

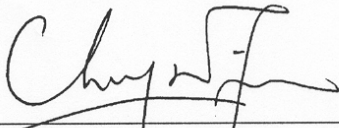
Highways Department

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 2005

Approved By 
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

- This is the eighth 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 2005 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 month included slope cutting, bored piling, blasting, excavation works and construction of portal buildings.

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 2005</i>				
1-hr TSP	1 ^a	0	0	NOE was issued.
24-hr TSP	0	0	0	N/A
Noise	1 ^b	0	0	Complaint investigation
<i>October 2005</i>				
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	1 ^b	0	0	Complaint investigation
<i>November 2005</i>				
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	1 ^b	0	0	Complaint investigation

Remarks:

- On 12 Sept 05, the 1-hr TSP level at Station AM3 exceeded the Action Level. Based on the filed observation and EPD's API records, it was considered that the exceedance was due to the poor ambient air quality over Hong Kong and not related to the Project works.
- Three noise Action Level exceedances were recorded due to the public noise complaint received on 28 Sept, 31 Oct and 1 Nov 05.

Environmental Licensing and Permitting

- Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Construction Noise Permits (CNPs) 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 this 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	4	2 on noise only 1 on dust only 1 on noise & dust	Complaint investigation	Closed	---
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"> • Slope cutting; • Haul road construction; • Soil nail installations; • Stepped channel and retaining wall construction; • Installation of water proofing membrane in tunnels; • Portal building construction. <p>The anticipated environmental impacts will be mainly on dust from slope work, haul roads and stockpiles.</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-IDC Hong Kong Ltd. was appointed as the IEC under Condition 2.1 of the EP. This is the eighth quarterly EM&A report summarizing the EM&A works for the ENT Project between September and November 2005.

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**. The site activities during the reporting period include:
- Regular blasting at North Portal and South Portal;
 - Soil nailing, box culvert and water-main works at Butterfly Valley;
 - Cut slop, drainage works and haul road construction at Butterfly Valley;
 - Chlorine barrier wall construction at Portion X;
 - Surface blasting and retaining wall construction at Butterfly Valley;
 - Water proofing membrane and lining construction in tunnels;
 - Excavation and mucking out from tunnels;
 - Pile cap construction at South Portal, North Portal, Toll Plaza and Ventilation Adit;
 - Tunnel drainage, cross passage, ventilation adit shotcreting, OHVD slab and road construction at ENT Tunnel;
 - Excavation, concreting of blinding layer, column and wall at South Portal, North Portal, Toll Plaza and Ventilation Adit;
 - Permanent rock dowels and shotcreting at Ventilation Adit;
 - Footing construction at Ventilation Adit; and
 - Footbridge, subway construction and drainage works at Toll Plaza.

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 or 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 month. On 12 September 2005, the 1-hr TSP level at Station AM3 exceeded the Action Level. However, based on our field observation and EPD's monitoring data (API), it was considered that the exceedance was due to the poor ambient air quality but not related to R8-ENT works. The exceedance report is provided in **Appendix J**.

4.3 No 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 and November 2005. 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 Limit Level exceedance was recorded in this reporting period.

4.9 Three Action Level exceedances were recorded due to public noise complaints received on 28 September, 31 October and 1 November 2005.

4.10 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.

4.11 The monitoring data of construction noise are attached in the appendices of the Monthly Reports for September and November 2005. The graphical presentations of the monitoring results are shown in **Appendix F**.

4.12 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 8, 14, 21 and 28 September, 5, 13, 20 and 26 October, 3, 9, 17, 24 and 30 November 2005. IEC's monthly site audits were conducted on 8 September, 5 October and 3 November 2005 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>	8-Sept-05	Regarding the overflow at Portion D4 into other's construction site. The water quality of the outfall was found satisfactory. It was also noted that the Contractor had diverted most of the clear stream water to the outlet to avoid overloading the treatment facility. Nevertheless, the Contractor was recommended to review the situation regularly to avoid any discharge of sub-standard water.	N/A
	5-Oct-05	In order to reduce the loading to the WetSep system at Portion D4, the Contractor had diverted some of the stream water to downstream box culvert, bypassing the WetSep system. However, it was observed that the by-pass water was polluted by muddy surface runoff. The Contractor was reminded to review the diversion scheme to avoid discharge of sub-standard water.	Rectification / improvement was observed during the site audit on 13-Oct-05.
	17-Nov-05	Silty water discharge was observed at Portion D4 near the WetSep. The channel preceding the discharge point was filled by sediment. The Contractor was reminded to keep the de-silting facilities well-maintained.	Rectification / improvement was observed during the site audit on 23-Nov-05.
<i>Air Quality</i>	8-Sept-05 14-Sept-05 21-Sept-05	The stockpile at the loading and unloading area at Portion H3 was observed dry. The Contractor was reminded to maintain the stockpile wet to avoid dust emission.	Rectification / improvement was observed during the site audit on 28-Sept-05.

Parameters	Date	Observations / Recommendations	Remedial Actions
	8-Sept-05	Uncovered cement bags (more than 20 bags) were observed at Portion D3. The Contractor was reminded to provide proper covers for the cement bags.	Rectification / improvement was observed during the site audit on 14-Sept-05.
	21-Sept-05	Spot check was conducted at Garden Villa to inspect the condition of dump trucks leaving the site via TAR1. Two dump trucks, which were working for ENT Contract, were found inadequately covered and 1 truck was found uncovered.	Rectification / improvement was observed during the site audit on 28-Sept-05.
	5-Oct-05 13-Oct-05	Idled exposed slope surfaces were observed at Portion E1. The Contractor was recommended to cover the exposed slopes if practical to avoid wind erosion.	Rectification / improvement was observed during the site audit on 20-Oct-05.
	5-Oct-05	Fugitive dust emission was observed from the haul roads and the sorting area at Portion H1. The Contractor was reminded to ensure adequate water spray was applied.	Rectification / improvement was observed during the site audit on 13-Oct-05.
	26-Oct-05	Dust emission was observed from the access road at Toll Plaza and loading area at South Portal. The contractor was reminded to prevent the dust emission in dry condition.	Rectification / improvement was observed during the site audit on 3-Nov-05.
	26-Oct-05	Dust emission was observed on the public road near the WTW access road. The contractor was reminded to water the access road more frequently.	Rectification / improvement was observed during the site audit on 3-Nov-05.
	3-Nov-05	The surface of the stockpile at Portion D4 (Toll Plaza) was observed dry. Immediate action was taken by the Contractor to water spray the stockpile to prevent dust emission.	Rectification / improvement was observed during the site audit on 9-Nov-05.
	9-Nov-05	Fugitive dust emission was observed during the drilling works at Portion H1 near the existing box culvert. The Contractor was reminded to implement sufficient dust mitigation measures, such as water spray, during the works.	Rectification / improvement was observed during the site audit on 9-Nov-05.
	9-Nov-05	Open stockpile of dusty materials was observed at Portion E1 near BVS2. The Contractor was recommended to cover the stockpile properly to prevent wind erosion.	Rectification / improvement was observed during the site audit on 17-Nov-05.
	17-Nov-05	Fugitive dust emission was observed during the breaking and drilling works at Portion H1 near the existing box culvert and BVS2. The Contractor was reminded to apply sufficient dust mitigation measures, such as water spray, for dust suppression.	Rectification / improvement was observed during the site audit on 23-Nov-05.
	30-Nov-05	The haul road at <u>Portion D5</u> near the workshop was observed dry. The Contractor was reminded to water the haul road to avoid dust emission.	The situation would be followed up in Dec 05.

Parameters	Date	Observations / Recommendations	Remedial Actions
<i>Noise</i>	5-Oct-05 13-Oct-05	An air compressor without noise emission label was observed at Portion I2.	Rectification / improvement was observed during the site audit on 20-Oct-05.
	23-Nov-05	No noise label was affixed on an air compressor operated at Portion A.	Rectification / improvement was observed during the site audit on 30-Nov-05.
<i>Chemical and Waste Management</i>	28-Sept-05	The fuel was observed placed on bare ground without the drip tray at Mui Kong Tsuen. The contractor was reminded to store the fuel properly.	Rectification / improvement was observed during the site audit on 05-Sept-05.
	20-Oct-05	Oil stained soil was observed near the roller at BVS2. The contractor was reminded to remove the oil stained soil properly.	Rectification / improvement was observed during the site audit on 05-Sept-05.
	20-Oct-05 26-Oct-05	An oil dump without drip tray was observed at Admin. Building of Toll Plaza. The contractor was reminded to storage the fuel/ chemical properly.	Rectification / improvement was observed during the site audit on 3-Nov-05.
	3-Nov-05	An oil drum without drip tray was observed at Portion D1 (North Portal). The Contractor was reminded to provide a drip tray for the oil drum.	Rectification / improvement was observed during the site audit on 9-Nov-05.
	23-Nov-05	Several oil drums were not placed on bunded area. The Contractor was reminded to provide drip trays for the oil drums.	Rectification / improvement was observed during the site audit on 30-Nov-05.
	30-Nov-05	General refuse was observed at the discharge point at <u>Portion A</u> (Mui Kong Tsuen). The Contractor was reminded to dispose of the refuse properly.	The situation would be followed up in Dec 05.
<i>Others</i>	14-Sept-05	Stagnant water was observed near the chemical storage area at North Portal. The contractor was reminded to remove the standing water.	Rectification / improvement was observed during the site audit on 21-Sept -05.

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 all 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 An Action Level exceedance was recorded at AM3 on 12 September 2005. However, it was considered that the exceedance was not related to the construction activities of the Project. No further action was required. No Limit Level exceedance was recorded.

Construction Noise Monitoring

- 6.2 Three Action Level exceedances were recorded due to public noise complaints received on 28 September, 31 October and 1 November 2005. No Limit Level exceedance was recorded

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 Four environmental related complaints were received in this reporting quarter, as summarized in Table 7.1.

Table 7.1 Summary of Complaints Received in the Reporting Period

Received Date	Area of Concern	Investigation	Conclusion	Status
28-Sept-05	Noise due to nighttime blasting near Government Quarters	<ul style="list-style-type: none"> Ad-hoc noise measurements were carried on 29 to 30 Sept 05. No exceedance was recorded. The blasting works were carried out under a valid permit. 	Not justifiable	Closed
25-Oct-05	Dust generation from access road near Caldecott Hill	<ul style="list-style-type: none"> Ad-hoc inspections were carried out on 26-Oct-05. Significant dust generation was noted. Enhanced dust mitigation measures were taken by the Contractor and the situation was found improved as observed on 27 Oct and 3 Nov 05. 	Valid and related to the Project works. Mitigation was taken and the situation was found improved.	Closed
31-Oct-05	Noise due to blasting works at PLKCKY School	<ul style="list-style-type: none"> Ad-hoc noise measurement was taken on 5 Nov 05 to evaluate the noise impact due to daytime surface blasting at BV. No exceedance was recorded. 	Not justifiable	Closed
1-Nov-05	Construction noise and dust affecting Government Quarters	<ul style="list-style-type: none"> 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. Enhanced dust mitigation measures were implemented by the Contractor for stockpiles and during handling of dusty materials and the situation was found improved. 	Not justified, except for the concern of dust from stockpiles.	Closed

7.2 The details of the complaints, the investigation results and the mitigation actions are summarized in **Appendix I**. There were 20 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 coming months include:

ENT Tunnel

- Water-proofing membrane, tunnel lining, OHVD slab construction, tunnel drainage, cross passage construction, Ventilation Adit shotcreting and E&M installation works.

Butterfly Valley

- Cut slope and haul road, soil nailing, box culvert, surface blasting, retaining wall and water mains construction.

South Portal Building

- Excavation, concreting of columns, walls and slab at G/F and 1/F levels.

North Portal Building

- Concreting of columns, walls and slabs at 2/F level.

Toll Plaza's Structures and Administration Building

- Footbridge and subway construction, drainage works, concreting of columns, walls and slabs at G/F, 1/F and 2/F levels.

Ventilation Adit Tunnel and Building

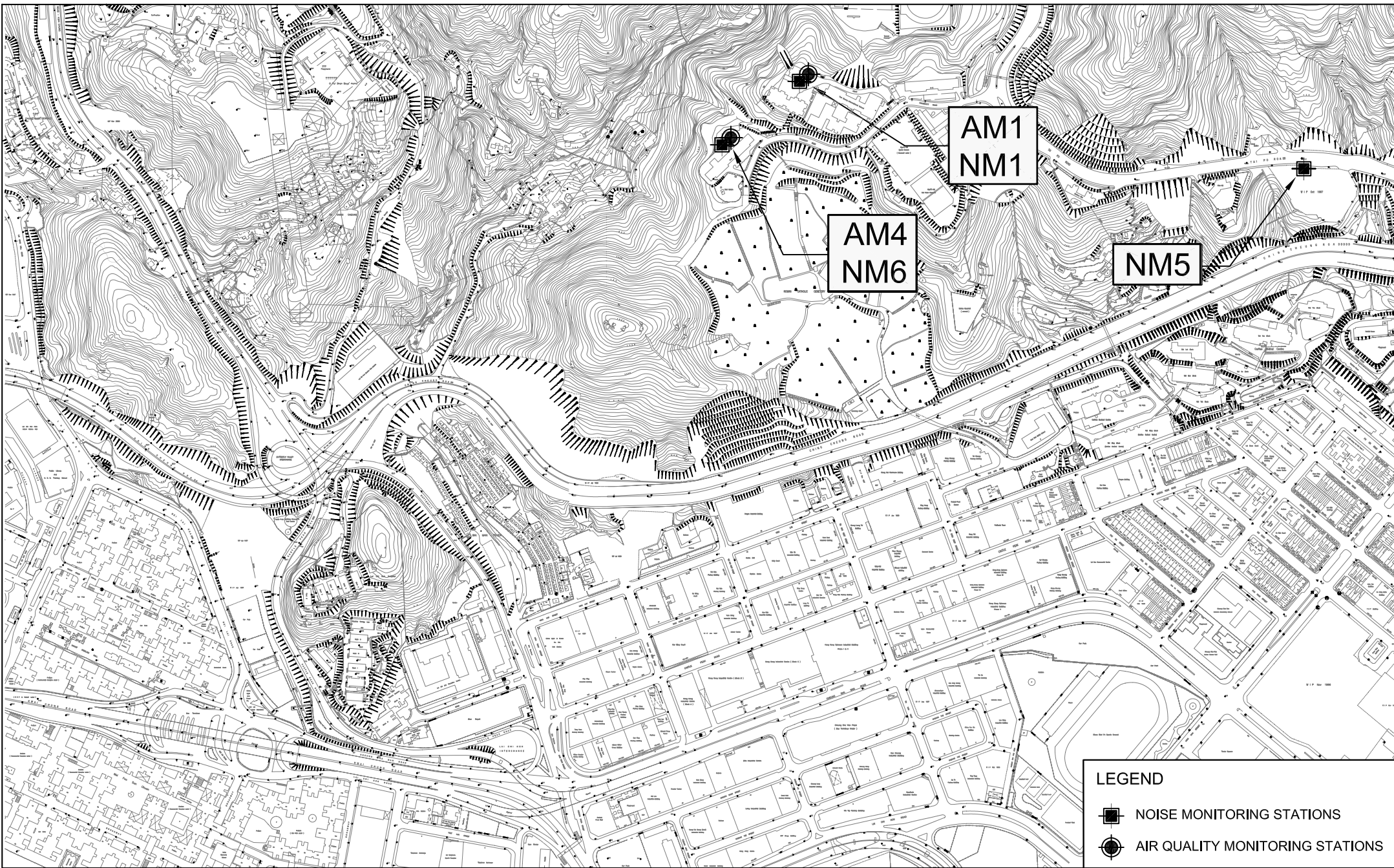
- Footing construction, concreting of columns, walls and slab at Plenum level.

Other Works Areas

- Chlorine barrier wall construction at Portion X.

- 9.2 The anticipated environmental impacts will be mainly on air quality from excavation, stockpiles and noise impact from slope works.

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

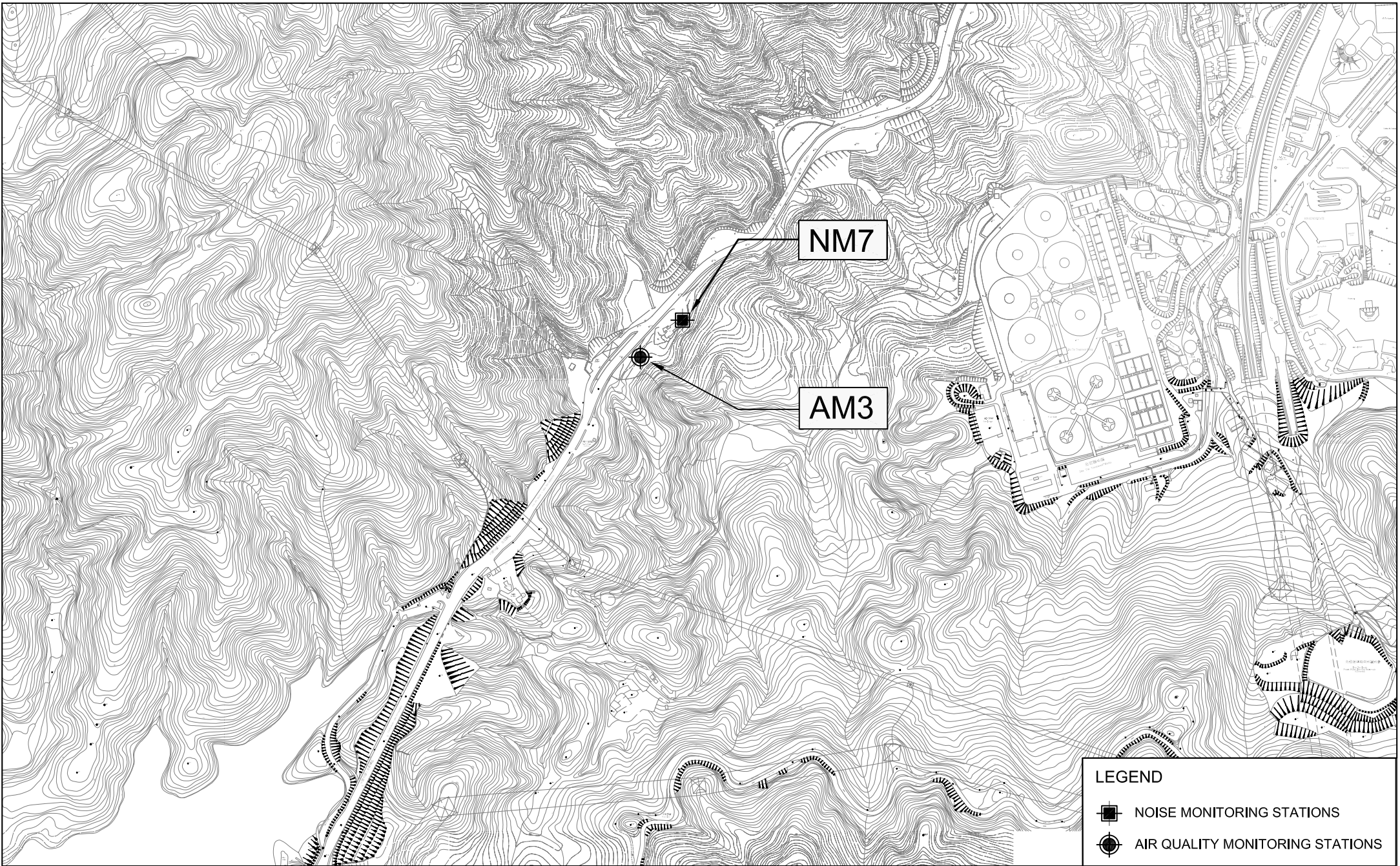
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Date
2005

Project No.
MA3024

Figure No.
1a





LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

Title

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

LOCATIONS OF MONITORING STATIONS

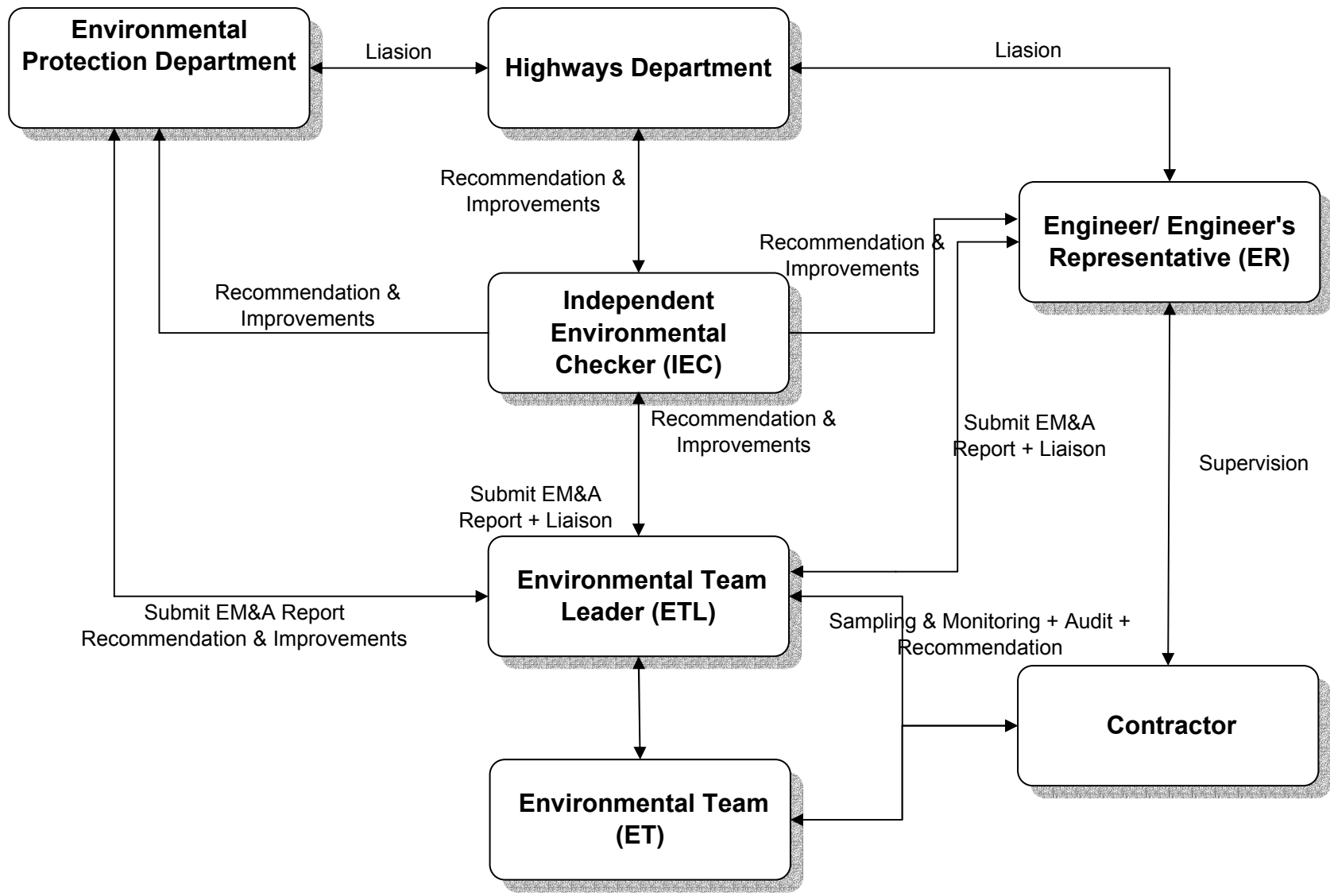
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 1 : 6500 (A4)

Date
 2005

Project No.
 MA3024

Figure No.
 1b





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

2005

Project

No. MA3024

Figure

2

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**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. K.T. Lee	SE3/R8K	2762 3684	2714 5198
		Mr. Albert Cheung	E6/R8K	2762 3598	
		Mr. George Law	E4/R8K	2762 3675	2714 5224
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	The ET Leader	2151 2089	3107 1388
		Mr. KK Chan	Audit Team Leader	2151 2077	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
CH2M-IDC	Independent Environmental Checker	Mr. David Yeung	Independent Environmental Checker	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	
Enquiries Hotline				3552 2226	-
Complaint Hotline				3552 2380	-

APPENDIX B
CONSTRUCTION PROGRAMME

Data Date 20NOV05
Run Date 26NOV05 16:41

3 MONTH ROLLING PROGRAMME

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

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR											
										24	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13			
GENERAL & PRELIMINARIES																																							
CONTRACT DEFINED DATES, STAGES & SECTIONS																																							
SECTIONS OF THE WORKS																																							
KD22	KD-22 Compl.Section 14 (01June05) 19Jun05	0		06FEB06	0		0	-232	-297																														
PROGRAMME RESTRAINTS																																							
EXC05	LCK Contr.to erect Noise Enclosure C3,C4 & I2	350	20JAN06	04JAN07	0		350	-177	-251																														
SUBMITTALS & APPROVALS																																							
DRAWING SUBMITTAL & APPROVAL																																							
8034	Prep. & Sub. Independ't Serv. Dwgs for SHT&T3&LCK	48	04AUG04A	18JAN06	98	100	48	-42	-334																														
8024	Engineer Comment / Approve ENT ISD Submissions	18	06AUG04A	10DEC05	85	100	18	-102	-424																														
8030	Res-sub. & Approv of ENT ISD	24	06SEP04A	17DEC05	55	100	24	-102	-406																														
8035	Engineer Comment / Approve SHT&T3LCK ISD Sub.	24	13SEP04A	09MAR06	70	100	84	-42	-346																														
8032	Engineer Comment / Approve SHT&T3&LCK CSD Sub.	18	25OCT04A	18JAN06	80	100	48	6	-406																														
8033	Re-sub. & Approv. of SHT & T3 & LCK CSD	24	28JUN05A	23FEB06	60	100	24	-42	-406																														
SEM INTERFACE WITH SHT & T3																																							
SHT RC FULL ENCLOSURE																																							
2473	Apprv.for Det.Engineering of Encl.Vent.Fans	12	07JUL04A	03DEC05	99	100	12	108	-584																														
T3 UNDERPASS																																							
2481	Apprv.for Det.Engineering of T3 Underpass	12	07JUL04A	03DEC05	99	100	12	108	-584																														



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LEIGHTON - KUMAGAI JV R8- EAGLE'S NEST TUNNEL

DETAILED WORKS PROGRAMME REVISION C

Proj. Name: W13C
 Layout: 3 MONTHS ROLLING PROGRAMME
 Filter: 3 MONTH ROLLING PROGRAMME
 Current Proj: W13C
 Target 1 Proj: BLRC
 Target 2 Proj: EOTS
 Sheet 1 of 45

LKJV/ENT/DWP/B			
Date	Revision	Checked	Approved
24NOV05	Prog update	November	IT RB

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR																
										12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13								
LAI CHI KOK VIADUCT																																												
SUBMITTALS & APPROVALS																																												
E&M EQPT./MTRL SUBMITTALS																																												
8313	LCKVd-Sub. Enclosure Lgt sys (incl Excision NEs)	78	02JUL04A	20OCT05A	100	100	0		-62																																			
E&M EQPT./MTRL APPROVALS BY ENGINEER																																												
8314	LCKVd-App.Enclosure Lgt sys (incl Excision NEs)	18	05AUG04A	09JUN06	80	100	156	-166	-226																																			
8318	LCKVd-App. Elect Power sys (incl Excision NEs)	18	07DEC04A	10DEC05	65	100	18	-46	-88																																			
PROCUREMENT - MATERIAL																																												
8320	LCKVd-Proc & Manuf. Elect Power sys (incl Excision NEs)	180	20MAY05A	08JUL06	65	100	180	-46	-70																																			
BUTTERFLY VALLEY																																												
CONSTRUCTION WORKS																																												
EARTHWORKS & SLOPEWORKS																																												
SLOPE SP-S2 & SP-S3																																												
SLOPE STABILISATION (SOIL NAILS, ROCK BOLTS ETC)																																												
1110	SP-S2/S3 Inst. Soil Nails & Test (97nr.w/3rig)	18	08SEP05A	04JAN06	0	100	36	110	-430																																			
3798	SP-S2/S3 hydro-seeding & tensar mat	24	05JAN06	09FEB06	0	100	24	237	-430																																			
SLOPE BV-S2																																												
EXCAVATION (SOFT & ROCK)																																												
2689	BV-S2/8 Slope excavation (rock & some soft)	82	23JUL05A	15NOV05A	100	100	0		-197																																			
2692	BV-S2/9 (South) Slope excavation (rock & some soft)	83	05SEP05A	13DEC05	50	100	20	-103	-184																																			
2695	BV-S2/10 (South) Slope excavation (rock & some soft)	22	12DEC05	09JAN06	0	100	22	-103	-171																																			
SLOPE STABILISATION (SOIL NAILS, ROCK BOLTS ETC)																																												
2694	BV-S2/9 Inst. Rock bolts & Test (4nr.w/1.rig)	5	21NOV05	25NOV05	0	100	5	-103	-171																																			
3664	BV-S2/9 Row B2 Soil Nails & Test 38nr.w/1.rig	21	21NOV05	14DEC05	0	100	21	-103	-171																																			
2691	BV-S2/8 Inst. Rock bolts & Test (60nr.w/3.rig)	22	30NOV05	24DEC05	0	100	22	243	-273																																			
2696	BV-S2/10 Row B3 Soil Nails & Test 39nr.w/2.rig	11	28DEC05	10JAN06	0	100	11	-103	-171																																			
HYDRO-SEEDING & TENSAR MAT																																												
3805	BV-S2 Berm 8 hydro-seeding & tensar mat	12	21DEC05	06JAN06	0	100	12	259	-183																																			
3811	BV-S2 Berm 9 hydro-seeding & tensar mat	12	10JAN06	23JAN06	0	100	12	233	-183																																			
3812	BV-S2 Berm 10 hydro-seeding & tensar mat	12	27JAN06	17FEB06	0		12	230	-171																																			

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
										24	25	26	27	28	29	30	
CONCRETE WORKS																	
1143	BV-R1(C) Pile Capping Beam	18	20FEB06	11MAR06	0		18	-14	-163								
1147	BV-R1(B) RC Base Slab ch.2+070 to B1(BP wall)	18	20FEB06	11MAR06	0		18	-32	-220								
EXCAVATION (SOFT & ROCK)																	
2700	BV-R1 Excavation (BV-S2/8 rock)	61	23JUL05A	10DEC05	0	100	18	697	-201								
RETAINING WALL BV-R2																	
CONCRETE WORKS																	
1116	BV-R2 (7) Capping Beam and wall	30	21NOV05	24DEC05	0	100	30	116	-273								
1117	BV-R2 (8) Capping Beam and wall	30	05JAN06	16FEB06	0	100	30	110	-279								
BACKFILLING																	
1122	BV-R2(A&B) Granular Drain & Compacted Backfill	36	07APR05A	16FEB06	5	100	36	112	-207								
1126	BV-R2(C) Granular Drain & Compacted Backfill	6	17FEB06	23FEB06	0	100	6	160	0								
STEPPED CHANNEL & BOX CULVERT																	
CONCRETE WORKS																	
1911	Box culvert bays (32to43) ch.2+010 to 2+110	55	20SEP05A	20MAY06	15	100	140	-148	-292								
1161	Box culvert bays (44&45) ch.2+110 to 2+140	18	21NOV05*	20JAN06	0	100	50	-32	-176								
EXCAVATION (SOFT & ROCK)																	
1912	Box culvert rock exc.bay 5-15 Ch.2+010 to 2+110	60	20JUL05A	13DEC05	50	100	20	-148	-191								
INLET HEADWALLS																	
INLET HEAD WALL																	
3715	Inlet headwall @SP-S2/3	30	28NOV05	04JAN06	0	100	30	261	-412								
3796	Inlet headwall ch.1+810	66	16DEC05	14MAR06	0	100	66	209	-307								
3797	Inlet headwall ch.1+830	66	16DEC05	14MAR06	0	100	66	209	-307								
WSD WORKS																	
WSD 900 MAIN DIVERSION																	
1929	Inst.900.dia pipe (incl.thrust blocks) westside	90	19JUL05A	07DEC05	70	100	15	-19	-300								
1174	Inst.DN900 pipe (incl.thrust blocks) to BV-S4	66	01AUG05A	07DEC05	70	100	15	-19	-318								
3163	DN900 main clean/pressure test & WSD approve	54	08DEC05	31DEC05	0	100	24	-22	-331								
1175	DN900 connection by WSD	12	01JAN06	12JAN06	0	100	12	-22	-397								
1176	DN900 WSD Diversion Implemented	0		12JAN06	0	100	0	-22	-343								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR						
										12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27
WSD 2x600 MAIN DIVERSION																																		
1169	Inst.2xDN600 WSD Pipe down BV-S2/6-7	90	21JUL05A	30MAR06	50	100	102	71	-330																									
1165	Construct DN600 pipe tunnel	66	26SEP05A	08DEC05	30		16	-144	-235																									
1167	Inst.DN600 WSD Pipe along BV-S2/8 (CH140>200)	40	31OCT05A	15DEC05	0	100	22	86	-45																									
1163	Inst.DN600 WSD Pipe along BV-S2/8 (CH140>45)	30	21NOV05	24DEC05	0	100	30	88	-141																									
1164	Inst.DN600 WSD Pipe in Pipe Tunnel	18	09DEC05	31DEC05	0	100	18	-90	-217																									
1166	Construct DN600 Pipe Bridge 'D' (CH225>280)	30	28DEC05	09FEB06	0	100	30	88	-312																									
WSD 200 MAIN																																		
2338	Inst.DN200 pipe (incl.thrust blocks) to BV-S4	60	03OCT05A	20JAN06	10	100	50	-45	-359																									
2340	DN200 connection by WSD	12	14JAN06	25JAN06	0	100	12	-56	-445																									
3164	DN200 main clean/pressure test & WSD approve	54	26JAN06	20MAR06	0	100	54	-56	-445																									
TERRAIN MITIGATION																																		
NTMM - BV-S2																																		
2392	NTMM - Constr.Peforated Drain Channel	24	11JUL05A	03DEC05	80	100	12	-103	-255																									
2350	NTMM - Afforestation of Area	60	25FEB06	12MAY06	0	100	60	164	-316																									
NTMM - CULVERT 'A'																																		
SOIL STABILISATION (SOIL NAILS,ROCK BOLTS ETC)																																		
2384	Culvert 'A' Prep.access for Soil Nails Ch.2+140	8	21JAN06	07FEB06	0	100	8	164	-221																									
2385	Culvert A-Soil Nails & Test ch.2+140 19nr.w/1rig	11	08FEB06	20FEB06	0	100	11	164	-221																									
2386	Culvert 'A' - excavate gabion benches Ch.2+140	4	21FEB06	24FEB06	0	100	4	164	-221																									
FINISHES																																		
2387	Culvert 'A' - place gabions Ch.2+140	4	25FEB06	01MAR06	0		4	620	-221																									
RECREATED STREAM																																		
3808	Recreated stream DN525 pipe (east) ch.1+740	18	21NOV05	10DEC05	0	100	18	42	-442																									
1927	Recreated stream (east) ch.1+720 to 2+010	64	05JAN06	28MAR06	0		64	24	-114																									
3810	Recreated stream pond [east) ch.1+920	36	15FEB06	28MAR06	0		36	197	-114																									
EXCISION WORKS - NOISE BARRIERS & ENCLOSURES																																		
NOISE BARRIER (SB)																																		
2741	SB Barrier.Fnds.-RC Base (C2)	58	16DEC05	04MAR06	0	100	58	-46	-150																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR																		
										24	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13										
NOISE SEMI-ENCLOSURE [SB]																																														
2735	SB Semi-Encl.Fnds. - RC Base (C4)	23	28NOV05	23DEC05	0	100	23	-177	-223																																					
2739	SB Semi-Encl.Fnds. - RC Base (C3,C4,I2)	51	28NOV05*	06FEB06	0	100	51	-200	-237																																					
2733	SB Semi-Encl.Fnds. - RC Base (C3)	20	24DEC05	19JAN06	0	100	20	-177	-267																																					
2737	SB Semi-Encl.Fnds. - RC Base (I2)	14	24DEC05	12JAN06	0		14	-171	-223																																					
SB/NB ROADWORKS & FINISHES																																														
ROADS - FORMATION																																														
FILLING																																														
1103	BV Compact.Fill to Form.ch.1+920 to 2+020	84	14JUN04A	24DEC05	80	100	30	-158	-249																																					
1102	BV Compact.Fill to Form.ch.2+020 - 2+200	48	11AUG04A	24DEC05	80	100	30	-158	-285																																					
2732	BV Compact.Fill to Form.ch.1+860 to 1+920	78	03OCT05A	20JAN06	20	100	50	-106	-227																																					
DRAINAGE																																														
2381	SB/NB Sth.Appr.Rd.Drainage ch.2+030 - 2+200	114	28NOV05	25APR06	0	100	114	-200	-261																																					
2727	BV.Appr.Rd.Drainage ch.1+780 to 1+920	62	16DEC05	09MAR06	0	100	62	-116	-199																																					
1178	BV.Appr.Rd.Drainage ch.1+920 to 1+960	44	28DEC05	25FEB06	0	100	44	-130	-249																																					
ROADS - FINISHES																																														
2717	BV CLP Inst.HV cable duct to SP	90	20JAN06	19MAY06	0		90	-157	-229																																					
2742	TCSS Ducts NB & SB Carriageway ch.1+800 to 1+900	90	10FEB06	02JUN06	0		90	-116	-175																																					
EVA ROADWORKS & FINISHES																																														
SB (EAST SIDE) EVA ROADWORKS																																														
FILLING																																														
1980	BV Fill Temp.covered culvert ch.2+000	12	21NOV05	03DEC05	0		12	16	-114																																					
2378	BV Fill to Formation (east) ch.1+840 - 1+980	24	05DEC05	04JAN06	0		24	16	-114																																					
DRAINAGE																																														
1979	SB EVA rd.drainage (east) ch.2+000 to 2+200	31	11APR05A	11JAN06	75	100	12	112	-152																																					
1978	SB EVA rd.drain testing (east) ch.2+000 to 2+200	18	12JAN06	09FEB06	0	100	18	112	-152																																					
EXCISION WORK-SHEK LEI PUI WATER TREATMENT PLANT																																														
2747	Soilid Barrier Type II - Structural Steelwork	30	14SEP05A	08NOV05A	100	100	0		-219																																					
2749	Soilid Barrier Type III - Structural Steelwork	24	14SEP05A	08NOV05A	100	100	0		-176																																					
2748	Soilid Barrier Type I - Structural Steelwork	18	15SEP05A	08NOV05A	100	100	0		-201																																					

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR																	
											12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13									
NORTH PORTAL																																														
3437	NB Ground water ENG-26 to ENG-27 [49m]	11	24FEB06	08MAR06	0		11	-94	-199																																					
SOUTH PORTAL																																														
3226	NB Kicker/form part Service Trough (fr.SP) 253m	35	22JUL05A	28OCT05A	100	100	0		-181																																					
3227	NB Kicker/form part Service Trough (fr.SP) 90m	13	29OCT05A	29NOV05	41	100	8	-94	-195																																					
3228	NB Kicker/form part Service Trough (fr.SP) 146m	20	30NOV05	22DEC05	0	100	20	-94	-189																																					
3229	NB Kicker/form part Service Trough (fr.SP) 100m	14	23DEC05	11JAN06	0	100	14	-94	-181																																					
3230	NB Kicker/form part Service Trough (fr.SP) 199m	28	12JAN06	21FEB06	0	100	28	-94	-178																																					
3210	NB exc.grnd/foul water drain trough 253m(fr.SP)	50	20DEC05	27FEB06	0	100	50	-57	-301																																					
3216	NB Invert Cleaning [fr.SP] 253m	18	20DEC05	12JAN06	0	100	18	-57	-266																																					
3324	NB Foulwater Gulley ENF-1A to ENF-1 [44m]	10	06JAN06	17JAN06	0		10	-57	-218																																					
3325	NB Foulwater Gulley ENF-1 to ENF-2 [50m]	11	18JAN06	07FEB06	0		11	-57	-218																																					
3326	NB Foulwater Gulley ENF-2 to ENF-3 [53m]	12	08FEB06	21FEB06	0		12	-57	-218																																					
3327	NB Foulwater Gulley ENF-3 to ENF-4 [51m]	11	22FEB06	06MAR06	0		11	-57	-218																																					
3412	NB Ground water ENG-1B to ENG-2 [50m]	11	06JAN06	18JAN06	0		11	-48	-218																																					
3410	NB Ground water ENG-1C to ENG-1B [44m]	14	19JAN06	11FEB06	0		14	63	-218																																					
3413	NB Ground water ENG-2 to ENG-3 [53m]	12	19JAN06	09FEB06	0		12	-48	-218																																					
3414	NB Ground water ENG-3 to ENG-4 [51m]	11	10FEB06	22FEB06	0		11	-48	-218																																					
3411	NB Ground water ENG-1A to ENG-1B	6	13FEB06	18FEB06	0		6	63	-218																																					
3415	NB Ground water ENG-4 to ENG-5 [51m]	11	23FEB06	07MAR06	0		11	-48	-218																																					
TUNNEL LINING																																														
NORTH PORTAL																																														
3240	NB NP Arch Lining 150m Tch.2+280 to 2+130	30	14OCT05A	10NOV05A	100	100	0		-148																																					
3241	NB NP Arch Lining 150m Tch.2+130 to 1+980	30	11NOV05A	10DEC05	39	100	18	-124	-144																																					
3242	NB NP Arch Lining 150m Tch.1+980 to 1+830	30	12DEC05	18JAN06	0	100	30	-120	-144																																					
3243	NB NP Arch Lining 157m Tch.1+830 to 1+673 VA	36	19JAN06	09MAR06	0		36	-120	-144																																					
3250	NB NP OHVD 150m Tch.2+280 to 2+130	30	15OCT05A	22NOV05	95	100	2	-126	-146																																					

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	SEP			OCT			NOV			DEC			JAN			FEB			MAR		
										12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30
SOUTH PORTAL																														
3458	SB Ground water ESG-3 to ESG-4 [48m]	11	24JAN06	13FEB06	0		11	-94	-188																					
3459	SB Ground water ESG-4 to ESG-5 [49m]	11	14FEB06	25FEB06	0		11	-94	-188																					
TUNNEL LINING																														
NORTH PORTAL																														
2191	SB NP Arch Lining 150m Tch.2+285 to 2+135	30	20OCT05A	18NOV05A	100	100	0		-163																					
2192	SB NP Arch Lining 150m Tch.2+135 to 1+985	30	19NOV05A	19DEC05	17	100	25	-131	-159																					
2193	SB NP Arch Lining 150m Tch.1+985 to 1+835	30	20DEC05	26JAN06	0		30	-127	-159																					
2194	SB NP Arch Lining 175m Tch.1+835 to 1+660 VA	35	27JAN06	16MAR06	0		35	-127	-159																					
3157	SB NP OHVD 150m Tch.2+435 to 2+285	30	05OCT05A	27OCT05A	100	100	0		-163																					
3158	SB NP OHVD 150m Tch.2+285 to 2+135	30	28OCT05A	26NOV05	81	100	6	-130	-159																					
3159	SB NP OHVD 150m Tch.2+135 to 1+985	30	29NOV05	05JAN06	0	100	30	-131	-160																					
3160	SB NP OHVD 150m Tch.1+985 to 1+835	30	06JAN06	17FEB06	0		30	-131	-160																					
3161	SB NP OHVD 175m Tch.1+835 to 1+660 VA	40	18FEB06	06APR06	0		40	-131	-160																					
SOUTH PORTAL																														
1320	SB SP Arch Lining 150m Tch.1+063 to 1+213	30	10OCT05A	19NOV05A	100	100	0		-170																					
3167	SB SP Arch Lining 150m Tch.1+213 to 1+363	30	21NOV05	24DEC05	0	100	30	-143	-170																					
3151	SB SP Arch Lining 150m Tch.1+363 to 1+513	30	28DEC05	09FEB06	0		30	-143	-170																					
3168	SB SP Arch Lining 130m Tch.1+513 to 1+643	38	10FEB06	25MAR06	0		38	-143	-170																					
3172	SB SP OHVD 150m Tch.1+063 to 1+213	30	29OCT05A	13DEC05	33	100	20	-139	-178																					
3173	SB SP OHVD 150m Tch.1+213 to 1+363	30	14DEC05	20JAN06	0	100	30	-139	-178																					
3174	SB SP OHVD 150m Tch.1+363 to 1+513	30	21JAN06	04MAR06	0		30	-139	-178																					
TUNNEL FINISHING WORKS																														
SERVICE TROUGH & UTILITIES																														
3560	SB service trough 150m Tch.3+035 to 2+885 fr.NP	23	15OCT05A	03DEC05	51	100	12	-233	-306																					
3561	SB service trough 150m Tch.2+885 to 2+735 fr.NP	23	05DEC05	03JAN06	0	100	23	-226	-299																					
3562	SB service trough 150m Tch.2+735 to 2+585 fr.NP	23	04JAN06	07FEB06	0	100	23	-226	-292																					
3563	SB service trough 150m Tch.2+585 to 2+435 fr.NP	23	08FEB06	06MAR06	0	100	23	-226	-285																					

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
											24	25	26	27	28	29	30	
TESTING & COMMISSIONING																		
EAGLE'S NEST TUNNEL																		
STATUTORY INSPECTIONS																		
FSD INSPECTION																		
6917	EntRt-All FS design approved by FSD (MHJV)	0	12DEC05		0	100	0	-114	-190									
6918	EntRt-Issue, endorse & submit FSI 314 to FSD	6	28DEC05	04JAN06	0	100	6	-114	-190									
VENTILATION ADIT & BUILDING																		
SUBMITTALS & APPROVALS																		
ABWF & BUILDER'S WORKS																		
1973	VA Bldg. - Prep & submit louvre details	90	22NOV04A	03DEC05	50	100	12	-100	-214									
1985	VA Bldg. - Prep & sub aluminium cladding	90	22NOV04A	03DEC05	0	100	12	-94	-214									
1975	VA Bldg. - Prep & sub balustrade & metal wks	90	24NOV04A	03DEC05	0	100	12	-94	-212									
1971	VA Bldg. - Prep & submit door & window detail	90	03FEB05A	03DEC05	40	100	12	-70	-154									
1974	VA Bldg. - Approve louvre details	24	07APR05A	17DEC05	50	100	24	-112	-202									
1989	VA Bldg. - Prep & sub fall arrest system	90	19APR05A	03DEC05	50	100	12	-70	-100									
1972	VA Bldg. - Approve door & window details	24	07MAY05A	10DEC05	0		18	-76	-136									
1991	VA Bldg. - Approve slate cladding	24	15JUN05A	10DEC05	50	100	18	-106	-196									
1990	VA Bldg. - Approve fall arrest system	24	14OCT05A	10DEC05	50		18	-76	-82									
1976	VA Bldg. - Approve balustrade & metal works	24	05DEC05	04JAN06	0		24	-94	-212									
1988	VA Bldg. - Approve aluminium cladding	24	05DEC05	04JAN06	0		24	-94	-214									
E&M EQPT./MTRL.DETAIL SUBMITTAL																		
8232	VaBldg-Sub.TVF, Ductworks & Control sys	78	02JUL04A	21NOV05	99	100	1	-39	-122									
8234	VaBldg-Sub.MVAC MCC, power & control sys	54	02JUL04A	25JAN06	95	100	54	-91	-255									
8231	VaBldg-Sub.FS AFA & FM200 sys	54	05JUL04A	25NOV05	99	100	5	21	-146									
8229	VaBldg-Sub.MVAC mech.vent. sys	54	03AUG04A	21OCT05A	100	100	0		-164									
8228	VaBldg-Sub.FS wet sys	54	05AUG04A	25NOV05	99	100	5	21	-146									
8233	VaBldg-Sub.MVAC / TVF pneumatic sys	54	14AUG04A	18JAN06	95	100	48	-33	-111									
8230	VaBldg-Sub.CMCS & ELV sys	78	26AUG04A	02MAR06	98	100	78	-87	-237									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	SEP			OCT			NOV			DEC			JAN			FEB			MAR						
										12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27
PROCUREMENT - MATERIAL																																		
ABWF WORKS																																		
1967	NP.Bldg. - Procure aluminium cladding	180	18JAN05A	17DEC05	50	100	24	-87	-90																									
1966	NP.Bldg. - Procure balustrade & metal works	120	24MAR05A	17DEC05	50	100	24	-79	-100																									
E&M WORKS																																		
6202	EntNpBldg-Proc & Manuf. LV power dist. equip't	180	20MAR05A	08JUL06	30	80	180	-144	-192																									
6201	EntNpBldg-Proc. & Manuf. of HV dist. equip't	180	25MAR05A	08JUL06	50	100	180	-138	-228																									
6208	EntNpBldg-Proc. & Manuf. of CMCS & ELV sys	180	25MAR05A	08JUL06	20	70	180	-90	-156																									
6838	EntNpBldg-Proc & Manuf. MCC, power & control sys	180	25MAR05A	08JUL06	20	95	180	-138	-222																									
6205	EntNpBldg-Proc & Manuf. FS wet sys	120	06JUN05A	25APR06	30	90	120	12	-154																									
6824	EntNpBldg-Proc & Manuf. TVF, Ductwks&Cont'l sys	180	09JUN05A	08JUL06	35	80	180	-90	-166																									
6204	EntNpBldg-Proc & Manuf. Cleans & flush water sys	120	12DEC05	18MAY06	0	100	120	-6	-190																									
6206	EntNpBldg-Proc & Manuf. MVAC mech.vent. sys	180	12DEC05	29JUL06	0	100	180	-162	-252																									
8500	EntNpBldg-Proc & Manf bldg related luminaires	180	12DEC05	29JUL06	0	80	180	-84	-196																									
6269	EntNpBldg-Proc & Manuf. FS AFA & FM200 sys	120	13FEB06	11JUL06	0		120	-44	-132																									
CONSTRUCTION																																		
SUPERSTRUCTURE																																		
RC WORKS																																		
NB CARRIAGEWAY & CENTRAL RESERVE																																		
1387	NP.Bldg. - RC Cols.& Walls to 1FL.GL.A-K/2-6	18	03AUG05A	12NOV05A	100	100	0		-180																									
1385	NP.Bldg. - Nth Bound C/Way RC Ret. Wall W1	24	03SEP05A	14NOV05A	100	100	0		-169																									
1389	NP.Bldg. - RC S/Slab 1FL.+72.50mPD GL.A-K/2-6	18	12OCT05A	03DEC05	50	100	12	-99	-174																									
1427	NP.Bldg - RC Trans Slab - Nth Bound [New Act]	36	18OCT05A	30NOV05	50		9	-102	0																									
1391	NP.Bldg. - RC S/Slab LPL.+74.40mPD GL.A-F/2-6	12	26OCT05A	09NOV05A	100	100	0		-135																									
1392	NP.Bldg. - RC S/Slab LPL.+75.50mPD GL.G-K/2-6	12	01NOV05A	03DEC05	50	100	12	-107	-150																									
1390	NP.Bldg. - RC Cols.& Walls to 2FL.GL.A-K/2-6	18	14NOV05A	26NOV05	50	100	6	-99	-156																									
1393	NP.Bldg - RC Trans Slab 2FL.+78.5mPD GL.A-K/2-7	20	18NOV05A	10DEC05	0	100	18	-111	-136																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR						
											12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27
E&M - GENERAL																																			
ELECTRICAL WORKS																																			
EARTHING & LIGHTNING PROTECTION																																			
6209	EntNpBldg-Earth'g & lighn'g - Earth Mat & Rods	30	24FEB06	30MAR06	0		30	-12	-136																										
TCSS CONTAINMENT																																			
8481	EntNpBldg - TCSS Contain't for KD7	24	06FEB06	04MAR06	0		24	-111	-132																										
TOLL PLAZA & ANCILLIARY STRUCTURES																																			
CONTRACT DEFINED DATES & SECTIONS																																			
AREA ACCESS & VACATION DATES																																			
ACS_D5	Access to Portion - D5	0	20NOV05		0	0	0	-61	-41																										
SUBMITTALS & APPROVALS																																			
ABWF & BUILDER'S WORKS																																			
1522	TP/FB - Approve footbridge details	24	28JUL05A	03DEC05	0	100	12	1	-317																										
E&M EQPT. / MTRL. SUBMITTALS																																			
8258	EntNpBldg-Sub.TVF	78	02JUL04A	21NOV05	99	100	1	-90	-185																										
E&M EQPT. / MTRL. APPROVALS																																			
7547	TP-App. MVAC Package AC Unit sys	18	01FEB05A	25APR06	30	0	18	-27	-79																										
DESIGN & ENGINEERING																																			
PERMANENT WORKS																																			
1244	Design/ICE Check Tool Booth Canopy	24	03DEC05	03JAN06	0	70	24	-45	-76																										
1341	Eng Approve Dsg Tool Booth Canopy	12	04JAN06	17JAN06	0	0	12	-45	-76																										
1358	Issue Constr Dwgs Tool Booth Canopy	0		25JAN06	0	0	0	-45	-76																										
PROCUREMENT - MAJOR MATERIAL																																			
2184	Order/Fabricate/Deliver FBridge Structural Steel	120	01APR05A	24JAN06	0	30	53	22	-9																										
1518	Admin Bldg - Procure & manufacture lift	270	01JUN05A	24JAN06	0	40	53	127	56																										
2185	Order/Fabricate/Deliver Tool Booth Canopy	90	26JAN06	25MAY06	0	0	90	-45	-76																										
TOLL PLAZA																																			
1512	TP/FB - Procure & manufacture lifts (x2)	270	15JUL05A	23JAN06	0	30	52	149	82																										
1521	TP/FB - Procure & fabricate footbridge	110	15JUL05A	24JAN06	0	100	53	7	-178																										

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR					
										24	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20
CONSTRUCTION WORKS																																	
TOLL PLAZA ROADWORKS																																	
SURVEY																																	
1737	TP - Land Survey & report - Portion D5	8	21NOV05	29NOV05	0	0	8	-51	-35	[Gantt chart bars for 1737: Sep 24-26, Nov 21-28]																							
1738	TP - Land Survey & report - Portion D8	8	09FEB06	17FEB06	0		8	4	0	[Gantt chart bars for 1738: Feb 13-20]																							
ROADS - FORMATION																																	
1770	TP/Rd - Perm materials storage area; Ptn D2 & D3	175	01JUN04A	14DEC05	90	100	21	-112	-145	[Gantt chart bars for 1770: Jun 01-Dec 14]																							
1497	TP/Rd - Drainage ch.4+520 to 4+680	44	01AUG05A	03MAY06	20	0	126	-32	-41	[Gantt chart bars for 1497: Aug 01-May 03]																							
1744	TP/Rd - Drainage ch.4+320 to 4+460	40	15DEC05	10FEB06	0	0	40	-37	-48	[Gantt chart bars for 1744: Dec 15-Feb 10]																							
1877	TP/Rd - Water main	60	11JAN06	29MAR06	0	0	60	-37	-48	[Gantt chart bars for 1877: Jan 11-Mar 29]																							
1878	TP/Rd - HV & LV Cable ducting	60	11FEB06	26APR06	0	0	60	-37	-48	[Gantt chart bars for 1878: Feb 11-Apr 26]																							
1825	TP/Rd - Drain Testing - ch.4+320 to 4+460	36	18FEB06	31MAR06	0	0	36	-3	-48	[Gantt chart bars for 1825: Feb 18-Mar 31]																							
ROADS - EVA																																	
1776	TP/Rd - Petrol Interceptor	24	05DEC05	04JAN06	0	0	24	-29	-59	[Gantt chart bars for 1776: Dec 05-Jan 04]																							
1743	TP/Rd - Drainage - EVA loop road - SW area	48	15DEC05	20FEB06	0	0	48	-40	-48	[Gantt chart bars for 1743: Dec 15-Feb 20]																							
1751	TP/Rd - Drain Testing - EVA loop road - SW area	18	21FEB06	13MAR06	0	0	18	-11	-48	[Gantt chart bars for 1751: Feb 21-Mar 13]																							
1752	TP/Rd - Sub-base - EVA loop road - SW area	6	21FEB06	27FEB06	0	0	6	1	-48	[Gantt chart bars for 1752: Feb 21-Feb 27]																							
1756	TP/Rd - Drainage - EVA loop rd - E & NE area	55	21FEB06	29APR06	0	0	55	-40	-48	[Gantt chart bars for 1756: Feb 21-Apr 29]																							
ROADS - FINISHES																																	
1824	TP/Rd - Ptn D4 TCSS Ducts S&NB ch.4+460 to 4+520	24	21NOV05	17DEC05	0	100	24	-115	-125	[Gantt chart bars for 1824: Nov 21-Dec 17]																							
1736	TP/Rd - Ptn D2&D3TCSS Dct S&NB ch.4+320 to 4+460	42	19DEC05	16FEB06	0	100	42	-115	-125	[Gantt chart bars for 1736: Dec 19-Feb 16]																							
1500	TP/Rd - TCSS Ducts SB&NB C'Way ch.4+520 to 4+680	42	23JAN06	20MAR06	0	0	42	4	0	[Gantt chart bars for 1500: Jan 23-Mar 20]																							
1747	TP/Rd - Ptn D5 - TCSS Dct S&NB ch.4+320 to 4+460	30	17FEB06	23MAR06	0	0	30	-71	-93	[Gantt chart bars for 1747: Feb 17-Mar 23]																							
STRUCTURAL STEEL																																	
1849	TP/Rd - TCSS Sign ch.4+520 to 4+680	18	18FEB06	10MAR06	0		18	12	0	[Gantt chart bars for 1849: Feb 18-Mar 10]																							
TOLL PLAZA COLLECTOR'S SUBWAY																																	
STRUCTURE																																	
1714	TP/CS - Substructure construction - Ptn A	18	25JUL05A	14NOV05A	100	100	0		-140	[Gantt chart bars for 1714: Jul 25-Nov 14]																							

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR									
											24	25	26	27	28	29	30	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STRUCTURE																																						
1716	TP/CS - Substructure construction - Ptn C	18	25JUL05A	10DEC05	20	100	18	-97	-127																													
1719	TP/CS - Waterproof & backfill - Ptn B	18	14OCT05A	03DEC05	25	100	12	-97	-121																													
1718	TP/CS - Waterproof & backfill - Ptn A	18	14NOV05A	03DEC05	50	100	12	-103	-139																													
1720	TP/CS - Waterproof & backfill - Ptn C	18	12DEC05	04JAN06	0	100	18	-97	-127																													
1470	TP/CS - Excavation - Ptn D	8	15FEB06	23FEB06	0	0	8	-20	-35																													
1717	TP/CS - Substructure construction - Ptn D	18	24FEB06	16MAR06	0		18	-20	-35																													
ABWF																																						
1471	TP/CS - Internal Finishes Ptn A, B & C	24	12DEC05	11JAN06	0	100	24	43	-127																													
TOLL PLAZA FOOTBRIDGE																																						
BORED PILES																																						
1490	TP/FB - Site Investigation & Report - Cap FT1	12	30NOV05	13DEC05	0	0	12	-51	-35																													
1491	TP/FB - Bored Pile 1.2m dia 4nr - Cap FT1	14	14DEC05	31DEC05	0	0	14	-51	-35																													
FOUNDATIONS																																						
1495	TP/FB - Pile Cap - Cap FT1	12	24JAN06	14FEB06	0	0	12	-51	-35																													
RC SUPERSTRUCTURE																																						
1694	TP/FB - Column & bearings C2	12	27APR05A	16MAR06	95	100	90	-30	-215																													
1707	TP/FB - Column & bearings C1	12	29APR05A	16MAR06	95	100	90	-21	-214																													
1494	TP/FB - Column & bearings W2 (FT4)	12	13MAY05A	16MAR06	95	100	90	-30	-242																													
1506	TP/FB - Column & bearings W1 (FT1)	56	15FEB06	25APR06	0	0	56	-51	-79																													
1507	TP/FB - Lift Machine room walls & stair (FT1)	15	15FEB06	03MAR06	0	0	15	-4	-35																													
TOLL PLAZA BOOTHS																																						
STRUCTURE																																						
1510	TP/B - Construct toll islands - Portion A - 1 no	12	05DEC05	17DEC05	0	100	12	-103	-139																													
1713	TP/B - Construct toll islands - Portion B - 5 no	30	12DEC05	18JAN06	0	100	30	-103	-127																													
1722	TP/B - Construct toll islands - Portion C - 5 no	30	12JAN06	23FEB06	0		30	-103	-127																													
ADMIN.BLDG. - WORKSHOP																																						
FOUNDATIONS																																						
1750	Admin.Bldg. Wk Shop - Raft footing	18	05DEC05	24DEC05	0	0	18	-41	-59																													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR
											24	25	26	27	28	29	30
STRUCTURE																	
1749	Admin.Bldg. Wk Shop - GF Slab	18	28DEC05	18JAN06	0	0	18	-41	-59								
1768	Admin.Bldg. Wk Shop - Columns & walls GF to Roof	18	12JAN06	09FEB06	0	0	18	-41	-59								
1777	Admin.Bldg. Wk Shop - Roof Slab	18	26JAN06	23FEB06	0		18	-41	-59								
1779	Admin. Wk Shop - Col & walls Roof to Upper Roof	12	17FEB06	02MAR06	0		12	-41	-59								
ADMINISTRATION BUILDING																	
SUBMITTALS & APPROVALS																	
ABWF & BUILDER'S WORKS																	
1879	Admin.Bldg. - Prep & submit glass canopy details	24	25AUG04A	03DEC05	50	100	12	-151	-353								
1893	Admin.Bldg. - Prep & submit louvre details	24	25AUG04A	03DEC05	50	100	12	-151	-353								
1897	Admin.Bldg. - Prep & sub aluminium cladding	24	25AUG04A	03DEC05	50	100	12	-12	-353								
1889	Admin.Bldg. - Prep & submit curtain wall details	24	30SEP04A	03DEC05	50	100	12	-133	-323								
1883	Admin.Bldg. - Prep & sub sheet decking details	24	13NOV04A	17DEC05	12	100	24	-139	-299								
1891	Admin.Bldg. - Prep & submit door & window detail	24	13NOV04A	03DEC05	10	100	12	-127	-287								
1885	Admin.Bldg. - Prep & submit wood ceiling details	24	20NOV04A	03DEC05	50	100	12	-151	-281								
1899	Admin.Bldg. - Prep & sub fall arrest system	24	18DEC04A	03DEC05	50	100	12	-96	-257								
1517	Admin Bldg - Engineering & Submit lift details	78	28DEC04A	03DEC05	50	100	12	127	-197								
1895	Admin.Bldg. - Prep & sub balustrade & metal wks	24	05JAN05A	03DEC05	50	100	12	-151	-245								
1881	Admin.Bldg. - Prep & sub GRP water tank details	24	12JAN05A	03DEC05	50	100	12	-133	-239								
1892	Admin.Bldg. - Approve door & window details	24	06APR05A	17DEC05	50	100	24	-139	-275								
1894	Admin.Bldg. - Approve louvre details	24	07APR05A	17DEC05	50	100	24	-163	-341								
1880	Admin.Bldg. - Approve glass canopy details	24	07MAY05A	06DEC05	80	100	14	-153	-331								
1516	Admin Bldg - Approve lifts details	24	01JUN05A	03DEC05	50	100	12	127	-173								
1819	Admin.Bldg. - Approve stone cladding design	24	15JUN05A	17DEC05	50		24	0	-191								
1820	Admin.Bldg. - Approve slate cladding design	24	15JUN05A	17DEC05	50		24	0	-191								
1890	Admin.Bldg. - Approve curtain wall details	24	22JUN05A	17DEC05	50	100	24	-145	-311								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance Early Finis	SEP 24	OCT 25	NOV 26	DEC 27	JAN 28	FEB 29	MAR 30																				
										12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13
ABWF & BUILDER'S WORKS																																				
1887	Admin.Bldg. - Prep & sub suspend ceiling details	24	12AUG05A	03DEC05	50	100	12	44	-71																											
1900	Admin.Bldg. - Approve fall arrest system	24	14OCT05A	10DEC05	50	100	18	-102	-239																											
1882	Admin.Bldg. - Approve GRP water tank details	24	05DEC05	04JAN06	0	100	24	-133	-239																											
1886	Admin.Bldg. - Approve wood ceiling details	24	05DEC05	04JAN06	0	100	24	-151	-281																											
1888	Admin.Bldg. - Approve suspended ceiling details	24	05DEC05	04JAN06	0	100	24	44	-71																											
1896	Admin.Bldg. - Approve balustrade & metal works	24	05DEC05	04JAN06	0	100	24	-151	-245																											
1898	Admin.Bldg. - Approve aluminium cladding	24	05DEC05	04JAN06	0	100	24	-12	-353																											
1884	Admin.Bldg. - Approve sheet decking details	24	19DEC05	18JAN06	0	100	24	-139	-299																											
E&M EQPT. / MTRL. SUBMITTALS																																				
8244	AdmBldg-Sub.FS AFA & FM200 sys	54	05JUL04A	25NOV05	99	100	5	-18	-116																											
8241	AdmBldg-Sub.MVAC mech.vent. sys	54	03AUG04A	21OCT05A	100	100	0		-242																											
8240	AdmBldg-Sub.FS wet sys	54	05AUG04A	25NOV05	99	100	5	6	-260																											
8242	AdmBldg-Sub.CMCS, TCS & ELV sys	78	26AUG04A	02MAR06	90	100	78	-148	-299																											
8243	AdmBldg-Sub.FCUs & PAUs	54	04JAN05A	21OCT05A	100	100	0		-302																											
8247	AdmBldg-Design LPG sys	54	07APR05A	25JAN06	80	100	54	-63	-185																											
8249	AdmBldg-Sub.LPG sys	54	07APR05A	25JAN06	80	100	54	-63	-131																											
E&M EQPT. / MTRL. APPROVALS																																				
6385	AdmBldg-App. HV power dist. sys	18	14JUL04A	10DEC05	95	100	18	-114	-327																											
6386	AdmBldg-App. LV power dist. sys	18	13AUG04A	10DEC05	90	100	18	-114	-291																											
8503	AdmBldg-App. building related luminaires	18	18AUG04A	10DEC05	90	100	18	-102	-177																											
6388	AdmBldg-App. FS wet sys	18	04SEP04A	10DEC05	80	100	18	6	-255																											
6399	AdmBldg-App. FS AFA & FM200 sys	18	14SEP04A	10DEC05	70	100	18	-18	-111																											
6392	AdmBldg-App. of CMCS, TCS & ELV sys	18	20SEP04A	10DEC05	80	100	18	-148	-221																											
6389	AdmBldg-App. MVAC mech.vent. sys	18	23SEP04A	10DEC05	70	100	18	-138	-267																											
6396	AdmBldg-App. FCUs & PAUs	18	23SEP04A	07DEC05	70	100	15	-135	-324																											

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR
										24	25	26	27	28	29	30
E&M EQPT. / MTRL. APPROVALS																
6387	AdmBldg-App. PD all fresh & flush water sys	18	04NOV04A	10DEC05	78	100	18	-12	-279							
6478	AdmBldg-App. Chiller & Pumps	18	17JAN05A	10DEC05	30	100	18	-78	-285							
7586	AdmBldg-App. LPG sys	18	26JAN06	23FEB06	0	100	18	-63	-131							
DESIGN & ENGINEERING																
ABWF WORKS																
1802	Admin.Bldg. - Design stone cladding	36	04APR05A	17DEC05	50	100	24	0	-215							
1803	Admin.Bldg. - Design slate cladding	36	04APR05A	17DEC05	50	100	24	0	-215							
PROCUREMENT - MATERIAL																
ABWF WORKS																
1904	Admin.Bldg. - Procure wood ceiling	90	19JAN05A	17DEC05	0	100	24	-169	-89							
1909	Admin.Bldg. - Procure balustrade & metal works	90	09MAR05A	17DEC05	0	100	24	-139	-143							
1910	Admin.Bldg. - Procure aluminium cladding	90	09MAR05A	17DEC05	0	100	24	-30	-161							
1916	Admin.Bldg. - Procure slate cladding	90	14MAR05A	17DEC05	50	80	24	-30	-11							
1902	Admin.Bldg. - Procure GRP water tank	90	16MAR05A	17DEC05	0	100	24	-151	-107							
6391	AdmBldg-Proc & Manuf. LV power dist. equip't	120	20MAR05A	25APR06	30	100	120	-114	-213							
6390	AdmBldg-Proc & Manuf. of HV dist. equip't	120	25MAR05A	25APR06	50	100	120	-114	-249							
6397	AdmBldg-Proc & Manuf. of CMCS, ELV & TCS sys	180	25MAR05A	08JUL06	15	90	180	-148	-203							
1917	Admin.Bldg. - Procure stone cladding	90	03MAY05A	17DEC05	50	70	24	-30	-11							
1905	Admin.Bldg. - Procure suspended ceiling	120	09MAY05A	18JAN06	0	0	48	2	37							
6394	AdmBldg-Proc & Manuf. FS wet sys	90	06JUN05A	16MAR06	30	100	90	6	-207							
6415	AdmBldg-Proc & Manuf. FCUs & PAUs	90	08DEC05	03APR06	0	100	90	-135	-234							
6393	AdmBldg-Proc & Manuf. PD fresh & flush water sys	90	12DEC05	07APR06	0	100	90	-12	-249							
6395	AdmBldg-Proc & Manuf. MVAC mech.vent. sys	90	12DEC05	07APR06	0	100	90	-138	-237							
6444	AdmBldg-Proc & Manuf. FS AFA & FM200 sys	120	12DEC05	18MAY06	0	40	120	-18	-111							
6479	AdmBldg-Proc & Manuf. Chiller & Pumps	90	12DEC05	07APR06	0	100	90	-78	-195							

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR		
											24	25	26	27	28	29	30		
ABWF WORKS																			
8504	AdmBldg-Proc & Manf bldg related luminaires	180	12DEC05	29JUL06	0	80	180	-102	-177										
1938	Admin.Bldg. - Initial delivey glass canopy	0	14JAN06		0		0	-153	0										
2059	Admin.Bldg. - Initial delivery fall arrest syst	0	19JAN06		0		0	-102	0										
2054	Admin.Bldg. - Initial delivery louvres	0	26JAN06		0		0	-163	0										
2055	Admin.Bldg. - Initial delivery curtain wall	0	26JAN06		0		0	-145	0										
2056	Admin.Bldg. - Initial delivery sheet decking	0	26JAN06		0		0	-139	0										
2057	Admin.Bldg. - Initial delivery doors & windows	0	26JAN06		0		0	-139	534										
2060	Admin.Bldg. - Initial delivery balust & mtl wks	0	17FEB06		0		0	-151	0										
7582	AdmBldg-Proc & Manuf. LPG sys	120	24FEB06	22JUL06	0	10	120	-63	-131										
INTERFACE DATES																			
ADMINISTRATION BUILDING																			
1827	Int. MS - Admin.Bldg. - E&M 1/F access (partial)	0		24DEC05	0	100	0	-64	-137										
6406	AdmBldg-E&M access to 1/F (partial)	0	28DEC05		0	100	0	-64	-137										
1729	Int. MS - Admin.Bldg. - E&M G/F access (partial)	0		25JAN06	0	100	0	-96	-173										
4003	Int. MS - Admin.Bldg. - E&M G/F access (full)	0		25JAN06	0	100	0	661	-155										
6404	AdmBldg-E&M access to G/F (partial)	0	26JAN06*		0	100	0	-96	-171										
1828	Int. MS - Admin.Bldg. - E&M 2/F access (partial)	0		06FEB06	0		0	-87	-140										
6402	AdmBldg-E&M access to 2/F (partial)	0	07FEB06		0		0	-87	-140										
CONSTRUCTION																			
CIVIL & ABWF WORKS																			
SUBSTRUCTURE																			
1746	Admin bldg - Septic tank construction	24	21NOV05	17DEC05	0	0	24	164	-11										
6398	Admin.Bldg. - Earth Mat & Rods - All in ptn D4	36	31DEC05	20FEB06	0	100	36	-40	-308										
RC SUPERSTRUCTURE																			
NORTH [GL.1-11]																			
1557	Admin.Bldg Nth - GF Slab	24	01SEP05A	30NOV05	90	100	9	-130	-188										
1647	Admin.Bldg Nth - Columns & walls GF to 1F	24	21SEP05A	03DEC05	50	100	12	-130	-179										

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR														
											12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13						
NORTH [GL.11-11]																																											
1648	Admin.Bldg Nth - 1F Slab	24	21OCT05A	03DEC05	50	100	12	-130	-167																																		
1649	Admin.Bldg Nth - Columns & walls 1F to 2F	24	29OCT05A	03DEC05	50	100	12	-130	-155																																		
1661	Admin.Bldg Nth - 2F Slab	24	15NOV05A	03DEC05	50	100	12	-130	-143																																		
1665	Admin.Bldg Nth - Columns & walls 2F to 3F	24	22NOV05	19DEC05	0	100	24	-130	-144																																		
1666	Admin.Bldg Nth - Roof Slab	24	01DEC05	30DEC05	0	100	24	-130	-140																																		
1672	Admin.Bldg Nth - Columns & walls 3F to Upp Roof	24	10DEC05	10JAN06	0	100	24	-96	-136																																		
1673	Admin.Bldg Nth - Upper Roof Slab	24	20DEC05	19JAN06	0		24	-80	-132																																		
SOUTH [GL.11-21]																																											
1624	Admin.Bldg Sth - GF Slab	24	01SEP05A	30NOV05	90	100	9	-121	-176																																		
1784	Admin.Bldg Sth - Columns & walls GF to 1F	24	27OCT05A	03DEC05	50	100	12	-121	-167																																		
1785	Admin.Bldg Sth - 1F Slab	24	05NOV05A	03DEC05	50	100	12	-121	-155																																		
1786	Admin.Bldg Sth - Columns & walls 1F to 2F	24	11NOV05A	03DEC05	50	100	12	-107	-143																																		
1787	Admin.Bldg Sth - 2F Slab	24	21NOV05	17DEC05	0	100	24	-107	-143																																		
1788	Admin.Bldg Sth - Columns & walls 2F to 3F	24	30NOV05	29DEC05	0	100	24	-107	-139																																		
1789	Admin.Bldg Sth - Roof Slab	24	15DEC05	14JAN06	0	100	24	-112	-140																																		
1791	Admin.Bldg Sth - Columns & walls 3F to Upp Roof	24	24DEC05	24JAN06	0	100	24	-41	-136																																		
1790	Admin.Bldg Sth - Upper Roof Slab	24	11JAN06	15FEB06	0		24	49	-136																																		
ABWF																																											
CRITICAL ROOMS																																											
1730	Admin.Bldg Crit Rm - Int. Blockwork GF	12	28NOV05	10DEC05	0	100	12	-121	-137																																		
1731	Admin.Bldg Crit Rm - Int. Blockwork 1F	12	12DEC05	24DEC05	0	100	12	-121	-137																																		
1734	Admin.Bldg Crit Rm - Int. Blockwork 2F	12	16JAN06	06FEB06	0		12	-130	-140																																		
1804	Admin.Bldg Crit Rm - Ext. Doors & Glazing GF	18	26JAN06	23FEB06	0	100	18	-163	-191																																		
1366	Admin.Bldg Crit Rm - Int. Finishes GF	18	17FEB06	09MAR06	0	100	18	-151	-185																																		
1733	Admin.Bldg Crit Rm - Ext. Glazing 1F	18	24FEB06	16MAR06	0	100	18	-163	-179																																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance Early Finis	SEP			OCT			NOV			DEC			JAN			FEB			MAR													
										24	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	30				
REMAINING ROOMS																																									
1792	Admin.Bldg Oth Rm - Int. Blockwork GF	24	28DEC05	25JAN06	0	100	24	-108	-155																																
1793	Admin.Bldg Oth Rm - Int. Blockwork 1F	24	26JAN06	02MAR06	0		24	-108	-155																																
1805	Admin.Bldg Oth Rm - Ext. Doors & Windows GF	24	26JAN06	02MAR06	0		24	-108	-155																																
E&M WORKS - GENERAL																																									
FS WORKS																																									
FS MAJOR EQUIPMENT																																									
6411	AdmBldg-Hydrant Pump & Tank set 1st fix	48	26JAN06	30MAR06	0	100	48	42	-171																																
ELECTRICAL WORKS																																									
HV POWER DISTRIBUTION MAJOR EQPT.																																									
6408	AdmBldg-HV power dist. sys 1st fix	36	26JAN06	16MAR06	0	100	36	-72	-171																																
P&D WORKS																																									
P&D MAJOR EQUIPMENT																																									
6412	AdmBldg-Water Pumps & Tanks 1st fix	24	26JAN06	02MAR06	0	100	24	66	-171																																
ADMINISTRATION BLDG. - G/F																																									
MVAC WORKS																																									
MECH. VENT / AIR CONDITIONING																																									
6405	AdmBldg G/F -AC(1st Fix) mech.vent.	36	26JAN06	16MAR06	0	100	36	-96	-171																																
ADMINISTRATION BLDG. - 1/F																																									
MVAC WORKS																																									
CHILLED WATER SYSTEM																																									
6464	AdmBldg 1F-AC(1st Fix) Chilled water sys	48	24FEB06	25APR06	0		48	-64	-137																																
MECH. VENT / AIR CONDITIONING																																									
6407	5AdmBldg 1F-AC(1st Fix) mech.vent.	42	28DEC05	23FEB06	0	100	42	-64	-137																																
ELECTRICAL WORKS																																									
MAIN & SUBMAIN DISTRIBUTION																																									
6437	AdmBldg 1F-ES(1st Fix) Main & Sub-main dist.	42	24FEB06	18APR06	0		42	-52	-137																																
FINAL CIRCUIT																																									
6438	AdmBldg 1F-ES(1st Fix) Final Circuit dist.	36	24FEB06	07APR06	0		36	-52	-137																																
ADMINISTRATION BLDG. - 2/F																																									
MVAC WORKS																																									
MECH. VENT / AIR CONDITIONING																																									
6403	AdmBldg 2F-AC(1st Fix) mech.vent.	48	07FEB06	03APR06	0		48	-87	-140																																

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finish	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
											24	25	26	27	28	29	30	
STATUTORY INSPECTIONS																		
WSD - WATER SUPPLY																		
6456	AdmBldg-All plumb. design approved by WSD	0	05JAN06		0	100	0	66	-171						◇			
6477	AdmBldg-Sub. WWO 046 part 1 to 3 to WSD	6	19JAN06	25JAN06	0	100	6	66	-171					□□□				
FSD INSPECTIONS																		
6468	AdmBldg-All FS design approved by FSD (MHJV)	0	05JAN06		0	100	0	0	-171					◆				
6493	AdmBldg-Issue, endorse & submit FSI 314 to FSD	6	19JAN06	25JAN06	0	100	6	0	-171					■ ■ ■				
SHATIN HEIGHTS SOUTH PORTAL BUILDING																		
CONTRACT DEFINED DATES & SECTIONS																		
AREA ACCESS & VACATION DATES																		
ACS_D8	Access to Portion - D8	0	09FEB06		0		0	5	0							◆		
ACS_J2	Access to - J2 (T.Plate & above) SH-S.Vent.Bldg.	0	09FEB06		0		0	22	0						◇			
SUBMITTALS & APPROVALS																		
ABWF & BUILDER'S WORKS																		
1998	SHT SPB - Prep & submit door & window detail	24	13NOV04A	03DEC05	50	100	12	108	-97									
2000	SHT SPB - Approve door & window details	24	03JUN05A	17DEC05	0	100	24	96	-85									
2006	SHT SPB - Prep & sub balustrade & metal wks	24	13JUL05A	03DEC05	50	100	12	42	-97									
2007	SHT SPB - Approve balustrade & metal works	24	05DEC05	04JAN06	0	100	24	42	-97									
E&M EQPT. / MTRL. SUBMITTALS																		
8266	ShtSpBldg-Sub.TVF, Ductworks & Control sys	78	02JUL04A	21NOV05	99	100	1	-90	-128									
8268	ShtSpBldg-Sub.MVAC MCC, power & control sys	54	02JUL04A	25JAN06	95	100	54	-120	-211									
8270	ShtSpBldg-Sub.FS AFA & FM200 sys	54	05JUL04A	25NOV05	99	60	5	24	-28									
8265	ShtSpBldg-Sub.MVAC mech.vent. sys	54	03AUG04A	21OCT05A	100	100	0		-72									
8269	ShtSpBldg-Sub.FS wet sys	54	05AUG04A	25NOV05	99	100	5	-16	-108									
8267	ShtSpBldg-Sub.MVAC / TVF pneumatic sys	54	14AUG04A	18JAN06	95	10	48	-30	-49									
8263	ShtSpBldg-Sub.CMCS & ELV sys	78	26AUG04A	02MAR06	98	100	78	-48	-169									
8272	ShtSpBldg-Sub.PD irrig. sys	54	04FEB05A	25JAN06	85	100	54	-16	-163									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	SEP			OCT			NOV			DEC			JAN			FEB			MAR						
										24	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27
E & M WORKS																																		
7210	ShtSpBldg-Proc & Manuf. Cleans & flush water sys	120	21JAN06	26JUN06	0	40	120	-54	-141																									
7206	ShtSpBldg-Proc & Manuf. FS AFA & FM200 sys	120	06FEB06	04JUL06	0		120	-14	-61																									
INTERFACE DATES																																		
1854	Int M/S - SHT S Ptal Bldg - E&M access 3/F	0		08FEB06	0		0	19	0																									
1855	Int M/S - SHT S Ptal Bldg - E&M access G/F	0		08FEB06	0		0	19	0																									
1859	Int M/S - SHT S Ptal Bldg - E&M access 2/F	0		08FEB06	0		0	19	0																									
1856	Int M/S - SHT S Ptal Bldg - E&M access 1/F	0		15FEB06	0		0	25	0																									
1853	Int M/S - SHT Sth Ptal Bldg-E&M access Ext.Elev	0		22FEB06	0		0	37	0																									
1857	Int M/S - SHT S Ptal Bldg - E&M access Plenum	0		22FEB06	0		0	19	0																									
1858	Int M/S - SHT S Ptal Bldg - E&M access Roof	0		22FEB06	0		0	31	0																									
CONSTRUCTION																																		
ARCHITECTURAL & BUILDER'S WORKS																																		
ROOFING & EXTERNAL FACADE																																		
1811	SHT Sth PBldg - Ext. Doors & Windows	33	09FEB06	18MAR06	0		33	37	0																									
BUILDER'S WORK																																		
1808	SHT Sth PBldg - Wet Trades 1FL	16	09FEB06	27FEB06	0		16	25	0																									
1815	SHT Sth PBldg - Wet Trades GL	16	09FEB06	27FEB06	0		16	19	0																									
1851	SHT Sth PBldg - Wet Trades 2FL	16	09FEB06	27FEB06	0		16	19	0																									
1852	SHT Sth PBldg - Wet Trades 4FL	16	09FEB06	27FEB06	0		16	19	0																									
1860	SHT Sth PBldg - Wet Trades 3FL	16	09FEB06	27FEB06	0		16	19	0																									
1861	SHT Sth PBldg - Wet Trades 5FL	16	09FEB06	27FEB06	0		16	31	0																									
SHT TUNNEL																																		
SUBMITTALS & APPROVALS																																		
E&M EQPT. / MTRL. SUBMITTALS																																		
8279	ShtRtNb-Sub.Tunnel Lgt sys	78	02JUL04A	20OCT05A	100	100	0		-104																									
8281	ShtRtNb-Sub.TVS control sys	54	02JUL04A	25JAN06	95	100	54	-38	-148																									
8285	ShtRtSb-Sub.Tunnel Lgt sys	78	02JUL04A	20OCT05A	100	100	0		-86																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Gantt Chart (Monthly)							
										SEP 24-30	OCT 01-07	NOV 01-07	DEC 01-07	JAN 01-07	FEB 01-07	MAR 01-07	
SHT TUNNEL NORTHBOUND																	
7011	ShtRtNb-Proc & Manuf. TVS control sys	180	25MAY05A	12AUG06	10	10	180	-68	-106	[Gantt bar]							
7628	ShtRtNb-Proc & Manuf. TVS in Tunnel	180	09JUN05A	08JUL06	35	30	180	-68	-106	[Gantt bar]							
6992	ShtRtNb-Proc & Manuf. Tunnel Lgt sys	180	12DEC05	29JUL06	0	40	180	-111	-130	[Gantt bar]							
SHT TUNNEL SOUTHBOUND																	
6946	ShtRtSb-Proc & Manuf. CMCS & ELV sys	180	25MAR05A	08JUL06	20	20	180	-66	-85	[Gantt bar]							
6970	ShtRtSb-Proc & Manuf. FS AFA & Linear sys	180	25MAR05A	08JUL06	20	70	180	-104	-154	[Gantt bar]							
6933	ShtRtSb-Proc & Manuf. ES Main & submain dist.	180	20MAY05A	08JUL06	65	50	180	-96	-124	[Gantt bar]							
6958	ShtRtSb-Proc & Manuf. TVS control sys	180	25MAY05A	12AUG06	10	20	180	-68	-106	[Gantt bar]							
7625	ShtRtSb-Proc & Manuf. TVS in Tunnel	180	09JUN05A	08JUL06	35	30	180	-68	-106	[Gantt bar]							
6939	ShtRtSb-Proc & Manuf. Tunnel Lgt sys	180	12DEC05	29JUL06	0	20	180	-90	-112	[Gantt bar]							
SHT NORTH PORTAL BUILDING																	
CONTRACT DEFINED DATES, STAGES & SECTIONS																	
ACS_J3	Access to Portion - J3 (T/Plate & above) SH-N.VB	0	09FEB06		0		0	22	0	[Gantt bar]							
SUBMITTALS & APPROVALS																	
ABWF & BUILDER'S WORKS																	
1999	SHT NPB - Prep & submit door & window detail	24	13NOV04A	03DEC05	50	100	12	78	-97	[Gantt bar]							
2001	SHT NPB - Approve door & window details	24	03JUN05A	17DEC05	0	100	24	66	-85	[Gantt bar]							
2008	SHT NPB - Prep & sub balustrade & metal wks	24	13JUL05A	03DEC05	50	100	12	42	-97	[Gantt bar]							
2009	SHT NPB - Approve balustrade & metal works	24	05DEC05	04JAN06	0	0	24	42	-97	[Gantt bar]							
E&M EQPT. / MTRL. SUBMITTALS																	
8295	ShtNpBldg-Sub.TVF, Ductworks & Control sys	78	02JUL04A	21NOV05	99	100	1	-86	-124	[Gantt bar]							
8297	ShtNpBldg-Sub.MVAC MCC, power & control sys	54	02JUL04A	25JAN06	95	100	54	-138	-229	[Gantt bar]							
8299	ShtNpBldg-Sub.FS AFA & FM200 sys	54	05JUL04A	25NOV05	99	100	5	12	-54	[Gantt bar]							
8294	ShtNpBldg-Sub.MVAC mech.vent. sys	54	03AUG04A	21OCT05A	100	100	0		-72	[Gantt bar]							
8298	ShtNpBldg-Sub.FS wet sys	54	05AUG04A	25NOV05	99	100	5	6	-96	[Gantt bar]							
8296	ShtNpBldg-Sub.MVAC / TVF pneumatic sys	54	14AUG04A	18JAN06	95	10	48	-32	-51	[Gantt bar]							

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR
										24	25	26	27	28	29	30
										12 19 26 3	10 17 24 31 7	14 21 28 5	12 19 26 2 9	16 23 30 6	13 20 27 6	13
E&M EQPT. / MTRL. SUBMITTALS																
8292	ShtNpBldg-Sub.of CMCS & ELV sys	78	26AUG04A	02MAR06	95	100	78	-62	-181	[Gantt bar: Blue line from 26AUG04 to 02MAR06, ending with a red square]						
E&M EQPT. / MTRL. APPROVALS																
7262	ShtNpBldg-App. HV power dist. sys	18	14JUL04A	10DEC05	95	100	18	-110	-151	[Gantt bar: Blue line from 14JUL04 to 10DEC05, ending with a red square]						
7268	ShtNpBldg-App. LV power dist. sys	18	13AUG04A	10DEC05	90	100	18	-114	-151	[Gantt bar: Blue line from 13AUG04 to 10DEC05, ending with a red square]						
8511	ShtSpBldg-App. building related luminaires	18	18AUG04A	10DEC05	90	100	18	-74	-115	[Gantt bar: Blue line from 18AUG04 to 10DEC05, ending with a red square]						
7377	ShtNpBldg-App. FS wet sys	18	02SEP04A	10DEC05	80	100	18	6	-91	[Gantt bar: Blue line from 02SEP04 to 10DEC05, ending with a red square]						
7427	ShtNpBldg-App. FS AFA & FM200 sys	18	14SEP04A	10DEC05	70	0	18	12	-49	[Gantt bar: Blue line from 14SEP04 to 10DEC05, ending with a red square; Green line from 14SEP04 to 10DEC05]						
7307	ShtNpBldg-App. of CMCS & ELV sys	18	20SEP04A	10DEC05	88	100	18	-62	-103	[Gantt bar: Blue line from 20SEP04 to 10DEC05, ending with a red square]						
7338	ShtNpBldg-App. MVAC mech.vent. sys	18	23SEP04A	10DEC05	70	100	18	-75	-97	[Gantt bar: Blue line from 23SEP04 to 10DEC05, ending with a red square]						
7431	ShtNpBldg-App. PD cleans. & flush water sys	18	04NOV04A	10DEC05	78	100	18	-24	-109	[Gantt bar: Blue line from 04NOV04 to 10DEC05, ending with a red square]						
7355	ShtNpBldg-App. TVF, Ductworks & Control sys	18	12NOV04A	10DEC05	85	100	18	-86	-123	[Gantt bar: Blue line from 12NOV04 to 10DEC05, ending with a red square]						
7369	ShtNpBldg-App. MVAC MCC, power & control sys	18	12NOV04A	10DEC05	80	100	18	-138	-175	[Gantt bar: Blue line from 12NOV04 to 10DEC05, ending with a red square]						
7323	ShtNpBldg-App. MVAC Package AC Unit sys	18	01FEB05A	10DEC05	90	0	18	16	-37	[Gantt bar: Blue line from 01FEB05 to 10DEC05, ending with a red square; Green line from 12NOV04 to 10DEC05]						
PROCUREMENT - MATERIAL																
ABWF WORKS																
2016	SHT NPB - Procure doors & windows	120	12JAN05A	17DEC05	50	10	24	66	35	[Gantt bar: Green line from 12JAN05 to 17DEC05; Blue line from 12JAN05 to 17DEC05]						
2028	SHT NPB - Procure balustrade & metal works	120	09MAR05A	04JAN06	50	10	24	42	23	[Gantt bar: Green line from 09MAR05 to 04JAN06; Blue line from 09MAR05 to 04JAN06]						
7269	ShtNpBldg-Proc & Manuf. LV power dist. equip't	180	20MAR05A	08JUL06	30	50	180	-114	-133	[Gantt bar: Green line from 20MAR05 to 08JUL06]						
7263	ShtNpBldg-Proc. & Manuf. of HV dist. equip't	180	25MAR05A	08JUL06	50	50	180	-110	-133	[Gantt bar: Blue line from 25MAR05 to 08JUL06; Green line from 25MAR05 to 08JUL06]						
7308	ShtNpBldg-Proc. & Manuf. of CMCS & ELV sys	180	25MAR05A	08JUL06	20	20	180	-62	-85	[Gantt bar: Green line from 25MAR05 to 08JUL06]						
7370	ShtNpBldg-Proc & Manuf. MCC, power & control sys	180	25MAR05A	08JUL06	10	70	180	-138	-157	[Gantt bar: Green line from 25MAR05 to 08JUL06]						
7428	ShtNpBldg-Proc & Manuf. FS AFA & FM200 sys	120	25MAR05A	02JUN06	20	0	120	-18	-61	[Gantt bar: Green line from 25MAR05 to 02JUN06]						
7378	ShtNpBldg-Proc & Manuf. FS wet sys	120	06JUN05A	25APR06	30	20	120	6	-73	[Gantt bar: Green line from 06JUN05 to 25APR06]						
7356	ShtNpBldg-Proc & Manuf. TVF,Ductwks&Cont'l sys	180	09JUN05A	08JUL06	35	30	180	-86	-105	[Gantt bar: Blue line from 09JUN05 to 08JUL06; Green line from 09JUN05 to 08JUL06]						
7339	ShtNpBldg-Proc & Manuf. MVAC mech.vent. sys	120	12DEC05	18MAY06	0	20	120	-75	-97	[Gantt bar: Green line from 12DEC05 to 18MAY06; Blue line from 12DEC05 to 18MAY06]						

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance	Early Finis	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
											24	25	26	27	28	29	30	
ABWF WORKS																		
7432	ShtNpBldg-Proc & Manuf. Cleans & flush water sys	120	12DEC05	18MAY06	0	40	120	-24	-109									
8512	ShtSpBldg-Proc & Manf bldg related luminaires	180	12DEC05	29JUL06	0	30	180	-74	-115									
7324	ShtNpBldg-Proc & Manuf. MVAC Package AC Units	120	12JAN06	16JUN06	0	0	120	-8	-61									
INTERFACE DATES																		
SHT NORTH PORTAL BUILDING																		
1863	Int M/S - SHT N Ptal Bldg - E&M access 3/F	0		08FEB06	0		0	19	0									
1864	Int M/S - SHT N Ptal Bldg - E&M access G/F	0		08FEB06	0		0	25	0									
1865	Int M/S - SHT N Ptal Bldg - E&M access 1/F	0		08FEB06	0		0	19	0									
1868	Int M/S - SHT N Ptal Bldg - E&M access 2/F	0		08FEB06	0		0	19	0									
CONSTRUCTION																		
ARCHITECTURAL & BUILDER'S WORKS																		
BUILDER'S WORK																		
1812	SHT Nth PBldg - Ext. Doors & Windows	33	09FEB06	18MAR06	0		33	31	0									
1821	SHT Nth PBldg - Wet Trades GL	16	09FEB06	27FEB06	0		16	25	0									
1823	SHT Nth PBldg - Wet Trades 1FL	16	09FEB06	27FEB06	0		16	19	0									
1869	SHT Nth PBldg - Wet Trades 2FL	16	09FEB06	27FEB06	0		16	19	0									
1870	SHT Nth PBldg - Wet Trades 4FL	16	09FEB06	27FEB06	0		16	19	0									
1871	SHT Nth PBldg - Wet Trades 3FL	16	09FEB06	27FEB06	0		16	19	0									
1872	SHT Nth PBldg - Wet Trades 5FL	16	09FEB06	27FEB06	0		16	31	0									
SHT RC ENCLOSURE & T3 UNDERPASS																		
SUBMITTALS & APPROVALS																		
E&M EQPT./ MTRL.SUBMITTALS																		
8302	Sht-N.R9-Sub.Tunnel Lgt sys	78	02JUL04A	20OCT05A	100	100	0		-71									
8304	Sht-N.R9-Sub.TVS control sys	54	02JUL04A	25JAN06	95	100	54	-38	-129									
8309	Sht-N.R9-Sub.MCC, power & control sys	54	02JUL04A	25JAN06	95	100	54	-53	-144									
8305	Sht-N.R9-Sub.FS AFA & Linear sys	54	05JUL04A	25NOV05	99	100	5	-9	-67									
8308	Sht-N.R9-Sub.LCC, power & control sys	54	07JUL04A	20OCT05A	100	100	0		-50									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	DWP % Compl.	Rem Dur	Total Float	Variance arly Finis	SEP		OCT			NOV			DEC			JAN			FEB			MAR						
										24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31								
E&M EQPT./ MTRL.SUBMITTALS																																	
8303	Sht-N.R9-Sub.CMCS & ELV sys	78	26AUG04A	02MAR06	98	100	78	-31	-146																								
E&M EQP. / MTRL. APPROVALS																																	
7487	Sht-N.R9-App. Tunnel Lgt sys	18	05AUG04A	10DEC05	80	100	18	-78	-97																								
7481	Sht-N.R9-App. HV/LV main & submain dist. sys	18	13AUG04A	10DEC05	80	100	18	-51	-88																								
7604	Sht-N.R9-App. LCC, power & control sys	18	18AUG04A	10DEC05	80	100	18	-57	-76																								
7517	Sht-N.R9-App. FS AFA & Linear sys	18	14SEP04A	10DEC05	70	80	18	-9	-62																								
7494	Sht-N.R9-App. CMCS & ELV sys	18	20SEP04A	10DEC05	88	100	18	-31	-68																								
7505	Sht-N.R9-App. TVS control sys	18	12NOV04A	25JAN06	70	100	54	-38	-111																								
7529	Sht-N.R9-App. TVF, Ductworks & Control sys	18	12NOV04A	10DEC05	85	100	18	-60	-97																								
7612	Sht-N.R9-App. MCC, power & control sys	18	12NOV04A	10DEC05	80	100	18	-53	-90																								
PROCUREMENT - MATERIAL																																	
SHT RC FULL ENCLOSURE / T3 UNDERPASS																																	
7482	Sht-N.R9-Proc & Manuf. ES Main & submain dist.	180	20MAR05A	08JUL06	30	20	180	-51	-70																								
7495	Sht-N.R9-Proc & Manuf. CMCS & ELV sys	180	25MAR05A	08JUL06	20	0	180	-31	-50																								
7518	Sht-N.R9-Proc & Manuf. FS AFA & Linear sys	120	25MAR05A	25APR06	15	0	120	-9	-44																								
7613	Sht-N.R9-Proc & Manuf. MCC, power & control sys	180	25MAR05A	05AUG06	10	20	180	-77	-96																								
7506	Sht-N.R9-Proc & Manuf. TVS control sys	180	25MAY05A	08JUL06	10	5	180	-38	-57																								
7530	Sht-N.R9-Proc & Manuf. TVF, Ductwks & Cont'l sys	180	09JUN05A	08JUL06	35	20	180	-60	-79																								
7488	Sht-N.R9-Proc & Manuf. Tunnel Lgt sys	180	12DEC05	29JUL06	0	20	180	-78	-97																								
7605	Sht-N.R9-Proc & Manuf. LCC, power & control sys	180	12DEC05	29JUL06	0	5	180	-57	-76																								

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	

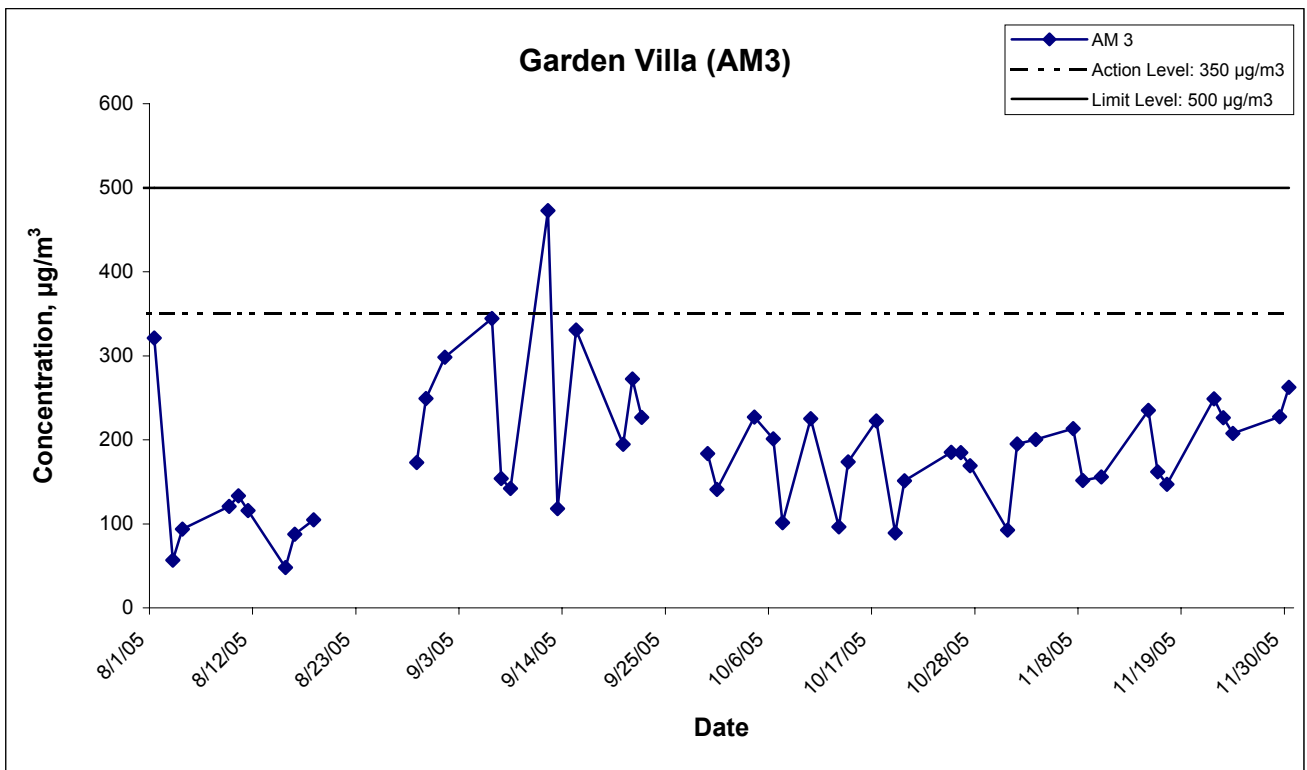
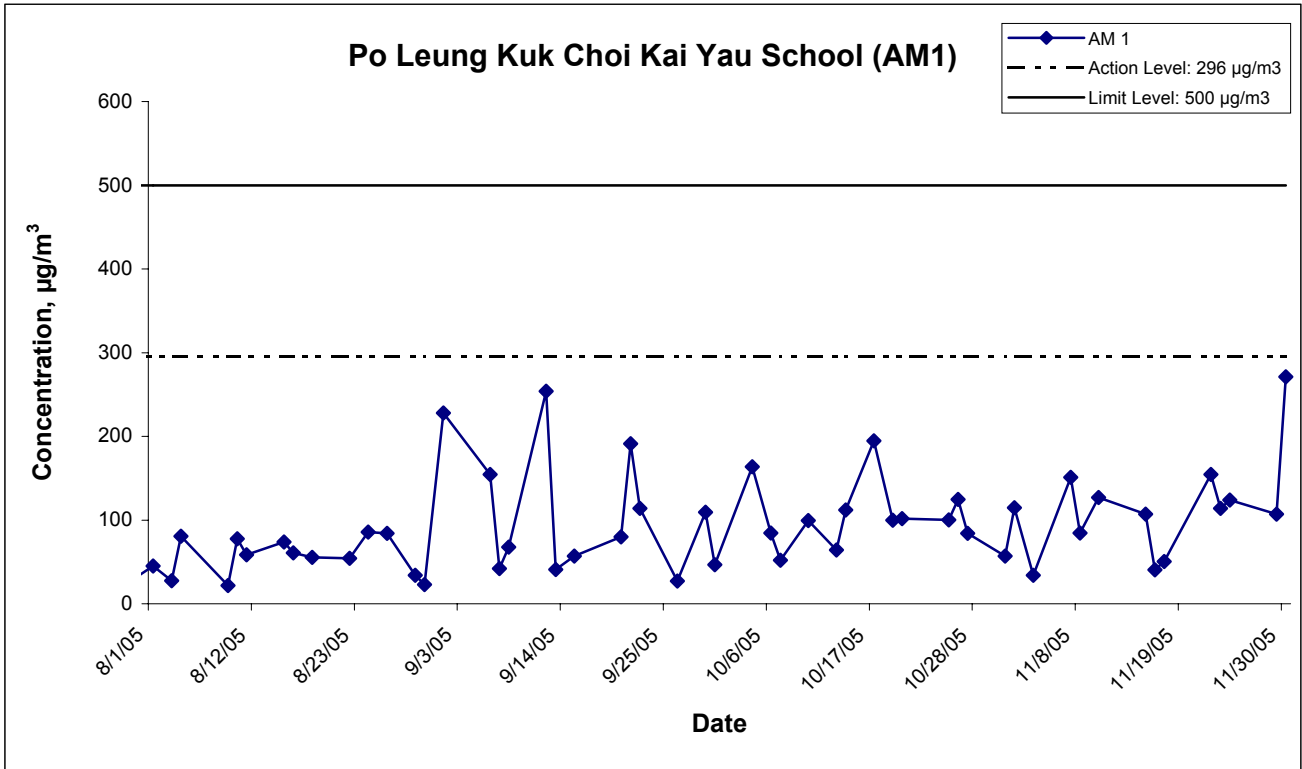
Construction Noise

Period	Action Level for all stations	Limit Level, dB(A)			
		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.

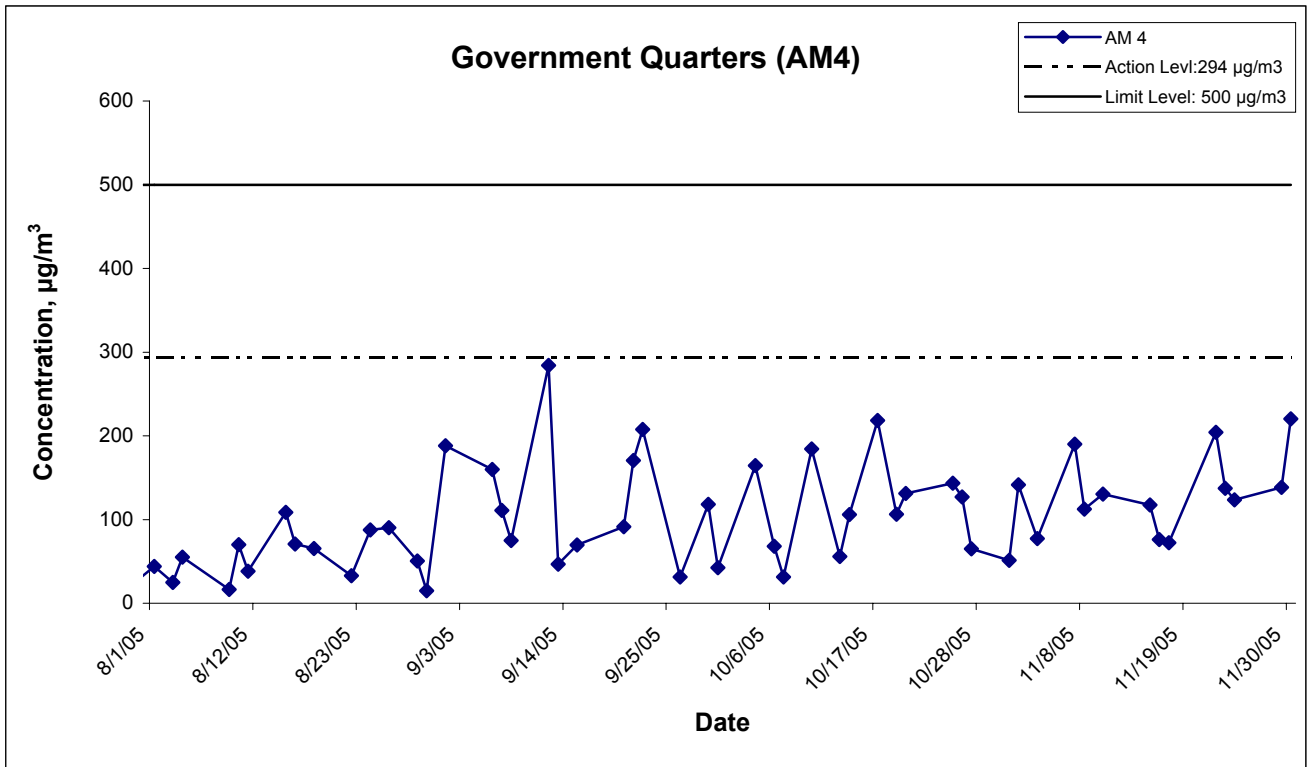
**APPENDIX E
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS**

1-hr TSP Levels



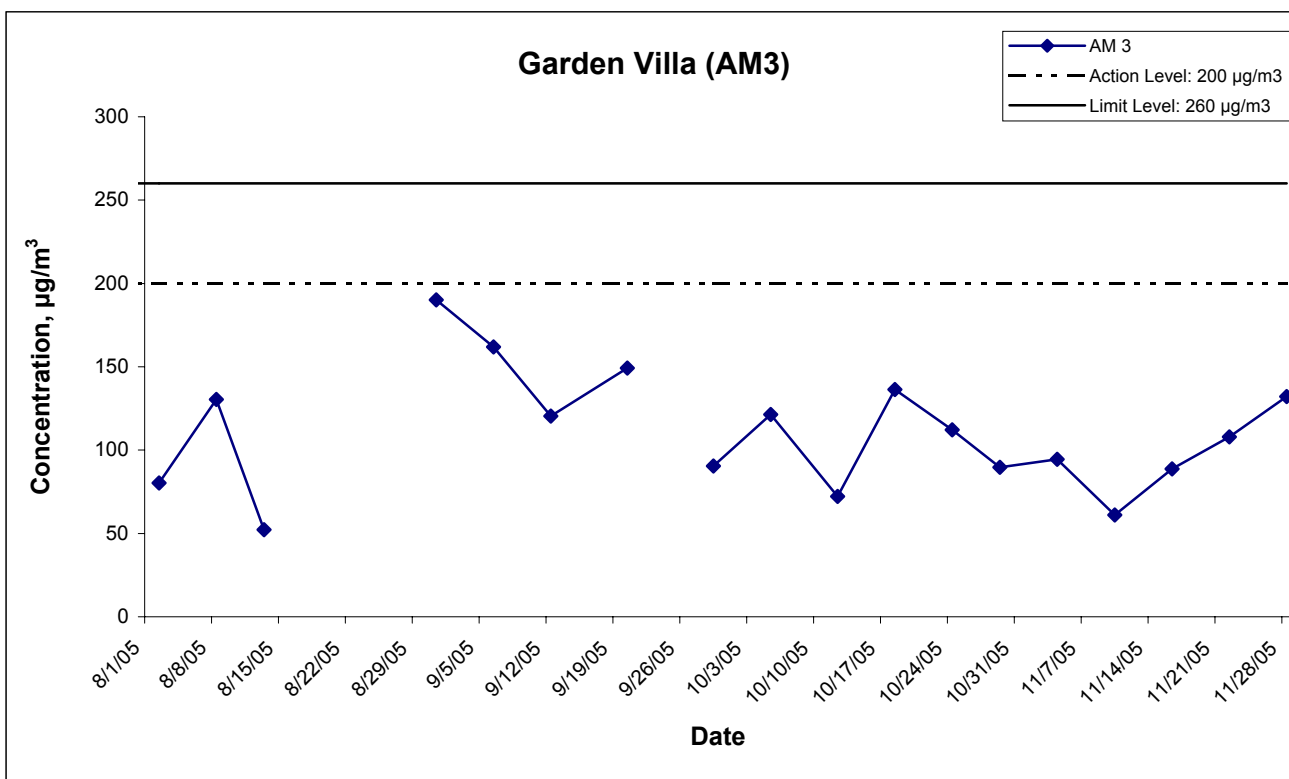
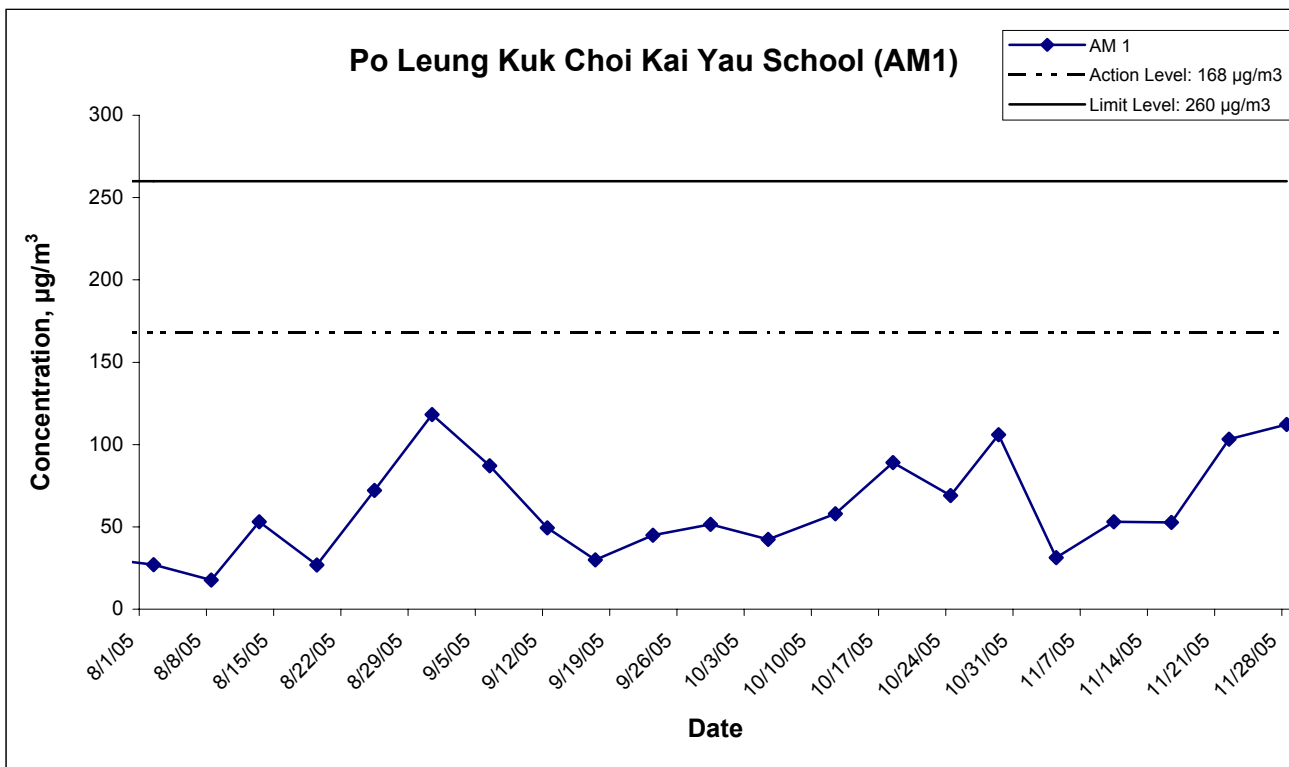
Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 1-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Nov 05	Appendix E	

1-hr TSP Levels



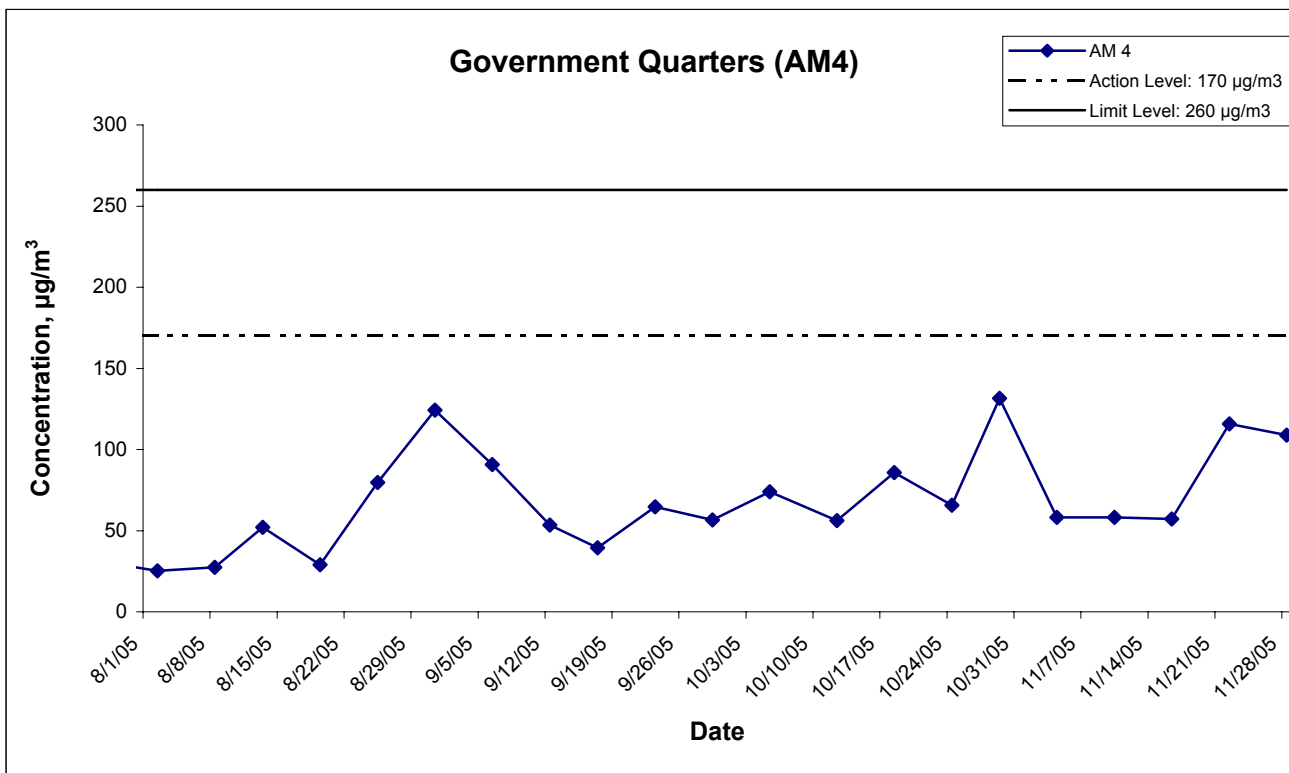
Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 1-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Nov 05	Appendix E	

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 05	Appendix E	

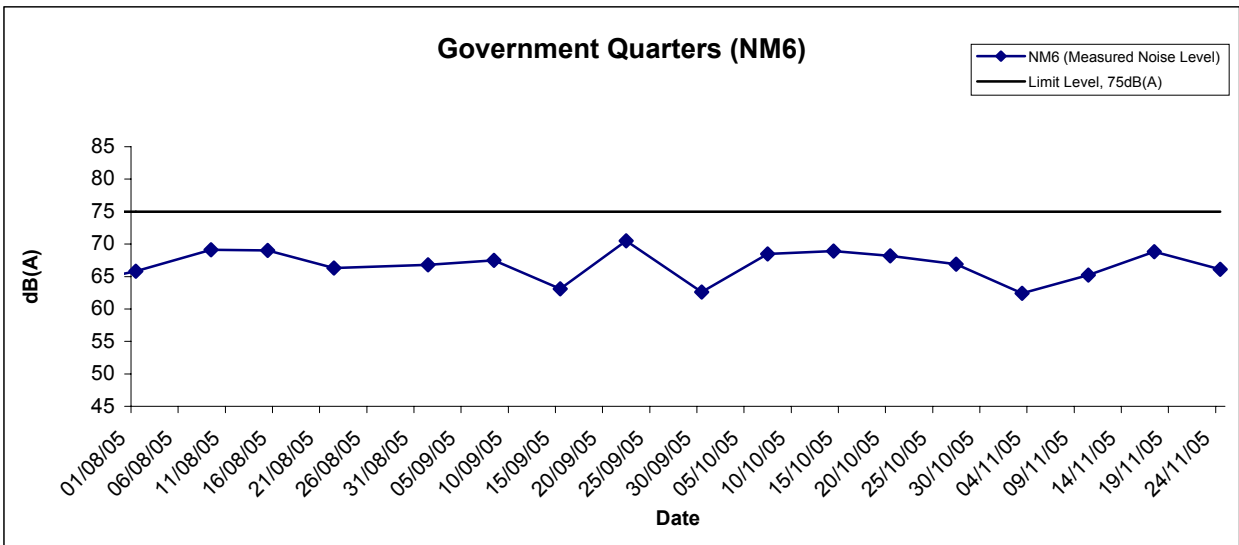
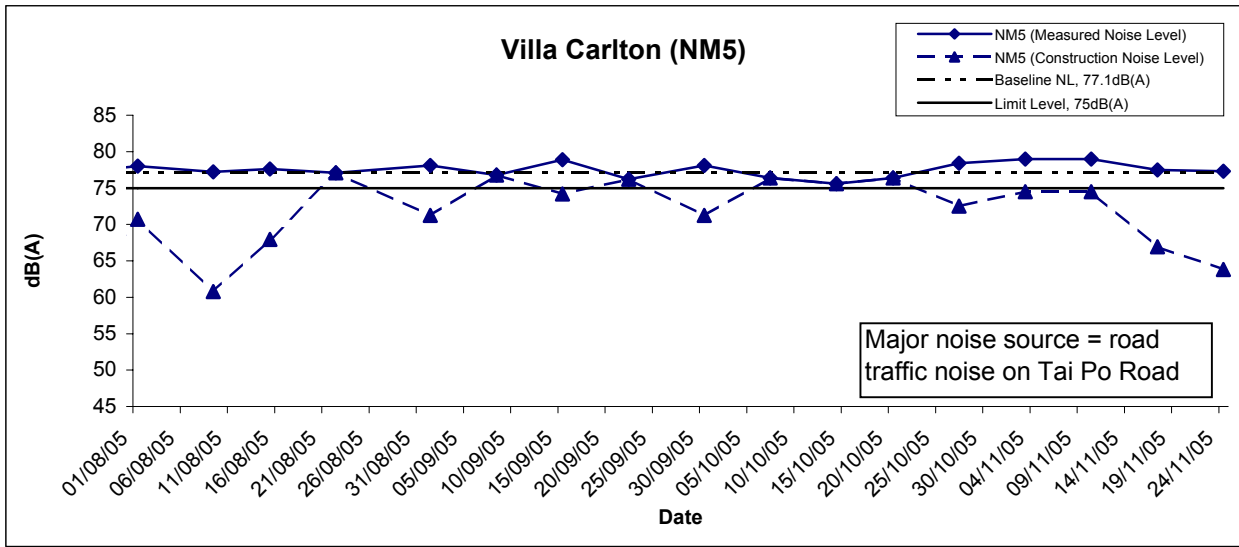
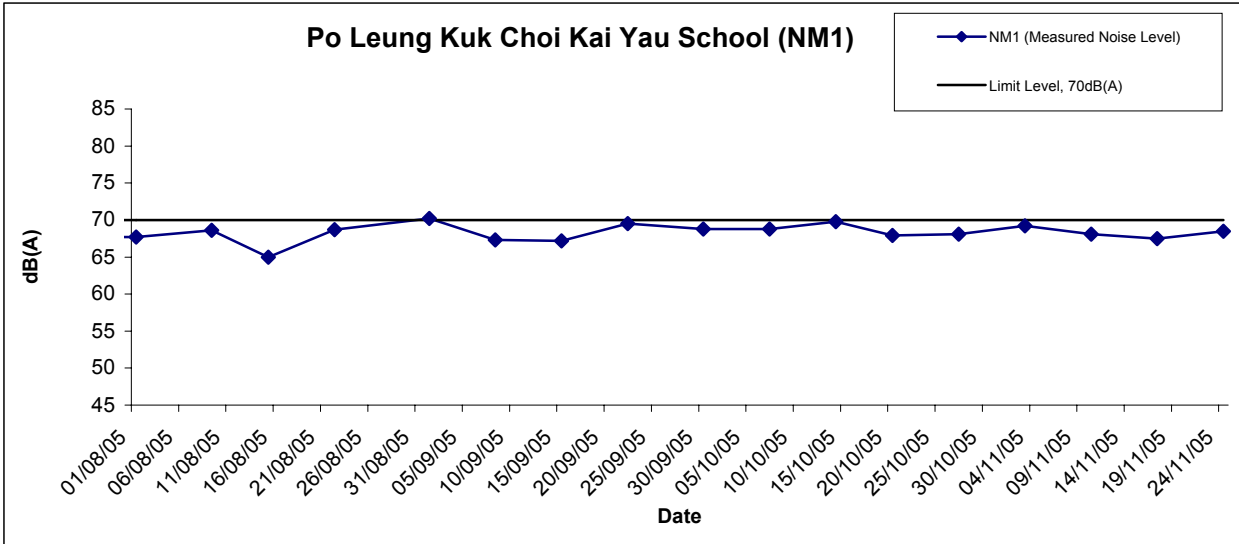
24-hr TSP Levels



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 05	Appendix E	

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

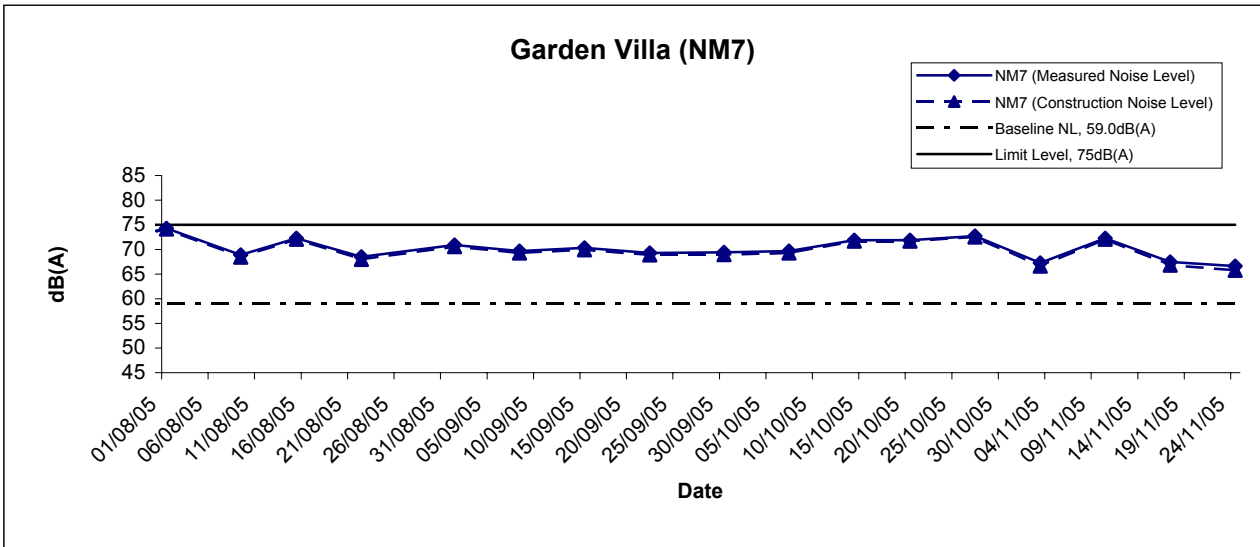
Noise Levels



* 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 05	Appendix F	

Noise Levels

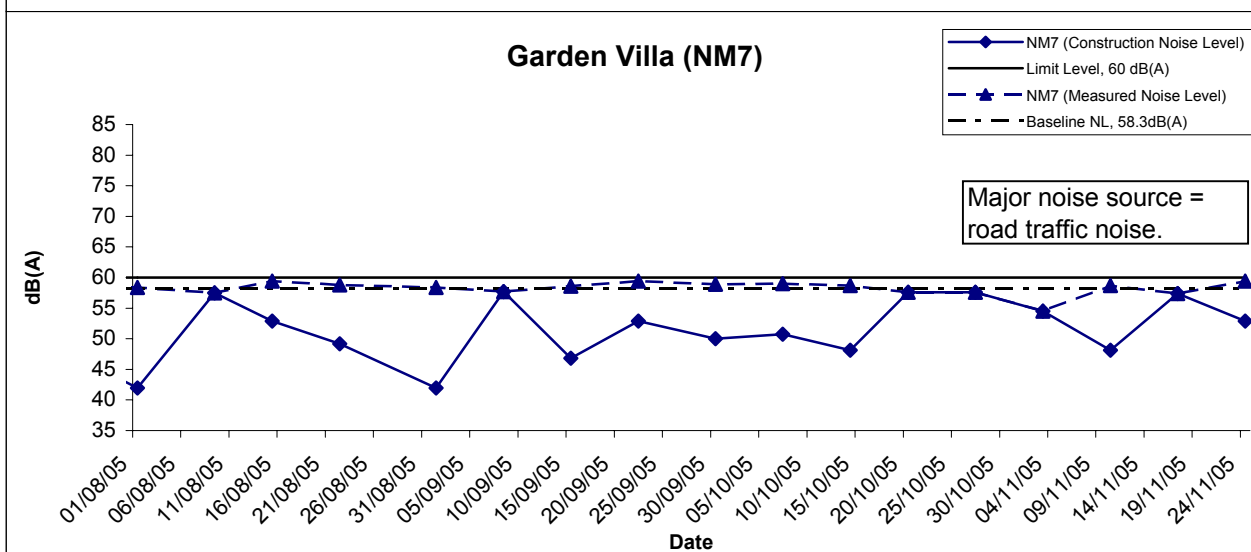
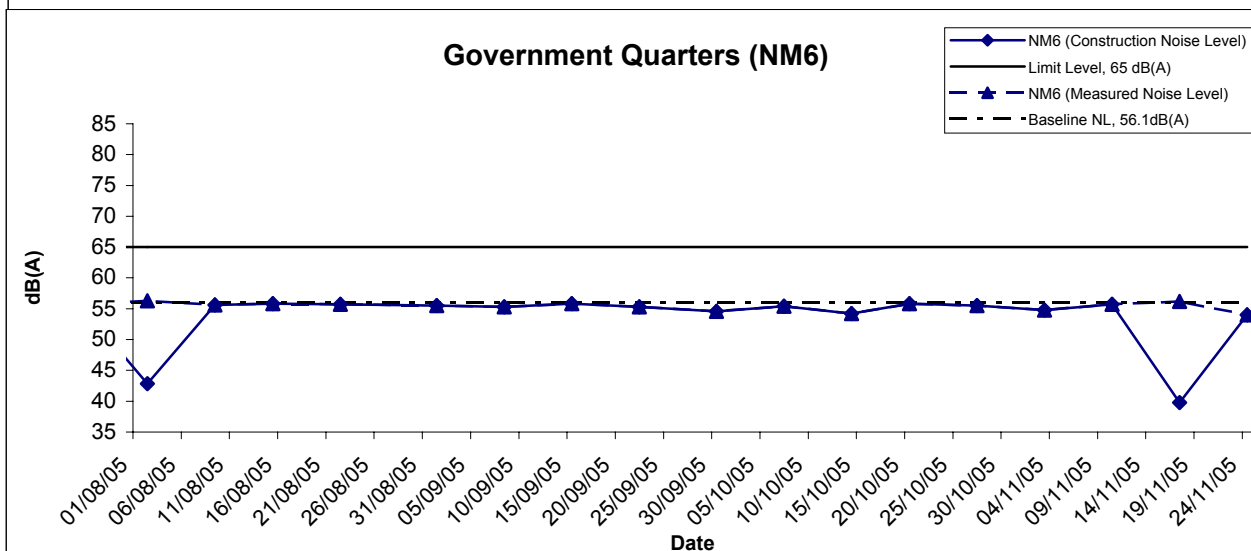
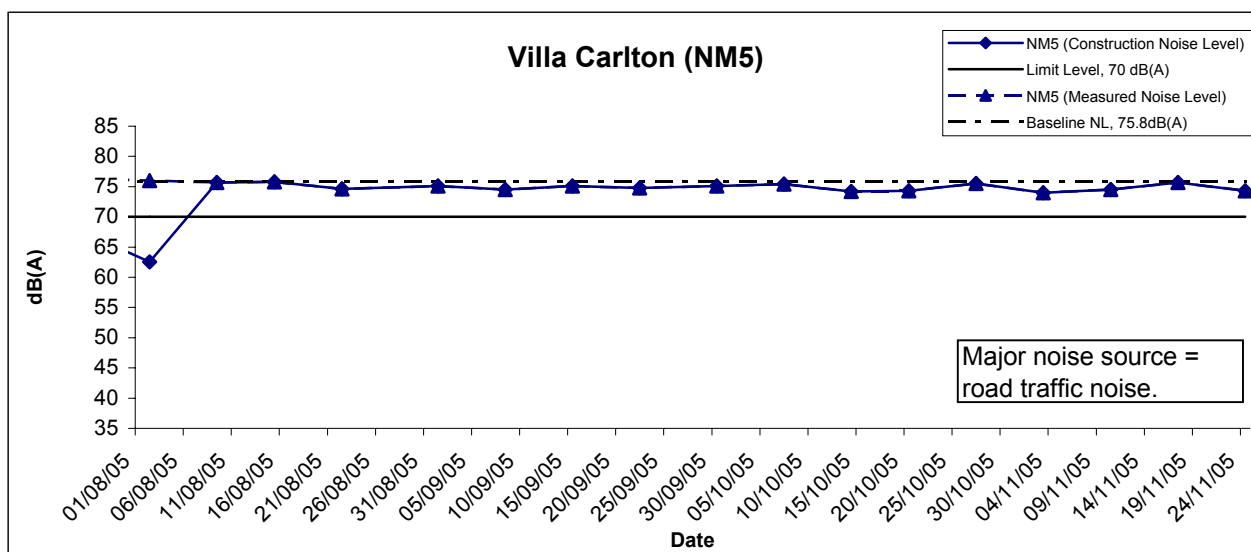


* Construction Noise Level = Measured Noise Level - Baseline Level

(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	
	Date Nov 05	Appendix F	

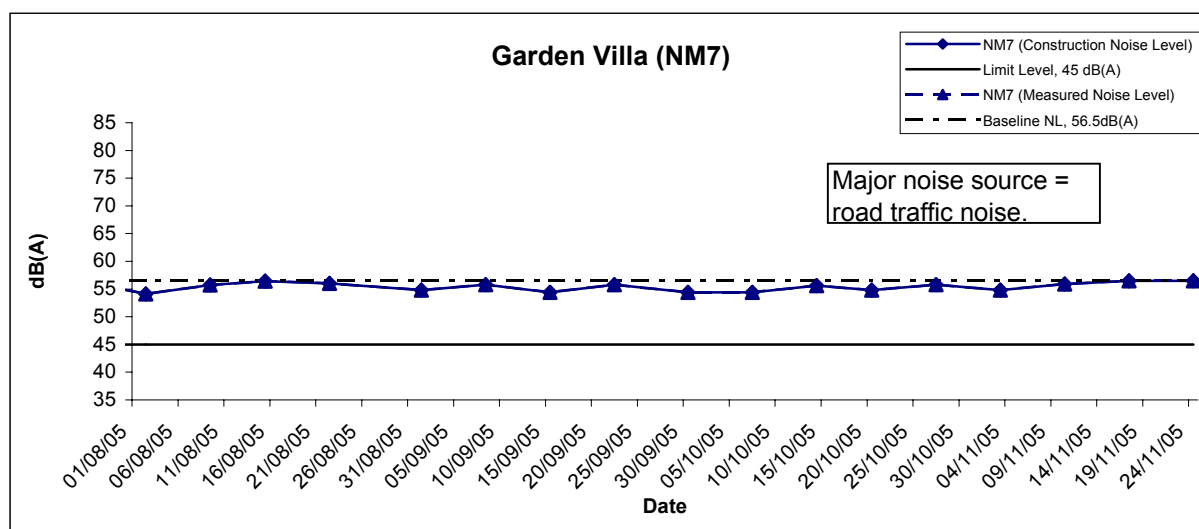
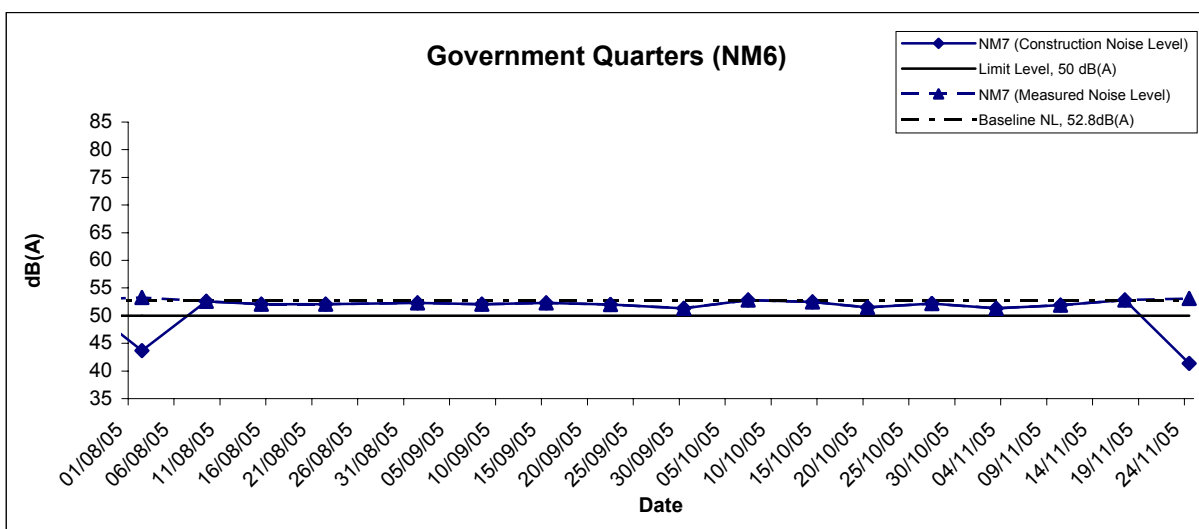
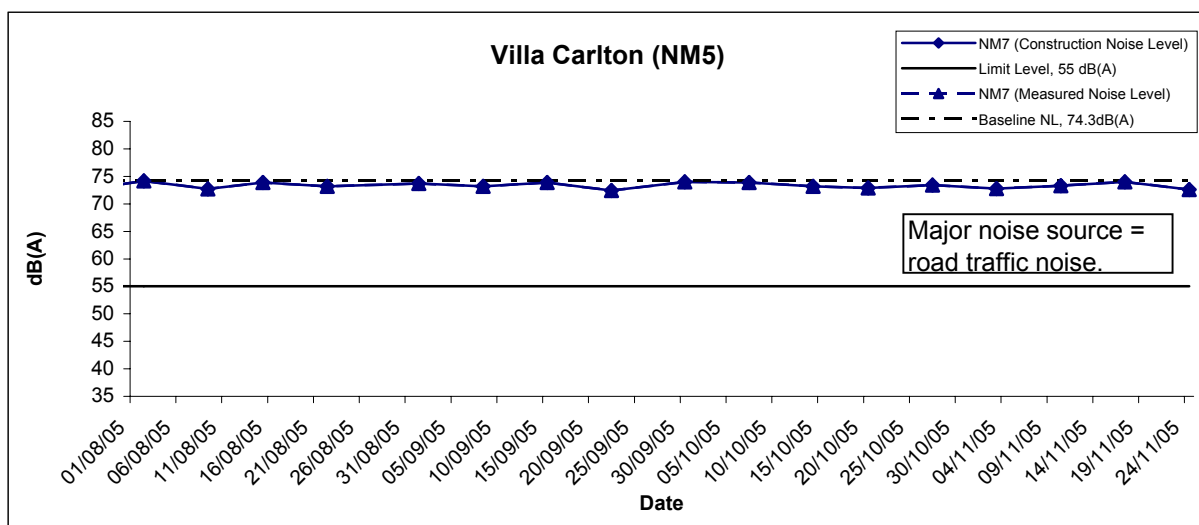
Restricted Hours (19:00 to 23:00) - Noise Levels



* 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	CINOTECH
	Date Nov 05	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 05	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	<i>Construction Runoff and Drainage</i>	
	<ul style="list-style-type: none"> Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow. Boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilities runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporarily diverted drainage should be reinstated to its original condition when the construction works has finished or the temporary diversion is no longer required Sand silt in the wash water from the wheel washing facilities, which ensure no earth, mud and debris is deposited on roads, should be settled out the removed before discharging into storm drains. A section of the road between the wheel washing bay and the public road should be paved with backfill to prevent wash water or other site runoff form entering public road drains. Oil interceptors should be provided in the drainage system and regularly emptied to prevent the release of oils and grease into the storm water drainage system after accidental spillage. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks. Silt removal facilities, channels and manholes shall be suitably maintained with the deposited silt and grit being removed at least once a week, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels shall be provided along the site boundary or at the locations agreed with the ET Leader. Rainwater pumped out from trenches or foundation excavations shall be discharged into silt removal facilities before discharge into storm drains. All generators, fuel and oil storage shall be within bunded areas. Drainage from the areas shall be connected to storm drains via a petrol interceptor. 	^ ^ ^ ^ ^ ^ ^ ^
	<i>Tunnelling Work</i>	
	<ul style="list-style-type: none"> Temporary open storage of excavated materials should be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials form the drill and blast tunnelling work should be diverted to the drainage system via appropriate sediment traps. Ground water pumped out of tunnels should be discharged into the drainage channels which incorporated sediment traps to enhance deposition rates and to remove silt. 	^ ^

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> Spent grouts used in diaphragm wall construction should be collected in a separate slurry collection system, reconditioned and reused wherever practicable. The disposal of used grouting materials will only be permitted if it is treated to the TM standards before discharge to the storm drains or disposal to landfill. 	N/A
	<i>General Construction Activities</i>	
	<ul style="list-style-type: none"> Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column and cause water quality impacts. 	^
	<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"> Due to the high risk of loose material being washed into the existing nullah, stockpile materials should be properly compacted and covered from water erosion and located at least 10m away from the nullah wall. 	N/A
	<i>Construction and Demolition (C&D) Waste</i>	
	<ul style="list-style-type: none"> Careful design, planning and good site management shall be adopted to minimise over-ordering and generation of waste materials such as concrete grouts. 	^
	<ul style="list-style-type: none"> The handling and disposal of bentonite slurries shall be undertaken in accordance with Practice Note for Professional Persons – Construction Site Drainage (ProPECC PN 1/94) on construction site drainage. 	N/A
	<ul style="list-style-type: none"> Construction and demolition (C&D) material shall be segregated to inert and non-inert parts. The inert portion shall re-used at areas of reclamation or land formation, or to public filling area shall such allocation is deemed necessary. The non-inert portion shall be disposed of to landfill. 	^
	<i>Chemical Waste</i>	
<ul style="list-style-type: none"> Chemical waste that is produce during construction shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. 	^	
<ul style="list-style-type: none"> Containers used for the storage of chemical wastes should: <ol style="list-style-type: none"> Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; 	^	
<ol style="list-style-type: none"> Have a capacity of less than 450 litres unless the specifications have been approved by the EPD; 	^	
<ol style="list-style-type: none"> Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste Regulations. 		
<ul style="list-style-type: none"> The storage area for chemical wastes should: <ol style="list-style-type: none"> Be clearly labelled and used solely for the storage of chemical waste; 		
<ol style="list-style-type: none"> Be enclosed on at least 3 sides; 		
<ol style="list-style-type: none"> Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is largest; 	^	
<ol style="list-style-type: none"> Have adequate ventilation; 		
<ol style="list-style-type: none"> Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); 		
<ol style="list-style-type: none"> Be arranged so that incompatible materials are adequately separated. 		
<ul style="list-style-type: none"> Disposal of chemical waste shall be via a licensed waste collector; and to a facility licensed to receive chemical waste; or a reuser of the waste (under approval from EPD). 	^	
<i>General Refuse</i>		
<ul style="list-style-type: none"> General refuse generated on-site shall be stored in enclosed bins or compaction unit separate from C&D and chemical wastes. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D and chemical wastes, on a daily for every second day basis to minimise odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law. 	^	

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	Construction and operation of (a) All civil works (including highways, traffic, geotechnical, drainage, structural, architectural and landscaping works) for the Lai Chi Kok Viaduct, the interchange with Ching Cheung Road, the main road within Butterfly Valley and the Eagle's Nest Tunnel; (b) All E&M works (including ventilation, Traffic Control & Surveillance System (TCSS), toll collection system and lighting) for the whole Route 9 between Cheung Sha Wan and Sha Tin; (c) The permanent slope works above the northern portal of the Eagle's Nest Tunnel; (d) The architectural works (including fitting out and furnishings) of the portal buildings of the Sha Tin Heights Tunnel.	Valid
Registration of Chemical Waste Producer				
WPN 5213-761-L2595-01	26/01/04	N/A	N/A	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-RW0643-05	08/10/05	07/04/06	<i>Location:</i> Butterfly Valley <i>Time period:</i> general holiday (including Sundays) between 0700 and 2300 hours, and any other day between 1900 and 2300 hours.	Valid
GW-RW0503-05	06/08/05	05/02/06	<i>Location:</i> Ventilation Adit <i>Time period:</i> general holiday (including Sundays) between 0700 and 2300 hours, and any other day between 1900 and 2300 hours.	Valid
GW-RW0504-05	06/08/05	05/02/06	<i>Location:</i> Ventilation Adit <i>Time period:</i> Any day between 2300 and 0700 hours on next day.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RN0532-05	04/10/05	03/04/06	<i>Location:</i> South Portal <i>Time period:</i> general holiday (including Sundays) between 0900 and 2300 hours, and any other day between 1900 and 2300 hours.	Valid
GW-RN0447-05	04/10/05	03/04/06	<i>Location:</i> South Portal <i>Time period:</i> Any day between 2300 and 0700 hours on next day.	Valid
GW-RN0449-05	04/10/05	03/04/06	<i>Location:</i> North Portal <i>Time period:</i> general holiday (including Sundays) between 0900 and 2300 hours, and any other day between 1900 and 2300 hours.	Valid
GW-RN0448-05	04/10/05	03/04/06	<i>Location:</i> North Portal <i>Time period:</i> Any day between 2300 and 0700 hours on next day.	Valid
GW-RN0537-05	11/11/05	10/05/06	<i>Location:</i> Toll Plaza <i>Time period:</i> general holiday (including Sundays) between 0900 and 2300 hours, and any other day between 1900 and 2300 hours.	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><u>Noise from blasting</u> For carrying out the blasting, the Contractor had obtained the permit from relevant authority. The ET’s noise monitoring results did not show any exceedance for the measurement taken when blasting was in place. It should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the control of EPD. In order to minimize the nuisance from the works, the Contractor was recommended:</p> <ul style="list-style-type: none"> • To inform the residents around the area about the time of blasting in advance; and • To re-schedule the blasting time table, if possible, in order to avoid nuisance. <p><u>Uncovered dump trucks</u> In order to evaluate the situation, two inspections were carried out by the ET at Garden Villa on 27-Jan and 28-Jan-05 to identify the dump trucks leaving the site with uncovered load. On 27-Jan-05, 3 nos. of trucks, which were working for ENT Project, was noted by-passing Garden Villa without proper cover.</p> <p>Enhanced control (penalty system) was implemented by the Contractor after the inspection on 27-Jan. During the inspection on 28-Jan-05, 24 nos. of dump trucks for ENT Project were found leaving the site. No non-compliance was noted for the trucks working for ENT Project.</p> <p>LKJV was reminded to keep closely monitoring on the condition and the effectiveness of the proposed control measures.</p>	Closed

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

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

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50419	Government Quarters	15-Apr-05 (by EPD) 19-Apr-05 (by ET Leader)	<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	<p>A resident of Government Quarters complaint about a blast undertaken at 0215hr on 28 Sept 05.</p>	<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	<p>The resident site staff (MHJV) of R8-ENT received a complaint from the Principal of PLKCKY School.</p> <p>She commented that the blasting noise (nighttime and daytime) at Butterfly Valley became louder than before.</p>	<p>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.</p> <p>The complaint was therefore considered not justifiable.</p>	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></p> <p>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 nuisance due to operation of a generator after 11pm</u></p> <p>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></p> <p>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>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p data-bbox="1245 210 1908 268"><u>Item 4: Noise due to works outside tunnel in the early morning of 2 Nov 05</u></p> <p data-bbox="1245 303 1908 539">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> <p data-bbox="1245 571 1370 596"><u>Conclusion</u></p> <p data-bbox="1245 632 1908 742">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>	

APPENDIX J
SUMMARY OF EXCEEDANCES

Summary of Exceedances Recorded in the Reporting Quarter***a) Exceedance Report for 1-hr TSP (NIL)***Exceedance(s) on 12 September 2005

Station No.	Parameter	Particulate Concentration ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	Level exceeded
AM3 (Garden Villa)	1-hr TSP	472.7	350	500	Action
(a) Statement of exceedance(s) 1-hr TSP level at Station AM3 (Garden Villa) exceeded the Action level.					
(b) Cause of exceedance(s) It was considered that the exceedance was not related to the R8-ENT construction works based on the following observations:					
<ul style="list-style-type: none"> • Based on the EPD monitoring data, the hourly Air Pollution Index (API) from most air quality monitoring stations was ranked as high to very high. The API recorded at the EPD's Sha Tin Station was 91 (both ranked as high), respectively during the sampling period (0900 to 1000 hrs). • High TSP levels were also obtained in our other EM&A Projects, covering the areas of Sha Tin, Yuen Long and Lai Chi Kok, etc. Exceedances of air quality were also recorded at the monitoring stations in the above areas. • Dust mitigation measures had been implemented by the Contractor, such as covering stockpiles and watering of haul roads. No observable dust source was identified in the R8-ENT construction site near the monitoring station. • Therefore, the recorded exceedance of air quality may be due to the high ambient TSP level as a consequence of regional air pollution over Hong Kong. 					
(c) Action required under the action plan N/A					
(d) Action taken under the action plan N/A					
(e) ET's conclusions and recommendations for mitigation The exceedance was not due to the Project works and no further action is required.					

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

- Three action level exceedances were recorded due to public noise complaints received by the ET Leader on 28 September, 31 October and 1 November 2005. The details can refer to **Appendix I**.
- No noise limit level exceedance was recorded in the reporting period.