

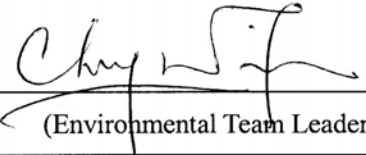
Highways Department

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

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

September to November 2006

Approved By 
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

- This is the twelfth Quarterly 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 summary report documents the findings of EM&A works performed in the period between September and November 2006 for Contract No. HY/2003/02, Route 8 – Eagle’s Nest Tunnel and Associated Works (the Project).
- The major site activities undertaken in the reporting quarter included soil nailing/ rock dowel, retaining wall, drainage work, road works, cut slope, haul road and Tunnel Ventilation System.
- The major site activities for Traffic Control and Surveillance System (TCSS) works undertaken in the reporting quarter included:
 - Cable containment;
 - Cable laying; and
 - Cabinet installation.

Environmental Monitoring Works

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

Table I Summary Table for Events Recorded in the Reporting Quarter

<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>		
<i>September 2006</i>				
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A
<i>October 2006</i>				
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A
<i>November 2006</i>				
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A

Environmental Licensing and Permitting

- Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Construction Noise Permits (CNP) and Water Discharge Licenses (WDLs). The Contractor had also registered as a Chemical Waste Producer.

Key Information in the Reporting Quarter

- Summary of key information in the reporting quarter is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---
<p><u>Future Key Issues:</u></p> <p>Major site activities for the coming month include:</p> <ul style="list-style-type: none"> • Cut slope and haul road; • Road & Drainage works; • Rock dowel; • TTA for watermains crossing Tai Po Road; • Shotcreting; • Earth works; • Louvre, door wall and cladding installation; • Plumbing & drainage; • E&M cabling; • Mechanical ventilation air condition; and • Tunnel Ventilation System. <p>Major site activities for TCSS works in the coming months include: Cable-laying, field equipment installation and control equipment installation.</p> <p>The anticipated environmental issues will be mainly on dust impact from slope work, haul roads and soil nailing, noise nuisance from concreting and installation works.</p>					

1. INTRODUCTION

- 1.1 Route 9 (Kowloon Section) (R9K) (hereinafter call the R9K-Project) forms part of the Route 9 between Cheung Sha Wan and Sha Tin (R9-CSWST) project, which will be a new expressway connecting West Kowloon and Sha Tin. It will be the fourth external link between Sha Tin and Kowloon and will form an important link between the northeast New Territories and the west Kowloon, Lantau Island and the western New Territories. R9K is being managed and implemented by the Highways Department (HyD).
- 1.2 The engineering design of R9K is covered under Agreement No. CE 50/98 "Route 9 between Cheung Sha Wan and Sha Tin – Design Construction Assignment". The main consultant engaged under Agreement No. CE 50/98 is Maunsell Hyder Joint Venture (MHJV), who will act as the Engineer for the construction contracts. The works of R9K mainly comprise a 1.4km dual 3-lane Lai Chi Kok Viaduct from Lai Wan Interchange to Butterfly Valley; 0.5 km of dual 3-lane at-grade carriageway linking to the 2.1 km dual 3-lane twin-bore Eagle's Nest Tunnel with associated portal buildings; a toll plaza with an administration building located with the Sha Tin valley woodland; a ventilation building and an adit; associated noise barriers, noise enclosures, drainage, slope and landscape works; and electrical and mechanical works for the whole R9-CSWST. The remainder of the R9-CSWST forms the Sha Tin Section (R9S) of the project and is being managed and implemented separately by the Civil Engineering and Development Department (CEDD).
- 1.3 The R9-CSWST project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449) (EIAO). An environmental impact assessment (EIA) report has been prepared in 1998 for the R9-CSWST project (1998 R9 EIA) to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and cultural impacts, and identify possible mitigation measures.
- 1.4 An Updated Final EIA report was subsequently completed in August 1999 for the R9-CSWST project (1999 R9 EIA), to cater for some changes in R9K portion as mentioned in paragraph 1 in the report. The 1999 R9 EIA was endorsed by Environmental Protection Department (EPD) in November 1999. The 1998 R9 EIA and the 1999 R9 EIA (R9 EIA Reports) were included in the EIA register under the EIAO as report no. EIA-135/BC and AEIAR-022/1999 respectively. An Environmental Monitoring and Audit (EM&A) Manuals for each of the R9 EIA Reports (EM&A Manuals) were also included as part of the EIA reports in the register.
- 1.5 Subsequent to the endorsement of the R9 EIA Reports by EPD in November 1999, the project programme was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the project was then separated into the R9S and R9K portion. An Environmental Permit (EP) No. EP-103/2001 was issued on 17 September 2001 for R9K to the HyD as Permit Holder. A revised EP No. EP-103/2001/A was issued on 20 May 2003 for R9K (R9K EP) to HyD as Permit Holder. A varied EP-103/2001/C was recently issued on 22 July 2005.

- 1.6 The major construction activities of two civil contracts of the R9K project, Contract No. HY/2003/01 entitled "Route 9 – Lai Chi Kok Viaduct" and Contract No. HY/2003/02 entitled "Route 9 – Eagle's Nest Tunnel and Associated Works", were commenced in 15th December 2003 for completion in April 2007.
- 1.7 "Route 9" was recently re-titled as "Route 8 (previously known as Route 9)". Cinotech Consultants Limited (Cinotech) was commissioned by HyD to undertake the Environmental Monitoring and Audit works for "Route 8 (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 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 twelfth quarterly EM&A report summarizing the EM&A works for the ENT Project between September and November 2006.

2 PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

- 2.1 An organization structure and the line of communication were set up for the Project between the Project Proponent, Engineer's Representative (ER), Independent Environmental Checker (IEC), the Contractor and Environmental Team (ET). The organization chart and contact details are shown in **Appendix A** and **Figure 2**.

Construction Programme and Synopsis of Work

- 2.2 The construction programme is presented in **Appendix B**.
- 2.3 The site activities for civil works undertaken in the reporting month included:
- Cut slope and haul road, box culvert/open channel & Culvert A, soil nailing, road & drainage works, DN200 & DN200 twin water-main, utility (Draw pit/ Ducting), Retaining Wall (BV-R1 & BV-R2) and shotcreting at Butterfly Valley.
 - LV cable trough sand backfilling activities, VE Panel, E&M cabling, dampers and Tunnel Ventilation System at ENT Tunnel.
 - Louvre installation, screeding, plumbing & drainage, Tunnel Ventilation System at South Portal Building.
 - Louvre installation, rendering, plumbing & drainage, Tunnel Ventilation System at North Portal Building.
 - Utility (draw pit/ ducting), drainage works, louvre, curtain wall & door installation, plumbing & drainage and rendering at Toll Plaza and Administration Building.
 - Concreting of wing wall, louvre door wall & cladding installation, rendering, earth works, plumbing & drainage, watermains crossing Tai Po Road and Tunnel Ventilation System at Ventilation Adit Tunnel and Building.
 - E&M installation works within SHT/T3 works area.

- 2.4 The site activities for TCSS works undertaken in the reporting month included:
- Cable containment in 1/F, 2/F and 3/F of SHT SPB
 - Cable containment in 1/F, 2/F and 3/F of SHT NPB
 - Cable containment in G/F of ENT SPB
 - Cable containment in G/F, 1/F, 2/F, 3/F and 4/F of ENT NPB
 - Cable containment in ENT tunnel Northbound tube CP01 & CP21
 - Cable containment in ENT tunnel Southbound tube CP01 & CP21
 - Cable laying at SHT portal buildings, tunnel and open road section
 - Cable laying at ENT NPB (1/F – 3/F) and tunnel
 - Cabinet installation in SHT CKM to SHT open road
 - Traffic field equipment (LCS) installation at SHT open road section and north bound tunnel.

3 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manual designated locations for the ET to monitor environmental impacts in terms of noise and air quality due to the Project. The monitoring locations are depicted in **Figures 1a** and **1b**. **Appendix C** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

- 3.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly EM&A Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

- 3.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective Event Action Plans would be implemented. The Action/Limit Levels for each environmental parameter are provided in **Appendix D**.

Environmental Mitigation Measures

- 3.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manuals for the Contractor to implement. A list of mitigation measures is given in **Appendix G**.

4 MONITORING RESULTS

Weather Conditions

- 4.1 The weather during monitoring sessions was mainly sunny and cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Air Quality

1-hr TSP Monitoring

- 4.2 All 1-hour TSP monitoring was conducted as scheduled during the reporting quarter.
- 4.3 No Action/Limit Level exceedance was recorded in this reporting quarter.

24-hr TSP Monitoring

- 4.4 All 24-hr TSP monitoring was conducted as scheduled in this reporting quarter.
- 4.5 No Action / Limit Level exceedance was recorded in the reporting quarter.
- 4.6 The monitoring data of 1-hr and 24-hr TSP Levels are attached in the appendices of the Monthly Reports for September to November 2006. The graphical presentations of the monitoring results are shown in **Appendix E**.

Construction Noise

- 4.7 Noise monitoring was performed at the four designated locations during the daytime period (0700-1900 hours) on normal as scheduled in this reporting month. Restricted-hour monitoring was also conducted at NM5, NM6 and NM7.
- 4.8 No Action/Limit Level exceedance was recorded in the reporting quarter.
- 4.9 All the Construction Noise Levels (CNLs) 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.
- 4.10 The monitoring data of construction noise are attached in the appendices of the Monthly Reports for September to November 2006. The graphical presentations of the monitoring results are shown in **Appendix F**.
- 4.11 Construction noise exceedances recorded in the reporting quarter and the associated actions taken are summarized in **Appendix J**.

5 ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

- 5.1 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 Environmental Mitigation Implementation Status (EMIS) is provided in **Appendix G**.

Site Audit Summary

- 5.2 ET's weekly site audits were conducted on 4th, 13th, 20th and 27th September 2006, 4th, 11th, 18th and 25th October 2006, 1st, 8th, 14th, 22nd and 29th November 2006. IEC's monthly site audits were conducted on 4th September 2006, 11th October 2006 and 1st November 2006 together with ET.
- 5.3 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations are summarized in **Table 5.1**.

Table 5.1 Observations and Recommendations of the Site Audits

Parameters	Date	Observations / Recommendations	Remedial Actions
<i>Water Quality</i>	4-Sep-06	<i>Observation</i> - Accumulation of silt and sediment was observed at the u-channel of Toll Plaza Portion D-6. The Contractor was reminded to clean/remove the silt from the u-channel.	Rectification / improvement was observed during the site inspection on 13 September 06.
	4-Oct-06	<i>Reminder</i> - The Contractor was reminded to cover the entire exposed slope at loop road 1 near ENT-South Portal Tunnel.	Rectification / improvement was observed during the site inspection on 11 October 2006.
	11-Oct-06	<i>Reminder</i> - The Contractor was reminded to clean up the stagnant muddy water on bare ground to avoid mosquito breeding at Portion A, Mui Kong Tsuen.	Rectification / improvement was observed during the site inspection on 18 October 2006.
	11-Oct-06	<i>Reminder</i> - The Contractor was reminded to maintain the drainage channels and system at Toll Plaza Portions D4, D6 & Ventilation Adit regularly to ensure their efficiency.	Rectification / improvement was observed during the site inspection on 18 October 2006.
	18-Oct-06	<i>Observation</i> - Sandy materials at the Step Channel was noted at Mui Kong Tsuen. The Contractor was recommended to remove the materials from the channel in order to prevent it from being flushed into existing drainage.	Rectification / improvement was observed during the site inspection on 25 October 2006.

Parameters	Date	Observations / Recommendations	Remedial Actions
	25-Oct-06	<i>Reminder</i> - General refuse at the u-channel near the Ventilation Building was observed. The Contractor was reminded to clear the refuse at the u-channel.	Rectification / improvement was observed during the site inspection on 1 November 2006.
	1-Nov-06	<i>Reminder</i> - Accumulation of silts and debris were observed at the drainage channel near RE Wall near SHT Tunnel. The Contractor was reminded to clear the silts and debris to prevent stagnant water.	Rectification / improvement was observed during the site inspection on 8 November 2006.
	22-Nov-06	<i>Observation</i> - Yellow surface runoff directly flowed to the step channel was observed. A temporary ditch should be constructed for the runoff flowed into the desilting facility before discharge.	Rectification / improvement was observed during the site inspection on 29 November 2006.
	22-Nov-06	<i>Reminder</i> - The contractor was reminded to turn on the power of de-silting facility at portion D4 when rainy in order to avoid accumulating yellow water at u-channel and de-silt before discharge.	Rectification / improvement was observed during the site inspection on 29 November 2006.
	29-Nov-06	<i>Reminder</i> - Stagnant water was observed at 2/F Shatin Heights North Portal Building and G/F ENT South Portal Building. The Contractor was reminded to clean it up to avoid mosquito breeding.	The situation will be inspected in next follow-up audit session.
<i>Air Quality</i>	13-Sep-06	<i>Reminder</i> - A stock of cement bags stored within the Administration Building was observed not being covered with impervious sheeting. Fugitive dust is likely to be produced by wind erosion. The Contractor was recommended to cover the stock in order to prevent dust generation even the stock is stored indoor.	Rectification / improvement was observed during the site inspection on 20 September 06.
	11-Oct-06	<i>Reminder</i> - Potential fugitive dust emission from dry haul road at Portion E1 was observed. The Contractor was reminded to spray water on the haul road more frequently in order to avoid dust emission.	Rectification / improvement was observed during the site inspection on 18 October 2006.
	1-Nov-06	<i>Reminder</i> - The haul road and exposed slope at Butterfly Valley was observed to be dry. The Contractor was reminded to spray water on the haul road and exposed slope frequently for dust suppression.	Rectification / improvement was observed during the site inspection on 8 November 2006.

Parameters	Date	Observations / Recommendations	Remedial Actions
	8-Nov-06	<i>Reminder</i> - Dust generation by wind erosion was observed at unpaved road near administration building. The contractor should provide watering for the unpaved road more frequent in this dry season.	Rectification / improvement was observed during the site inspection on 14 November 2006.
<i>Noise Quality</i>	27-Sep-06	<i>Reminder</i> - Breaking works was carrying out at Ventilation Adit during site inspection. However, no mitigation measures for noise reduction were provided for aforesaid works. As advised by the Contractor, the works would last for 2 days more as such the Contractor was recommended to provide sufficient mitigation measures for noise reduction whenever the works is carrying out.	Rectification / improvement was observed during the site inspection on 4 October 06.

Status of Environmental Licensing and Permitting

- 5.4 Environmental licenses and permits including the Environmental Permit for the Project were in place and valid during the reporting quarter. The status of these licenses and permits obtained for the Project is summarized in **Appendix H**.

6 NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

Air Quality

- 6.1 No Action/Limit Level exceedance was recorded in the reporting quarter.

Construction Noise Monitoring

- 6.2 No Action/Limit Level exceedance was recorded in the reporting quarter.

Review of the Reasons for and the Implications of Non-compliance

- 6.3 There was no non-compliance from the site audits in the reporting quarter. As mentioned previously in the Section 5.2 of this report, the observations and recommendations made in each individual site audit session were presented.

7 ENVIRONMENTAL COMPLAINTS

- 7.1 No environmental complaints were received in the reporting quarter.
- 7.2 The details of the complaints, the investigation results and the mitigation actions are summarized in **Appendix I**. There were 22 environmental complaints received since the Project commencement.

8 NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 No notification of summon or successful prosecution was recorded in this reporting quarter.
- 8.2 There was no notification of summon or successful prosecution received since the Project commencement.

9 COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Major site activities for civil works in the coming months include:

ENT Tunnel

- VE Panel, Road Work for NB tunnel, E&M cabling, dampers, Tunnel Ventilation System and fire services.

Butterfly Valley

- Cut slope and haul road, rock dowel, road and drainage works, DN200 & DN200 twin water-main, utility (Draw pit/ Ducting), retaining wall (BV-R2) and shotcreting.

South Portal Building

- Louvre installation, screeding, rendering, cladding, plumbing & drainage, fire services, mechanical ventilation air condition, Tunnel Ventilation System and T&C for HV, LV cable & switchboard.

North Portal Building

- Louvre installation/stone cladding, rendering, plumbing & drainage, fire services, mechanical ventilation air condition, Tunnel Ventilation System, T&C for HV, LV cable & switchboard.

Toll Plaza's Structures and Administration Building

- Footbridge and Toll Collector construction, utility (draw pit/ ducting), drainage works, louvre, curtain wall & glazing installation, rendering, mechanical ventilation air condition, plumbing & drainage, cabling, cabling work, lift installation, T&C for HV, LV cable & switchboard and fire services.

Ventilation Adit Tunnel and Building

- Concreting of wing wall, louvre door wall & cladding installation, rendering, earth works, TTA for watermains crossing Tai Po Road, plumbing & drainage, fire service, mechanical ventilation air condition, T&C for HV, LV cable & switchboard and Tunnel Ventilation System.

Other Works Areas

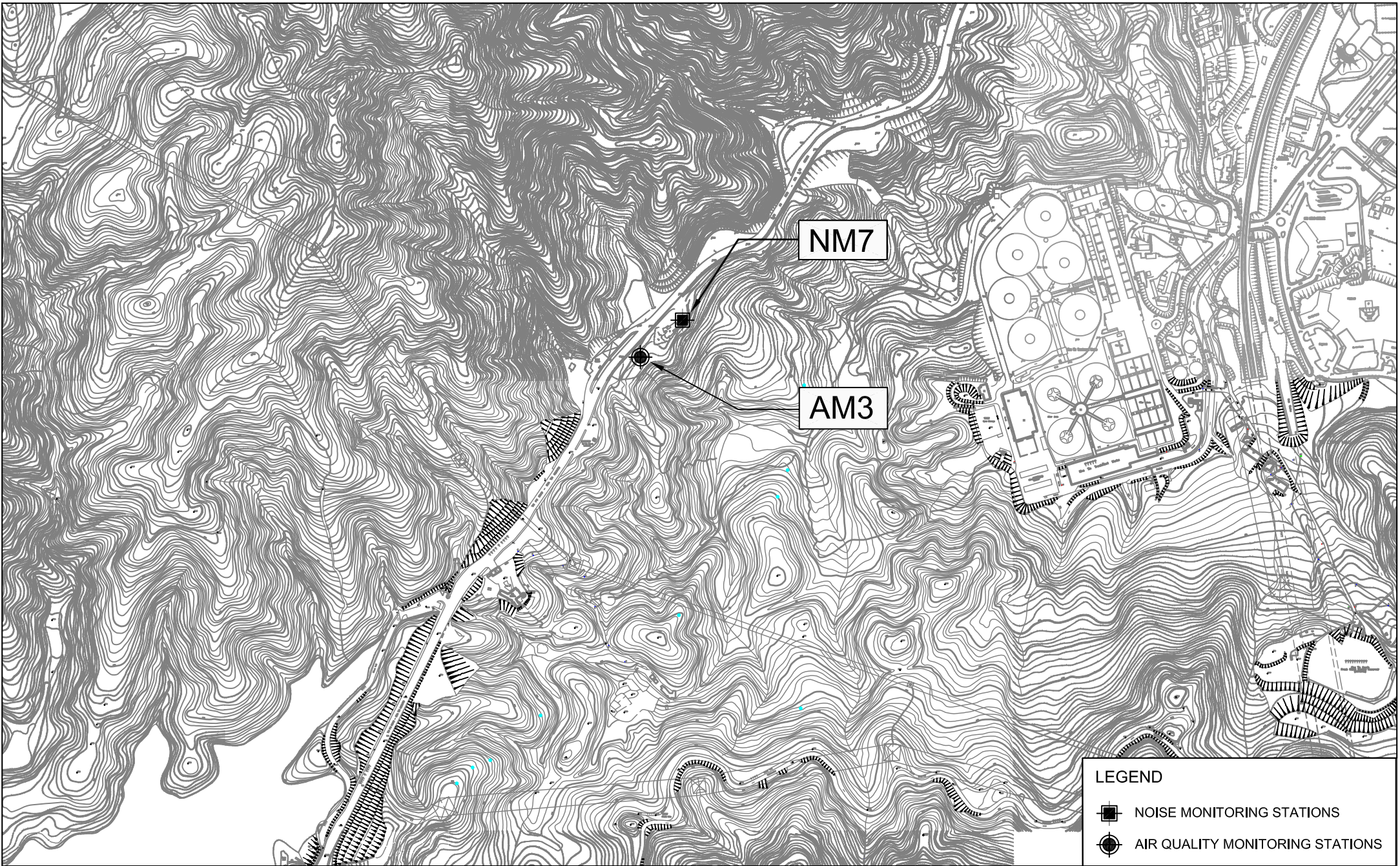
- E&M installation works within SHT/T3 works area.

9.2 The major site activities for TCSS works in the coming months include:

- On software development aspect
 - Finishing all module tests;
 - Finishing the per-FAT tasks; and
 - Continue Central System FAT scheduled on 11th December 2006.
- FAT for PA and ET System
- Assist interface contractors for resubmission for DID
- Prepare equipment mounting detail drawings
- Resubmission of material installation at ENT and NWT
- Cable containment for ENT-Ventilation Building
- Equipment installation and cabling in SHT open area, SHT Tunnel, SHT-SPB, SHT-NPB, ENT tunnel, ENT-SPB, ENT-NPB
- Video Wall and Console installation for ADB

9.3 The anticipated environmental impacts will be mainly on surface runoff during rainy season, dust from slope work, haul roads and stockpiles, noise impact from soil nailing and rock dowel installation.

FIGURES

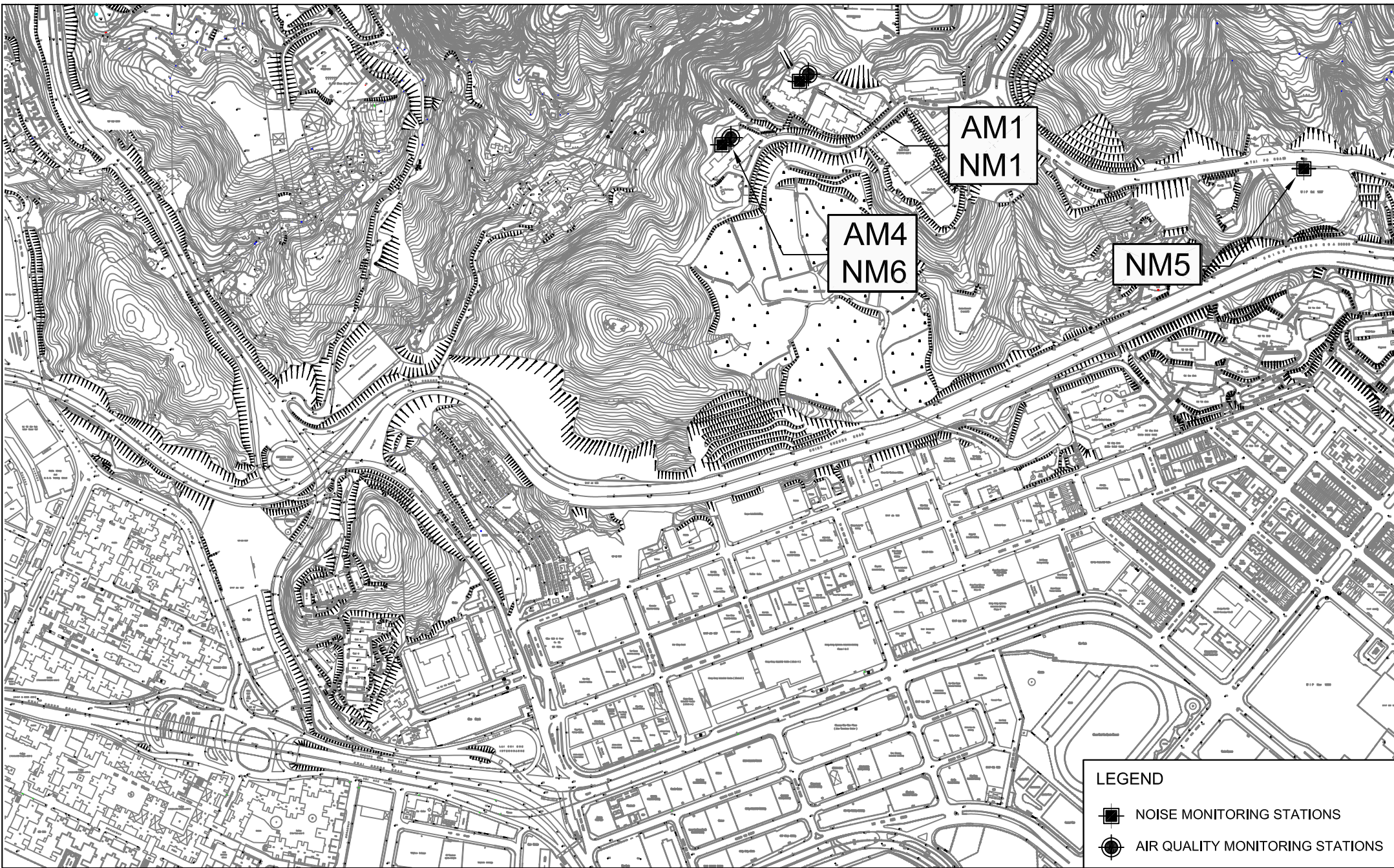


LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

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)	Project No.	MA3024
Date	2006	Figure No.	1b





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

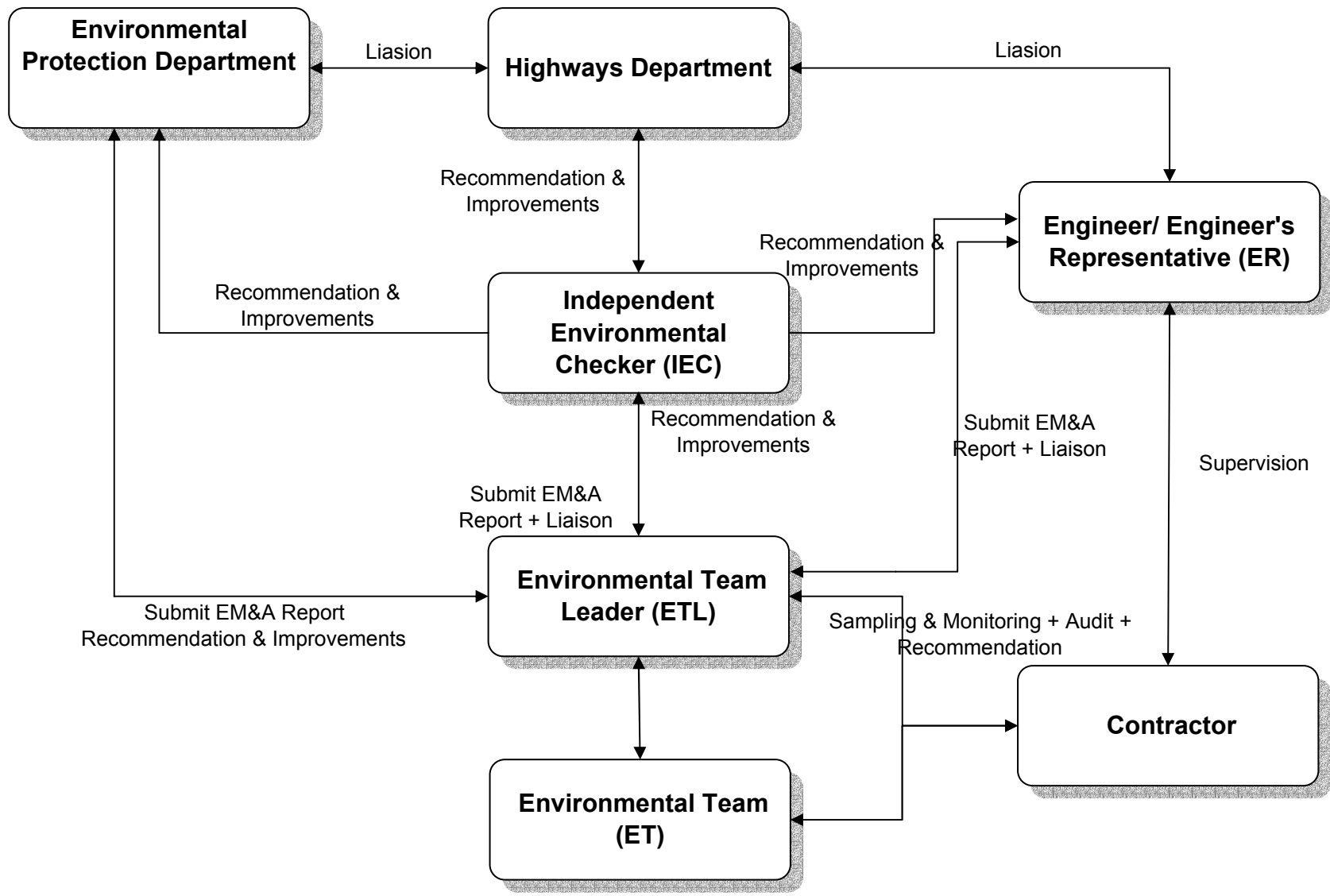
Scale
1 : 6500 (A4)

Date
2006

Project No.
MA3024

Figure No.
1a





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

Environmental Monitoring and Audit Organization Chart

Scale N.T.S

Date 2006

Project No. MA3024

Figure 2



**APPENDIX A
CONTACT DETAILS OF THE PROJECT
ORGANISATION**

Appendix A - Contact Details of the Project Organisation (ENT)

Party	Role	Name	Position	Phone No.	Fax No.
HyD	Permit Holder	Mr. Kroc Leung	SE2/R8K	2762 3684	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 2090	
		Mr. Edmond Wu	Audit Team Leader	2151 2092	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
CH2M-HILL	Independent Environmental Checker	Mr. David Yeung	Independent Environmental Checker	2507 2203	2507 2293
		Mr. Billy Yu	Assistant Independent Environmental Checker	2872 2949	
LKJV	Contractor	Mr. Ray Brewster	Project Director	9092 6128	2743 1600
		Mr. Kevin Harman	QA/E Manager	3352 2128	
ARUP	Engineer's Representative (TCSS)	Mr. Donald Leung	RE	2436 7489	2436 1803
		Mr. Joseph Chow	ARE	2436 7435	
DIGJV	Contractor (TCSS)	Ms. Joyce Chan	Quality Manager	2123 0845	2123 0889
Enquiries Hotline				3552 2226	-
Complaint Hotline				3552 2380	-

APPENDIX B
CONSTRUCTION PROGRAMME

Data Date 20OCT06
Run Date 27OCT06 16:00

3 MONTH ROLLING PROGRAMME

Monthly Update
 Detailed Works Progr.(DWP) r
 Progress Bar
 Critical Activity

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG			SEP			OCT			NOV			DEC			JAN			FEB						
										35	36	37	38	39	40	41	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
GENERAL																																		
Contract defined dates, stages and sections																																		
Area Access & Vacation Dates																																		
VCT_W2	Release of Portions - W2	0		22DEC06	0	0	0	337	0																									
Stages of the Works																																		
KD07A	KD-7 TCSS Access Toll Plaza east (30.Jun.06)	0		07NOV06	0	0	0	-130	-110																									
Submittals & Approvals																																		
Drawing Submittal & Approval																																		
8034	Prep.& Sub. Independ't Serv. Dwgs for SHT&T3&LCK	48	04AUG04A	03NOV06	98	98	12	286	-140																									
8024	Engineer Comment / Approve ENT ISD Submissions	18	06AUG04A	28OCT06	85	85	8	-36	-140																									
8030	Res-sub. & Approv of ENT ISD	24	06SEP04A	03NOV06	70	70	12	-36	-140																									
8035	Engineer Comment / Approve SHT&T3&LCK ISD Sub.	24	13SEP04A	01DEC06	85	85	36	286	-140																									
8032	Engineer Comment / Approve SHT&T3&LCK CSD Sub.	18	25OCT04A	07NOV06	90	90	15	286	-140																									
8036	Re-sub. & Approv of SHT & T3 & LCK ISD	36	31MAR05A	01DEC06	70	70	36	286	-140																									
8033	Re-sub. & Approv. of SHT & T3 & LCK CSD	24	28JUN05A	17NOV06	60	60	24	286	-140																									
8022	Engineer Comment / Approve ENT CSD Submissions	12	20OCT06	03NOV06	0	0	12	286	-140																									
8029	Re-sub. & Approv. of ENT CSD	24	04NOV06	01DEC06	0	0	24	286	-140																									



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

Proj. Name: W24E
 Layout: 3 MONTHS ROLLING PROGRAMME
 Filter: 3 MONTH ROLLING PROGRAMME
 Current Proj: W24E
 Target 1 Proj: BE02
 Sheet 1 of 43

LKJV/ENT/DWP/B			
Date	Revision	Checked	Approved
20OCT06	Prog update Oct 06	GW	RB

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
LAI CHI KOK VIADUCT																											
Construction Works																											
LCK Viaduct Noise Enclosure 1																											
8322	LckVd NE1-Elect Works 1st Fix	36	20OCT06*	01DEC06	0	0	36	-80	-140																		
8332	LckVd NE1-Elect Works 2nd Fix	30	02DEC06	09JAN07	0	0	30	-80	-140																		
8342	LckVd NE1- Elect Cabling ENT SPB to N.E.	18	10JAN07	30JAN07	0	0	18	-80	-123																		
8352	LckVd NE1 Elect Works Fin Fix	18	10JAN07	30JAN07	0	0	18	-80	-140																		
LCK Viaduct Noise Enclosure 2																											
7400	LckVd NE2-Elect Works 1st Fix	36	20OCT06*	01DEC06	0	0	36	-80	-140																		
7410	LckVd NE2-Elect Works 2nd Fix	30	02DEC06	09JAN07	0	0	30	-80	-140																		
7420	LckVd NE2- Elect Cabling ENT SPB to N.E.	18	10JAN07	30JAN07	0	0	18	-80	-123																		
7430	LckVd NE2 Elect Works Fin Fix	18	10JAN07	30JAN07	0	0	18	-80	-140																		
LCK Viaduct Noise Enclosure 3																											
6737	LckVd NE3 & Elect Works 1st Fix	72	20OCT06*	16JAN07	0	0	72	-110	-140																		
6747	LckVd NE3 Elect Works 2nd Fix	60	02DEC06	13FEB07	0	0	60	-110	-140																		
6757	LckVd NE3 Cabling ENT SPB to N.E. 3	24	22JAN07	09MAR07	0	0	24	-110	-140																		
6767	LckVd NE3 Elect Works Fin Fix	24	22JAN07	09MAR07	0	0	24	-110	-140																		
CMCS Leased Lines at Pump Houses																											
6807	E&M at Lai Wan Overpass Pump House	6	07NOV06	13NOV06	0	0	6	-2	-140																		
6817	E&M at Lai Po Rd Pump House	6	14NOV06	20NOV06	0	0	6	-2	-140																		
6827	E&M at Wai Man Tsuen Pump House	6	21NOV06	27NOV06	0	0	6	-2	-140																		
BUTTERFLY VALLEY																											
Contract Key Dates & Milestones																											
Area Access & Vacation Dates																											
ACS_A	Access to Portions - A	0	20OCT03A		100	100	0		-169																		
CT_ABC	Release of Portions - A,B,C1,C2,C3,C4	0		22DEC06	0	0	0	337	0																		
T_E1234	Release of Portions - E1,E2,E4,E5	0		22DEC06	0	0	0	337	0																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart											
										AUG 35	SEP 36	OCT 37	NOV 38	DEC 39	JAN 40	FEB 41					
Area Access & Vacation Dates																					
CT_I123	Release of Portions - I1,I2,I3	0		22DEC06	0	0	0	337	0												
Construction Works																					
BUTTERFLY VALLEY 3RD PARTY WORKS																					
TCSS at Butterfly valley Approach																					
S2462	TCSS Access to Gantry MLS-CAP13 (NB) (15MAY06)	0		23OCT06	0	0	0	-134	-128												
S2602	TCSS Access to Gantry MLS-CAP11 (NB) (15MAY06)	0		23OCT06	0	0	0	-134	-128												
S2622	TCSS Access to Gantry MLS-CAP12 (SB) (11JUN06)	0		23OCT06	0	0	0	-112	-128												
S2632	TCSS Access to VMS MLS-CAP14,15 (11JUN06)	0		24OCT06	0	0	0	-113	-128												
S2642	TCSS Access to Kiosk K4(15MAY06)	0		06NOV06	0	0	0	-145	11												
S2552	TCSS Access to Kiosk K3 (11JUN06)	0		13NOV06	0	0	0	-129	11												
Noise Barrier Works by ACCIONA																					
S2562	Access for 7m N.B. Works by Acciona at BV South	77	23JUN06A	15JAN07	0	0	71	251	-100												
S2612	Access for S-Enclosure Works (Primary Elements)	90	08JUL06A	25APR07	0	0	146	-259	-154												
S2662	1Access for 5m N.B. Works by Acciona at BV South	90	27SEP06A	17MAR07	0	0	117	-98	-101												
BUTTERFLY VALLEY E&M WORKS																					
Noise Enclosure 6 at South Portal Area																					
8372	LckVd NE6 - Elect Works 1st Fix	30	20OCT06*	08MAY07	0	0	30	-164	-144												
8382	LckVd NE6 - Elect Works 2nd Fix	24	04NOV06	15MAY07	0	0	24	-164	-144												
8392	LckVd NE6 - Elect Cabling ENT SPB to N.E.	9	25NOV06	22MAY07	0	0	9	-164	-144												
8402	LckVd NE6 - Elect Works Fin Fix	12	25NOV06	22MAY07	0	0	12	-164	-144												
Butterfly Valley Miscellaneous E&M Works																					
8440	Butterfly Valley - Elect Works 1st Fix	42	27OCT06	15DEC06	0	0	42	-12	-46												
8430	Butterfly Valley - Elect Works 2nd Fix	36	11NOV06	22DEC06	0	0	36	-12	-46												
8410	Butterfly valley - Elect Works Fin Fix	24	02DEC06	02JAN07	0	0	24	-12	-46												
8420	Butterfly Valley - Cabling	24	02DEC06	02JAN07	0	0	24	-12	-46												
8400	Butterfly Valley - Ready for Energization	0		03JAN07	0	0	0	-12	-46												

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart											
										AUG 35	SEP 36	OCT 37	NOV 38	DEC 39	JAN 40	FEB 41					
MAJOR DRAINAGE DIVERSIONS																					
Filling																					
S2680	Fill on top of Box Culvert 45 & culvert A	9	11NOV06	21NOV06	0	0	9	295	-125												
Box Culvert																					
S2710	Box Cul. Final Structure (Strip, Clean & Fill)	12	15SEP06A	15OCT06A	100	0	0		-124												
S2800	Culvert A Structure & connection to Bay 45	18	20OCT06	10NOV06	0	0	18	295	-125												
EARTHWORKS & SLOPEWORKS																					
BV-R1 Remaining Works																					
S3240	BV-R1 - Construction of Lagging Wall	91	20MAR06A	13NOV06	78	5	20	302	-85												
S2360	BV-R1 - Backfill	48	10MAY06A	01NOV06	70	0	10	312	-78												
SLOPE SP-S2 & SP-S3																					
S2370	Remaining Works to Slopes SP-S3 & SP-S2	24	19JUL06A	13NOV06	5	0	20	11	-118												
S2480	WSD Access Rd No Longer Available for Use	0		31OCT06*	0	0	0	0	0												
SLOPE BV-S2																					
SLOPE STABILISATION (SOIL NAILS, ROCK BOLTS ETC)																					
102691	BV-S2/8 Inst. Rock bolts & Test (60nr.w/3.rig)	22	15FEB06A	31OCT06	92	75	9	0	-143												
102694	BV-S2/9 Inst. Rock bolts & Test (4nr.w/1.rig)	5	28MAR06A	01NOV06	80	15	10	5	-148												
20.500.130.180.035																					
103811	BV-S2 Berm 9 hydro-seeding & tensar mat	12	09NOV06	20NOV06	0	0	10	-7	-142												
103812	BV-S2 Berm 10 hydro-seeding & tensar mat	12	25NOV06	08DEC06	0	0	12	-11	-146												
SURFACE DRAINAGE																					
103696	BV-S2 Berm 9 Surface drainage	14	01MAR06A	08NOV06	30	30	16	-11	-146												
103697	BV-S2 Berm 10 Surface drainage	14	09NOV06	24NOV06	0	0	14	-11	-146												
SLOPE BV-S4																					
S3050	Complete Outstanding Soil Nails for BVS4 (5No.)	10	27OCT06	08NOV06	0	0	10	-20	-38												
S3520	Remaining Raking Drains (11No.) & Hydroseeding	12	09NOV06	22NOV06	0	0	12	-9	-38												
S3580	Additional Soil Nails - Base of Pier 19	24	11NOV06	08DEC06	0	0	24	-29	-140												
SLOPE FINISHES																					
102380	BV-S4/3a-4a & 5 hydro-seeding & tensarmat	12	12SEP05A	11DEC06	80	70	30	-197	-154												

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
Ducting & Drawpits																												
S3350	BV South - TCSS Ducts & Drawpits (West)	10	01JUN06A	20SEP06A	100	0	0		-44																			
S2740	BV South - LV Ducts & Drawpits	20	01JUN06A	26OCT06	50	0	6	-52	-63																			
Road Pavement & Associated Work																												
S2940	BV Sth - Trim Formation & S'base - Sth Bnd	26	01AUG06A	14NOV06	80	0	5	-49	-52																			
S2960	BV Sth - Kerbs & CPB to Sth Bound Carriageway	30	12AUG06A	05DEC06	90	0	3	-49	-48																			
S2510	BV Sth - Trim Formation & S'base - Nth Bnd	35	14AUG06A	29NOV06	50	0	18	-62	-56																			
S2950	BV Sth - Kerbs & CPB to Nrth Bound Carriageway	30	18SEP06A	20DEC06	5	0	28	-62	-56																			
S2970	BV Sth - Bitu. Pavement to Sth Bnd Carrig'way	20	20SEP06A	04JAN07	70	0	6	-49	-48																			
S2980	BV Sth - Bitu. Pavement to Nrth Bnd Carrig'way	23	09NOV06	19JAN07	0	0	23	-62	-56																			
S2990	Road Marking & White Lining (Staged Access)	18	20JAN07	09FEB07	0	0	18	-62	-56																			
S3190	Installation of Road Signage (Sign Plates Only)	18	20JAN07	09FEB07	0	0	18	-62	-56																			
Miscellaneous Works																												
S2750	Kiosk K4	6	21SEP06A	06NOV06	60	0	10	-145	11																			
S2850	Erect HML9	4	20OCT06	24OCT06	0	0	4	27	-102																			
S2790	Installation of DN 200 Fire Hydrant Pipe & FH's	12	25OCT06	08NOV06	0	0	12	-62	-81																			
S3340	Construction of Weighbridge Pit	10	25OCT06	06NOV06	0	0	10	11	-81																			
S2780	Install & Commission Weighbridge	24	20JAN07	16FEB07	0	0	24	-50	-56																			
LKJV Works at Abutment M																												
S3440	200mm Watermain, valve pit & FH-6	12	19OCT06A	02NOV06	3	0	11	-28	-107																			
S3470	Ducting & drawpits in Portion B	12	03NOV06	16NOV06	0	0	12	-28	-107																			
S3420	Complete remaining roadworks within Portion B	36	17NOV06	30DEC06	0	0	36	-28	-107																			
ACCIONA Works at Abutment																												
S3480	ACCIONA - Dismantle Launching Girder	24	15SEP06A	16OCT06A	100	0	0		-21																			
DSD MAINTENANCE ROAD																												
DSD Maintenance Rd DSD1-1 (Acciona Interface)																												
S3570	WSD Slope Reinstatement	18	09DEC06	02JAN07	0	0	18	-29	-140																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB												
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12		
ENT SOUTH PORTAL VENTILATION BUILDING																																							
SUBMITTALS & APPROVALS																																							
E&M EQPT. & MATERIAL APPROVALS																																							
1919	SP.Bldg. - Approve doors details	24	07MAY05A	25OCT06	80	80	5	-138	-136																														
PROCUREMENT - MATERIAL																																							
ABWF WORKS																																							
1951	SP.Bldg. - Procure aluminium composite cladding	180	19APR05A	15NOV06	80	80	22	-128	-140																														
1979	SP.Bldg. - Procure expanded metal mesh cladding	180	06JUN05A	31OCT06	80	80	9	-69	-140																														
2018	SP.Bldg. - Initial deliver fall arrest roof syst	0	20OCT06*		0	0	0	-12	-93																														
2019	SP.Bldg. - Initial deliver of slate cladding	0	20OCT06*		0	0	0	-36	-68																														
2030	SP.Bldg. - Initial deliver balust & metal works	0	20OCT06*		0	0	0	-12	-93																														
2025	SP.Bldg- Initial deliver exp metal mesh cladding	0	29NOV06*		0	0	0	-69	-88																														
2029	SP.Bldg. - Initial deliv alum composite cladding	0	12JAN07*		0	0	0	-128	-110																														
MAJOR EQUIPMENT DELIVERY																																							
6033	EntSpBldg-Del. PD pump & tank to G/F	48	06MAR06A	01NOV06	80	55	10	312	-140																														
6034	EntSpBldg-Del. PD irrig. pump & tank to G/F	48	02MAY06A	01NOV06	80	0	10	312	-102																														
6163	EntSpBldg-Del. AFA & FM200 sys	48	15MAY06A	01NOV06	80	0	10	312	-80																														
6744	EntSpBldg-Del. MVAC MCC, & control sys to 3/F	48	15MAY06A	28NOV06	90	0	33	289	-115																														
6194	EntSpBldg-Del. CMCS & ELV equip't	48	01JUN06A	04DEC06	90	0	38	284	-91																														
CONSTRUCTION																																							
South Portal Bldg. - TCSS Access																																							
T2720	SP Bldg - TCSS Access Entire Structure	0		20SEP06A	100	0	0		-80																														
South Portal Bldg. - CIVIL & ABWF WORKS																																							
STRUCTURES																																							
T2920	Backfilling at South Portal Building	18	18APR06A	08NOV06	95	60	16	-145	-146																														
ABWF WORKS																																							
SB Bldg - Internal Works GF																																							
T2650	ABWF Initial finishes & Doors to CLP Rm & GF	18	06APR06A	23OCT06	95	5	3	1	-121																														

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB							
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22
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		-169																									
ACS_F2	Access to Portions - F2 (U/Gnd Sth Tunnel)	0	20OCT03A		100	100	0		-169																									
T_F12345	Release of Portions - F1,F2,F3,F4,F5	0		22DEC06	0	0	0	337	0																									
T_GH134	Release of Portions - G,H1,H3,H4	0		22DEC06	0	0	0	337	0																									
Design & Engineering - Temporary Works																																		
Permanent Works																																		
Tunnel																																		
1664	Issue Constr Dwgs Niche Cabinets	0		10OCT06A	100	0	0		-65																									
1668	Eng Approve Dsg X-passage/Adit Fire Doors	12	20OCT06	03NOV06	0	0	12	260	-140																									
1669	Issue Constr Dwgs X-passage/Adit Fire Doors	0		03NOV06	0	0	0	260	-140																									
Procurement - Material																																		
Tunnelling Project Wide																																		
1685	Order/Manufact/Del Fire Doors	50	04NOV06	04JAN07	0	0	50	260	-140																									
Major Equipemnt Delivery																																		
Tunnelling Project Wide																																		
NB Tunnel																																		
6891	EntRtNb-Del. TVS control sys	48	14JAN06A	01NOV06	95	90	10	312	-144																									
6888	EntRtNb-Del. AFA & Linear sys	48	15MAY06A	07NOV06	90	0	15	307	-122																									
6886	EntRtNb-Del. CMCS & ELV sys	35	01JUN06A	28NOV06	90	0	33	289	-76																									
SB Tunnel																																		
6797	EntRtSb&VA-Del. TVS control sys	48	14JAN06A	04DEC06	90	90	38	284	-172																									
6787	EntRtSb&VA-Del. AFA & Linear sys	48	15MAY06A	14NOV06	56	0	21	301	-80																									
6801	EntRtSb&VA-Del. CMCS & ELV sys	72	01JUN06A	04DEC06	90	0	38	284	-81																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18
Construction Works																												
Tunnel Drive North Bound																												
Tunnel Finishing Works																												
<i>Bituminous Pavement</i>																												
3599	NB Base Course - RHS 650m Ch 3030->2380	4	02NOV06	06NOV06	0	0	4	-27	-134																			
3600	NB Base Course - RHS 650m Ch 2380->1730	4	07NOV06	10NOV06	0	0	4	-27	-134																			
3601	NB Base Course - RHS 650m Ch 1730->1080	4	11NOV06	15NOV06	0	0	4	-27	-134																			
3603	NB Base Course - LHS 650m Ch 3030->2380	4	16NOV06	20NOV06	0	0	4	-27	-134																			
3604	NB Base Course - LHS 650m Ch 2380->1730	4	21NOV06	24NOV06	0	0	4	-27	-134																			
3605	NB Base Course - LHS 650m Ch 1730->1080	4	25NOV06	29NOV06	0	0	4	-27	-134																			
<i>VE Panel Installation</i>																												
3616	NB - VE Panel Sub-Frame Installation	60	20OCT06	02JAN07	0	0	60	-73	0																			
3656	NB - Niche Cabinets	50	25NOV06	06FEB07	0	0	50	-63	0																			
3636	NB - VE Panel Installation	55	19DEC06	03MAR07	0	0	55	-98	0																			
ENT NB TUNNEL - (E&M) BUILDING SERVICES																												
<i>MVAC / Tunnel Ventilation Syst Above OHVD</i>																												
277963	Ent NB - Install Motorised Smoke & Fire Dampers	72	04JAN06A	01NOV06	84	45	10	-148	-121																			
277964	Ent NB - Comp Air Pipes/Condts to E/P16 to E/P21	36	10FEB06A	24OCT06	90	40	4	-148	-109																			
277965	Ent NB - Comp Air Pipes/Condts to E/P15 to E/P8	36	27MAR06A	24OCT06	90	30	4	-148	-103																			
277966	Ent NB - Comp Air Pipes/ Condts to E/P1to E/P7	36	13JUN06A	01NOV06	90	0	4	-110	-73																			
277967	Ent NB - Cabling, Wiring and Termination	60	20OCT06	02JAN07	0	0	60	-148	-87																			
277968	Ent NB - MVAC Testing and T&C	36	03JAN07	13FEB07	0	0	36	-148	-81																			
<i>Fire Protection System</i>																												
277990	Ent NB - Install FS Conduit for Niches	54	07FEB06A	24OCT06	93	40	4	-122	-112																			
277991	Ent NB - Install brckts for detection sys @ C/L	60	29JUL06A	24NOV06	50	0	30	-122	-110																			
277992	Ent NB - Install detection system @ Ceiling Lvl	42	20SEP06A	08DEC06	30	0	29	-122	-80																			
277994	Ent NB - Install Hose Reel Cabinets & Eqpt @ G/L	48	20OCT06	15DEC06	0	0	48	-122	-130																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
VA Building - External Finishes																											
T2110	VA Bldg. - Expanded metal cladding to Ext Walls	22	02JAN07	26JAN07	0	0	22	-93	-114																		
E & M WORKS																											
Ventilation Adit Bldg (GF/Lwr Plen) - E & M Work																											
EM2040	BS Works for HV Sw + Tx	12	17JUL06A	23OCT06	90	0	3	-108	-115																		
EM2060	HV Sw + Tx Installation	18	25JUL06A	15OCT06A	100	0	0		-47																		
EM2200	BS Works for Genset	18	01AUG06A	31OCT06	60	0	7	-104	-103																		
EM2260	E&M Works in Corridors G/F	24	01AUG06A	07NOV06	65	0	10	-104	-101																		
EM2300	E&M Works in Risers	48	04AUG06A	21NOV06	60	0	19	-104	-67																		
EM2310	BS Works in TVS Plenums	30	14AUG06A	09NOV06	45	0	17	-117	-92																		
EM2220	Genset Installation	36	13SEP06A	14NOV06	60	0	15	-104	-79																		
Ventilation Adit Bldg (1F) - E & M Work																											
EM2100	BS Works for LV Sw, MCC, UPS, LCC	12	18JUL06A	23OCT06	90	0	3	-107	-113																		
EM2280	E&M Works in Corridors 1/F	24	04AUG06A	28OCT06	70	0	8	-97	-96																		
EM2160	BS Works for 110V Charger Rm	12	11SEP06A	31OCT06	70	0	4	-107	-107																		
EM2120	LV Sw, MCC, UPS, LCC Installation	30	02OCT06A	02NOV06	75	0	8	-98	-76																		
EM2340	Termination of overall Elect HV & LV Sys	30	10OCT06A	20JAN07	15	0	25	-128	-86																		
Ventilation Adit Bldg (2F/Upr Plen) - E & M Work																											
EM2320	TVS Installation	90	23AUG06A	08JAN07	48	0	47	-117	-60																		
Testing and Commissioning																											
EM2080	HV Sw + Tx Termination + T&C	30	20OCT06	24NOV06	0	0	30	-82	-51																		
EM2180	110V Charger Rm Installation + T&C	12	20OCT06	07NOV06	0	0	12	-107	-101																		
EM2240	Genset Termination + T&C	12	20OCT06	21NOV06	0	0	12	-104	-73																		
EM2140	LV Sw, MCC, UPS, LCC Termination + T&C	30	04NOV06	08DEC06	0	0	30	-107	-77																		
Statutory Inspection & Issued Certificates																											
EM3001	Submit Form WWO46 for Water Supply to WSD	30	17JAN07	28FEB07	0	0	30	-102	-43																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
EXTERNAL AREAS																											
LANDSCAPING & ESTABLISHMENT WORKS																											
T3180	Planting Works	18	02SEP06A	06FEB07	65	0	18	-60	-105																		
ENT NORTH PORTAL VENTILATION BUILDING																											
SUBMITTALS & APPROVALS																											
ABWF & Builders Works																											
1954	NP.Bldg. - Approve door details	24	06APR05A	31OCT06	80	80	9	-121	-140																		
PROCUREMENT - MATERIAL																											
ABWF WORKS																											
1967	NP.Bldg. - Procure aluminium composite cladding	180	19APR05A	24NOV06	84	50	30	-130	-148																		
1981	NP.Bldg. - Procure expanded metal cladding	180	06JUN05A	31OCT06	50	50	9	-75	-140																		
2051	NP.Bldg. - Initial delivery slate cladding	0	20OCT06*		0	0	0	-36	-81																		
2052	NP.Bldg. - Initial delivery balust & metal works	0	20OCT06*		0	0	0	-24	-93																		
2053	NP.Bldg. - Initial delivery fall arrest roof sys	0	20OCT06*		0	0	0	-24	-93																		
2039	NP.Bldg. - Initial delivery of doors	0	06DEC06*		0	0	0	-121	-132																		
2066	NP.Bldg. - Initial deliv expanded metal cladding	0	06DEC06*		0	0	0	-75	-94																		
2050	NP.Bldg. - Initial deliv alum composite cladding	0	15JAN07*		0	0	0	-130	-112																		
MAJOR EQUIPMENT DELIVERY																											
ENT NORTH PORTAL BUILDING																											
6231	EntNpBldg-Del. FS pumps & tank to G/F	48	06MAR06A	01NOV06	80	50	10	312	-140																		
6229	EntNpBldg-Del. PD pump & tank to G/F	48	15MAY06A	01NOV06	80	0	10	312	-93																		
6359	EntNpBldg-Del. AFA & FM200 sys	48	15MAY06A	01NOV06	80	0	10	312	-80																		
6288	EntNpBldg-Del. CMCS & ELV equip't	48	01JUN06A	04DEC06	90	0	38	284	-91																		
CONSTRUCTION																											
North Portal Bldg. - CIVIL & ABWF WORKS																											
STRUCTURE																											
T1390	NP Bldg - Exhaust Shaft (+110.38mPD)	18	24MAY06A	28OCT06	80	0	8	-88	-122																		
S1370	Construct earth mat	36	20OCT06	01DEC06	0	0	36	-94	-132																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
ABWF WORKS																												
Internal Works GF																												
T1650	GF ABWF Initial finishes	18	04MAR06A	21OCT06	90	28	2	-45	-129																			
NP Bldg - Internal Works 2F																												
T1600	2F ABWF Initial Finishes	18	06APR06A	25OCT06	95	28	5	-129	-133																			
NP Bldg Internal Works 3/F																												
T1880	3F - paint touch up & doors	12	15NOV06	28NOV06	0	0	12	-3	-95																			
NP Building - Internal Works																												
T1620	4F ABWF initial finishes	12	24JUL06A	13NOV06	95	0	1	302	-122																			
NP Bldg - Roofing & External Facade																												
T2238	Ent NPB - Ext. Wall Waterproof Render	18	17JUL06A	06NOV06	20	0	14	-78	-128																			
T1740	Ent NPB - Install Aluminum louvres & doors	90	14AUG06A	12JAN07	60	0	36	-121	-93																			
T1800	Ent NPB - Roof Waterproofing & Test	12	10OCT06A	10NOV06	10	0	10	-72	-120																			
T1780	Ent NPB - Slate cladding above NB/SB carriageway	36	20OCT06	01DEC06	0	0	36	-36	-81																			
T1730	Ent NPB - External Wall Painting	34	14NOV06	22DEC06	0	0	34	-78	-128																			
T1700	Ent NPB - 25thk Roof Screed & Roofing Tiles	18	25NOV06	15DEC06	0	0	18	-72	-120																			
T1770	Ent NPB - Expanded metal cladding to Ext Walls	36	06DEC06	19JAN07	0	0	36	-75	-94																			
T1790	Ent NPB - GMS,S/S Channel, Balustrade & Railing	24	23DEC06	23JAN07	0	0	24	-78	-126																			
T1750	Ent NPB - Alum. Comp Panel Cladding to Ext Walls	60	15JAN07	02APR07	0	0	60	-130	-112																			
ENT North Portal Bldg. - BUILDING SERVICES																												
E & M WORKS																												
ENT North Portal Bldg (G/F) - E & M Works																												
T1720	Installation of FS Pumps & Pipework at GF	18	15SEP06A	07NOV06	30	0	13	-45	-124																			
ENT North Portal Bldg (1F/Lwr Plen) - E & M Work																												
T1810	Installation of FM200 at 1F	12	04SEP06A	21OCT06	80	0	2	-54	-118																			
ENT North Portal Bldg (2F/Silencer) - E & M Work																												
EM2930	BS Works for TVS Plenums	30	17JUN06A	14NOV06	30	0	21	-129	-117																			
EM2580	BS Works for HV Sw + Tx	12	20JUN06A	21OCT06	90	0	2	-108	-118																			
EM2700	BS Works for LV Sw	12	20JUN06A	21OCT06	90	0	2	-100	-118																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
ENT North Portal Bldg (2F/Silencer) - E & M Work																											
EM2860	E&M Works in Corridors 2/F	24	17JUL06A	20OCT06	95	0	1	-83	-105																		
EM2800	BS Works for Genset	18	01AUG06A	07NOV06	20	0	15	-111	-125																		
EM2600	HV Sw + Tx Installation	18	08AUG06A	20OCT06A	100	0	0		-24																		
EM2900	E&M Works in Risers	48	10AUG06A	06NOV06	95	0	2	-84	-68																		
EM2720	LV Sw Installation	30	17AUG06A	06NOV06	90	0	12	-100	-100																		
ENT North Portal Bldg (3F/ Fan Rm) - E & M Works																											
EM2640	BS Works for MCC, UPS, LCC	12	20JUN06A	21OCT06	90	0	2	-103	-116																		
EM2880	E&M Works in Corridors 3/F	24	17JUL06A	21OCT06	95	0	2	-84	-104																		
EM2760	BS Works for 110V Charger Rm	12	01AUG06A	25OCT06	60	0	5	-120	-119																		
EM2820	Genset Installation	30	01SEP06A	14NOV06	50	0	15	-111	-95																		
EM2660	MCC, UPS, LCC Installation	30	18SEP06A	14NOV06	30	0	21	-103	-111																		
EM2920	Termination of overall Elect HV & LV Sys	30	15OCT06A	11JAN07	15	0	26	-120	-100																		
EM2890	Compressor Room Installation	18	20OCT06	10NOV06	0	0	18	-70	-126																		
ENT North Portal Bldg (4F/Upr Plen) - E & M Work																											
EM2940	TVS Installation	100	02AUG06A	26JAN07	43	0	57	-129	-89																		
Testing and Commissioning																											
EM2780	110V Charger Rm Installation + T&C	12	20OCT06	03NOV06	0	0	12	-120	-114																		
EM2620	HV Sw + Tx Termination + T&C	30	04NOV06	08DEC06	0	0	30	-120	-35																		
EM2680	MCC, LCC Termination + T&C	30	04NOV06	08DEC06	0	0	30	-112	-102																		
EM2740	LV Sw Termination + T&C	30	04NOV06	08DEC06	0	0	30	-112	-98																		
EM2840	Genset Termination + T&C	12	15NOV06	28NOV06	0	0	12	-111	-95																		
TOLL PLAZA & ANCILLIARY STRUCTURES																											
CONTRACT DEFINED DATES & SECTIONS																											
AREA ACCESS & VACATION DATES																											
T_D1234	Release of Portions - D1,D2,D3,D4	0		22DEC06	0	0	0	337	0																		
T_D5678	Release of Portions - D5,D6,D7,D8	0		22DEC06	0	0	0	337	0																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP		OCT		NOV		DEC		JAN		FEB											
										35	36	37	38	39	40	41	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
SUBMITTALS & APPROVALS																																	
ABWF & BW SUBMITTALS																																	
1522	TP/FB - Approve footbridge details	24	28JUL05A	03NOV06	50	50	12	310	-140																								
Design & Engineering - Temporary Works																																	
50.030.020																																	
1244	Design/ICE Check Tool Booth Canopy	24	20OCT06	17NOV06	0	0	24	-143	-140																								
1341	Eng Approve Dsg Tool Booth Canopy	12	18NOV06	01DEC06	0	0	12	-143	-140																								
1358	Issue Constr Dwgs Tool Booth Canopy	0	11DEC06	09DEC06	0	0	0	-143	-140																								
Procurement - Major Material																																	
2185	Order/Fabricate/Deliver Tool Booth Canopy	90	01DEC05A	12DEC06	50	11	45	-145	-105																								
Toll Plaza																																	
7548	TP-Proc & Manuf. MVAC Package AC Units	120	11JAN06A	01NOV06	90	50	10	-52	-90																								
MAJOR EQUIPMENT DELIVERY																																	
TOLL PLAZA																																	
7549	TP-Del. Package AC Units	48	02NOV06	29DEC06	0	0	48	-52	-90																								
Construction Works																																	
Toll Plaza - TCSS Access																																	
K1162	Toll Plaza - TCSS Access (East Side)	0		07NOV06	0	0	0	-107	-91																								
TOLL PLAZA EAST SIDE																																	
K1282	Provision of micro-satellite-office at East Loop	186	13MAR06A	02JAN07	35	17	60	-66	-70																								
K1232	Carriageway Drainage Prior to TCSS	36	27APR06A	27OCT06	80	10	7	-107	-115																								
K1222	Main carriageway Ducting & Drawpits	54	02MAY06A	19DEC06	70	0	16	-79	-106																								
S1170	FW Watermains Centre to Admin Bldg & FH12, FH13	36	02MAY06A	16NOV06	80	0	23	-73	-103																								
S1160	Installation of Ducting and Drawpits for TCSS	32	08MAY06A	07NOV06	75	0	8	-107	-91																								
K1212	Main Carid'way Drain (D3 & D4) - after stockpile	57	20MAY06A	16NOV06	60	0	23	-79	-106																								
K1242	Main carriageway - East Subbase and kerbs	53	16OCT06A	20JAN07	10	0	47	-79	-90																								
S1420	Road Pavement Surfacing (Flex & Rigid)	56	18OCT06A	07FEB07	10	0	50	-79	-90																								
K1182	East Loop Road - Drainage	28	20OCT06	22NOV06	0	0	28	-34	-140																								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB							
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22
ABWF																																		
S1290	Toll Subway - E&M	54	02DEC06	06FEB07	0	0	54	-60	-126																									
TOLL PLAZA FOOTBRIDGE																																		
ABWF																																		
S1264	Installation of Aluminium Cladding	38	20OCT06	04DEC06	0	0	38	-120	-132																									
S1250	Toll Ftbrdge - Finishes	54	12JAN07	23MAR07	0	0	54	-92	-132																									
S1340	Toll Plaza - Erection of Lift Steel Work	24	30MAY06A	24OCT06	95	0	4	-70	-120																									
E & M WORKS																																		
S1200	Toll Plaza Footbridge - Lift Installation	72	25OCT06	20JAN07	0	0	72	-70	-120																									
S1450	Toll Plaza Footbridge - Lift Commissioning	24	22JAN07	26FEB07	0	0	24	-70	-120																									
S1470	E&M Installation at Footbridge	30	05DEC06	11JAN07	0	0	30	-92	-132																									
S1500	E&M Footbridge T&C	18	12JAN07	01FEB07	0	0	18	-56	-132																									
TOLL PLAZA BOOTHS																																		
S1210	Construct Toll Islands 17 No.	51	20OCT06	19DEC06	0	0	51	-125	-132																									
S1220	Construct Toll Booths - 22No.	88	13DEC06	10APR07	0	0	88	-145	-105																									
ADMIN.BLDG. - WORKSHOP																																		
S1350	Workshop - External Finishes	60	03AUG06A	15DEC06	20	0	48	-18	-86																									
S1320	Workshop - Remaining internal Finishes	36	20AUG06A	10NOV06	50	0	18	12	-56																									
S1280	Workshop - Install Roller Shutters	12	20OCT06	29NOV06	0	0	12	-4	-86																									
ADMINISTRATION BUILDING																																		
SUBMITTALS & APPROVALS																																		
ABWF. MTRL SUBMITTALS																																		
1885	Admin.Bldg. - Prep & submit wood ceiling details	24	20NOV04A	03NOV06	50	50	12	262	-140																									
1881	Admin.Bldg. - Prep & sub GRP water tank details	24	12JAN05A	03NOV06	50	50	12	256	-140																									
1887	Admin.Bldg. - Prep & sub suspend ceiling details	24	12AUG05A	03NOV06	50	50	12	226	-140																									
1882	Admin.Bldg. - Approve GRP water tank details	24	04NOV06	01DEC06	0	0	24	256	-140																									
1886	Admin.Bldg. - Approve wood ceiling details	24	04NOV06	01DEC06	0	0	24	262	-140																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
CONSTRUCTION																												
TCSS Access at Admin Bldg																												
T3350	TCSS Works Within Admin Bldg / Tunnel & Ext	140	15SEP06A	24MAR07	0	0	110	-105	-74																			
CIVIL & ABWF WORKS																												
Substructure																												
106398	Admin.Bldg. - Earth Mat & Rods - All in ptn D4	36	08NOV06	19DEC06	0	0	36	-51	-135																			
ABWF																												
Admin Bldg (G/F) - Internal Work @ Grid 1 to 21																												
T1682	AB (G/F to 1/F) - Staircase Finishing Works	30	18APR06A	02NOV06	65	5	11	-122	-123																			
T1685	AB G/F (Grid 1-21) - Wall Plaster & Flr Screed	20	19APR06A	21OCT06	90	10	2	-123	-128																			
T1680	AB G/F (Grid 1-21) - Windows & door frames	18	24APR06A	31OCT06	50	56	9	-123	-141																			
T3245	Rm (G39/G40/G45/G46) - Wdws & door frames	8	24APR06A	24OCT06	50	70	4	-114	-142																			
T1975	AB G/F (Grid 1-21) - Base Skirting	18	15JUN06A	14DEC06	80	0	4	-23	-90																			
T2995	AB G/F (Grid 1-21) - Wall & Ceiling Base Paint	30	02AUG06A	09NOV06	45	0	17	-120	-107																			
T2990	AB G/F (Grid 1-21) - Tileworks & Sanitary Fixt	30	20OCT06	24NOV06	0	0	30	-120	-140																			
T3255	Genset&Fuel Rm (G45/G46) - Floor Tiles	4	26OCT06	31OCT06	0	0	4	-123	-128																			
T3275	AB G/F (Critical Rooms) - Access to E&M Works	0		31OCT06	0	0	0	-123	-128																			
T3285	Rm (G39/G40/G45/G46) - Door Leaf & Final Paints	4	22NOV06	25NOV06	0	0	4	-1	-80																			
T1970	AB G/F (Grid 1-21) - Install Ceiling Grids	18	25NOV06	15DEC06	0	0	18	-40	-120																			
T2160	AB G/F (Grid 1-21) - Install Ceiling Panels	10	16DEC06	29DEC06	0	0	10	-40	-109																			
T2150	AB G/F (Grid 1-21) - Door Leaf & Final Paints	12	30DEC06	13JAN07	0	0	12	-40	-107																			
Admin Bldg (1/F) - Internal Work @ Grid 1 to 18																												
T1982	AB (1/F to 2/F) - Staircase Finishing Works	30	18APR06A	31OCT06	70	5	9	313	-121																			
T1985	AB 1/F (Grid 1-18) - Wall Plaster & Flr Screed	24	18APR06A	25OCT06	90	35	5	-111	-130																			
T1980	AB 1/F (Grid 1-18) - Wdws & Door Frames	18	24APR06A	27OCT06	60	56	7	-100	-138																			
T2165	AB 1/F (Grid 1-18) - Install Skirting	14	15JUN06A	23NOV06	50	0	7	1	-53																			
T2015	AB 1/F (Grid 1-18) - Wall & Ceiling Base Paint	30	10JUL06A	09NOV06	80	0	6	-39	-105																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB							
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22
MAJOR EQUIPMENT DELIVERY																																		
E&M WORKS																																		
7157	ShtSpBldg-Del. FS pumps & tank to G/F	48	06MAR06A	25OCT06	90	50	5	317	-136																									
7211	ShtSpBldg-Del. PD pump & tank to G/F	48	10APR06A	01NOV06	80	0	10	312	-93																									
7231	ShtSpBldg-Del. PD irrig. pump & tank to G/F	48	10APR06A	01NOV06	80	0	10	312	-93																									
7207	ShtSpBldg-Del. AFA & FM200 sys	48	15MAY06A	25OCT06	90	0	5	317	-74																									
7087	ShtSpBldg-Del. CMCS & ELV equip't	48	01JUN06A	28NOV06	90	0	33	289	-88																									
CONSTRUCTION																																		
TCSS Access to SHT Sout Portal Bldg																																		
EM6700	TCSS Containment in G/F	12	01NOV06	14NOV06	0	0	12	-208	-132																									
EM6710	TCSS ACCESS GF (Room G01-G05, G08-G10)	0		31OCT06	0	0	0	-170	-132																									
EM6720	TCSS ACCESS GF(Room G07,G11,G12)	0		14NOV06	0	0	0	-208	-132																									
CIVIL & ABWF WORKS																																		
AB5983	U/G Drainages and Utilities under bldg	24	01APR06A	24OCT06	85	0	4	-46	-120																									
AB5986	Backfill, G/F Slabs and Walls	24	20APR06A	08NOV06	85	0	4	-46	-108																									
ABWF																																		
AB6022	Remedy SHT Contractor Defects	25	12DEC05A	23OCT06	90	90	3	-208	-138																									
ABWF at GF																																		
AB5989	Initial Finishes to G/F	18	11FEB06A	31OCT06	50	5	9	-208	-132																									
AB6042	G/F Paint Touch Up & Doors	12	22NOV06	05DEC06	0	0	12	-9	-37																									
ABWF at 1F & LP																																		
AB5995	Initial Finishes to Lower Plenum	12	10APR06A	31OCT06	95	15	5	-79	-132																									
AB6032	1F & LP Paint Touch Up & Doors	12	22NOV06	05DEC06	0	0	12	-9	-37																									
ABWF at 2F																																		
AB6052	2/F Paint Touch Up & Doors	12	22NOV06	05DEC06	0	0	12	-9	-37																									
ABWF at 3F																																		
AB6062	3/F Paint Touch Up & Doors	12	22NOV06	05DEC06	0	0	12	-9	-37																									
ABWF at 4F and above																																		
AB6004	Initial Finishes to 4/F and above	24	13APR06A	31OCT06	90	10	9	-45	-114																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
SHT SOUTHBOUND TUNNEL																												
(E & M) BUILDING SERVICES																												
MVAC / Tunnel Ventilation System Above OHVD																												
242270	Sht SB - Install Motorized Smoke & Fire Damper	48	02MAR06A	02NOV06	77	74	11	-104	-139																			
242272	Sht SB - Comp Air Pipes/Condts to E/P1 to E/P5	36	08MAY06A	09NOV06	93	0	3	-104	-85																			
242273	Sht SB - Cabling, wiring and termination	24	20JUN06A	18NOV06	70	0	8	-104	-69																			
242274	Sht SB - MVAC Testing and T&C	12	20NOV06	02DEC06	0	0	12	-89	-69																			
Plumbing and Drainage																												
249393	Sht SB - Pipe Testing and T&C	12	22JUN06A	23OCT06	75	0	3	-73	-79																			
249392	Sht SB - Pipe Connectn, pumps, tanks to SP / NP	18	24OCT06	14NOV06	0	0	18	-73	-109																			
Fire Protection System																												
256516	Sht SB - Install FS Conduits for Niches	30	12JUN06A	23OCT06	96	0	3	-103	-59																			
256518	Sht SB - Hose Reel Cabinets & Equipts	40	30JUN06A	07NOV06	96	0	5	-103	-31																			
256514	Sht SB - Install brckt for detection sys @ C/L	30	04SEP06A	23OCT06	96	0	3	-108	-113																			
256515	Sht SB - Install detection system @ Ceiling Lvl	24	01OCT06A	13NOV06	30	0	17	-108	-106																			
256520	Sht SB - FS Wiring & Termination	24	14NOV06	11DEC06	0	0	24	-108	-34																			
256521	Sht SB - FS Testing and T&C	12	12DEC06	27DEC06	0	0	12	-108	-34																			
Electrical Works Above OHVD																												
263655	Sht SB-HV&LV Mn/Submain Cable Pulling (CP6-CP10)	24	10AUG06A	01NOV06	60	0	10	-143	-33																			
263658	Sht SB-HV&LV Mn/Submain Cable Pulling (CP1-CP5)	24	10AUG06A	01NOV06	60	0	10	-143	-57																			
263659	E&M Inspection & Access to Civil Contractor	0		08NOV06	0	0	0	-113	-33																			
Electrical Works Below OHVD																												
270799	Sht SB - Conduits Works (Above & below OHVD)	48	01MAR06A	21OCT06	98	42	2	-105	-114																			
270798	Sht SB - Brackets for Lightings @ Ceiling Level	48	01JUN06A	21OCT06	98	0	2	-118	-117																			
270802	Sht SB - Tunnel Lightings Fixtures	60	27JUN06A	06NOV06	97	0	2	-105	-33																			
270800	Sht SB - Tunnel Earthing to CP1-CP10	36	01AUG06A	06NOV06	75	0	9	-118	-93																			
270803	Sht SB - Cabling, Wiring and Termination	36	01OCT06A	05DEC06	30	0	25	-118	-52																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB	
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
SHT NORTH PORTAL BUILDING																												
7325	ShtNpBldg-Del. Package AC Units	48	10APR06A	01NOV06	80	0	10	312	-93																			
7433	ShtNpBldg-Del. PD pump & tank to G/F	48	10APR06A	01NOV06	80	0	10	312	-93																			
7429	ShtNpBldg-Del. AFA & FM200 sys	48	15MAY06A	25OCT06	90	0	5	317	-85																			
7309	ShtNpBldg-Del. CMCS & ELV equip't	48	01JUN06A	28NOV06	90	0	33	289	-86																			
CONSTRUCTION																												
TCSS Access to SHT North Portal Bldg																												
EM7286	TCSS Containment in 1/F	12	20OCT06	03NOV06	0	0	12	310	-124																			
EM7289	TCSS Containment in Lower Plenum	18	20OCT06	10NOV06	0	0	18	304	-119																			
EM7292	TCSS Containment in 2/F	18	20OCT06	10NOV06	0	0	18	304	-124																			
EM7295	TCSS Containment in 3/F and above	18	20OCT06	10NOV06	0	0	18	304	-119																			
EM7283	TCSS Containment in G/F	12	31OCT06	13NOV06	0	0	12	-168	-127																			
EM7290	TCSS ACCESS - GF (Room G02-G03, G04-G08)	0		28OCT06	0	0	0	-164	-127																			
EM7293	TCSS ACCESS - GF (Room G09,G15)	0		13NOV06	0	0	0	-168	-127																			
CIVIL & ABWF WORKS																												
AB7040	11U/G Drainages and Utilities under bldg	24	20JUL06A	03NOV06	50	0	12	296	-128																			
AB7060	Backfill, G/F Slabs and Walls	24	04SEP06A	20NOV06	40	0	14	296	-118																			
ABWF Works																												
AB7130	Remedy defects to SHT Buildings	24	17DEC05A	21OCT06	95	50	2	-168	-133																			
ABWF at GF																												
AB7080	Initial Finishes to G/F	18	25APR06A	28OCT06	95	7	8	-168	-127																			
AB7330	G/F paint Touch Up & Doors	12	21DEC06	06JAN07	0	0	12	-34	-41																			
ABWF at 1F & LP																												
AB7120	Initial Finishes to Lower Plenum	12	22APR06A	06NOV06	95	0	8	-104	-133																			
AB7320	1F & LP Paint Touch Up & Doors	12	21DEC06	06JAN07	0	0	12	-34	-41																			
ABWF at 2F																												
AB7340	2/F Paint Touch Up & Doors	12	21DEC06	06JAN07	0	0	12	-34	-41																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB											
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	
Fire Protection System																																						
280026	RCFE NB - FS Conduit, Hose Reel Cabinets & Eqpt.	16	31JUL06A	21OCT06	40	0	2	-78	-66																													
280029	RCFE NB - Install Smoke detector @ N1-N3	10	23OCT06	03NOV06	0	0	10	-66	-66																													
280030	RCFE NB - FS Wiring & Termination	24	27OCT06	24NOV06	0	0	24	-78	-66																													
Electrical Works																																						
280044	RCFE NB - Brackets for Lightings @ Ceiling Level	60	30MAY06A	24NOV06	50	0	30	-142	-110																													
280048	RCFE NB - Earthing, Lighting, Equipt. @ C/L	48	26JUN06A	08DEC06	50	0	24	-118	-74																													
280034	RCFE NB - E&M Access to Southern LV Sw Room	0	20OCT06		0	0	0	-142	-104																													
280038	RCFE NB - HV & LV Cabling Works @ C Trough	36	20OCT06	01DEC06	0	0	36	-142	-104																													
280046	RCFE NB - Conduits Works @ Ceiling Level	36	25NOV06	09JAN07	0	0	36	-142	-110																													
280040	RCFE NB - Install Power Distn Panels & Test	30	02DEC06	09JAN07	0	0	30	-142	-104																													
280054	RCFE NB - Tunnel Signage, Wiring, Term & Test	40	10JAN07	05MAR07	0	0	40	-142	-80																													
STN RC FULL ENCLOSURE (South Bound) - E&M WORKS																																						
MVAC / Tunnel Ventillation System																																						
280082	RCFE SB - Ductworks Supports / Containment @ C/L	36	02MAR06A	27OCT06	80	30	7	-127	-130																													
280084	RCFE SB - MVAC Ducts, TVF & MSFD Units @ C/L	48	02MAR06A	18NOV06	80	25	10	-127	-130																													
280086	RCFE SB - MVAC Pipeworks & Conduits @ C/L	30	20NOV06	23DEC06	0	0	30	-127	-130																													
280088	RCFE SB - Cabling, wiring and termination	24	27DEC06	24JAN07	0	0	24	-127	-130																													
Fire Protection System																																						
280098	RCFE SB - (100d) FH / HR Pipeworks & Fittings	18	03JUL06A	11NOV06	90	0	2	-91	-116																													
280096	RCFE SB - FS Conduit, Hose Reel Cabinets & Eqpt.	16	20OCT06	07NOV06	5	0	15	-91	-116																													
280100	RCFE SB - Install Smoke detector @ S1-S4	10	08NOV06	18NOV06	0	0	10	-79	-116																													
280102	RCFE SB - FS Wiring & Termination	24	13NOV06	09DEC06	0	0	24	-91	-116																													
Electrical Works																																						
280116	RCFE SB - Brackets for Lightings @ Ceiling Level	60	15AUG06A	03NOV06	80	0	12	-124	-92																													
280110	RCFE SB - E&M Access to Southern LV Sw Room	0	20OCT06*		0	0	0	-142	-104																													
280112	RCFE SB - HV & LV Cabling Works @ C Trough	36	20OCT06	01DEC06	0	0	36	-142	-104																													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	AUG		SEP			OCT			NOV			DEC			JAN			FEB										
										35	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12
Electrical Works																																					
280118	RCFE SB - Conduits Works @ Ceiling Level	36	20OCT06	01DEC06	0	0	36	-112	-80																												
280120	RCFE SB - Earthing, Lighting, Equipt. @ C/L	48	20OCT06	15DEC06	0	0	48	-124	-80																												
280114	RCFE SB - Install Power Distn Panels & Test	30	02DEC06	09JAN07	0	0	30	-142	-104																												
280124	RCFE SB - Tunnel Signage, Wiring, Term & Test	40	10JAN07	05MAR07	0	0	40	-142	-80																												
T3 UNDERPASS																																					
Kiosks S2 at T3 Underpass Portal																																					
EM3980	Kiosk S2 - Structure & Fittings	24	11SEP06A	06NOV06	40	0	14	-129	-110																												
EM4000	Kiosk S2 - Install E&M Works	18	20OCT06	20NOV06	0	0	18	-129	-104																												
EM4002	Kiosk S2 - E&M Testing and T&C	6	21NOV06	27NOV06	0	0	6	-129	-104																												

APPENDIX C
MONITORING REQUIREMENTS

Appendix C - Environmental Impact Monitoring Requirements for Eagle's Nest Tunnel and Associated Works

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1-hour TSP	3 times every 6 days	<ul style="list-style-type: none"> AM1 (Yew Chung International School / PLK Choi Kai Yau School) AM3⁽³⁾ (Garden Villa) AM4 (Government Quarters) 	<ul style="list-style-type: none"> AM1 – Rooftop AM3 – On ground AM4 – Ground floor close to the refuse collection station of Government Quarters
	24-hour TSP	Once every 6 days		
Noise	L _{eq} , L ₉₀ & L ₁₀ at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> NM1 (Yew Chung International School / PLK Choi Kai Yau School) NM5 (Villa Carlton) NM6 (Government Quarters) NM7 (Garden Villa) 	<ul style="list-style-type: none"> NM1 – Rooftop (Façade measurement) NM5 – Ground Floor⁽²⁾ - (Façade measurement) NM6 – Rooftop of Refuse Collection Station (Free field measurement) NM7 – Rooftop (Façade measurement)
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (1900 to 2300) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (2300 to 0700 of next day) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (0700 to 1900 on holidays) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		

⁽¹⁾ – Conduct noise monitoring only when construction work is carried out.

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

⁽³⁾ – Station AM3 was relocated from Garden Villa to the nearby slope no. 07SW-D/FR4 and the monitoring was resumed on 14 February 2005.

**APPENDIX D
ENVIRONMENTAL QUALITY
PERFORMANCE (ACTION/LIMIT)
LEVELS**

Appendix D - 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	

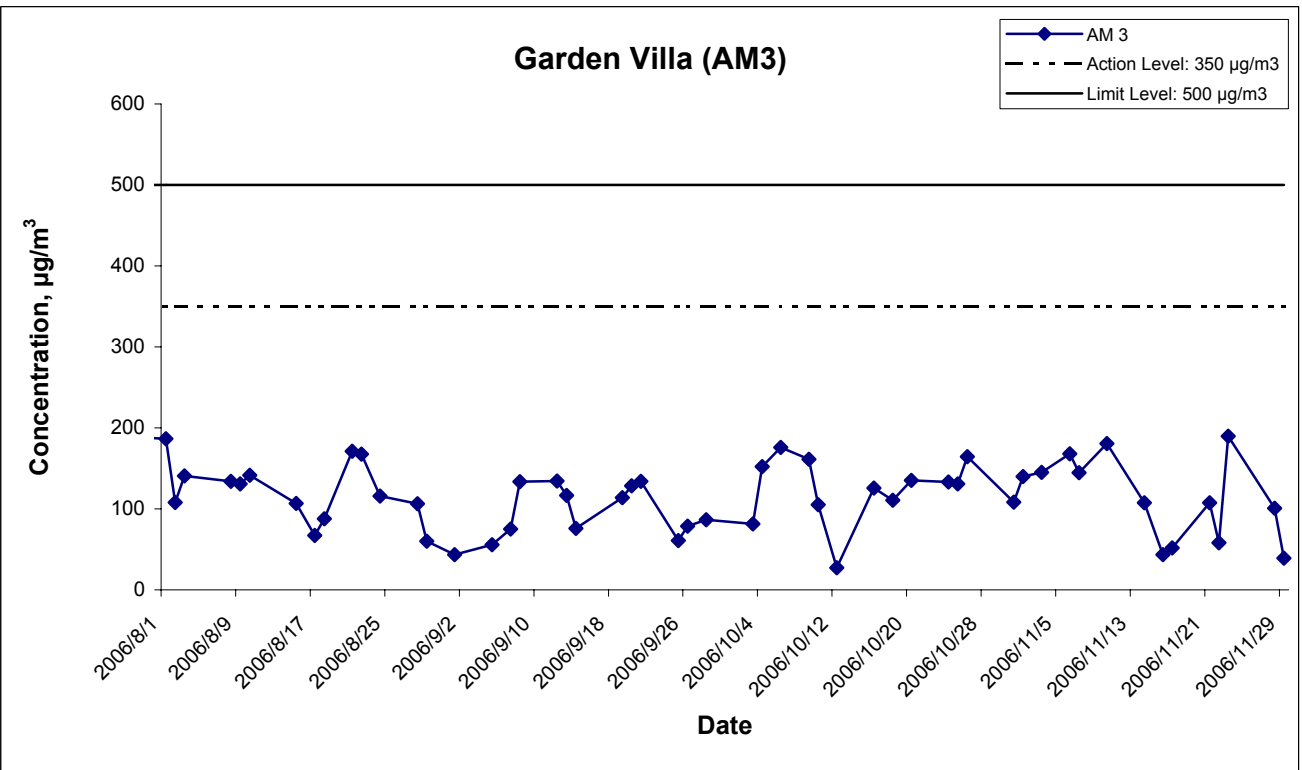
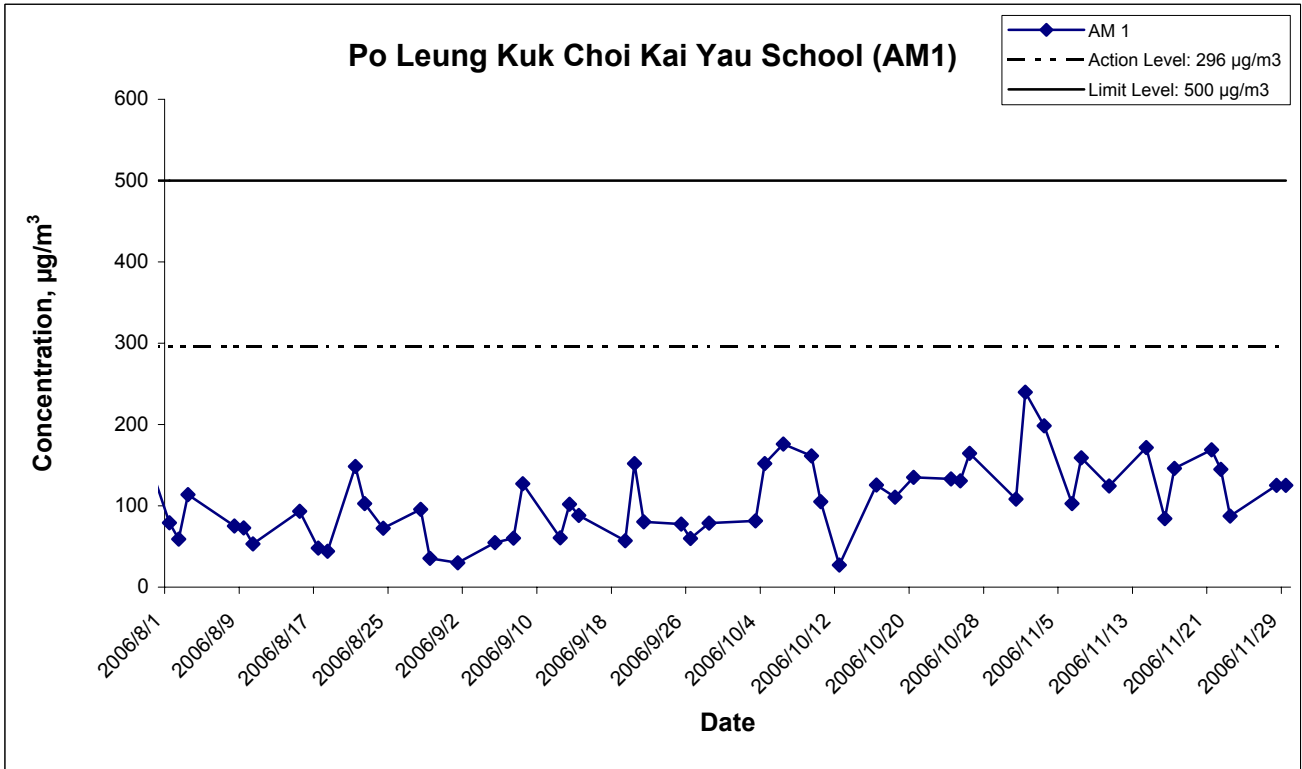
Construction Noise

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 reduce to 65 dB(A) during school examination periods.

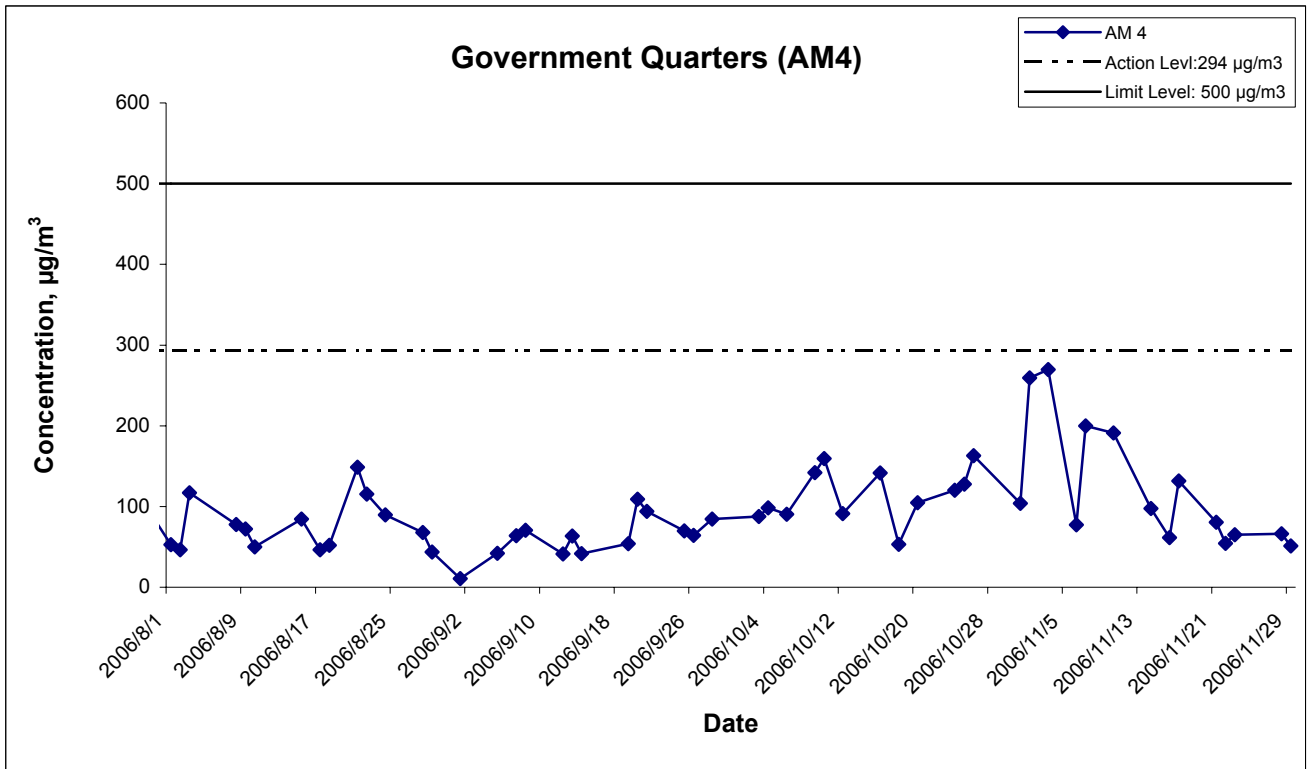
APPENDIX E
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS

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	Project No. MA3024	
	Date Nov 06	Appendix E	

1-hr TSP Levels



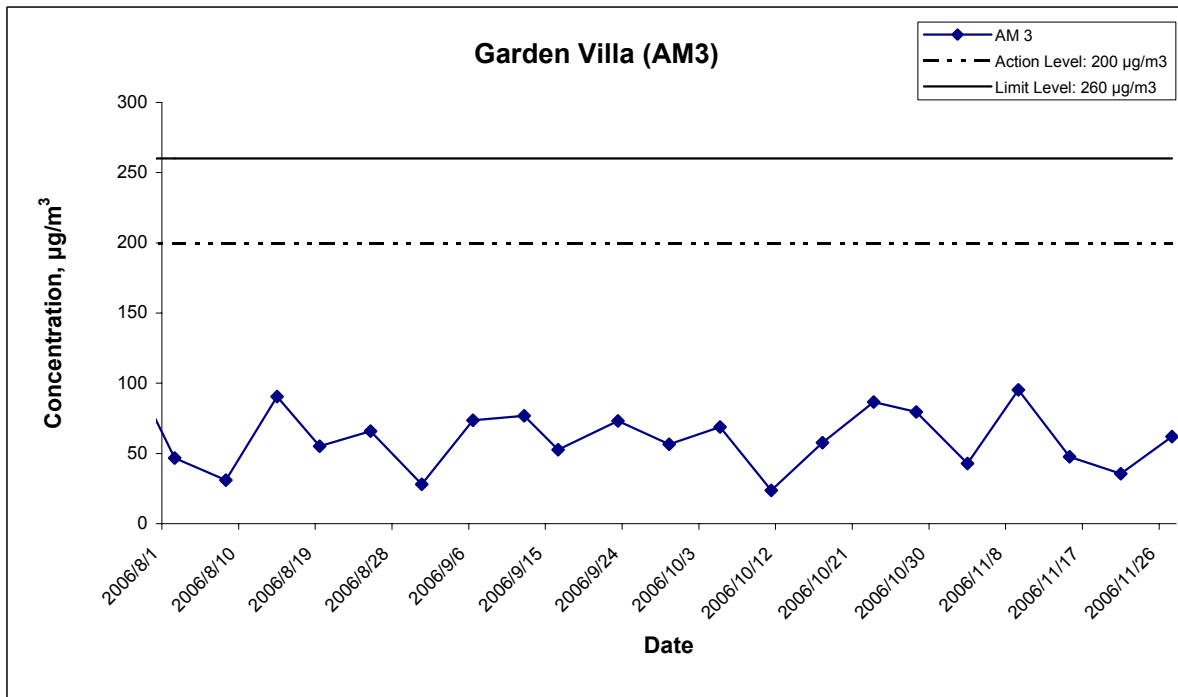
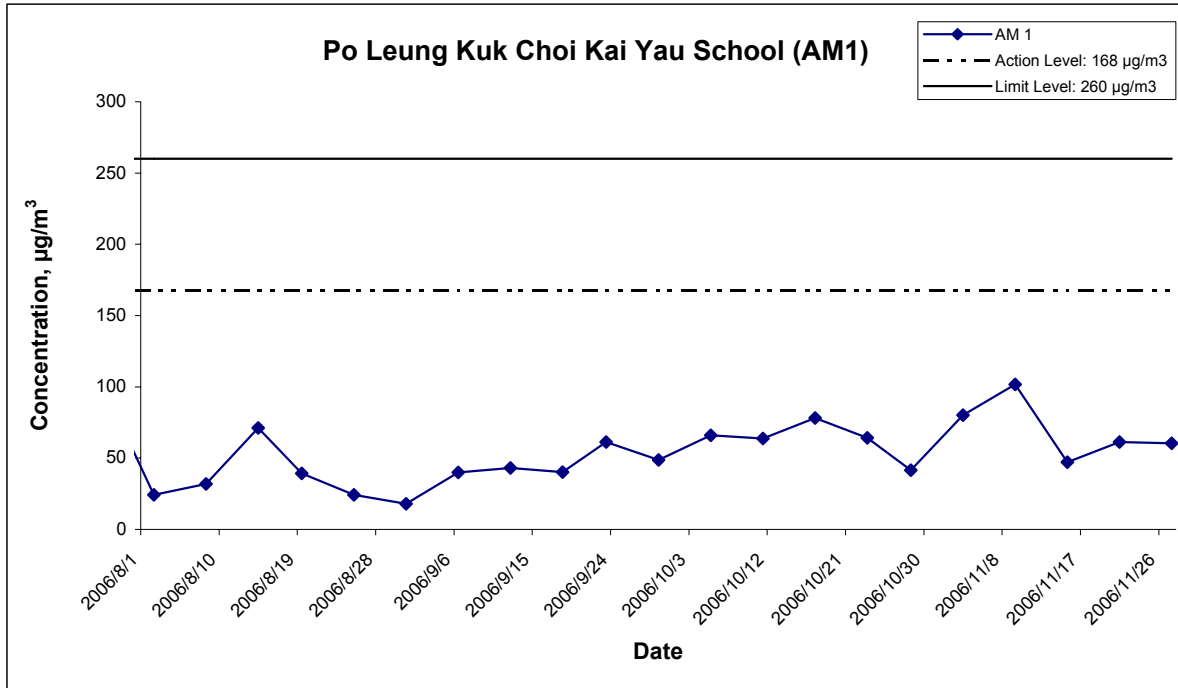
Title
 Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin
 Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works
 Graphical Presentation of 1-hour TSP Impact Monitoring
 Results

Scale
 N.T.S
 Date
 Nov 06

Project
 No. MA3024
 Appendix
 E

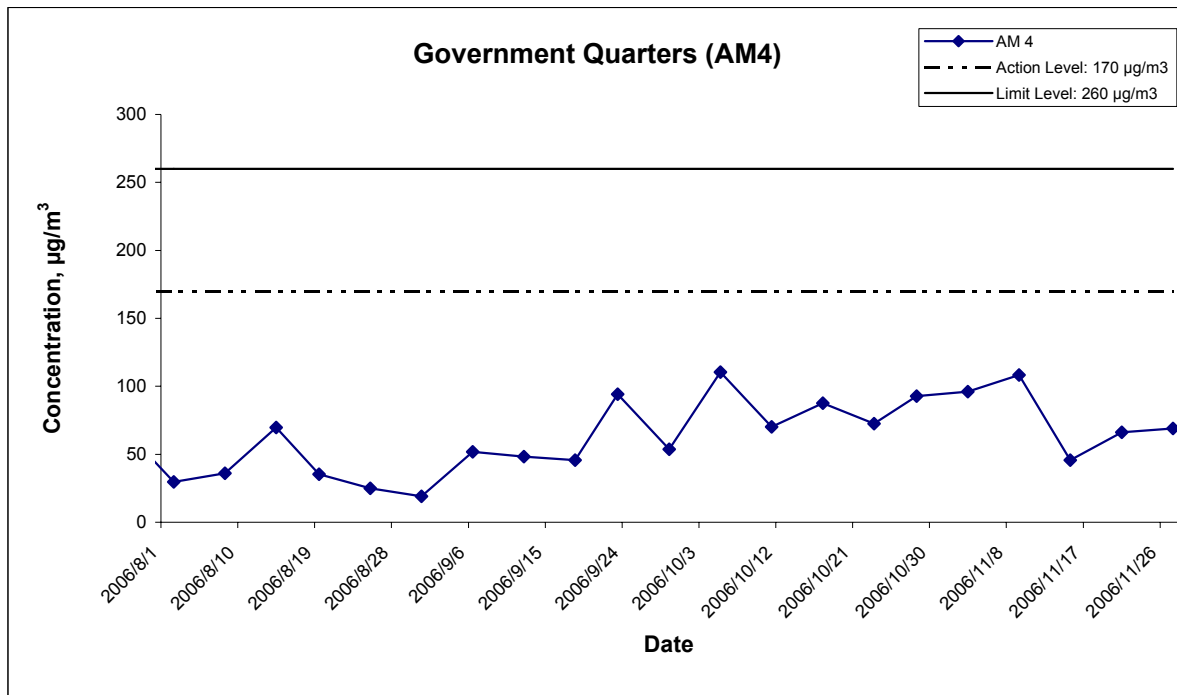


24-hr TSP Levels



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 Nov 06	Appendix E	

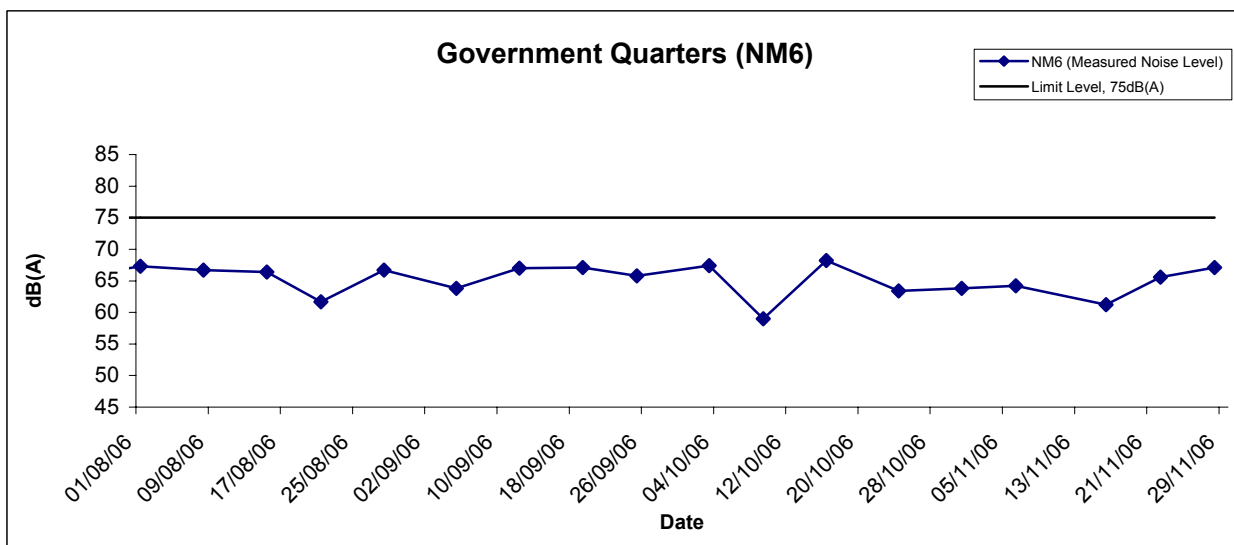
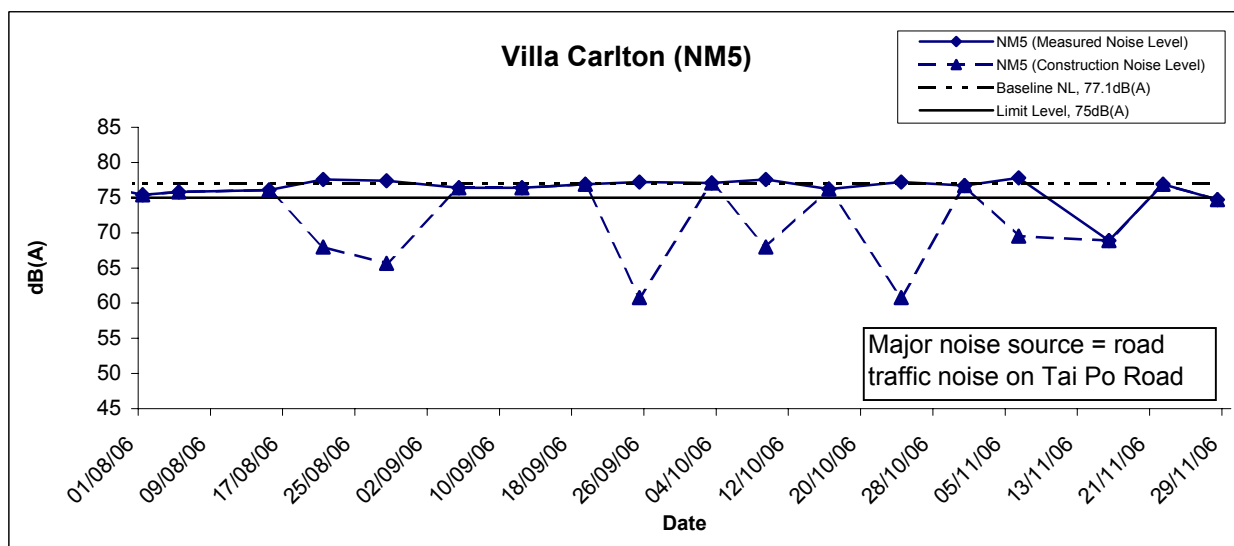
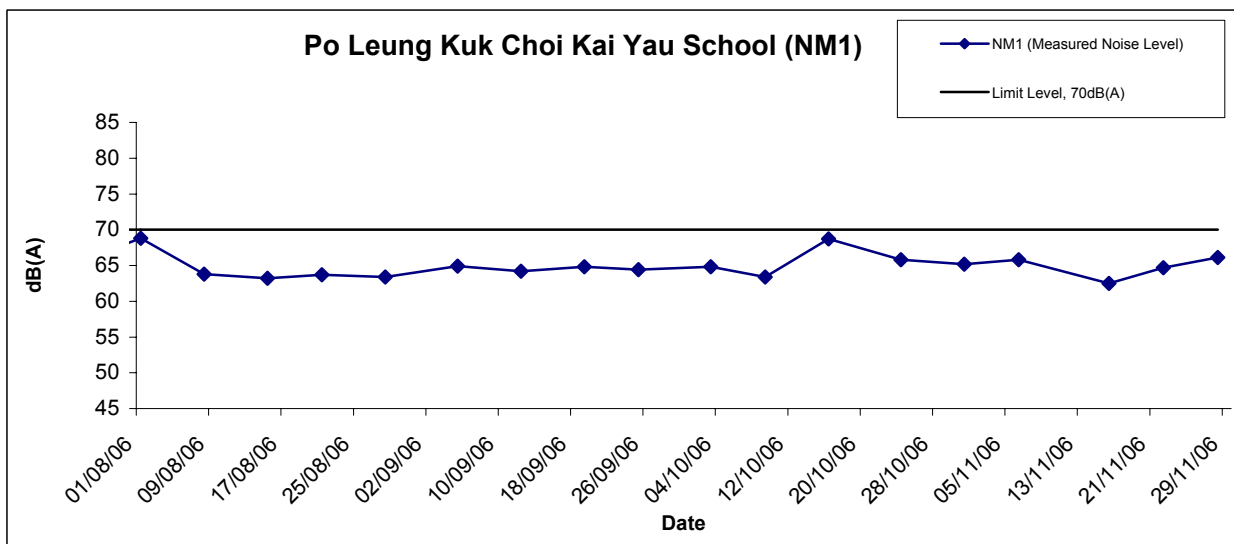
24-hr TSP Levels



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 Nov 06	Appendix E	

**APPENDIX F
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS**

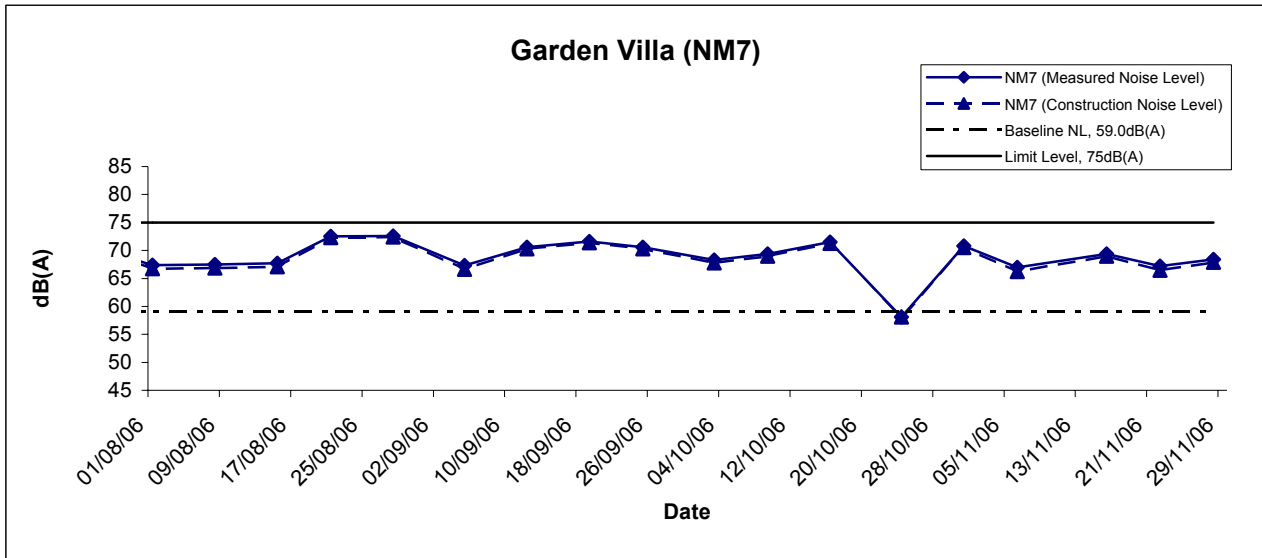
Noise Levels



* 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 Nov 06	Appendix F	

Noise Levels

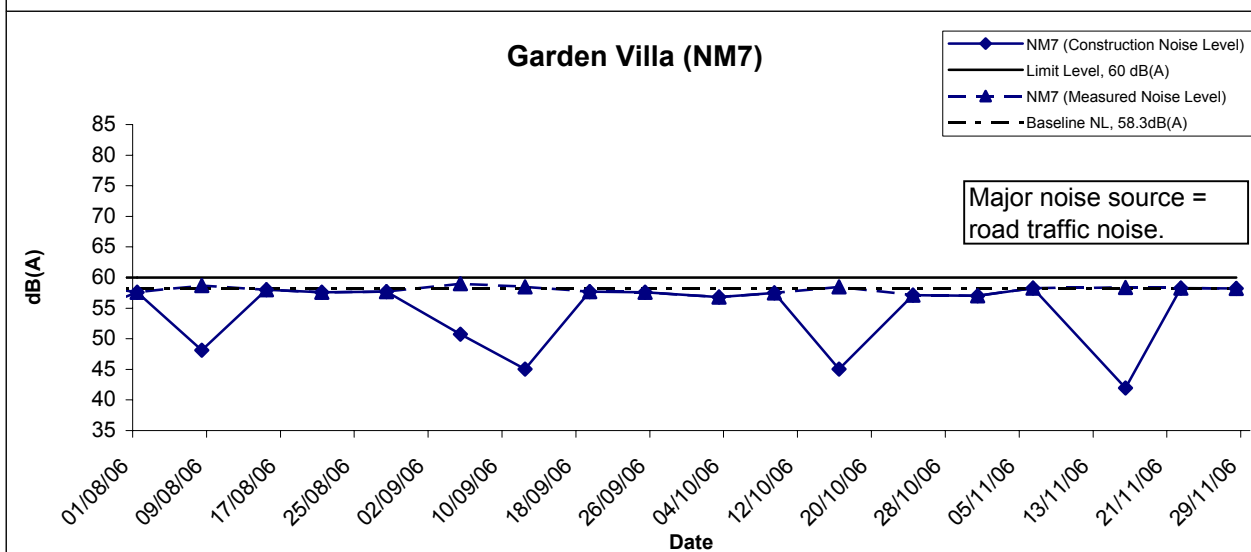
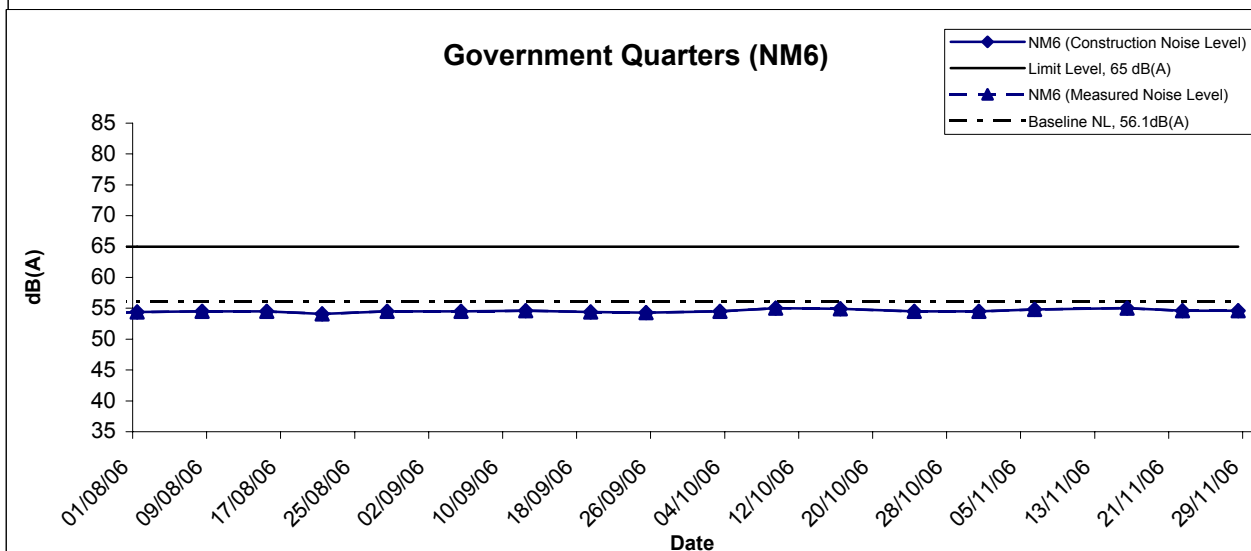
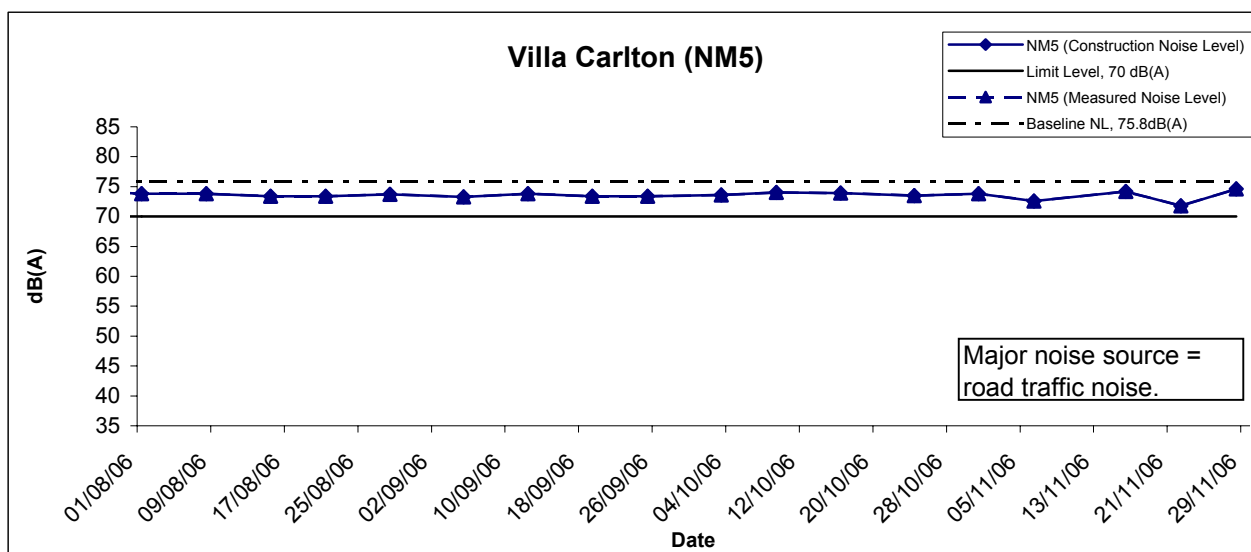


* Construction Noise Level = Measured Noise Level - Baseline Level

(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 Nov 06	Appendix F	

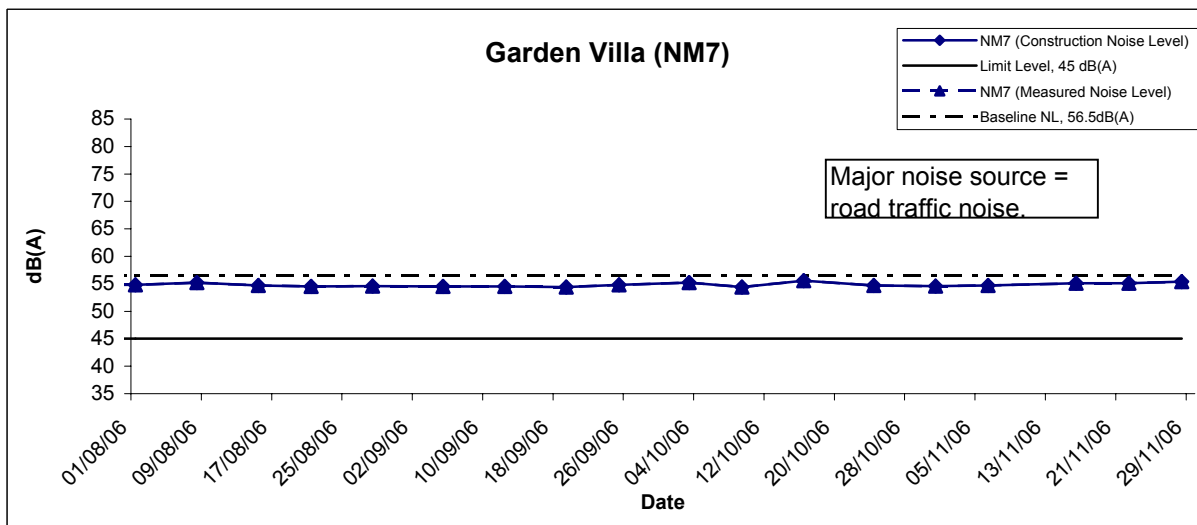
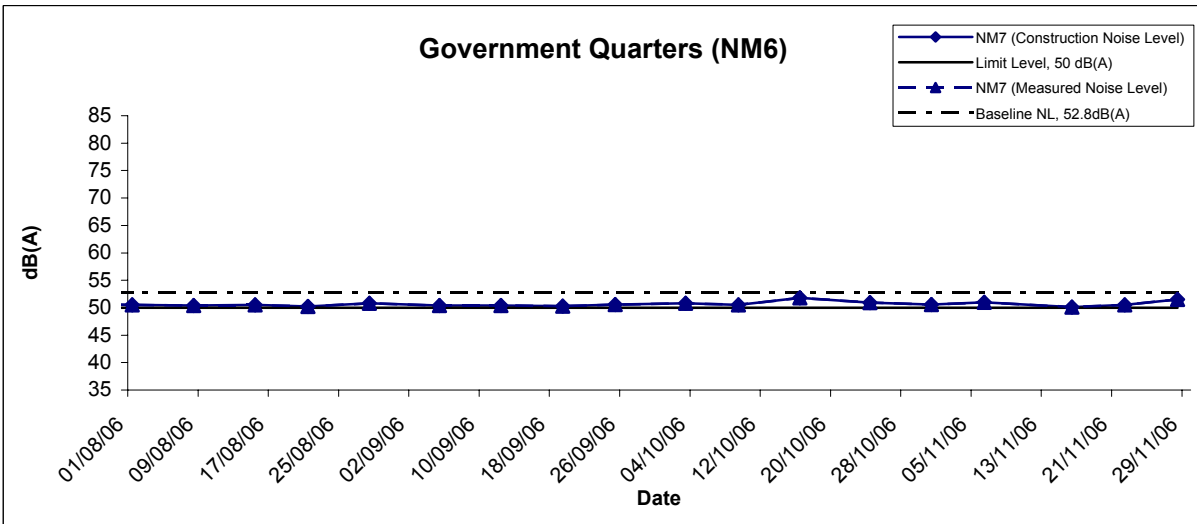
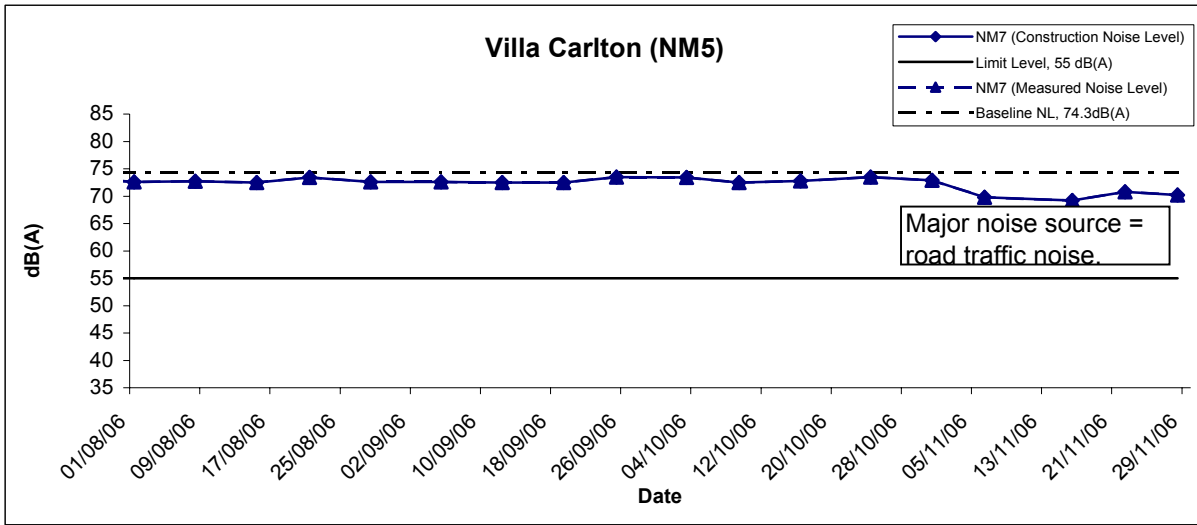
Restricted Hours (19:00 to 23:00) - Noise Levels



* 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	
	Date Nov 06	Appendix F	

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 Nov 06	Appendix F	

**APPENDIX G
IMPLEMENTATION SCHEDULE OF
ENVIRONMENTAL MITIGATION
MEASURES (EMIS)**

Appendix G - 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	<p><i>Construction Runoff and Drainage</i></p> <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. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p><i>Tunnelling Work</i></p> <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. 	<p>^</p> <p>^</p>

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. 	^
	<ul style="list-style-type: none"> 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>	
Waste	<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>	
	<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. 	^
	<ul style="list-style-type: none"> Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits. 	^
	<ul style="list-style-type: none"> Waste shall be removed on a daily basis. 	^
<ul style="list-style-type: none"> Waste storage area shall be maintained and cleaned on a daily basis. 	^	
<ul style="list-style-type: none"> Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers. 	^	
<ul style="list-style-type: none"> Obtain necessary waste disposal permits from the appropriate authorities if they are required. 	^	
<ul style="list-style-type: none"> Wastes shall be disposed of at licensed waste disposal facilities. 	^	
<ul style="list-style-type: none"> 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. 	^	
<ul style="list-style-type: none"> Maintain records of the quantities of wastes generated, recycled and disposed. 	^	
<i>Surplus Excavated Materials</i>		

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> Reusable rather than disposable dishware shall be used if feasible. 	N/A
Ecology	<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>
Landscape and Visual Impact	<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>N/A</p> <p>N/A</p> <p>N/A</p>

Remarks:

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

**APPENDIX H
SUMMARY OF ENVIRONMENTAL
LICENCES AND PERMITS**

Appendix H - Summary of Environmental Licensing and Permit Status (ENT)

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-103/2001/C	22/07/05	N/A	<p><u>Construction and operation of</u></p> <p>(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;</p> <p>(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;</p> <p>I The permanent slope works above the northern portal of the Eagle's Nest Tunnel;</p> <p>(d) The architectural works (including fitting out and furnishings) of the portal buildings of the Sha Tin Heights Tunnel.</p>	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-RN0143-06	3/4/06	2/10/06	<p><i>Location:</i> ENT South Portal Site at Butterfly Valley</p> <p><i>Time period:</i> any day between 2300 and 0700 on next day.</p>	Expired & replaced by CNP No. GW-RN0488-06
GW-RN0150-06	4/04/06	3/10/06	<p><i>Location:</i> ENT Tunnel North Portal Site near Garden Villa</p> <p><i>Time period:</i> Any day not being a general holiday including Sundays between 1900 and 2300.</p>	Expired & replaced by CNP No. GW-RN0487-06
GW-RN0151-06	3/4/06	2/10/06	<p><i>Location:</i> ENT North Portal Site near Garden Villa</p> <p><i>Time period:</i> Any day between 2300 and 0700 on next day.</p>	Expired & replaced by CNP No. GW-RN0486-06

Permit No.	Valid Period		Details	Status
	From	To		
GW-RN0226-06	11/5/06	10/11/06	<i>Location:</i> South Portal <i>Time period:</i> Normal weekdays between 1900 and 2300 and general holidays included Sunday between 0900 and 2300.	Expired
GW-RN0281-06	8/6/06	7/12/06	<i>Location:</i> Tunnel North Portal near Tai Po Road and Keng Hau Road <i>Time period:</i> Any day between 2300 and 0700 on next day.	Valid
GW-RN0282-06	8/6/06	7/12/06	<i>Location:</i> Tunnel South Portal near Garden Villa <i>Time period:</i> Any day between 2300 and 0700 on next day.	Valid
GW-RN0283-06	8/6/06	7/12/06	<i>Location:</i> Tunnel South Portal near Garden Villa <i>Time period:</i> General holiday including Sundays between 0900 and 2300 and any day not being a general holiday including Sundays between 1900 and 2300.	Valid
GW-RN0284-06	8/6/06	7/12/06	<i>Location:</i> Tunnel North Portal near Tai Po Road and Keng Hau Road <i>Time period:</i> General holiday including Sundays between 0900 and 2300 and any day not being a general holiday including Sundays between 1900 and 2300.	Superseded by GW-RN0473-06
GW-RW0392-06	6/8/06	5/2/07	<i>Location:</i> Tai Po Road Shell Petrol Filling Station and opposite to Villa Carlton <i>Time Period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Valid
GW-RW0422-06	4/8/06	3/2/07	<i>Location:</i> Butterfly Valley <i>Time Period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Valid
GW-RN0473-06	25/9/06	24/3/07	<i>Location:</i> Tunnel North Portal near Tai Po Road and Keng Hau Road <i>Time period:</i> General holiday including Sundays between 0700 and 2300 and any day not being a general holiday including Sundays between 1900 and 2300.	Valid
GW-RN0486-06	25/9/06	24/3/07	<i>Location:</i> ENT-North Portal <i>Time period:</i> Any day between 2300 and 0700 on next day.	Valid
GW-RN0487-06	10/10/06	9/4/07	<i>Location:</i> ENT-North Portal <i>Time Period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Valid
GW-RN0488-06	10/10/06	9/4/07	<i>Location:</i> ENT-South Portal <i>Time period:</i> Any day between 2300 and 0700 on next day.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RN0489-06	10/10/06	9/4/07	<i>Location:</i> ENT-South Portal <i>Time period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Valid
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.	Valid (New)
GW-RW0536-06	20/9/06	19/3/07	<i>Location:</i> Butterfly Valley <i>Time Period:</i> General holidays including Sundays between 0700-2300 and any day not being a general holiday between 1900-2300.	Valid

**APPENDIX I
COMPLAINT LOG**

Appendix I - 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>Noise from blasting</p> <p>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>Uncovered dump trucks</p> <p>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"> 1. Noise nuisance due to tunnel blasting works undertaken at midnights and in early mornings (3am to 5am); 2. Noise nuisance due to operation of a generator after 11pm; 3. Construction dust and daytime noise due to processing and stockpiling of crushed rocks at Butterfly Valley; 4. 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

APPENDIX J
SUMMARY OF EXCEEDANCES

Summary of exceedances recorded in the reporting quarter

- a) Exceedance Report for 1-hr TSP (NIL)*
- b) Exceedance Report for 24-hr TSP (NIL)*
- c) Exceedance Report for Construction Noise (NIL)*