviors were noted causing nuisance to Garden Villa residents:</p> <ol style="list-style-type: none"> 1. Driving the vehicles too fast, which generated excessive engine noise; 2. Noise inside the vehicles (such as staff talking or radios) escaping through the open vehicle windows; and 3. Vehicle beeping horn to request the guards to open the gate. <p>In order to rectify the situation, LKJV had notified the relevant staff with the receipt of the complaint and urged them to take appropriate measures when using TAR1 at night:</p> <ol style="list-style-type: none"> 1. to drive slowly in order to reduce the engine noise, especially when approaching Garden Villa; 2. to roll up the vehicle windows to contain any noise from talking or radios; and 3. to prohibit beeping the vehicle horn for gate opening; instead, to park the car and approach the guard on foot. 	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
41023	Government Quarters (Butterfly Valley)	20-Oct-04 (by MHJV) 23-Oct-04 (by ET Leader)	A public complaint was received by the Engineer's Representative (ER) of Route 8 – Eagle's Nest Tunnel and Associated Works (R8-ENT) Project on 20 th October 2004. The complaint was raised by a resident of the Government Quarters at Caldecott Road, concerning dust generation as a result of the construction activities at Butterfly Valley. The ER subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 23 rd October 2004.	<p>The complaint was considered valid based on:</p> <ol style="list-style-type: none"> 1. ER's site observations; 2. ET's weekly site audit; and 3. 1-hr TSP exceedance record. <p>Also, the sources of dust generation were identified as</p> <ol style="list-style-type: none"> 1. 2 portions of the haul roads, one at Slope BV-S2 and one linking between South Portal Tunnel to Mui Kong Tsuen, were found to be dry. 2. Dust impact due to the haulage of excavated materials at the South Portal. <p>Enhanced dust suppression measures had been implemented by the Contractor:</p> <ul style="list-style-type: none"> • added rockfill to the haul road between South Portal Tunnel and the Gully fill area; • maintained watering to haul road at Slope BV-S2; • requested the fill material supplier to ensure the material was in a damp condition before leaving quarry; • provided for material not dampened at the Quarry to be directed to the wheel wash for water spray before entering the site; • when cleaning drill holes along slope BV-S4 to ensure adequate water was available for flushing to suppress dust emission; AND • provided damper stockpiles of cleared material at BV-S2 before loading. <p>Based on ER's site observations, most of the above mitigation measures have been implementing by the Contractor. Also, an additional water browser was delivered to site on 29th Oct 04. No significant fugitive dust emission has been found.</p> <p>During ET's site inspections on 27th Oct and 3rd Nov 2004, the situation was found improved. No deficiency relating to air quality impact was noted by ET during the two audit sessions.</p> <p>The results of air quality monitoring (1-hr and 24-hr TSP) in the period between 21st Oct and 2nd Nov 2004 were all found to be complied with the Action / Limit Levels.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
41124	Government Quarters (Butterfly Valley)	21-Nov-04 (by LKJV) 24-Nov-04 (by ET Leader)	A public complaint was received by the Contractor of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 21 st November 2004 (Sunday). The complaint was concerned about excessive noise generation from construction machinery at Butterfly Valley on the same day. The Engineer’s Representative (ER) subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 24 th November 2004.	According to the ER, the only construction activity at Butterfly Valley undertaken on 21 st Nov 04 was formation of access road near Slope BV-S2. The activity only involved operations of 1 no. of excavator and 1 no. of dump truck with grab, which complied with the condition stipulated in a valid CNP GW-RW0484-04, which was hold by the Contractor. Routine noise monitoring was conducted on 21 st and 28 th Nov 2004 at NM6. All the measured noise levels (48.5 to 56.4 dB(A)) were well below the noise limit level. In addition, the measurement results were within the baseline noise level. Therefore, the complaint was considered to be invalid. Nevertheless, the Contractor was reminded to ensure the compliance of the conditions stipulated in CNP. The Contractor was also recommended to adopt good site practice in order to minimize the construction noise.	Closed
41201	Government Quarters (Butterfly Valley)	01-Dec-04 (by MHJV & ET Leader)	A public complaint was received by the Engineer’s Representative (ER) of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 1 st December 2004. The complaint was raised by a resident of the Government Quarters at Caldecott Road, concerning dust generation at Butterfly Valley. The Environmental Team (ET) of the Project was informed with the complaint on the same day. The resident complained that a large portion of the excavated slopes was not properly covered, which caused dust nuisance to her.	The complaint was considered valid based on: 1. ER’s site observations; 2. ET’s weekly site audit Upon receipt of the complaint, a series dust control measures had been implemented by the Contractor, such as covering of the exposed slopes with appropriate sheeting, regular watering to the haul roads and excavated slope faces, etc. During the ET’s weekly site audit on 08-Dec-04 together with the representative of HyD, IEC, ER and the Contractor, the above mitigation measures were observed. The idle slopes at BVS2 had been covered by tarpaulin sheeting and erosion mat. The left exposed slope surfaces at BVS2 were under excavation, thus being unable to be covered. According to the ER, the complainant has expressed his satisfaction to the site condition on 07-Dec-04, after the implementation of dust mitigation measures by the	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Contractor.</p> <p>However, owing to the prevailing of the dry season, the Contractor was reminded to ensure the dust control measures are effectively implemented.</p>	
50125	Garden Villa (North Portal)	<p>21-Jan-05 (by EPD)</p> <p>25-Jan-05 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 21 January 2005 about construction noise and dust generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 25 January 2005.</p> <p>The complaint was about construction noise and dust generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. The complainant was particularly concerned of two issues:</p> <ol style="list-style-type: none"> 1. Noise from tunnel blasting work carrying out at around 7:30am and 10:00pm; and 2. Dump trucks without covering of canvas when leaving the construction site. 	<p><u>Noise from blasting</u> For carrying out the blasting, the Contractor had obtained the permit from relevant authority. The ET’s noise monitoring results did not show any exceedance for the measurement taken when blasting was in place. It should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the control of EPD. In order to minimize the nuisance from the works, the Contractor was recommended:</p> <ul style="list-style-type: none"> • To inform the residents around the area about the time of blasting in advance; and • To re-schedule the blasting time table, if possible, in order to avoid nuisance. <p><u>Uncovered dump trucks</u> In order to evaluate the situation, two inspections were carried out by the ET at Garden Villa on 27-Jan and 28-Jan-05 to identify the dump trucks leaving the site with uncovered load. On 27-Jan-05, 3 nos. of trucks, which were working for ENT Project, was noted by-passing Garden Villa without proper cover.</p> <p>Enhanced control (penalty system) was implemented by the Contractor after the inspection on 27-Jan. During the inspection on 28-Jan-05, 24 nos. of dump trucks for ENT Project were found leaving the site. No non-compliance was noted for the trucks working for ENT Project.</p> <p>LKJV was reminded to keep closely monitoring on the condition and the effectiveness of the proposed control measures.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50308	Garden Villa (North Portal)	05-Mar-05 (by EPD) 08-Mar-05 (by ET Leader)	<p>EPD received a public complaint on 5 March 2005 about construction noise and dust generated from the construction sites of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) and Route 8 - Sha Tin Heights Tunnel and Approaches (R8-SHT), nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 8 March 2005.</p> <p>The complaint was about construction noise and dust generated from the construction sites nearby Garden Villa at Tai Po Road, Sha Tin. The complainant was particularly concerned of the following issues:</p> <ol style="list-style-type: none"> 1. Nighttime & Sunday construction noise 2. Noise from tunnel blasting at early morning and nighttime 3. Dust from construction activities 	<p><i>Nighttime & Sunday construction noise</i></p> <ul style="list-style-type: none"> • no exceedance for noise monitoring • restricted hour works were found complied with the CNPs • records of vehicular trips on TAR1 did not show non-compliance of CNP conditions <p><i>Noise from tunnel blasting at early morning and nighttime</i></p> <ul style="list-style-type: none"> • no exceedance for noise monitoring • valid blasting permit had been obtained from CEDD • blasting work is not under the jurisdiction of EPD <p><i>Dust from construction activities</i></p> <ul style="list-style-type: none"> • dump trucks with uncovered / inadequately covered materials were observed leaving site • no exceedance for TSP monitoring • enhanced dust suppression measures had been implemented by the Contractor <p><u>Conclusions</u> The complaint against the dust issue (uncovered / inadequately covered dump trucks) was considered justifiable. The Contractor was reminded to review the current checking system. Continuous spot checks would be performed by ET and RSS.</p>	Closed
50330	Garden Villa (TAR1)	30-Mar-05 (by EPD & ET Leader)	<p>Environmental Protection Department (EPD) received a public complaint on 30th March 2005 about construction noise from the sites of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) near Garden Villa at Tai Po Road, Sha Tin.</p> <p>The complaint, which was lodged by a resident of Garden Villa on 29th March 2005, was about the noise generated by heavy vehicles traveling in and out of the construction site near Garden Villa. According to the complaint, the noise was made from 7am onwards.</p>	<p>The site of concern was likely to be the Temporary Access Road no.1 (TAR1) connecting Tai Po Road and the construction sites of R8-ENT and Route 8 - Sha Tin Heights Tunnel and Approaches (R8-SHT).</p> <p>The time period of concern was within normal working hours (7am to 7pm) on a weekday not being holidays. According to the EM&A Manual, the criterion of construction noise in term of $L_{eq-30min}$ within this period is 75 dB(A) for domestic premises.</p> <p>Since the commencement of the Project, no exceedance of daytime noise criterion of 75 dB(A) was recorded at Station AM3 (Garden Villa). During the 2-hour measurement period of the ad-hoc monitoring (0700-0900 hrs), all the measured noise levels ($L_{eq-30min}$) were below the daytime noise</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>criterion of 75 dB(A).</p> <p>Based on the results of routine noise monitoring and the ad-hoc measurement on 1st April 2005 at Garden Villa, no exceedance of daytime noise criterion of 75 dB(A) was recorded. The complaint lodged is therefore considered not justifiable.</p> <p>In order to minimize the nuisance generated by the vehicle use at Garden Villa, the Contractor has proposed to limit the frequency of trucks existing from TAR1 at a rate of one truck per minute during the time period of concern (7am to 8:30am).</p>	
50415	Government Quarters	<p>09-Apr-05 (by EPD)</p> <p>15-Apr-05 (by ET Leader)</p>	<p>The complaint, which was lodged by a resident of 7/F, 38B, 8-10 Caldecott Road (Governmental Quarters) on 9th April 2005, was about the noise generated by the construction works at the Butterfly Valley during daytime. The complainant mentioned that the instant noise level taken by himself was 78 to 82 dB(A).</p> <p>EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 15th April 2005.</p> <p>The time period of concern was within normal working hours (7am to 7pm) on a weekday not being public holidays. According to the EM&A Manual, the criterion of construction noise in term of L_{eq}-30min within this period is 75 dB(A) for domestic premises.</p>	<p>Governmental Quarters (Station NM6) is one of the designated noise monitoring stations in the EM&A programme. Routine monitoring is undertaken on a weekly basis in accordance with the EM&A Manual.</p> <p>Since the commencement of the Project, no exceedance of daytime noise criterion of 75 dB(A) was recorded at this station.</p> <p>Ad-hoc measurement was conducted at the complainant's premises on 22 Apr 05. The measured noise level was 69.0 dB(A), which was well below the daytime noise criterion of 75 dB(A).</p> <p>Based on the results of routine noise monitoring and the ad-hoc measurements conducted in the complainant premises, no exceedance of daytime noise criterion of 75 dB(A) was recorded. The complaint lodged is therefore considered not justifiable.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50419	Government Quarters	<p>15-Apr-05 (by EPD)</p> <p>19-Apr-05 (by ET Leader)</p>	<p>The complaint was lodged by a resident of 8-10 Caldecott Road (Government Quarters) on 15th April 2005 to EPD as well as the Chief Resident Engineer of the Project.</p> <p>EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 19th April 2005.</p> <p>The complainant mentioned that they had experienced quite a lot of noise emanating from the tunnel drilling area after 11pm over several nights and most particularly at the night of 14th April 2005 and at 4am on 15th April 2005.</p>	<p>The site of concern was likely to be the South Portal. For carrying out construction works at this area during restricted hours, two Construction Noise Permits (CNPs no. GW-RW0085-05 and GW-RW0086-06) were obtained by the Contractor in accordance with the requirements stipulated in Noise Control Ordinance.</p> <p>According to the information provided by the Resident Site Staff and the Contractor, the construction activities undertaken in the period between 11th and 15th April 2005 from 1900 to 0700 hours included drilling, breaking, trimming, set up of rock drill, installation of arch-rib and grouting.</p> <p>The powered mechanical equipment (PME) involved in the above works included backhoe, rock drill, loader, dumper, shot-crete machine, group pump, mobile platform and grout machine, which were covered by the CNPs.</p> <p>According to the routine monitoring results, for the time period between 2300-0700 hours, the measured noise levels exceeded the corresponding noise Limit Level of 50dB(A). However, the measured levels were found within the range of baseline level and below the average baseline level.</p> <p>Based on the routine noise monitoring results at Station NM6, the measured noise levels for the period between 2300-0700 hours were below the baseline noise level, which was comparable to the ambient level. According to the RSS's record, the PME items operated during the concerned period were found covered by the 2 CNPs hold by the Contractor.</p> <p>Based on the available information, there is not enough evidence to prove whether the complaint against nighttime construction noise generated in the concerned period (11th to 15th April 2005) is justifiable or not.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50512	Yew Chung International School	12-May-05	<p>On 11 May 05, a notice was sent to Yew Chung International School (YCIS) by the Contractor, providing their tentative blasting schedule on 12 May 05. It was shown that one of the blasting operations was scheduled at 09:30am, at when an examination was being held in YCIS.</p> <p>Upon receipt of the notice, a representative of YCIS lodged a complaint to the Contractor via the Project's hotline at 07:40 on 12 May 2005. The complainant expressed her objection to the blasting operation taken at 09:30am when the examination was taken place.</p> <p>The Contractor then agreed on one occasion only to delay the tunnel blast planned for 9:30am until 9:50am (i.e. 5 min after the examination). The complainant satisfied but did expect no future blasting during the examination period. According to the Engineer's Representative, the Contractor did not wish to make any commitment to ensure no blasting would be taken within the examination period.</p>	<p>A 1-day continuous noise measurement was conducted by the Environmental Team at Station NM1 on 26 May 05. According to the ER's record, two blasting operations were taken in the vicinity of YCIS on 26 May 05. One surface blast was taken at Butterfly Valley at 15:42 and one tunnel blasting was taken at South Portal at 16:56.</p> <p>The measurement results showed that the noise impact in term of Leq-5min and Leq-30min arising from the blasting operations was insignificant. No exceedance of construction noise criterion for examination period was recorded (Leq-30min < 65dB(A)).</p> <p>The complaint lodged was therefore considered not justifiable.</p> <p>However, in order to minimize the potential nuisance arising from the blasting noise and the siren sounds prior to blasting, the Contractor was recommended to consider scheduling the blasting operations beyond the examination periods.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50610	Government Quarters	10-Jun-05	<p>On 10 June 2005, the Resident Site Staff (Maunsell-Hyder Joint Venture) received a complaint from a resident of the Government Quarters at Caldecott Road. The complaint was concerned about the construction dust generation as a result of the construction activities of the Project at Butterfly Valley.</p> <p>The complainant had not specified which construction activities had contributed to the dust generation.</p>	<p><i>Site Observations</i></p> <p>According to the RSS's preliminary investigation, it was considered that soil nailing at Slope BV-S2 was the dominant dust source and was likely to be the activity of concern. The dust suppression measures taken were found inadequate to control the dust dispersion from the works. Noticeable dust dispersion from the soil nailing work could be observed.</p> <p><i>Corrective Actions</i></p> <p>After the Contractor was notified by the RSS of the complaint, immediate action was taken by the Contractor on the same day (10 June 2005).</p> <p>The dust mitigation measures for the soil nailing were enhanced. An additional thicker cover was used. Also, continuous water spray was applied to suppress the dust emission.</p> <p><i>Environmental Outcome</i></p> <p>The RSS made a response to the complainant on 10 June 2005. The complainant was informed of the rectification actions taken by the Contractor. No further adverse comment was received from the complainant.</p> <p><i>Conclusions</i></p> <p>Based on the RSS's information, this complaint is considered to be valid and related to the construction activities of the Project. However, corrective action had been taken by the Contractor immediately and the situation was found improved.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50712	A scattered house near South Portal and Tai Po Road Water Treatment Works Staff Quarters	12-Jul-05	<p>On 12 July 2005, a resident, whose house is located near South Portal and Tai Po Road Water Treatment Works Staff Quarters, lodged a complaint to the Contractor via the Project's hotline at 11:40am. The complainant expressed his concern on the nuisance caused by the blasting works at early morning (before 07:00 hours) and late night (after 23:00 hours).</p>	<p><i>Site Activity</i></p> <p>According to the information provided by the RSS, tunnel blasting works have been taken place in the concerned period in north bound tunnel from the Ventilation Adit towards the direction of the South Portal.</p> <p><i>Environmental Requirements</i></p> <p>In the EP, the EM&A Manual of the Project and the NCO, no requirement is specified for the control of blasting operation and the associated environmental impact, such as blasting noise.</p> <p>It should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the jurisdiction of EPD.</p> <p>For carrying out the above-mentioned blasting operations, the Contractor has obtained a valid blasting permit from CEDD under the Dangerous Goods Ordinance (Cap. 295). Under this permit, the Contractor is allowed to carry out 24-hour blasting works within the designated area.</p> <p><i>Contractor's Actions</i></p> <p>Though the blasting noise is not under the control of any environmental related regulation and the Contractor is allowed to carry out 24-hour blasting, the Contractor would try to keep the blasts of concern undertaken between 07:00 to 23:00 hours. This arrangement could effectively reduce the potential nuisance to the residents within the more sensitive time period (23:00 to 07:00 on next day).</p> <p><i>Conclusions</i></p> <p>The subjected blasting operations were carried out by the Contractor under a valid blasting permit. The complaint lodged is therefore considered not justifiable.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50809	Government Quarters (8-10 Caldecott Road)	09-Aug-05	<p>On 9 August 2005, a resident of 8-10 Caldecott Road (Government Quarters) lodged a complaint to the Contractor via the Project's hotline at 14:30. The complainant expressed her concern on the nuisance caused by the blasting works undertaken at Butterfly Valley.</p> <p>Noise impact arising from the blasting works was one of the issues raised by the complainant.</p>	<p><i>Ad-hoc Noise Measurement</i></p> <p>An ad-hoc noise measurement was carried out on the roof of Government Quarters during a surface blast on 16 August 2005. According to the record of the RSS and the site observation, a surface blasting was undertaken at Butterfly Valley at around 15:38 on the monitoring day.</p> <p>The results show that the measured noise level in term of Leq-30min, i.e. 69.1 dB(A) during the surface blasting was well below the daytime construction noise criterion of 75 dB(A).</p> <p><i>Conclusion and Recommendation</i></p> <p>According to the results of ad-hoc noise measurement taken at Government Quarters on 16 August 2005, the measured noise levels (Leq-30min) did not exceed the noise criterion of 75 dB(A). In addition, the subjected blasting operations were carried out by the Contractor under a valid blasting permit. For the concern of noise impact, the complaint was considered not justifiable.</p>	Closed
50830	Government Quarters (8-10 Caldecott Road)	30-Aug-05	<p>The RSS received a public complaint from a resident of Government Quarters addressing two noise issues:</p> <ol style="list-style-type: none"> 1. Noise nuisance caused by drilling works at Butterfly Valley; 2. Noise nuisance due to blasting 0045 hrs of 28 August 2005. 	<p><i>Noise Measurement</i></p> <p>No exceedance was recorded for the routine noise monitoring at NM6 (Government Quarters). Ad-hoc noise measurement was conducted on 1 and 2 Sept 05. All measured noise levels complied with the noise criteria.</p> <p><i>Conclusion</i></p> <p>The complaint was considered not justifiable. However, the Contractor had taken proactive actions in order to minimize the nuisance of the residents, (1) to stop the rock breaking works at BVS2 and (2) to install temporary noise barriers for drilling works.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50928	Government Quarters (8-10 Caldecott Road)	28-Sept-05	A resident of Government Quarters complaint about a blast undertaken at 0215hr on 28 Sept 05.	<p><i>Environmental Monitoring</i></p> <p>After receiving the complaint, the ET carried out a continuous noise measurement at Station NM6 (Government Quarters) from 29 to 30 September 2005. All the measured noise levels in term of Leq-5min are close to the baseline noise level. The noise levels after correction of baseline levels were all below the noise criterion of 50 dB(A).</p> <p><i>Conclusion</i></p> <p>The subjected blasting operations were carried out by the Contractor under a valid blasting permit. In addition, no noise exceedance was recorded for the ad-hoc noise monitoring. The complaint lodged is therefore considered not justifiable.</p>	Closed
51025	Caldecott Hill (2 Caldecott Road)	25-Oct-05	<p>A public complaint was received by the MWPMO of Highways Department on 25 October 2005. The complaint was subsequently refereed to the RSS and Environmental Team of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project.</p> <p>The complaint was lodged by the management company of Caldecott Hill (No.2 Caldecott Road). It was about dust generation when construction vehicles, particularly dump trucks and concrete trucks, traveling along the Water Treatment Works (WTW) access road and its junction with Caldecott Road.</p> <p>According to the photos provided by the complainant, noticeable dust generation was observed during construction vehicles movement on the roads of concern.</p>	<p><i>Site Observations</i></p> <p>Ad-hoc site inspections were carried out on 25 and 26 Oct 05. On 26 Oct 05, the WTW access road was observed dry. Deposition of dusty materials was noted. Significant dust generation was identified during vehicle movement.</p> <p><i>Contractor’s Actions</i></p> <p>Mitigation actions were taken by the Contractor:</p> <ol style="list-style-type: none"> 1. One labour was appointed to water spray the concerned road junction and clear up of dusty materials deposited on the WTW access road. 2. Regular watering on access road by hose pipe was performed to keep the road wet. 3. All vehicles would be wheel-washed and loads of dusty materials would be covered before leaving the site. <p><i>Conclusions</i></p> <p>Based on the site observations, this complaint was considered to be valid and related to the Project works. However, enhanced dust mitigation measures were taken by the Contractor and the situation was found improved.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
51031	Po Leung Kuk Choi Kai Yau School	31-Oct-05	The resident site staff (MHJV) of R8-ENT received a complaint from the Principal of PLKCKY School. She commented that the blasting noise (nighttime and daytime) at Butterfly Valley became louder than before.	An ad-hoc noise measurement was taken by ET on 5 Nov 05 to evaluate the noise impact due to daytime surface blasting at the BV. The measurement results revealed that there has been no exceedance of noise level criteria. The complaint was therefore considered not justifiable.	Closed
51101	Butterfly Valley (Government Quarters)	1-Nov-05	<p>On 1 Nov 05, the Resident Site Staff received a complaint from a resident of the Government Quarters. On 2 Nov 05, a complaint of similar natures and same location was received by the Environmental Protection Department.</p> <p>The complainant was concerned about the following environmental issues:</p> <ol style="list-style-type: none"> Noise nuisance due to tunnel blasting works undertaken at midnights and in early mornings (3am to 5am); Noise nuisance due to operation of a generator after 11pm; Construction dust and daytime noise due to processing and stockpiling of crushed rocks at Butterfly Valley; Noise nuisance due to works outside tunnel in the early morning of 2 Nov 05. 	<p><u>Item 1: Noise nuisance due to tunnel blasting</u> For carrying out the above-mentioned blasting operations, the Contractor has obtained a valid blasting permit from CEDD. Under this permit, the Contractor is allowed to carry out 24-hour blasting works. As advised by the Contractor, all the blasting operations had been completed by 12 Nov 05.</p> <p><u>Item 2: Noise due to operation of a generator after 11pm</u> According to the Construction Noise Permit issued by EPD, one generator was allowed to be operated after 11pm at South Portal area outside the tunnel. In view of the provision of acoustic enclosure and the separation distance from the generator to Government Quarters (around 300m), the noise impact arising from this generator onto the residents of the Quarters was believed to be insignificant. During the ET's investigation on 11 Nov 05, no engine-like noise generated from the construction site could be identified.</p> <p><u>Item 3: Dust and noise due to handling of crushed rocks</u> No noise exceedance was recorded. During the weekly site inspections, deficiencies regarding inadequate dust mitigation measures for the crushed rock processing and stockpiling were occasionally observed. Dry / uncovered stockpiles and dust emissions from crushed rocks handling were sometimes noted.</p> <p><u>Item 4: Noise from works out of tunnel in morning of 2 Nov 05</u> According to the RSS's site records, there has been no activity outside the tunnel in the early morning of 2 November 2005. Work was undertaken deep inside the tunnel during the concerned period. The mentioned noise nuisance might not be related to R8-ENT Project. An ad-hoc noise measurement was carried out by ET from 8 to 10 November 2005 in order to evaluate the noise at Quarter's residents and no exceedance was recorded.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p><u>Conclusion</u></p> <p>Based on the information obtained, environmental monitoring results and site observations, this complaint was considered not justifiable, except for the concern of dust nuisance due to crushed rock processing.</p>	
51205	Caldecott Road junction	5-Dec-05	<p>The complaint was lodged by the management company of Villa Carlton. The complainant mentioned that several complaints from the occupants of Villa Carlton were received, against the dust emission when they drove to Kowloon via the Caldecott Road Junction. She also considered that the amount of water spraying by the Contractor was insufficient to suppress dust emission at Caldecott Road Junction.</p>	<p><u>Complaint Record</u></p> <p>A similar complaint (Log no. 51025) was received on 25 Oct 05 from Caldecott Hill. Significant dust emission was noted when construction vehicles traveling along the WTW access road and its junction with Caldecott Road.</p> <p>With implementation of enhanced dust mitigation measures, the situation was found improved and satisfactory.</p> <p><u>Site Observations</u></p> <p>Since Nov 05, in order to observe the Contractor's actions taken for the above-mentioned complaint, the area of interest was included during the weekly environmental audit. No deficiency had been noted at this area during the audit.</p> <p>After receiving this new complaint (Log no.51205), several ad-hoc site inspections were carried out on 6, 8 and 14 Dec 05. In addition, the RSS of the Project had carried out daily checking of the condition of the Caldecott Road Junction.</p> <p>Sufficient dust mitigation measures had been implemented by the Contractor. The condition was found satisfactory. Therefore, this complaint was considered not justifiable.</p> <p>However, it is noted that the Contractor had stepped up dust mitigation measures to further improve the condition at Caldecott Road junction.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60204	Garden Villa	4-Jan-06 (by ETL)	<p>A public complaint was received by the Environmental Protection Department on 3 January 2006. The complaint was subsequently referred to the Environmental Team of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 4 January 2006.</p> <p>According to EPD’s information, the complaint was lodged by a complainant, who walked along Tai Po Road on 1-2 January 2006. The following information was given by EPD for our investigation:</p> <ul style="list-style-type: none"> • Time of concern: 1-2 January 2006 (Daytime) • Suspected site area of concern: ENT’s Toll Plaza and Administration Building. • Dust and noise nuisance was noted by the complainant when he passed Garden Villa. • Noise from wood saw and crane or alike was noted. 	<p>A. Construction Noise Impact</p> <p>According to the Contractor’s information, construction activities were carried out on 1 and 2 Jan 06, including:</p> <ul style="list-style-type: none"> • Erection and dismantling of formwork • Fixing water pipe <p>All the equipment operated by the Contractor on 1-2 Jan 06 complied with the permissible equipment stated in the CNP.</p> <p>On 1 Jan 06, noise monitoring was carried out. All the results complied with the noise criterion.</p> <p>B. Construction Dust Impact</p> <p>Erection and dismantling of formwork and fixing water pipe were considered not dust emissive in nature.</p> <p>For stockpiles of materials in Toll Plaza area, dust mitigation measures had been implementing by the Contractor. The condition in term of dust control was found satisfactory during the audit sessions on 4 and 11 Jan 06.</p> <p>Since December 2005, all TSP monitoring results complied with the Action / Limit Level.</p> <p>Conclusion</p> <p>Based on the information given, site observations and environmental monitoring results, this complaint was considered not justifiable.</p> <p>Nevertheless, the Contractor was reminded to adopt good site practice to minimize the environmental impacts at the nearby sensitive receivers</p>	Closed