

**Civil Engineering & Development Department
NT EAST Development Office**

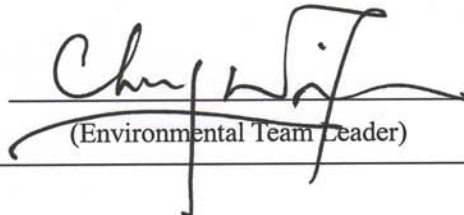
Contract No. ST89/02

Sha Tin Heights Tunnel and Approaches

Quarterly EM&A Report (Version 1.0)

February 2007 to April 2007

Certified 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

1. This is the 18th Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Sha Tin Heights Tunnel and Approaches” (the Project). This summary report presents EM&A works performed in the period between February 2007 and April 2007.
2. The construction activities undertaken in this reporting quarter included:
 - Drainage works;
 - Construction of Inspection Opening for Box Culvert;
 - Water works;
 - Removal of Epoxy above KCRC Rails;
 - Erection of Sign Gantry and Directional Sign;
 - Rising Existing Manhole Level;
 - Lining Installation for 1050mm diameter Sewer under Retaining Wall no.5;
 - Sealing up existing Manholes and Pipes;
 - Erection of Steel Frame / Noise Barrier;
 - Installation of Noise Barrier Post and Panel over KCRC Railway;
 - Installation of Lighting under Bridge N2/S2;
 - Tunnel/Portal Building./RCFE - VE cladding installation;
 - Erection of Sign Gantry and Directional Sign;
 - Application of Colour Treatment to RCFE and RE Wall;
 - Removal of Temporary Access Road TAR 1;
 - Construction of Flexible Road Pavement;
 - Construction of retaining wall AR/E/01; and
 - Slope upgrading works F437, F438 (Area B), F478 (Area C);

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manuals and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Air Quality

1-hr TSP Monitoring

4. All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter except the monitoring at stations A3 was cancelled on 24th April 2007 due to adverse weather. The 1-hr TSP monitoring was rearranged to conduct on 27th April 2007. No Action/Limit Level exceedance was recorded in the reporting quarter.

24-hr TSP Monitoring

5. All 24-hr TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded in the reporting quarter.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Environmental Complaint and Prosecution

7. No environmental prosecution was recorded in the reporting quarter.
8. No environmental complaint was received in the reporting quarter.

Environmental Licensing and Permitting

9. License/Permits granted to the Project include the Environmental Permit (EP), Construction Noise Permits (CNP), Waste Disposal (Chemical Waste) License and Wastewater Discharge Permit.
10. A total of one new CNP (CNP no.: GW-RN0123-07) was issued by the EPD in the reporting quarter.

Future Key Issues

11. Drainage works, water works, rising existing manhole level, sealing up existing manholes and pipes, erection of Sign Gantry and Directional Sign, erection of steel frame / noise barrier, installation of noise barrier post and panel over KCRC Railway, tunnel/portal building /RCFE - VE cladding installation, erection of sign gantry and directional sign, construction of flexible road pavement and slope upgrading works will be the major construction activities for the coming months.
12. The anticipated environmental issues will be mainly dust impact and construction noise nuisance during the slope works and parapet construction.

1. INTRODUCTION

- 1.1 Sha Tin Heights Tunnel and Approaches (SHT) (hereinafter called the “Project”) forms part of the Route 9 (Formerly Route 8) between Cheung Sha Wan and Sha Tin project, which will be a new expressway connecting west Kowloon and Sha Tin. The Project, the entrusted portion of the Route 9 (Formerly Route 8) project, is being managed and implemented by Civil Engineering & Development Department (CEDD).
- 1.2 The Project works mainly comprise the site formation for a toll plaza at the valley of Sha Tin Heights, the construction of 1 km long dual three-lane tunnels under Sha Tin Heights, a 0.6 km long dual two-lane tunnel approach road in Tai Wai, two slip road viaducts with approximately total length of 1 km connecting to Che Kung Miu Road, associated noise barriers and noise enclosures, drainage, slope works and landscape works. The remainder of the Route 9 (Formerly Route 8) (Main Portion, R9K) project forms the Kowloon Section and is being managed and implemented separately by Highways Department.
- 1.3 The 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 Route 9 (Formerly Route 8) project to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and culture impacts, and identify possible mitigation measures. An updated Final EIA report was subsequently completed in August 1999 to cater for some changes in the main portion. The 1998 and 1999 Route 9 (Formerly Route 8) EIA (R9 EIA Reports) reports were included in the EIA register under the EIAO as report number EIA-135/BC and AEIAR-022/1999 respectively. EM&A Manuals for each of the R9 EIA reports were also included as part of the EIA reports in the register.
- 1.4 Subsequent to the endorsement of the R9 EIA reports by EPD in November 1999, the R9 project was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the Route 9 (Formerly Route 8) project was then separated into the SHT and R9K portions. Meanwhile further design amendments had also been proposed for the SHT during the detailed design stage to resolve various engineering constraints. In view of these changes, an Environmental Review on the SHT was undertaken to update the findings of the R9 EIA reports. The Environmental Review report for R9S was completed in September 2001 and an Environmental Permit No. EP-104/2001 was issued on 4th October 2001 for the Project.
- 1.5 The works of the SHT is constructed under CEDD’s construction Contract No. ST 89/02 “Sha Tin Heights Tunnel and Approaches”. The site layout of the Project is shown in Figure 1.
- 1.6 Cinotech Consultants Limited (Cinotech) was commissioned by CEDD to undertake the Environmental Team (ET) Services for the Project. This is the 18th Quarterly EM&A report summarizing the EM&A works for the Project between November 2006 and January 2007.

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 CEDD, Engineer Representative (ER), Independent Environmental Checker (IEC), the Contractor and Environmental Team (ET). The organization chart and contact details are shown in Figure 3 and Appendix A respectively.

Construction Programme and Synopsis of Work

- 2.2 The construction programme is presented in Appendix B. The construction activities undertaken in this reporting quarter included:

- Drainage works;
- Construction of Inspection Opening for Box Culvert;
- Water works;
- Removal of Epoxy above KCRC Rails;
- Erection of Sign Gantry and Directional Sign;
- Rising Existing Manhole Level;
- Lining Installation for 1050mm diameter Sewer under Retaining Wall no.5;
- Sealing up existing Manholes and Pipes;
- Erection of Steel Frame / Noise Barrier;
- Installation of Noise Barrier Post and Panel over KCRC Railway;
- Installation of Lighting under Bridge N2/S2;
- Tunnel/Portal Building./RCFE - VE cladding installation;
- Erection of Sign Gantry and Directional Sign;
- Application of Colour Treatment to RCFE and RE Wall;
- Removal of Temporary Access Road TAR 1;
- Construction of Flexible Road Pavement;
- Construction of retaining wall AR/E/01; and
- Slope upgrading works F437, F438 (Area B), F478 (Area C);

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manuals designate locations for the ET to monitor environmental impacts in terms of air quality and noise due to the Project. The Project area and monitoring locations are depicted in Figures 2a and 2b. 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 Manuals. Copies of calibration certificates were attached in the appendices of the Monthly 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 action plans would be implemented. The Action/Limit Levels for each environmental parameter are given 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 E.

4. MONITORING RESULTS

- 4.1 The summary exceedance report in this reporting quarter is presented in Appendix J.

Weather Conditions

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

Air Quality

- 4.3 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter except the monitoring at stations A3 was cancelled on 24th April 2007 due to adverse weather. The 1-hr TSP monitoring was rearranged to conduct on 27th April 2007.
- 4.4 All 24-hr TSP monitoring was conducted as scheduled in the reporting quarter.
- 4.5 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP monitoring was recorded in the reporting quarter.
- 4.6 The monitoring data of 1-hour and 24-hour TSP Levels are shown in the appendices of the Monthly Reports. The graphical presentations of the monitoring results are shown in Appendix F.

Noise

- 4.7 All construction noise monitoring was conducted as scheduled in the reporting quarter.
- 4.8 No Action/Limit Level exceedance was recorded in the reporting quarter.
- 4.9 The noise monitoring data are attached in the appendices of the Monthly Reports. The graphical plots of the noise monitoring results in this reporting quarter are shown in Appendix G.

5. AUDIT RESULTS

Implementation Status of Environmental Mitigation Measures

- 5.1 The implementation status of environmental mitigation measures (EMIS) is given in Appendix E.

Site Audit Summary

Water Quality

- 5.2 In the reporting quarter, the followings were observed regarding water quality during site inspections:
- Ponding water was observed under abutment no.3. The contractor was reminded to fix it up.
 - The Contractor was reminded to remove stagnant water at Side-Beam footing in planting area at Che Kung Mui Road.

Air Quality

- 5.3 In the reporting quarter, the followings were observed regarding air quality during site inspections:
- Opened cement bag was observed without tarpaulin cover at cement stock area in construction site near Garden Villa.

Noise

- 5.4 No environmental deficiency was identified during the environmental site inspections in the reporting quarter.

Waste / Chemical Management

- 5.5 In the reporting quarter, the following was observed regarding waste/chemical management during site inspections:
- A drum of diesel oil without cover provided was observed at Garden Villa. The Contractor was reminded to provide a cover for the drum which should be stored in a sealed drip tray.
 - Some construction wastes were spread on bare ground at Abutment 1 enclosure. The contractor was reminded to clean it up.
 - Two drums of diesel oil were observed on bare ground at Villa Garden. The contractor was reminded to store them in the drip tray to avoid spillage.

Permit / Licenses

- 5.6 No environmental deficiency was identified during the environmental site inspections in the reporting quarter.

Status of Environmental Licensing and Permitting

- 5.7 Environmental licenses and permits including Environmental Permit for the Project, Construction Noise Permits (CNPs), Waste Disposal (Chemical Waste) License and Wastewater Discharge Permit were in place and valid during this reporting quarter. A summary status of licenses and permits is given in Appendix H.

Advice on Solid Waste Management Status

- 5.8 The solid waste generated from the Project site office was mainly general refuse that was collected by a licensed collector on an as need basis.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)**Summary of Exceedances***1-hr TSP*

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

24-hr TSP

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

Noise

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

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

- 6.4 There was no non-compliance from the site audits in this reporting quarter. The observations and recommendations made in each individual site audit session were attached in the Monthly Reports.

Summary of Actions Taken

- 6.5 In this reporting quarter, the following mitigation measures were implemented:
- Excavated/dusty materials have been covered by tarpaulin or water sprayed;
 - Groundwater pumped out was recycled via sediment tanks; and
 - 'AquaSed' has been setup to incorporate with the modified de-silting system.

7. ENVIRONMENTAL COMPLAINTS

Complaint Log

- 7.1 The implementation status of the complaint handling procedure is summarized in Appendix I.
- 7.2 No environmental complaint was received in the reporting quarter.

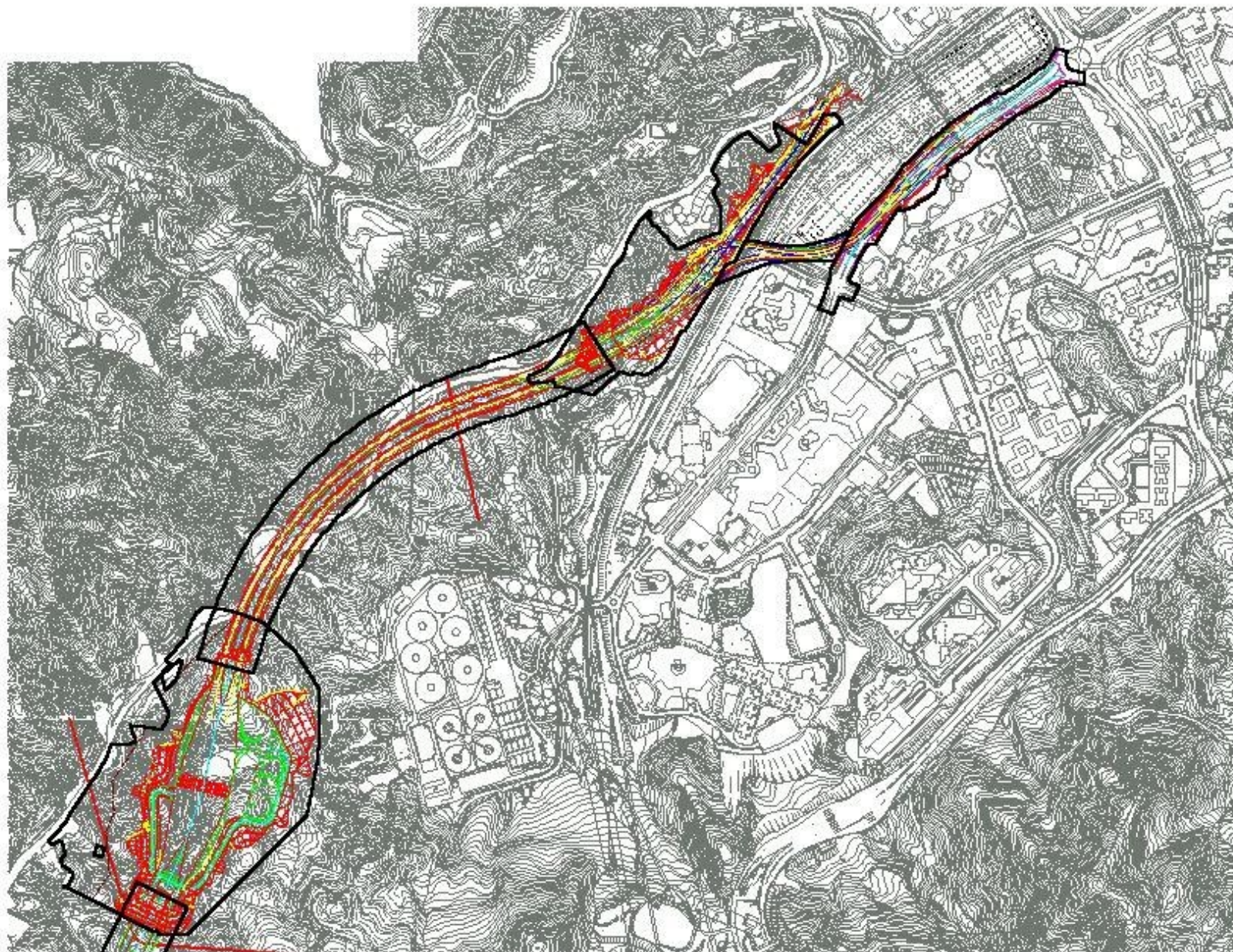
8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 No environmental prosecution was recorded in the reporting quarter.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Drainage works, water works, rising existing manhole level, sealing up existing manholes and pipes, erection of Sign Gantry and Directional Sign, erection of steel frame / noise barrier, installation of noise barrier post and panel over KCRC Railway, tunnel/portal building /RCFE - VE cladding installation, erection of sign gantry and directional sign, construction of flexible road pavement and slope upgrading works will be the major construction activities for the coming months.
- 9.2 The anticipated environmental issues will be mainly dust impact and construction noise nuisance during the slope works and parapet construction.

FIGURES



Title

Contract No. 92/02
Environmental Team For Sha Tin Heights Tunnel & Approaches
Site Layout Plan

Scale

1 : 10 500

Project
No.

MA2027

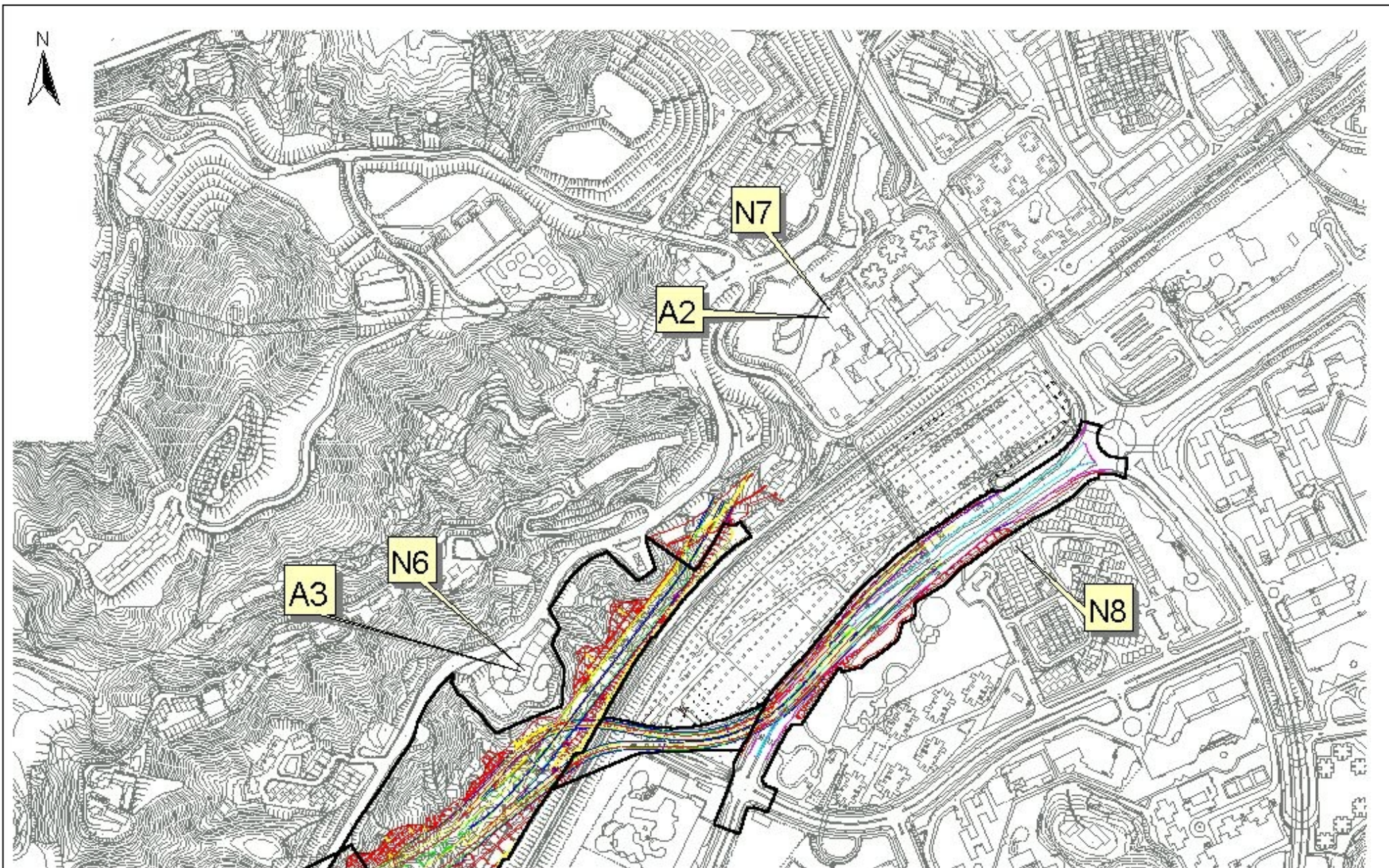
Date

2006

Figure
No.

1

CINOTECH



Title

Contract No. 92/02
Environmental Team For Sha Tin Heights Tunnel & Approaches
Locations of Monitoring Stations

Scale

1 : 6 000

Project
No.

MA2027

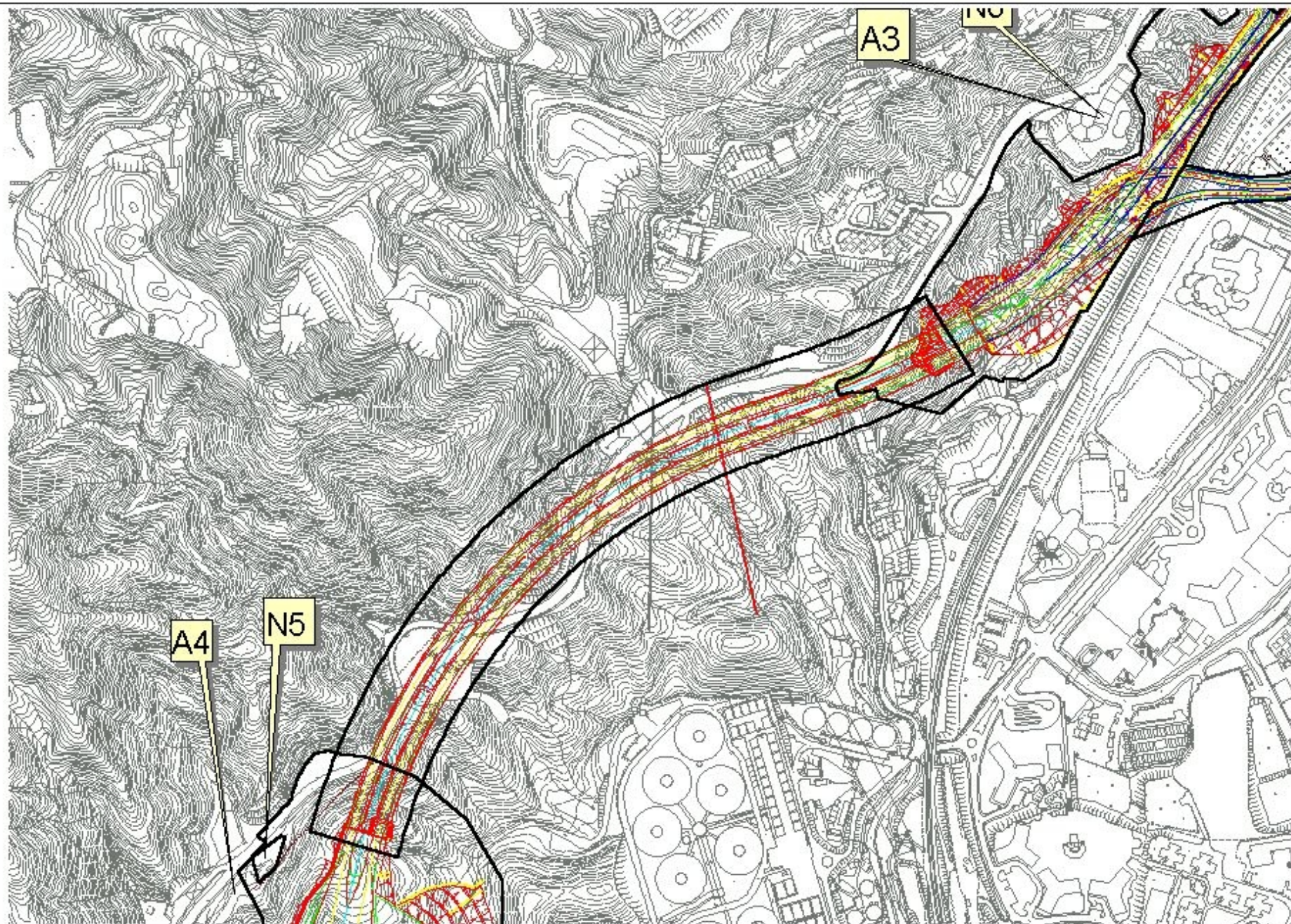
Date

2006

Figure
No.

2a

CINOTECH



Date

Contract No. 92/02
Environmental Team For Sha Tin Heights Tunnel & Approaches

Locations of Monitoring Stations

Date

1 : 6 000

Scale

2006

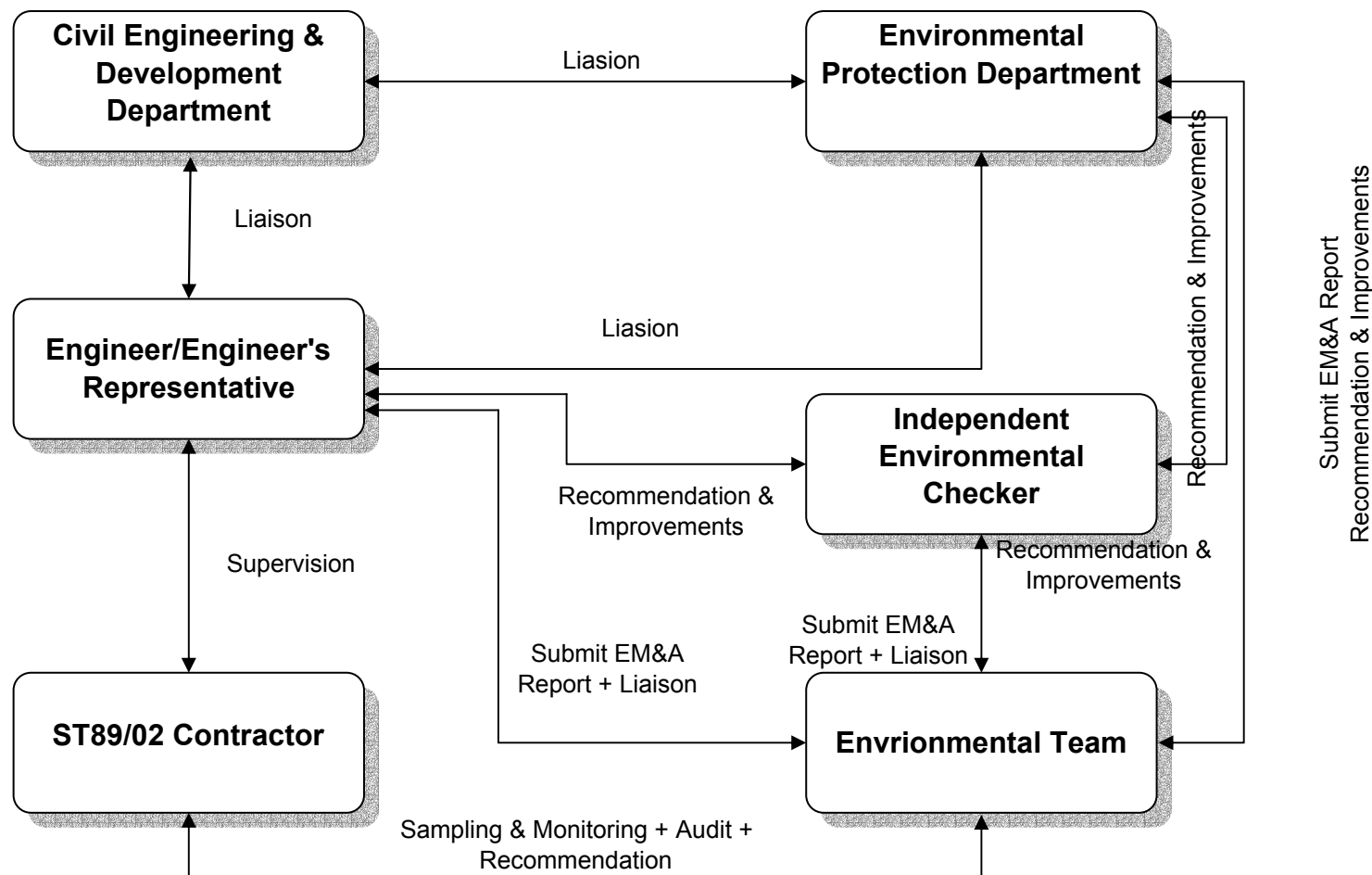
Project

No. MA2027

Figure

No. 2b

CINOTECH



Title	ST89/02 - Sha Tin Heights Tunnel & Approaches		Scale	N.T.S	Propos No.	MA2027	CINOTECH
	Environmental Monitoring and Audit Report Project Organization Chart		Date	2007	Figure	3	

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

Appendix A - Contact Details of the Project Organisation

Party	Name	Role	Phone No.	Fax No.
CEDD	Ms. Joanna Kwok	Permit Holder	2301 1383	2739 0076
	Mr. Robert Choy	Project Coordinator	2301 1373	2721 8630
MCAL	Mr. Francis Leong	The Engineer	2685 6517	2691 2649
	Mr. K.Y. Chan	Engineer's Representative	9750 0557	2697 4106
	Mr. S. K. Lo	Chief Engineer's Representative	9751 9638	2697 4106
ET	Dr. Priscilla Choy	The ET Leader	2151 2089	3107 1388
	Mr. Stanley Liu	Audit Team Leader	2151 2095	
	Mr. Henry Leung	Monitoring Team Leader	2151 2087	
IEC	Mr. David Yeung	Independent Environmental Checker	2507 2203	2507 2293
Contractor	Mr. David Lau	Senior Project Manager	2601 7917	2697 1592
24-hour Hotline			9759 9852	-

APPENDIX B
CONSTRUCTION PROGRAMME

Activity ID	Activity Description	Orig Dur	Current Projected Start	Current Projected Finish	15FEB07 Total Float	2007			
						FEB	MAR	APR	MAY
SECTION XVI - REMAINDER OF WORKS (4 SEP 06)									
SITE FORMATION & SLOPE WORKS									
Slope 7SW-D/FR5									
SB3547C	Back Filling from +102mPD	6	28/07/06A	21/02/07	-146	<div></div>	Back Filling from +102mPD		
SB3546	U-Channel construction	6	22/02/07	28/02/07	-146	<div></div>	U-Channel construction		
SB3548	Planting works - 7SW-D/FR5	6	22/02/07	28/02/07	-146	<div></div>	Planting works - 7SW-D/FR5		
SB3572	Slope 7SW-D/FR5 Complete	0		28/02/07	-146		◆Slope 7SW-D/FR5 Complete		
Slope D/F478									
NP2634	VO186 - 7SW-D/F478 upgrading	72	21/02/06A	28/02/07	-146	<div></div>	VO186 - 7SW-D/F478 upgrading		
Portion 15 Area									
NP3620	Concrete Footpath	6	15/02/07	21/02/07	-140	<div></div>	Concrete Footpath		
NP3630	FTNS & other utilities construction	6	15/02/07	21/02/07	-140	<div></div>	FTNS & other utilities construction		
RETAINING STRUCTURES									
RE Wall 1,2 and 3 in RC Enclosure Area									
NP2870	RE Wall AR/E/03 + APF1	24	02/05/06A	21/02/07	-147	<div></div>	RE Wall AR/E/03 + APF1		
NP2880E	RE Wall AR/E/02 + APF1	12	31/07/06A	21/02/07	-147	<div></div>	RE Wall AR/E/02 + APF1		
NP2890	RE Wall AR/E/01 (Part 1) + APF2	12	31/07/06A	21/02/07	-147	<div></div>	RE Wall AR/E/01 (Part 1) + APF2		
NP2872	RE Wall 1,2,3,4 - coping	6	20/02/07	26/02/07	-147	<div></div>	RE Wall 1,2,3,4 - coping		
NP2873	RE Wall 1,2,3,4 - railing	6	23/02/07	01/03/07	-147	<div></div>	RE Wall 1,2,3,4 - railing		
NP2880	RE Wall AR/E/01 to 03 at RC Enclosure Complete	0		01/03/07	-147		◆RE Wall AR/E/01 to 03 at RC Enclosure Complete		
BUILDING / STRUCTURES									
RCE: Roadworks, Cladding, Int. / Ext. Finishes									
NP2296	Bituminous Road Pavement : Wearing course	18	17/07/06A	21/02/07	-140	<div></div>	Bituminous Road Pavement : Wearing course		
NP2298	Road Markings and Road Furnitures	6	15/02/07	21/02/07	-140	<div></div>	Road Markings and Road Furnitures		
BRIDGE SUPERSTRUCTURE									
Road Works									
AB1590	Bridge S2- Bituminous Surfacing, Final Course	6	15/02/07	21/02/07	-146	<div></div>	Bridge S2- Bituminous Surfacing, Final Course		
AB1602	Bridge S1- Road Marking + Signs	6	15/02/07*	21/02/07	-146	<div></div>	Bridge S1- Road Marking + Signs		
AB1604	Bridge N1- Bituminous Surfacing, Final Course	6	15/02/07	21/02/07	-146	<div></div>	Bridge N1- Bituminous Surfacing, Final Course		
AB1606	Bridge N1- Road Marking + Signs	6	15/02/07	21/02/07	-140	<div></div>	Bridge N1- Road Marking + Signs		
AB1592	Bridge N2- Bituminous Surfacing, Final Course	6	22/02/07	28/02/07	-146	<div></div>	Bridge N2- Bituminous Surfacing, Final Course		
ABCK7870	Bridge N2- Road Marking + Signs	6	22/02/07	28/02/07*	-146	<div></div>	Bridge N2- Road Marking + Signs		
ABCK7872	Bridge S2- Road Marking + Signs	6	22/02/07	28/02/07	-146	<div></div>	Bridge S2- Road Marking + Signs		

Activity ID	Activity Description	Orig Dur	Current Projected Start	Current Projected Finish	15FEB07 Total Float	2007			
						FEB	MAR	APR	MAY
NB7 Type 1, N2, NS2/1 to NS2/5, L=232m									
Bridge N2									
AB2814	NB7 Type 1 - install panel, Span 1 and 2	16	17/08/06A	17/02/07	-137	<div></div> NB7 Type 1 - install panel, Span 1 and 2			
NB9 Type 4, Bridge S2, Ret Wall 4, L= 56m									
Bridge S2									
AB2850	NB9 Type 4 - install panel, RW4 area	18	09/08/06A	17/02/07	-137	<div></div> NB9 Type 4 - install panel, RW4 area			
ROADWORKS									
Road Works									
ABCK7558E	Concrete Footpath + Paving Blocks (CKMR)	48	24/05/06A	21/02/07	-140	<div></div> Concrete Footpath + Paving Blocks (CKMR)			
ABCK7556C	Road Base + Bituminous Pavement (CKMR)	30	21/07/06A	28/02/07	-146	<div></div> Road Base + Bituminous Pavement (CKMR)			
ABCK7558F	Railing + Untensioned safety fence	30	29/07/06A	27/02/07	-145	<div></div> Railing + Untensioned safety fence			
NB6-3, Type 1 RW 5, CKMR SB area) L=180m									
AB1948	NB6-3 Type 1 - install panel, RW5 area	12	17/08/06A	15/02/07	-135	<div></div> NB6-3 Type 1 - install panel, RW5 area			
Road Works in North Portal Approach Area									
NP2480E	NP Approach Rd - Landscape Softworks	12	22/12/06A	28/02/07	-146	<div></div> NP Approach Rd - Landscape Softworks			
NP3650	Railing + untensioned safety fence	12	22/12/06A	28/02/07	-146	<div></div> Railing + untensioned safety fence			
NP3660	Boundary fence installation	12	22/12/06A	28/02/07	-146	<div></div> Boundary fence installation			
NOISE BARRIER									
NB1 Type 3 (Bridge N1 to Abut 1)L = 100m									
Bridge N1									
AB0860	NB1 Type 3 - install panels (80m)	15	16/08/06A	20/02/07	-139	<div></div> NB1 Type 3 - install panels (80m)			
Noise Encl, N1/S1,L=75m, W=20m, H=5.5m + Alum Cl									
Noise Enclosure									
AB2320	Noise Enclosure Panel Installation	12	23/12/06A	15/02/07	-135	<div></div> Noise Enclosure Panel Installation			
SECTION COMPLETION									
Contract Completion Date(SA6+EOT AWARD 27)									
CONP3170	Section XVI (Remainder of Works)	0		01/03/07*	-178	<div></div> ♦Section XVI (Remainder of Works)			

APPENDIX C
MONITORING REQUIREMENTS

Appendix C - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1-hour TSP	3 times every 6 days	<ul style="list-style-type: none"> A2 (Lau Pak Lok Secondary School) A3 (Shatin Heights) A4 (Garden Villa) ⁽²⁾ 	<ul style="list-style-type: none"> A2 – on the roof top facing the site area A3 – on the roof top facing the site area A4 – on ground facing the site area
	24-hour TSP	Once every 6 days		
Noise ⁽¹⁾	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"> N5 (Garden Villa) N6 (Shatin Heights) N7 (Lau Pak Lok Secondary School) N8 (187 Tin Sam Tsuen) 	<ul style="list-style-type: none"> N5– Façade Measurement N6 – Façade Measurement N7 – Façade Measurement N8 –Façade Measurement
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (1900 to 2300)	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)	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)	Once per week (include 3 consecutive 5-min measurements)		

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

⁽²⁾ – Station A4 has been operating since 8 September 2003 and was relocated from Garden Villa to the nearby slope no. 07SW-D/FR4 on 14 February 2005.

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

Appendix D - Action and Limit Levels

Table 1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A2	350	500
A3		
A4		

Table 2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A2	186	260
A3	200	
A4	200	

Table 3 Action and Limit Level for Construction Noise

Action Level		Limit Level
0700-1900 hrs on normal weekdays	One or more complaint(s) received in one week	75* dB(A)
1900-2300 hrs on holidays & 0700-2300 hrs on all other days		60/65/70** dB(A)
2300-0700 hrs of next day		45/50/55** dB(A)

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

(**) to be selected based on Area Sensitivity Rating. If Specified Powered Mechanical Equipment (SPME) is employed, the noise limits should be 15 dB(A) less than that shown above for the restricted hours.

**APPENDIX E
IMPLEMENTATION STATUS OF
ENVIRONMENTAL MITIGATION
MEASURES (EMIS)**

Appendix E - 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. Construct temporary and movable noise barriers 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

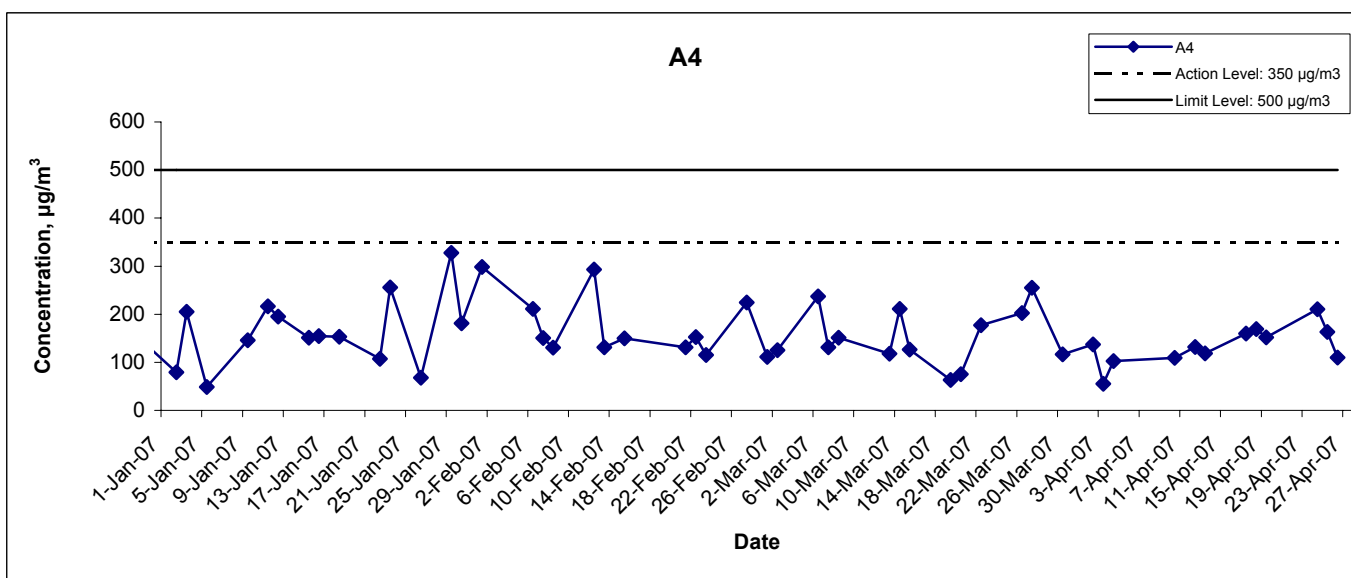
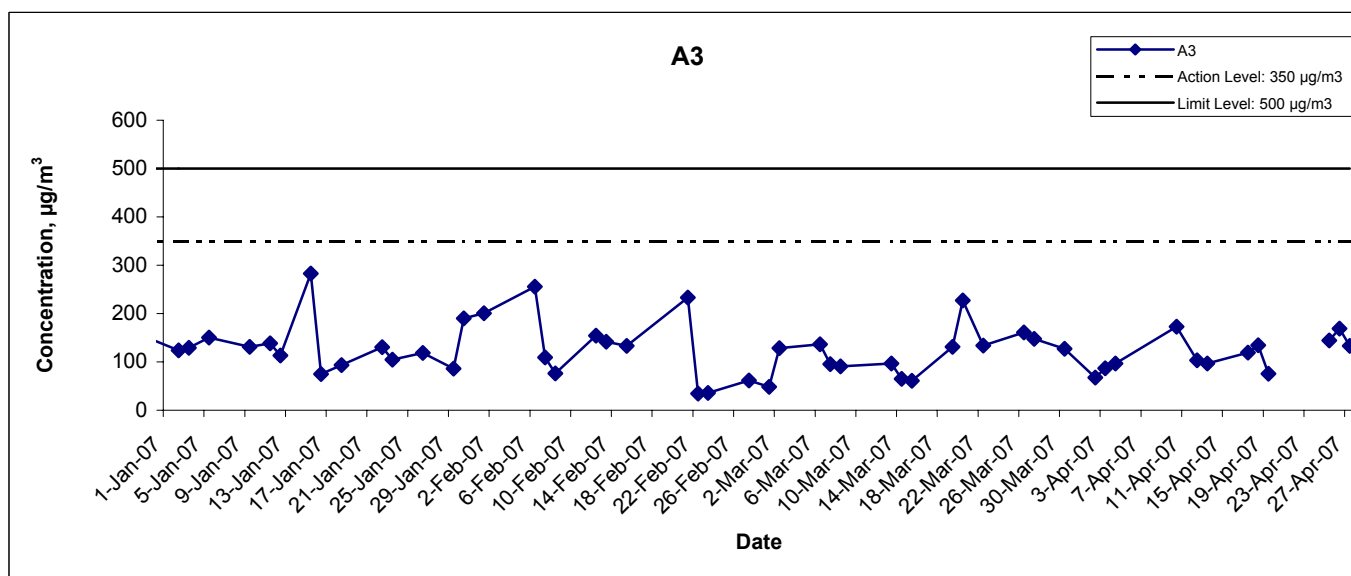
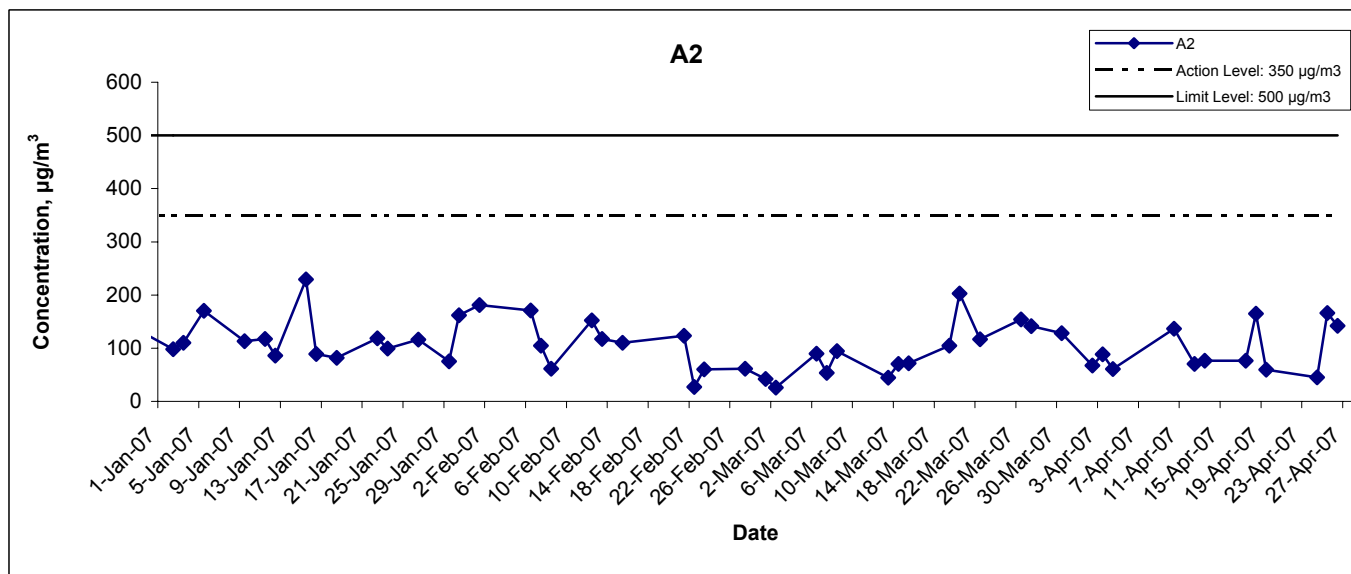
Types of Impacts	Mitigation Measures	Status
Water Quality	<i>Construction Runoff and Drainage</i>	
	<ul style="list-style-type: none"> • Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow. • Boundaries of critical areas of earthworks should be marked 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. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<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. • Spend grouts used in diaphragm wall construction should be collected in a separate slurry collection system, reconditioned and reused wherever practicable. The disposal of used grouting materials will only be permitted if it is treated to the TM standards before discharge to the storm drains or disposal to landfill. 	<p>^</p> <p>^</p> <p>N/A</p>


Types of Impacts	Mitigation Measures	Status
	<i>General Construction Activities</i>	
	<ul style="list-style-type: none"> Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column and cause water quality impacts. All fuel tanks and storage areas will be provided with locks and be located on sealed areas (within bunds of a capacity equal to 110% of the storage capacity of the largest tank or 20% by volume of the fuel stored in that areas, whichever in the greatest). 	<p>^</p> <p>^</p>
	<i>Sewage Effluent</i>	
	<ul style="list-style-type: none"> Construction work force sewage discharges from fixed toilet facilities on-site should be connected to the nearby existing trunk sewer wherever feasible. However, for areas where existing trunk sewer is not available, it is recommended that appropriate and adequate on site portable chemical toilets should be provided by a licensed contractor who will be responsible for appropriate disposal and maintenance of these facilities. It is considered that sewage discharges could also be treated by on-site septic tanks and soakaway. Minimum clearance away from streams and catchments and other requirements for the proposed septic tank and soakaway should be referred to EPD's Practice Note for Professional Persons, Drainage Plans. 	<p>^</p> <p>N/A</p>
Waste	<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. Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits. Waste shall be removed on a daily basis. Waste storage area shall be maintained and cleaned on a daily basis. Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers. Obtain necessary waste disposal permits from the appropriate authorities if they are required. Wastes shall be disposed of at licensed waste disposal facilities. Develop procedure such as ticketing system to facilitate tracking of loads, particularly for chemical waste, and to ensure that illegal disposal of wastes does not occur. Maintain records of the quantities of wastes generated, recycled and disposed. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<i>Surplus Excavated Materials</i>	
	<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 10 away from the nullah wall. 	N/A
	<i>Construction and Demolition (C&D) Waste</i>	

Types of Impacts	Mitigation Measures	Status
	<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. 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. 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. 	<p>^</p> <p>N/A</p> <p>^</p>
	<i>Chemical Waste</i>	
	<ul style="list-style-type: none"> Chemical waste that is produce during construction shall be handled in accordance with the Cod of Practice on the Packaging, Handling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should: <ul style="list-style-type: none"> a. Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; b. Have a capacity of less than 450 litres unless the specifications have been approved by the EPD; c. Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste Regulations. The storage area for chemical wastes should: <ul style="list-style-type: none"> a. Be clearly labelled and used solely for the storage of chemical waste; b. Be enclosed on at least 3 sides; c. Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is largest; d. Have adequate ventilation; e. Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); f. Be arranged so that incompatible materials are adequately separated. 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). 	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<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. Reusable rather than disposable dishware shall be used if feasible. 	<p>^</p> <p>N/A</p>
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. 	<p>^</p>

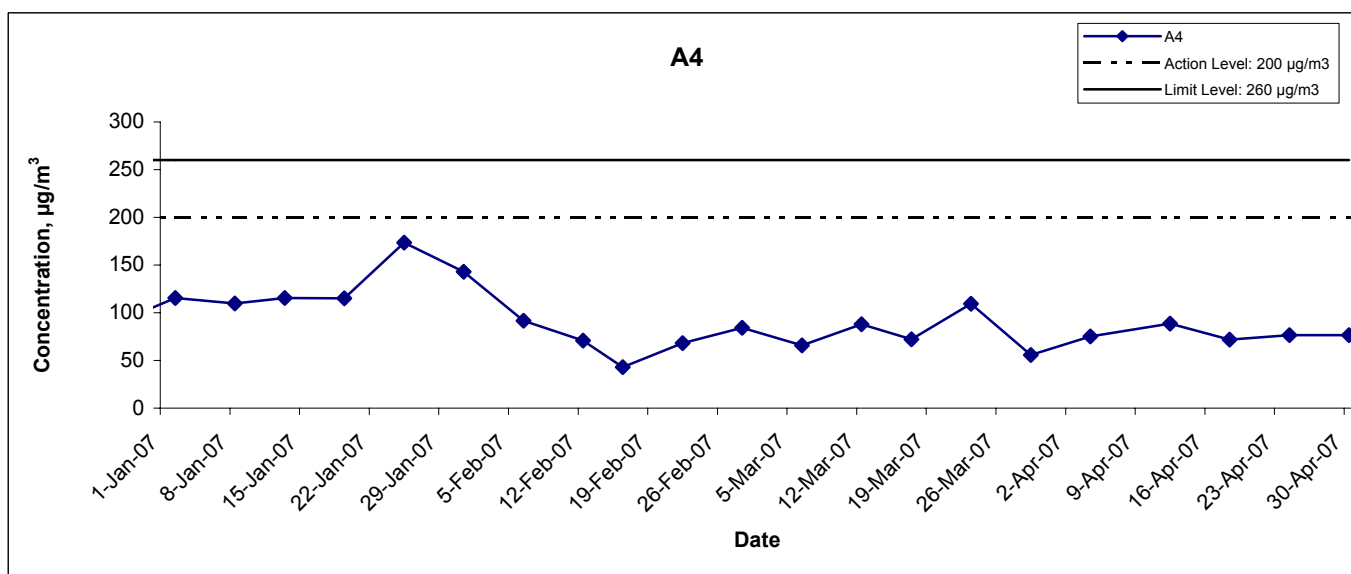
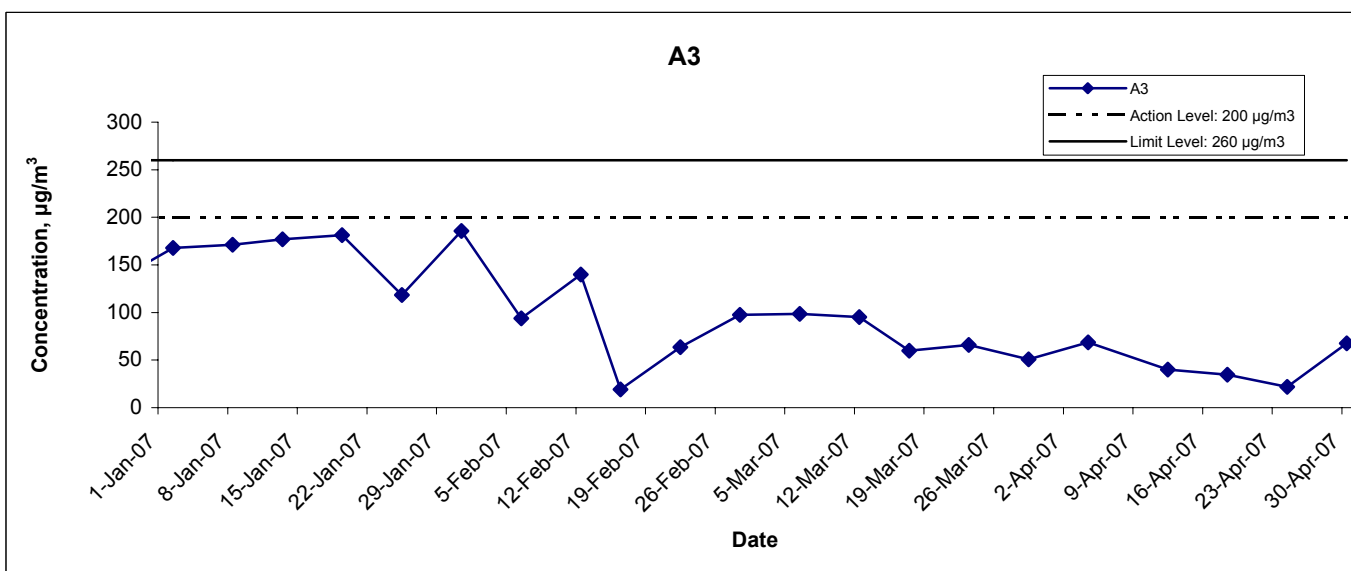
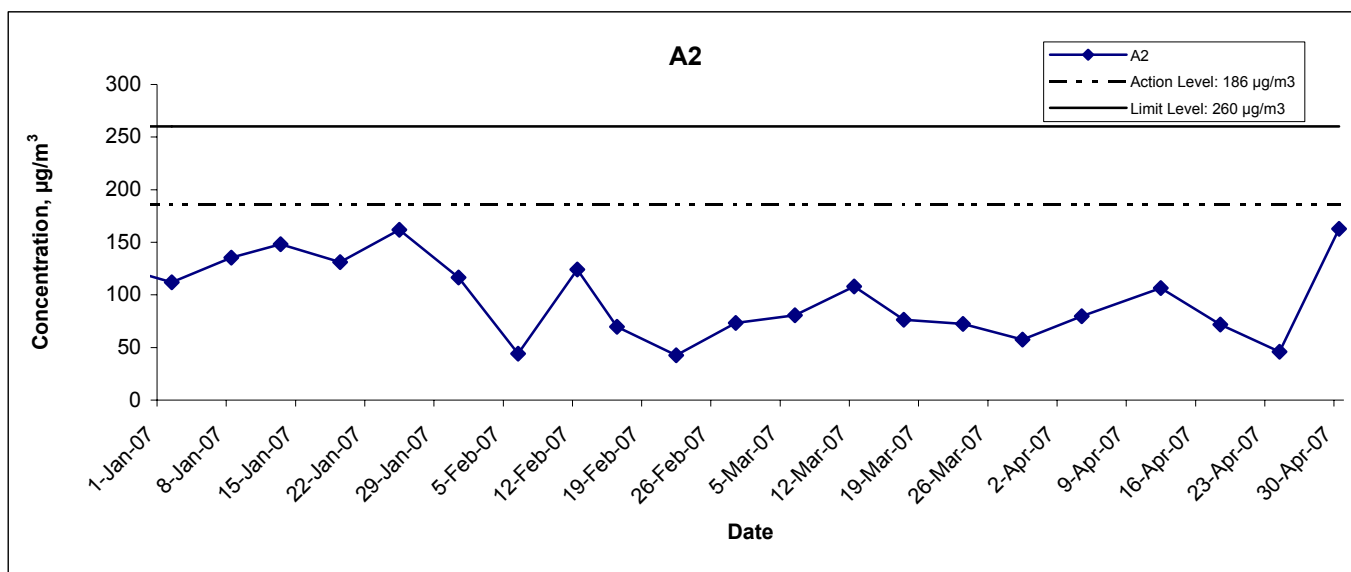
APPENDIX F
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS


1-hr TSP Levels



Title Environmental Team for Sha Tin Heights Tunnel & Approaches Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA2027	
	Date Apr 07	Appendix F	

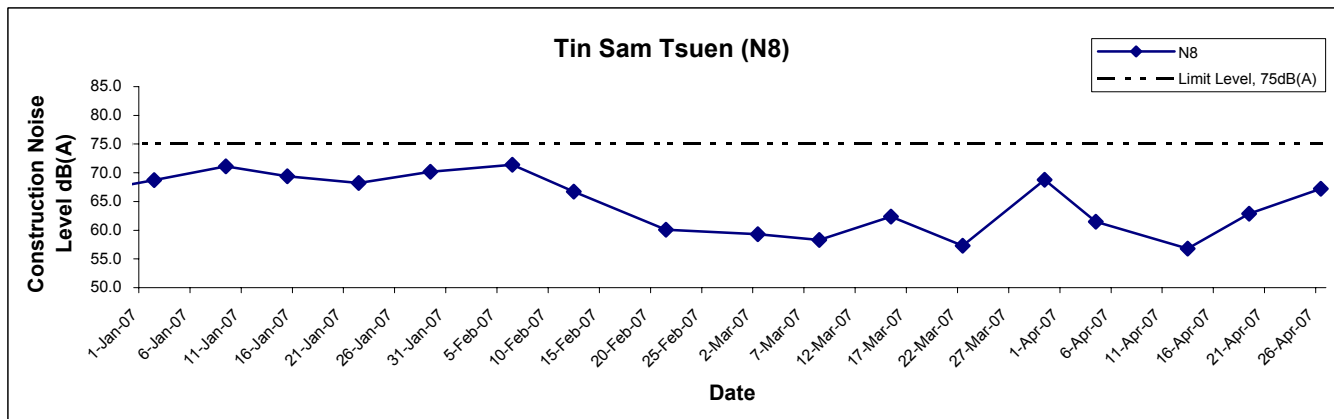
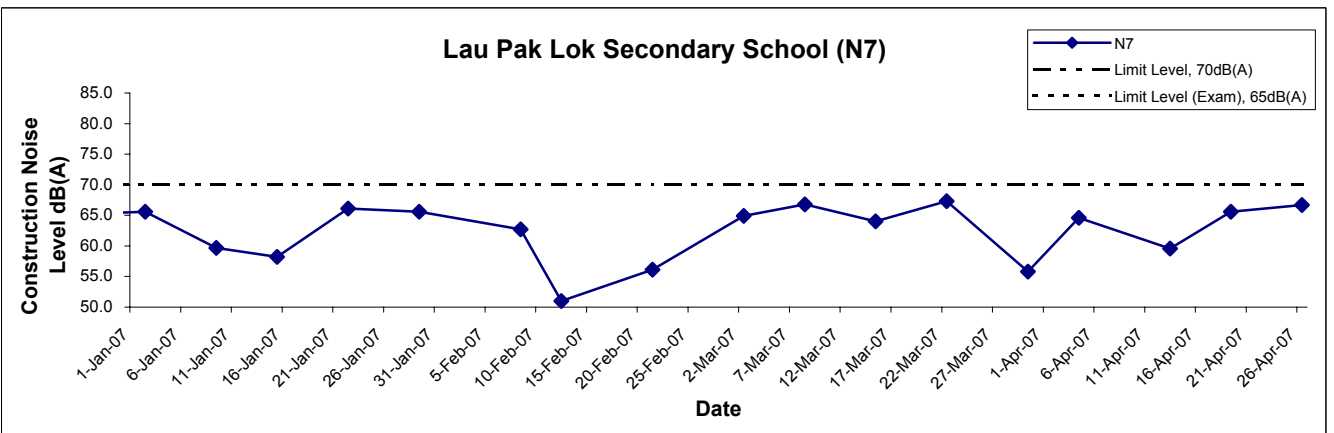
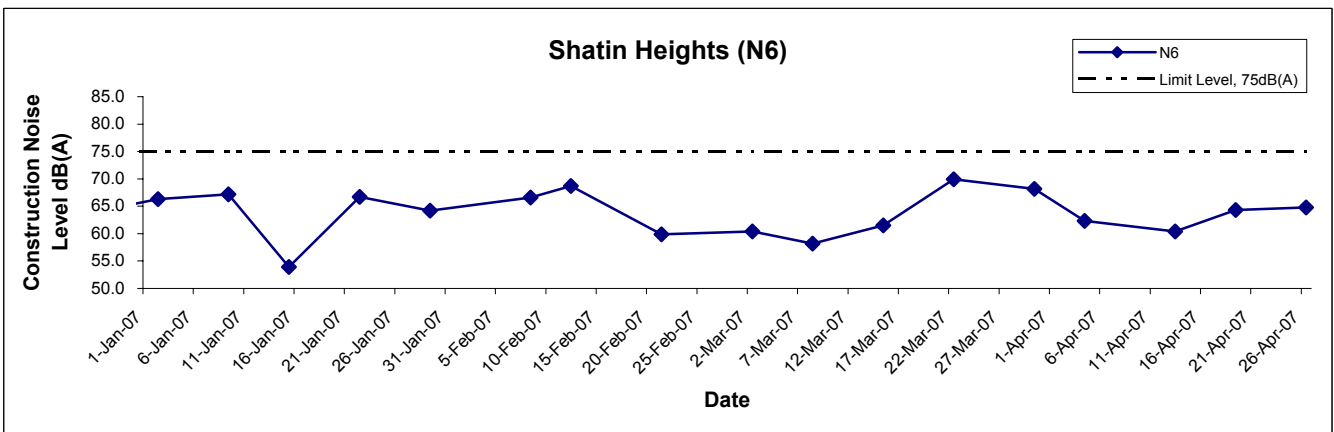
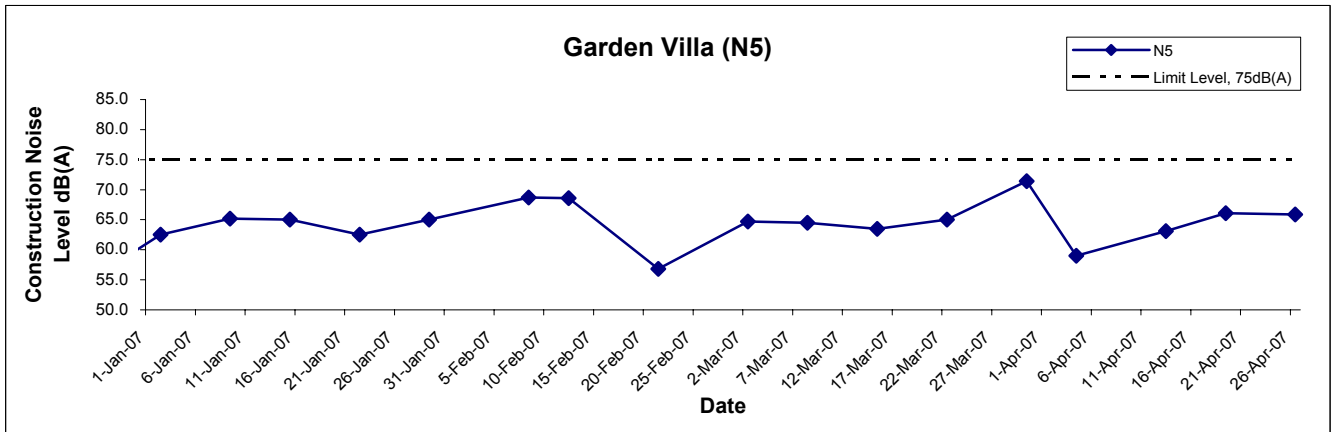
24-hr TSP Levels




Title Environmental Team for Sha Tin Heights Tunnel & Approaches Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA2027	
	Date Apr 07	Appendix F	

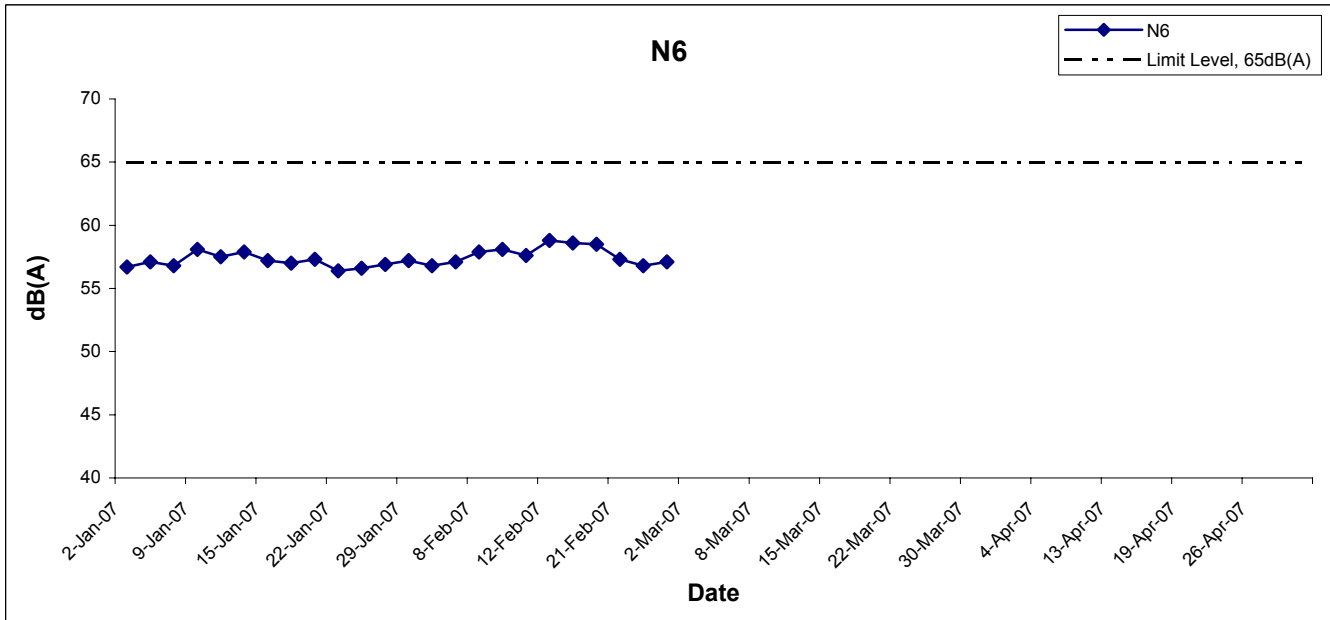
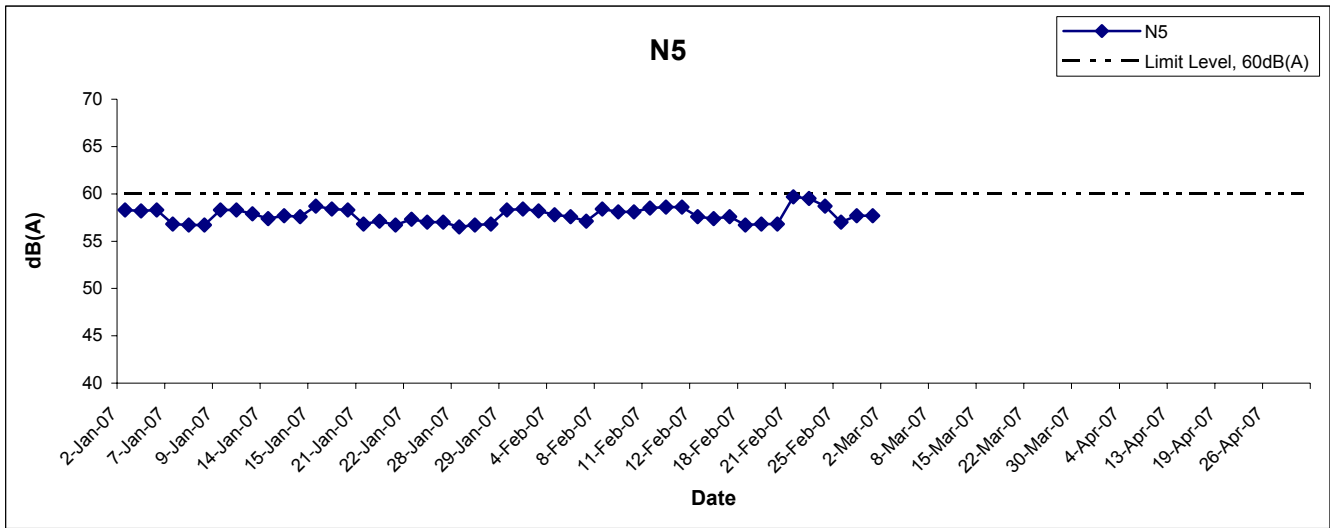
APPENDIX G
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS

Noise Levels



Title Environmental Team for Sha Tin Heights Tunnel & Approaches Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA2027	
	Date Apr 07	Appendix G	

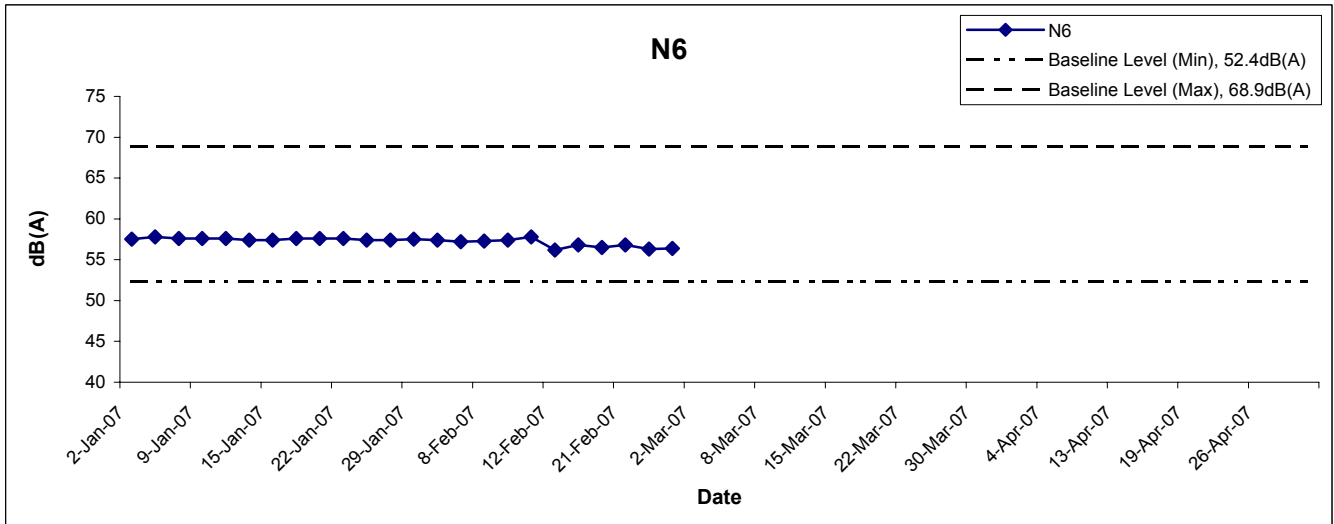
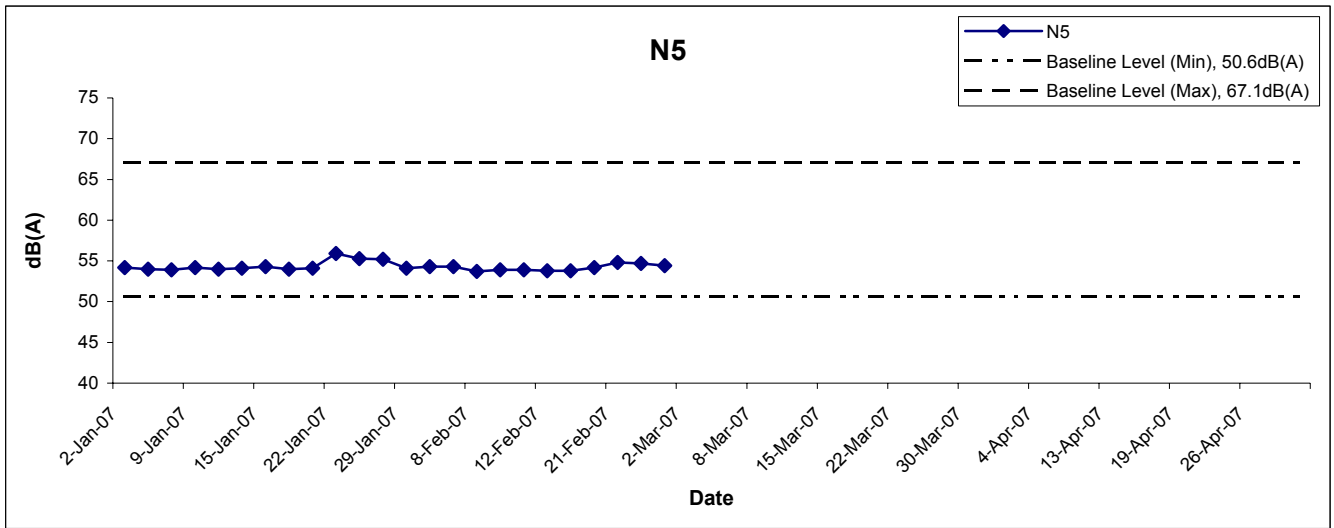
Restricted Hours[#] - Noise Levels



[#] Remarks: - 19:00 to 23:00 on normal weekdays
 - 07:00 to 23:00 on Holidays

Title Environmental Team for Sha Tin Heights Tunnel & Approaches Graphical Presentation of Construction Noise Monitoring Results	Scale	Project No.	CINOTECH
	Date	Appendix	
	N.T.S	MA2027	
	Apr 07	G	

Restricted Hours[#] - Noise Levels



[#] Remarks: - 23:00 to 07:00 on normal weekdays

Title Environmental Team for Sha Tin Heights Tunnel & Approaches Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA2027	
	Date	Apr 07	Appendix	G	

APPENDIX H
SUMMARY OF ENVIRONMENTAL
LICENCES AND PERMITS

Appendix H

Summary Status of Environmental Licenses and Permits

Permit No.	Valid Period		Section	Status
	From	To		
Environmental Permit				
EP-104/2001/B	16/02/05	N/A	Site formation, drainage, geotechnical and landscape works for the toll plaza. Construction of the Sha Tin Heights Tunnels, the Sha Tin Approach Roads and the Slip Road Connecting to Che Kung Miu Road including all formation, structure, road, geotechnical, drainage and landscape work. Construction of the structure of the portal buildings of the Sha Tin Heights Tunnel and noise mitigation measures.	Valid
Construction Noise Permit				
GW-RN0438-06	29/8/06	28/2/07	I Installation of cladding over the bridge during general holiday including Sundays between 0700 hrs and 2300 hrs and any day not being a general holiday including Sundays between 1900 hrs and 2300 hrs.	Expired
GW-RN0123-07	29/3/07	28/9/07	Erection of Noise Barrier during general holiday including Sundays between 0700 hrs and 2400 hrs and any day not being a holiday including Sundays between 1900 hrs and 2400 hrs.	Valid
Wastewater Discharge License				
3024	16/6/03	15/6/08	Wastewater discharge at the site office in Sha Tin Heights.	Valid
2984	21/8/03	20/8/08	Trade effluent and all other wastewater arising from the work areas, Sedimentation Barrier, Sedimentation tanks, Aqua Sep and Wet Sep	Valid
Waste Disposal (Chemical Waste)				
WPN: 5213-754-C3250-01	N/A	N/A	Disposal of chemical waste such as waste lubricating oil and diesel oil arising from construction work.	Valid

**APPENDIX I
COMPLAINT LOGS**

Appendix I - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30422-1	Garden Villa, Tai Po Road	22 nd April 2003	The complaint (EPD complaint ref. N01/TN/00004192-03), which was transferred by EPD to ET on 22 nd April 2003, was raised by a resident living at Garden Villa on 22 nd April 2003 concerning construction activity during general holidays (18 th to 21 st April 2003) at Portion 2C, the concerned works area near Garden Villa at Tai Po Road.	Based on the monitoring results on 18 th April 2003, noise levels at the concerned area were below the limit level. The type and quantity PME's used during the concerned period were complied with the requirement stated in the relevant CNP (CNP no. GW-TN0504-2002). The ET will continue monitoring under the EM&A programme. In case there is any exceedance or complaint reported, procedures stipulated in the Event Action Plans and the complaint handling procedure of the EM&A Manual will be strictly followed.	Closed
30506-1	Garden Villa, Tai Po Road	6 th May 2003	The complaint (EPD complaint ref. N01/TN/00004856-03), which was transferred by EPD to ET on 6 th May 2003, was raised by a resident living at Garden Villa on 5 th May 2003 concerning construction noise during general holidays (1 st May to 4 th May 2003) at Portion 2C, the concerned works area near Garden Villa at Tai Po Road and construction waste accumulated on the footpath outside Garden Villa.	No construction work was carried out and A Construction Noise Permit (CNP no. GW-TN0504-2002) was granted by the Contractor on 18 th December 2002 for the use of powered mechanical equipments at the concerned area during restricted hours. The Contractor has cleared the moulds from the footpath and placed all of them inside the site boundary upon receiving the complaint on 3 rd May 2003. The ET will continue monitoring under the EM&A programme. In case there is any exceedance or complaint reported, procedures stipulated in the Event Action Plans and the complaint handling procedure of the EM&A Manual will be strictly followed.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30714	Garden Villa, Tai Po Road	14 th July 2003	The complaint, which was transferred by ER to ET on 14 th July 2003, was raised by a resident living at Garden Villa concerning the dust pollution generated from the soil nail works at Temporary Access Road No. 1.	<p>The mitigation measures did not apply effective to prevent the dust generation at the concerned area during the soil nail.</p> <p>It was recommended that ER should continue monitoring the Contractor to implement the mitigation measures to avoid dust generation; the Contractor should continue implementing the mitigation measures to avoid dust generation, and minimize the disturbance generated by the construction activities at TAR1.</p>	Closed
30808	Sha Tin Heights	8 th August 2003	The complaint (EPD Complaint Ref. N01/TN/00011396-03), which was transferred by the EPD to the ET on 8 th August 2003, was about the massive tree cutting activities in the site near Sha Tin Heights.	<p>Based on the information stated in the Environmental Review Report, the tree cutting activities were considered necessary and the ecological impact of tree cutting was limited.</p> <p>According to the Contractor's Method Statement for tree felling and transplanting, which had been commented from ET and Engineer Representative (ER), the tree felling and transplanting had been under the supervision of ER and the tree being felled or transplanted were clearly labeled. Photographic records for the tree being affected were kept.</p> <p>Based on the information provided by the ER, the concerned area mainly included abandoned farm land and an existing stream covered with grass and shrubs. No individual tree identified to be retained had been felled.</p> <p>The complaint was considered to be invalid.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30826	Garden Villa	26 th August 2003	An environmental complaint was received by the ER on 26 th August 2003. The complaint (ER's complaint ref. EC-05) was forwarded to the ET on same day. It was about the noise disturbance from the rock-breaking activities in South Portal. ET undertook the investigation and submitted the complaint investigation report to ER on 29 th August 2003.	<p>According to the ET's investigation, the complaint was considered to be valid. However, there was no noise Limit Level exceedance in August 2003 at the concerned area. Additional noise measurement conducted on 26th August 2003 confirmed that the construction noise level at Garden Villa was below the noise limit.</p> <p>To minimize the noise disturbance from the rock breaking activities, mitigation measures were then provided by the Contractor.</p>	Closed
30901	Garden Villa	1 st September 2003	A public complaint was received by the EPD on 1 st September 2003. The complaint was forwarded by EPD to the ET on the same day. It was about the construction dust and Sunday noise generated from construction activities at Toll Plaza near Garden Villa. The complainant also expressed his/her concerns on the noise from breaking activities during weekdays' early morning around 7am. ET undertook the investigation and submitted the complaint investigation report to EPD on 9 th September 2003.	<p>According to the ET's investigation report, the complaint was considered to be valid. However, the information provided by the Contractor stated that no Powered Mechanical Equipment was used on Sunday except that wire mesh installation works were carried out at the concerned area. In addition, the measured noise levels and dust levels were below the respective environmental limit in August 2003 at the concerned area. Further dust measurement was conducted on 9th September 2003 to confirm that the dust level at Garden Villa was below the limit.</p> <p>Mitigation measures were recommended to the Contractor. An additional regular continuous construction dust monitoring was also recommended and has been working since 9th September 2003.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30905	Garden Villa	5 th September 2003	An environmental complaint via the Honourable Cheng Kar Foo and Leung Wing Hung and was received by TDD on 5 th September 2003. The complaint was forwarded by TDD to the ET on the same day. It was about the construction dust and noise generated from construction activities at the site near Garden Villa. The complainant also requested to implement barrier to mitigate the noise and dust problem. ET undertook the investigation and submitted the complaint investigation report (Appendix P) to TDD on 9 th September 2003.	According to the ET's investigation report, the complaint was considered to be valid. However, the measured noise levels and dust levels were below the respective environmental limits in August and September 2003. Mitigation measures were recommended to the Contractor. An additional regular continuous construction dust monitoring was also recommended and has been working since 9 th September 2003.	Closed
31003	Golden Time Villa	3 rd October 2003	An environmental complaint was raised by a resident of Golden Time Villa and was received by TDD on 3 rd October 2003. The complaint was forwarded by TDD to the ET on the same day. The complainant concerned about wildlife threat due to road works. He also expressed his concerns on whether the concerned department had any planning on how to settle the wildlife. ET undertook investigation and submitted the complaint investigation report to TDD on 14 th October 2003	According to the ET's investigation, the animal wildlife recorded for the Project was limited and no species of conservation interest was found. Avifauna, reptile, amphibian and butterfly species in the area were all common in Hong Kong. The potential impacts on animal wildlife were expected to be low. Therefore, no specific mitigation measure to the animal wildlife was recommended.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
31229	Hin Keng Estate	29 th December 2003	An environmental complaint was raised by residents of Hin Keng Estate and was received by EPD (EPD complaint ref.: N01/TN/00022004-03) on 29 th December 2003. The complaint was forwarded to the ET on the same day. The complaint was about the construction noise at the entrance of Sha Tin Heights Tunnel in North Portion. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 th January 2004.	According to ET's investigation report, a noise measurement at Hin Keng Estate was conducted on 3 rd January 2004 and the measured construction noise levels were well below the respective environmental criteria. The Contractor was recommended to <ul style="list-style-type: none"> space out noisy equipment and position it as far away as possible from the sensitive receivers; avoid concurrent uses of noisy equipment near the sensitive area; ensure the equipment are maintaining in good operation condition; turn off any idle equipment on site; provide mitigation measures to the rock-breaking activities; and continuously keep ET informed for the construction works to be carried out. 	Closed
31231a	Sha Tin Heights	31 st December 2003	An environmental complaint was received by EPD (EPD complaint ref. N01/TN/00019795-03) on 29 th November 2003, which was transferred to ET on 31 st December 2003. The complaint was about the construction dust from at Sha Tin Heights. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 th January 2004.	According to Contractor's information, the Contractor has implemented mitigation measures to suppress the dust generation. These include <ul style="list-style-type: none"> Exhaust of dump trucks for internal use were slightly verified in order to avoid it directing to the ground, but horizontally; All bared slope was hydroseeded; and Frequency of watering for haul road was increased. 	Closed
31231b	Sha Tin Heights	31 st December 2003	An environmental complaint was received by EPD (EPD complaint ref. N01/TN/00019858-03) on 1 st December 2003, which was transferred to ET on 31 st December 2003. The complaint was about the construction dust at Sha Tin Heights. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 th January 2004.	According to Contractor's information, the Contractor has implemented mitigation measures to suppress the dust generation. These include <ul style="list-style-type: none"> Exhaust of dump trucks for internal use were slightly verified in order to avoid it directing to the ground, but horizontally; All bared slope was hydroseeded; and Frequency of watering for haul road was increased. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40323	Sha Tin Heights	23 rd March 2004	An environmental complaint was received by EPD on 20 th March 2004 (EPD Ref.: N01/TN/00005617-04) about the dust nuisance generated from the Project at Shatin Heights. The EPD referred the complaint to the ET Leader on 23 rd March 2004 for investigation and the ET has submitted the investigation report on 29 th March 2004.	<p>According to ET's investigation report, the Contractor has enhanced mitigation measures as follows:-</p> <ul style="list-style-type: none"> • Arrange water spraying during the loading and unloading of dusty materials; • Increase the frequency for haul road watering; • Provide a brush machine to remove the dusty materials on the steep road; • Arrange workers to spray water at rock breaking area; and • Arrange workers at site entrance for wheel washing. <p>No non-compliance of dust level recorded and observed after implementation of mitigations.</p>	Closed
40506	Hin Keng Estate	6 th May 2004	On 3 rd May 2004, the TDD received a complaint (TDD Ref.: NTE-ST2/694TH/100) about the noise and dust nuisance due to tunnel blasting near Shatin Heights. The TDD referred the complaint to the ET Leader of the Project on the following day for investigation and the ET has submitted the investigation report on 10 th May 2004.	<p>According to ET's investigation report, the Contractor has enhanced mitigation measures as follows:-</p> <ul style="list-style-type: none"> • To cover the gap between the steel sheet panels of the blasting door to reduce dust nuisance; • To inform Hin Keng Estate of the time of blasting in advance; • To provide water spraying in the blasting door during blasting time; and • To provide acoustic absorption material at the inner surface of the blasting door. <p>No non-compliance of noise level recorded and observed after implementation of mitigations.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40517	Sha Tin Heights	17 th May 2004	On 14 May 2004, the EPD received a complaint (EPD Ref.: N01/TN/00009723-04) about the dust nuisance due to uncovered lorries near Shatin Heights. The EPD referred the complaint to the ET Leader of the Project on 17 May 2004 for investigation and the ET has submitted the investigation report on 20 May 2004.	The complaint was a public complaint at Sha Tin Heights. The complainant mentioned that some construction lorries with loaded with earth were not covered and caused dust nuisance. According to ET's investigation, the Contractor has already provided all possible measures to prevent uncovered dump trucks leaving the site. It is believed that the captioned complaint is an exceptional incidence and the Contractor was recommended to strictly enforce their policy on dump trucks leaving the site.	Closed
40630	Hin Keng Estate	30 th June 2004	On 28 June 2004, the EPD received a complaint (EPD Ref.: N01/TN/00012734-04) about the noise and dust nuisance due to blasting near Shatin Heights. The EPD referred the complaint to the ET Leader of the Project on 30 June 2004 for investigation and the complaint handling procedure is initiated.	<p>According to the information provided by the Contractor, blasting activities were taken place on 23, 26 and 29 June 2004.</p> <p>The Contractor has erected a blasting door for both the tunnel before the commencement of blasting works in order to enclose the dust and reduce the noise level. The blasting door is made of steel plate with fiberglass filled in between. In addition, a water pipe has been installed inside the tunnel, which can produce aerosol to form a water screen for dust suppression. During blasting, water screen will be operated throughout the period until dust is settled. Water will be sprayed outside the open ground of the tunnel. The blasting door is only allowed to re-open at least 15 minutes after blasting. Additional water spraying will be provided after opening the blasting door.</p> <p>After received the complaint, the Contractor has installed an additional water screen on 29 June 2004.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40713	Hin Keng Estate	13 th July 2004	On 6 July 2004, the CEDD received a complaint (CEDD Ref.: NTE-ST2/654TH/108) about the noise and dust nuisance due to tunnel blasting near Shatin Heights. The CEDD referred the complaint to the ET Leader of the Project on 13 July 2004 for investigation.	<p>The Contractor has provided the following mitigations:-</p> <ul style="list-style-type: none"> • To cover the gap between the steel sheet panels of the blasting door to reduce dust nuisance; • To inform Hin Keng Estate of the time of blasting in advance; • To provide water spraying in the blasting door during blasting time; and • To provide acoustic absorption material at the inner surface of the blasting door. <p>Based on the information provided by the ER on 13 July 2004 and the site investigation conducted by ET on 15 July 2004, the Contractor has been strictly implementing the mitigations. The Management Office of Hin Keng Estate was always noticed 24 hours before every blasting.</p>	Closed
40723	Garden Villa	23 rd July 2004	On 21 July 2004, the ER received a complaint (ER Ref.: EC-017) about the noise nuisance due to trucks queuing up along Temporary Access Road 1 (TAR1). The ER referred the complaint to the ET Leader of the Project on 23 July 2004 for investigation.	On 26 July 2004, the Contractor has relocated the truck queue from top of TAR1 to downhill in front of wheel washing bay, where is much far away from Garden Villa. The increased notional distance is about 200m. A noise measurement was conducted on the same day at 9:30am and the measured construction noise level was 69.6dB(A) which does not exceed the Limit Level. Early measurement at Garden Villa will be conducted in order to monitor the effectiveness of mitigations.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
41201	Construction site which near K. K. Terrace	1 st December 2004	Complaint regarding the noise nuisance was received on 1 December 2004 at 23:12 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complainant complained the construction noise emitted after 19:00 from the construction site which near K. K. Terrace.	<p>According to the RSS and the Contractor, one unit Rock Drill (hydraulic) was operated inside T1N tunnel and one unit Pneumatic Breaker was operated inside T2N tunnel during the time period of 19:00-23:00 on 1 December 2004. These two plants were operated in different tunnel and at staggered time. All the tunneling works should be conducted within a fully enclosure situation by closing the blasting door entirely. The Contractor did comply with the CNP conditions on the time of concern. In addition, no shotcreting works were conducted during the time period of 19:00-23:00 on 1 December 2004. As such, no concrete lorry mixer had traveled through Temporary Access Road No. 3 which is near K. K. Terrace during such period.</p> <p>There is insufficient evidence to establish the complaint based on the available information from the "Notice of Complaint", the RSS, the Contractor and monitoring records. However, it is recommended the Contractor should notify the nearby residents in advance with the working schedule of construction work during restricted hours and strictly comply with all noise mitigation measures.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50308	Garden Villa	8 th March 2005	Complaint regarding the noise and dust nuisance was received on 8 th March 2005 at 23:12 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint was about the night time and Sunday Construction noise and dust from construction activities carrying out at the site near Garden Villa.	<p>Dust: According to the site inspection on 18 March 2005, fugitive dust emission was observed generated by traffic movement on the haul road before vehicles entering into the wheel washing facility. The Contractor was recommended to provide sufficient dust control on the TAR1 such as installing additional water sprinklers or increasing the water spraying frequency by water truck to reduce the dust emission.</p> <p>The Contractor should also cover the trucks with canvas sheet once the C&D waste was laden before passing adjacent to Garden Villa.</p> <p>The Contractor should strictly implement the penalty system and further review and tighten up the system if no obvious improvement is made.</p> <p>Noise: Based on the available information, no sufficient evidence could establish the noise complaint from the "Notice of Complaint", the Contractor and monitoring records.</p> <p>The Contractor was recommended to notify the nearby residents in advance of the working schedule of construction work during the restricted hours and strictly comply with all necessary noise mitigation measures.</p>	Closed
50330	Garden Villa	30 th March 2005	Complaint regarding the noise nuisance was received on 30 th March 2005 at 16:00 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint 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.	According to the information provided by the Resident Site Staff, trucks from R8-SHT contract are not allowed to exit via TAR1 before 9am. The noise identified by the complainant is not related to R8-SHT contract. The complaint lodged against R8-SHT is therefore considered not justifiable.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50425	Shatin Heights	25 th April 2005	Complaint regarding the dust nuisance was received on 18 th April 2005 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint was subsequently referred to the ET Leader on 25 th April 2005. It was related to the construction dust and sulphur-like odour generated from the tunnel blasting works near Shatin Heights.	<p>The records of the RSS and the Contractor showed that blasting works have been conducted on the date of complaint (18 April 2005).</p> <p>According to the Contractor's investigation, a reversion of tunnel air flow was observed due to seasonal change, such that air kept flowing from the direction of Garden Villa towards Shatin Heights. Since there was no water curtains installed Shatin Heights' direction, white fume and dust particle were observed after blasting works.</p> <p>Upon receipt of the complaint, all blasting works were stopped until water curtain for tunnel tubes in the Shatin Heights' direction. The water curtain installation work was completed on 23rd April 2005. The Contractor also agreed to implemented the following mitigation measures for future tunnel blasting works:</p> <ol style="list-style-type: none"> 1. the area within 30m from the blasting area will be wetted with water prior to blasting; 2. sufficient time will be allowed for dust to settle before opening the blasting protection doors; and 3. water curtain will be operated. <p>Based on the site observed, the RSS considered that the implemented measures by the Contractor were effective.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50509	The Police	9 th May 2005	Complaint regarding the noise nuisance was received on 9 th May 2005. The complaint was subsequently referred to the Environmental Team and the Contractor on that day. It was related to the excessive noise generated by the night work.	<p>The records of the ER and the Contractor showed that bridge launching operation was being carried out over the East and Ma On Shan (MOS) Rail near Tai Wai Depot during the time of concern.</p> <p>CNP no. GW-RN0140-05 was issued to the Contractor in accordance with the Noise Control Ordinance. According to the Contractor's information, the PME groups D to K of the CNP were operated intermittently during that night. In addition, it was complied with Condition 3di of CNP. Also, there is no action or limit level exceedance was recorded based on the record from ET.</p> <p>Nevertheless, the Contractor was reminded to ensure the compliance of CNP conditions for carrying out construction work during restricted hours. The following measures are proposed:</p> <ul style="list-style-type: none"> • Trainings shall be provided to the site supervisors, frontline staff and relevant subcontractors as regards the conditions stipulated in the CNPs obtained as well as the relevant requirements stipulated in the Noise Control Ordinance. • The Contractor shall establish and implement a checking system for carrying out construction works during restricted hours. The conditions stipulated in the CNP shall be checked by a designated staff on site. The effectiveness of the system shall be reviewed regularly. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50509	The Police	9 th May 2005		<p>The Contractor was also reminded to continuously implement their practice as regards the advance notification to the nearby residents of the night time works. In addition, the Contractor should adopt good site practice to minimize the construction noise impact, such as:</p> <ul style="list-style-type: none"> • To space out noisy equipment and position it as far away as possible from the sensitive receivers; • To avoid concurrent uses of noisy equipment near the sensitive area; • To ensure the equipment are maintaining in good operation condition; and • To turn off any idle equipment on site. 	Closed
50513	Golden Villa	13 th May 2005	Complaint regarding the noise nuisance at the representative of residents of Golden Villa was received on 13 th May 2005 from EPD. The complaint was subsequently referred to the Environmental Team Leader. It was about the noise generated from the engineering works from the night time to day time.	<p>The site of concern was likely to be the Sha Tin Height Tunnel. According to the Contractor's information, tunnel excavation works including the rock drill and charging of explosive were undertaken after 2300 hours in the tunnels. It was believed that the nuisance was caused by the vibration due to drilling works. The nuisance was more significant as the excavation face at south bound tunnel came closer towards Keng Hau Road.</p> <p>Upon receipt of the complaint, the Contractor had already stopped all drilling works after 23:00 hours inside the sound bound tunnel. In addition, the Contractor also noticed to the residents of Golden Villa for explaining the cause of nuisance and the actions they had taken to rectify the problems.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
51026	Exit of TAR1 next to Tai Po Road	26 th October 2005 (by CEDD)	Complaint was received by CEDD on 26 th October 2005 and it was subsequently referred to the Environmental Team Leader. It was about water in the wheel washing bay was brought onto the ensuing concrete pavement by lorries passing through it and the water fall onto Tai Po Road.	<p>After the site investigation by the RSS, it was confirmed that the source of the muddy water was this newly constructed wheel washing bay. Water in the wheel washing bay was brought onto the ensuing concrete pavement by lorries passing through it and the water fall onto Tai Po Road.</p> <p>The complaint was considered valid and corrective and preventive actions were taken by the Contractor:</p> <ol style="list-style-type: none"> 1. all vehicles exiting from TAR1 were stopped using the wheel washing bay to prevent any further overflowing of muddy water from the bay. 2. a water browser was immediately deployed by the Contractor to clear the muddy water and the debris deposited on the concerned section of Tai Po Road. 3. A concrete bund was constructed along the lower side of the wheel washing bay to reduce the amount of water overflowing. 4. a small ditch was formed across the lower side of the vehicular exit in order to collect the overflowed water and prevent it from falling onto public road. <p>The Contractor was reminded to closely monitor the situation and review the effectiveness of the mitigation measures.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
51118	Near Carado Garden and KCRC depot	18 th November 2005 (by CEDD) A complaint of same nature was forwarded by EPD on 29 th Nov 05.	Complaint regards the nighttime construction noise due to construction works near Carado Garden and KCRC depot on 17 th November 2005. It was received on 18 th November 2005 by CEDD and EPD. On 21 st and 29 th November 2005, the complaint was referred to the ET Leader by CEDD and EPD.	<p>As advised by RSS, at the concern (17th November 2005), stressing work was carried out by the Contractor on the bridge N1, Span 1. Noise was generated during the lorry passed the movement joints of the bridge deck where steel plates were installed temporarily to provide access.</p> <p>According to the RSS, a valid CNP no. GW-RN0436-05 has been checked. All the PME and the type of lorry involved in the works complied with the CNP requirements.</p> <p>The complaint was considered valid and preventive actions were taken by the Contractor:</p> <ol style="list-style-type: none"> 1. re-spected the steel plates installed at the movement joints of the bridge deck and ensured that they are securely fixed. Such as , install steel bars to fix the steel plates. 2. rubber pads will be provided at the movement joints to minimize noise generation due to vibration of the steel plates. 3. close supervision to ensure care handling of construction materials will be provided on site. <p>As advised by the RSS, the bridge launching work has been completed and no similar type of work will be carried out during the nighttime in future.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60207	Che Kung Miu Road near Tin Sam Village	7 th February 2006	The complaint was concerned the construction dust and noise generated from a construction site near Tin San Village during daytime between 0700 hours and 1900 hours. It was received on 7 th February 2006 by EPD.	<p>According to the RSS, the site of concern was the Proposed Retaining Wall No.5 (located at Che Kung Miu Road near Tin Sam Village). During the period of concern, construction of pre-bored H-piles was undertaken and it's mainly activity involved a drilling machine, a crane lorry and air compressors.</p> <p>The ET had arranged ad-hoc noise measurements on 8th, 9th, 14th and 16th Feb 06 at Tin Sam Village. The results of measurements showed no exceedance of the daytime noise criterion, i.e. 75dB(A) recorded.</p> <p>The complaint was considered valid and rectification actions were taken by the Contractor, including:</p> <ul style="list-style-type: none"> a) All flaps of the air compressors would be closed all the time; b) Idled machines would be switched to minimize generation of unnecessary noise; c) Two air compressors were relocated to farther area on 8 Feb 06; d) Temporary noise barriers were erected on 11 Feb 06; e) Self monitoring of noise levels during the pilling operation; f) Additional dust screens were installed along the public road on 8 Feb 06; g) Public notices were distributed to the residents and the business establishment at Tin Sam Village on 8 Feb 06. <p>During ET's ad-hoc inspections, the abovementioned mitigation measures were found in place and the public footpath beside the site areas was found clean and free dusty materials.</p> <p>As advised by the Contractor, a total of 10 piles are required to be constructed for the Proposed Retaining Wall No.5, thus this pilling activity would be completed by April 2006. The situation would be continuously reviewed by the Contractor, RSS and the ET.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60501	North and south bound carriageway of Che Kung Miu Road	3 rd May 2006	The complaint was referred by ER on 3 rd May 2006, which was about the noise nuisance arising from the temporary steel plates installed at both north and south bound carriageway of Che Kung Miu Road. The noise at night was heard when heavy vehicles ran over the temporary steel plates.	<p>According to ER's record, the major construction activity at the concerned area was the underground drainage work at CKM Road where trenches were excavated at the carriageways. The steel plates were acted as temporarily deck over trenches for vehicles passage after works.</p> <p>When heavy vehicles passed over the decks, the noise was generated due to clashing of the steel plates. It was the source of noise nuisance.</p> <p>The complaint was considered valid and corrective and preventive actions were taken by the Contractor:</p> <ol style="list-style-type: none"> 1. Conducted inspection to the temporary steel plates; and 2. Steel plates were welded together and fixed in position. <p>In addition, the Contractor had informed the complaint that mitigation measures were taken. No further complaint on the same issue had been received again.</p> <p>During ET's ad-hoc inspections, the abovementioned mitigation measures were found in place.</p> <p>As advised by the RSS, the drainage works would be completed at the concerned area by the end of August 2006.</p> <p>Thus, the Contractor was reminded to continuously implement their practice to prevent noise nuisance generation due to the construction works.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60626	near Tin Sum Village, Che Kung Miu Road	26 th June 2006	The Complaint was received by EPD on 19 th June 2006 and referred to ET Team on 26 th June 2006, which was about general construction noise and flytipping/dumping of construction wastes caused by construction work near Tin Sum Village, at Che Kung Miu Road.	<p>According to the ER's record, the major construction activities included lying of drain pipe, removal and erection of framework. However, only hand held tools were used when formwork were erected to wall of RW5 Bay 12& 14.</p> <p>As advised by the RSS, the waste skip was provided to stock some timbers at the concerned area. i.e. beside the KCRC boundary wall.</p> <p>Besides, on load of construction waste was disposed on 19th June 2006.</p> <p>Site inspection on the Contractor's mitigation measure was carried out by ET on 28th and 29th June 2006.</p> <p>Base on the information collected, the complaint was considered not justifiable.</p> <p>However, the Contractor was reminded to continuously provide good site practice to minimize construction noise/waste impact.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60828	Sha Tin Heights Southern Tunnel near Tai Po Road	28 th August 2006	<p>The public complaint was received on 28 August 2006 by EPD which was about construction dust generated from the construction site at Sha Tin Heights Southern Tunnel near Tai Po Road - Sha Tin Heights, Sha Tin.</p>	<p>According to the RSS information, the Southbound Tunnel was not for traffic and water spray onto road surface was implemented at least once a day.</p> <p>According to the Contractor's information, the Northbound Tunnel was currently used as a vehicle access to the Toll Plaza near Garden Villa. This tunnel was maintained wet all the time during the working hours.</p> <p>A site inspection was conducted on 28 August 2006 and 7 September 2006 by ET. During the site inspection, the adequate water spraying onto road surface was found in the concerned area of the Southbound Tunnel.</p> <p>Based on the above information, the complaint was considered to be invalid.</p> <p>However, the Contractor was reminded to continuously provide good site practice to minimize construction air impact.</p>	Closed

APPENDIX J
SUMMARY OF EXCEEDANCES

Appendix J – Summary of Exceedances

Summary of Exceedances Recorded in the Reporting Quarter (February 2007 to April 2007)

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