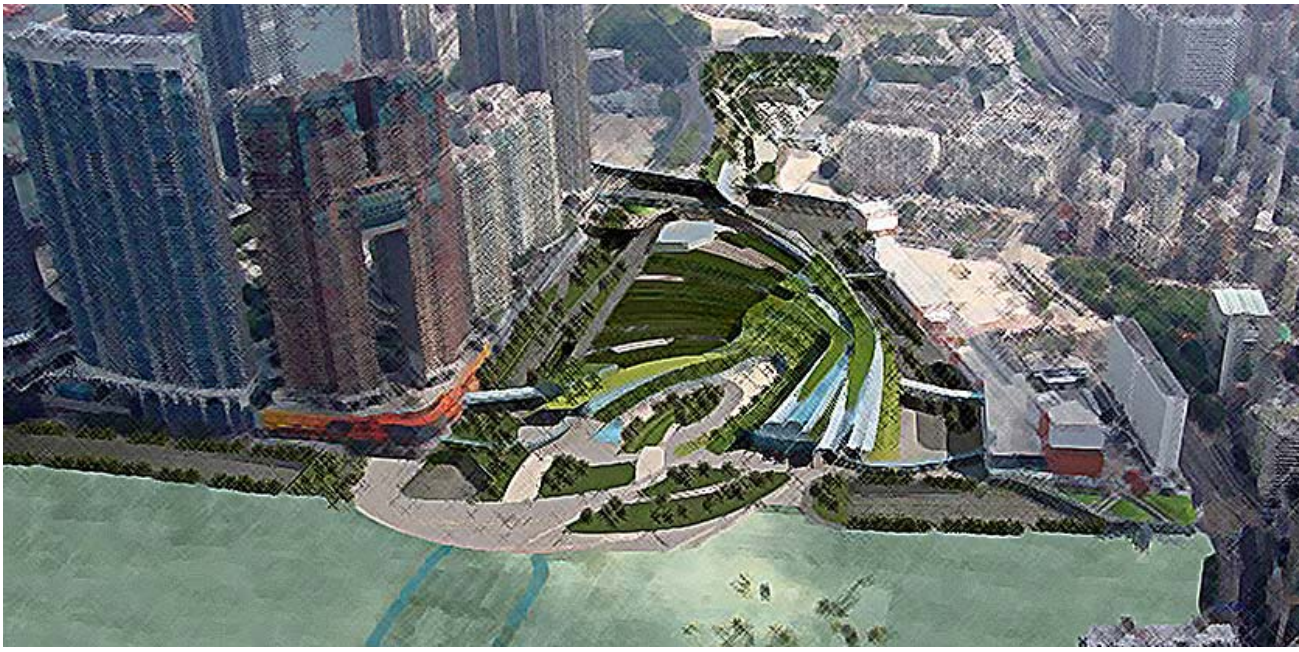
Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link



Environmental Monitoring and Audit Report

March 2011

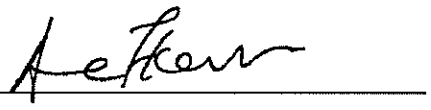
MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU – SHENZHEN – HONG KONG EXPRESS RAIL LINK

(No. EP-349/2009/B)

Environmental Monitoring and Audit Report No. 13

(March 2011)

Verified by:	
Position:	Independent Environmental Checker
Date:	15 April 2011

MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK

(No. EP-349/2009/B)

Environmental Monitoring and Audit Report No. 13

(March 2011)

Certified by: Glenn Frommes

Position: Environmental Team Leader

Date: 14 APR 2011

EXECUTIVE SUMMARY

This is the 13th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 31 March 2011 for the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (hereinafter referred to "the XRL" or "the Project") in accordance with the EM&A Manual and the requirement under EP-349/2009/B.

Air Quality

Air quality monitoring was conducted for 24-hour Total Suspended Particulates (TSP) at 17 air quality monitoring locations in the vicinity of Works Area in Mai Po (Works Area A) Ngau Tam Mei (Works Area B), Tai Kong Po (Works Area C), Shek Kong (Works Area D), Tsue Uk Tsuen, (Works Area E), Pat Heung (Works Area F), Shing Mun (Works Area G), Shek Yam (Works Area H), Kwai Chung (Works Area J), Mei Foo (Works Area L), Nam Cheong (Works Area P, Q and R) and West Kowloon (Works Area V1 and V2) in March 2011.

Please refer to the section "Environmental Complaints/Exceedance/Non-compliance/ Summons and Prosecution" below for the exceedance in air quality in the reporting month.

Airborne Noise

Airborne noise was measured in terms of $L_{eq\ (30min)}$ dB(A) with L_{10} and L_{90} measurements as reference at 33 noise monitoring locations in the vicinity of Works Area in Mai Po (Works Area A), Ngau Tam Mei (Works Area B), Tai Kong Po (Works Area C), Shek Kong (Works Area D), Tsue Uk Tsuen, (Works Area E), Pat Heung (Works Area F), Shing Mun (Works Area G), Shek Yam (Works Area H), Kwai Chung, (Works Area J and K), Mei Foo (Works Area L), Nam Cheong (Works Area M, N, O, P, Q, R, S and T) and West Kowloon (Works Area V1 and V2) once every week.

Please refer to the section "Environmental Complaints/Exceedance/Non-compliance/ Summons and Prosecution" below for the noise exceedance in the reporting month.

Monitoring of Avifaunal Species

Monthly ecological monitoring was conducted during the construction of Mai Po Ventilation Building Works Area (MPV), access road to Tai Kong Po Works Area (TPP-1/2/3), Shek Kong Stabling Sidings (SSS-3), Pat Heung Ventilation Building Works Area (PHV-1) and Tse Uk Tsuen (TUW-1/2). The monitoring results indicated the survey areas were utilized by a large number of waterbirds in March 2011 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed for the survey areas except for decrease in the bird abundance at TPP-1, TPP-2 and SSS-3 survey areas which were due to departure of some winter visitors. Based on the monitoring results, no adverse indirect impacts arising from the Project were observed.

Monitoring of Impact at Fishpond due to Noise

In accordance with the Monitoring and Emergency Response Plan, impact noise monitoring was conducted at fish pond on weekly basis for assessment of impact at fishponds due to noise. It was revealed from the monitoring results that all monitoring results were within the Limit Level. Based on the monitoring results, there was no adverse impact at fishpond due to noise.

Landscape and Visual

Regular inspections and audits conducted by certified Arborist found that the tree protection works being carried out by the civil works and transplanting contractors were in accordance with the requirements of EP and EIA.

Environmental Audits

In this reporting month, regular site inspections attended by representative from MTRCL and Contractors were carried out at 803A, 803B, 803D, 810B, 811A and 811B in West Kowloon, 802, 805 and 820 in Nam Cheong, 821 in Kwai Chung, 822 in Pat Heung, Shing Mun, Shek Yam, Tai Shu Ha Road West Magazine Site, So Kwun Wat Nursery and Magazine Site and Tsing Chau Tsai Barging Point, 823A and 823B in Shek Kong, Tsue Uk Tsuen, To Kau Wan stockpiling facility, 824 in Ngau Tam Mei and Tai Kong Po and 825 in Mai Po and Siu Lam Barging Point. In addition to the regular site inspections, IEC environmental audits attended by IEC, MTRCL

and Contractors were held on monthly basis. Issues observed during these audits are detailed in Section 6.

Environmental Complaints / Exceedance / Non-compliance / Summons and Prosecution

For the reporting month, a total of 11 environmental complaints were referred from EPD. The environmental complaints received were related to construction dust from construction site near Man Wui Street; construction noise from Nam Cheong Ventilation Building works area; construction noise from works area near Chui Yu Road and Sham Mong Road; construction dust from works area near Chui Yu Road and Nam Cheong Park; blasting noise generated from Shek Yam Works Area; construction dust and noise from construction at Tsat Sing Kong; muddy road surface and dust impact from Mai Po Ventilation Building Works Area. Complaint investigations were conducted in accordance with the complaint handling procedure in the EM&A Manual. Details of complaints are contained in Section 7.

For the reporting month, noise exceedances of air-borne noise Limit Level were recorded at HKIVE Haking Wong Waterfront Annex (CN 23), Ying Wah College (CN 26), Yaumati Catholic Primary School (CH29), The Waterfront (CN 32) and The Arch (CN 33). There were four noise exceedances of Action Level triggered due to complaint during daytime hours in the reporting month. Actions stipulated under the Event and Action Plan (Table 3.4 of the EM&A Manual) was implemented. Noise source was identified and the contractor had implemented further mitigation measures accordingly to minimize the noise impact.

Exceedances of 24-hour TSP Action Level were recorded at Kong Tai Road Village House (AM 3), DD110 LOT 482, Wang Toi Shan (AM 4), Leung Uk Tsuen Squats (AM 5), Tse Uk Tsuen (AM7), No. 306, Sheung Tsuen San Tsuen Village House (AM8) and Waterfront (AM 16) in this month. In addition, no exceedance of 24-hour TSP Limit Level was recorded. Actions stipulated under the Event and Action Plan (Table 9.4 of the EM&A Manual) were implemented. Investigation was carried out with dust source identified and the contractor implemented further mitigation measures accordingly to minimize the dust impact.

No non-compliance event was recorded during the reporting period. No summons/prosecutions was received in this reporting period.

Works for Coming Month

Construction works were started in Works Areas A, B, C, D, D1, E, F, G, H, J, L, M, N, O, P, Q, R, S, U, V1, V2, Y, AA, AC, AE and AG.

Please refer to Table 8-1 for the major works in the respective works areas. Impact monitoring would be continued in coming reporting month accordingly with reference to the EM&A Manual.

Further Environmental Key Issues

Air quality, airborne noise at NSRs and fishpond, ecological, landscape and visual monitoring shall continue in the following month. Considering the nature of construction activities, key environmental issues in the coming months include the followings:

- Disposal of C&D waste;
- Dust generation from site activities;
- Noise impact from operating equipment;
- Site water discharge;
- Chemical wastes;
- Ecological impact;
- Trees protection

Reporting Changes

In the reporting period, stage 1 ground treatment works at Hoi Wang Road near Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden was proposed by the Contractor. The Environmental Review conducted reveals that no significant adverse impact due to the ground treatment works. Please refer to Appendix J for the details.

Furthermore, modification of Tai Kong Po Emergency Access Point Building was proposed. The Environmental Review conducted reveals that no significant adverse impact due to the slight increase in footprint size. Please refer to Appendix K for the details.

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Appendix B Project Management Organization and Contacts of Key Personnel

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Appendix K Modification in Tai Kong Po Emergency Access Point Building

1. INTRODUCTION

1.1 Project Background

Further to the Government's decision made in April 2008, MTR Corporation (MTR) commenced to plan and design the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (hereinafter referred to "the XRL" or "the Project"), which is a committed cross boundary transport infrastructure project.

The XRL would provide high speed rail services between Hong Kong and Guangzhou, and a connection to the national high-speed passenger rail network serving major mainland cities outside of Guangdong province. The Hong Kong section of the XRL is about 26km from new terminus located in West Kowloon (i.e. West Kowloon Terminus (WKT)) to the boundary at Huang gang. Along the railway corridor, there would be a total of eight ventilation buildings/ emergency access point (EAP), stabling sidings and a maintenance facility at Shek Kong Stabling Sidings (SSS) and an Emergency Rescue Station (ERS) next to SSS serving the operation of the XRL.

1.2 Coverage

This is the 13th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 31 March 2011 for XRL in accordance with the EM&A Manual and the requirement under Environmental Permit No. EP-349/2009/B.

2. PROJECT INFORMATION

2.1 Project Management Organisation and Management Structure

The project management organisation chart and contact of key personnel are shown in Appendix B.

2.2 Construction Activities

This report marked the 13th month of civil construction in Works Area A, B, C, D, D1, E, F, G, H, J, L, M, N, O, P, Q, R, S, U, V1, V2, Y, AA, AC, AE and AG for March 2011. It is anticipated that the civil construction be completed in year 2015. The updated construction activity is provided in Section 8. Major construction activities undertaken in the reporting month is summarized in the following table.

Contract	**Works Area**	**Major Construction Activities**
Nam Cheong		
802	Q	Sheet-pilling, pre-drilling work, bored pile removal, H-pile extraction, pile cap demolition, excavation & lateral supports and utility diversion
805	N,O	Demolition of pile cap, removal of footbridge
805	S	Demolition of pile cap, removal of footbridge ; sheet-piling work
West Kowloon		
803A	V1	Pre-drilling, Diaphragm wall construction, utilities diversion and road works
803B	V1	Bored piling works, socketed H-piling works, pre-drill and interface coring
803D	V1	Pre-bored H-pile, diaphragm wall, post drilling, utilities diversion and road works.

Contract	**Works Area**	**Major Construction Activities**
810B	V1 & U	Site Clearance, Construction of Site Office, Site Establishment, Hoarding Erection, Predrill bore piles and Excavation of trial pit along Lin Cheung Road and Austin Road West.
811A	V2	Pre-drilling of bored piles, Construction of diaphragm wall and socketted H-pile; traffic diversion at Lai Cheung Road; construction of traffic deck at Lai Cheung Road; external works to CLP Sub Station at Lai Cheung Road
811B	V2	Predrilling for diaphragm wall, bored piling and diaphragm wall, bored pile and prebored H-piles installation, guide wall and diaphragm wall construction, temporary road construction, construction of temporary footbridge; culvert diversion
820	V2	Ground treatment
Nam Cheong		
811B	Y	Operation of Nam Cheong Barging Point
820	M	Utility diversion; Removal of pile by hydraulic rotator on-going.
820	P	Grouting work on-going; shaft excavation at Box A D-wall, strut installation at Box A D-wall, excavation and concreting for Box B D-wall, utilities diversion, temporary traffic arrangement
820	R	Preparation work for pile-removal; Temporary traffic arrangement and utilities diversion
820	S	Temporary traffic arrangement; Utilities diversion; Removal of pile by hydraulic rotator.
820	Y	Disposal ramp erection; Plant mobilization and site

Contract	**Works Area**	**Major Construction Activities**
		set-up
821	Y	Pipe-work setting for the barging point, stockpiling and barging activities
Mei Foo		
820	L	Nil
Kwai Chung		
821	J	Establishment of workshop area, blasting, breaking and drilling work inside the portal of the tunnel, stockpiling, transportation of excavated materials to Barging Point, erection tower crane
Pat Heung		
822	F	Vent adit access and portal excavation works; Pipe piling; Retaining wall construction
Shek Yam		
822	H	Adit Construction
Shing Mun		
822	G	Utility diversion
So Kwun Wat		
822	AC	Nil
Tai Shu Ha Road West Magazine Site		
822	AE	Nil
Tsing Chau Tsai Barging Point		
822	AG	Nil

Contract	**Works Area**	**Major Construction Activities**
Shek Kong Stabling Sidings		
823A& 823B	D and D1	Site formation, pre-drilling works
Tse Uk Tsuen		
823A	E	Pre-drilling works
Ngau Tam Mei		
824	B	Bored piling works
Tai Kong Po		
824	C	Pipe piling works for construction of additional circular shaft within Tai Kong Po Works Area; bridge construction at access road
Mai Po		
825	A	Shaft construction
Siu Lam Barging Point		
825	AA	Nil
To Kau Wan Works Area		
823B	-	Set up of stockpiling facility

Table 2-1 Major construction activities in March 2011

3. ENVIRONMENTAL STATUS

3.1 Status of Implementation of mitigation measures

Environmental mitigation measures recommended in the EIA report were implemented and their implementation status are summarized in Appendix C.

3.2 Status of Submissions under EP

A summary of the submissions submitted under the EP for this Project during the reporting month is presented in Table 3-1 below:

EP-349/2009/B Clause No.	**Document Title**
2.11	Contingency Plan for Groundwater Level Drawdown for Contract 825 (Rev 2)
2.11	Groundwater Monitoring and Contingency Plan for North Section of Approach Tunnel (Contract 811A)
2.11	Contingency Plan for Groundwater Level Drawdown for Contract 820
2.11	Contingency Plan for Groundwater Level Drawdown for Contract 821
2.21	Revised Contamination Assessment Plan for Shek Kong Works Area (SSS)
2.21	Supplementary Contamination Assessment Report and Remediation Action Plan for Kwai Chung Ventilation Building Works Area (Rev C)
2.21	Revised Contamination Assessment Plan for Shek Kong Works Area (Site B&W)
2.46	Monthly EM&A Report

Table 3-1 Summary of the status of submissions submitted under the EP in the reporting month

3.3 Status of Permit/License/Notifications

A summary of the status of permits, licences and notifications on environmental protection made, applied or approved under this Project during the previous and reporting month is presented in Table 3-2 below. The Environmental Permit No. EP-349/2009/B issued by EPD was used for the XRL project.

Item	Item Description	Application Date	Permit Status
Contract 802 (Works Area Q)			
1	QPME Application	15 Mar 2011	Under Assessement
Contract 803A (Works Area V1)			
1	WPCO License	10 Jan 2011	Approved on 7 Feb 2011 (License No. WT00008270-2011 valid until 30 April 2015)
2	CNP (Watermain Works)	4 Mar 2011	Approved on 16 Mar 2011 (Permit no. GW-RE0158-11 valid till 15 Jun 2011)
3	CNP (Near Austin Station) - Revised	16 Mar 2011	Approved on 30 Mar 2011 (Permit no. GW-RE0219-11 valid till 29 Sept 2011)
Contract 803D (Works Area V1)			

Item	Item Description	Application Date	Permit Status
1	WPCO License (Revised works area)	1 Mar 2011	Under Assessment
2	Type 2 – Marine Dumping Permit	18 Feb 2011	Permit No.: EP/MD/11-150 (Valid until 30 Mar 2011)
3	Construction Noise Permit (Near Austin Station) - Revised	16 Mar 2011	Approved on 31 Mar 2011 (Permit no. GW-RE0212-11 valid till 30 Sept 2011)
4	Registration as Chemical Waste Producer (New Works Area)	1 Mar 2011	Approved on 28 Mar 2011/4/4 (Permit no. 5213-217-B2383-01)
Contract 805 (Works Area S, N, O)			
1	CNP for Pile Removal works at Sham Mong Road	17 Mar 2011	Refused by the EPD on 24 Mar 2011.
Contract 810B (Works Area V1 & U)			
1	WPCO License	10 Feb 2011	Approved on 24 Mar 2011 (Licence No. WT00008520-2011 valid from 24/03/2011 to 31/03/2016)
2	Chemical Waste Producer	24 Jan 2011	Approved on 28 Mar

Item	Item Description	Application Date	Permit Status
	Registration		2011 (Waste Producer No. 5213-217-L2738-01)
3	Registration of Billing Account for Disposal of Construction Waste	24 Jan 2011	Approved on 16 Feb 2011 (Billing Account No. 7012340)
4	Dumping Permit for Types 1 & 2 Marine sediment	3 Mar 2011	Approved on 25 Mar 2011 (Permit Nos. EP/MD/11-157 (Type 1) valid from 28/03/2011 to 27/09/2011) & EP/MD/11-158 (Type 2) valid from 28/03/2011 to 27/04/2011
Contract 811A (Works Area V2)			
1	Construction Noise Permit (for relocation of gantry)	11 Feb 2011	Approved on 3 Mar 2011 (Permit no. GW_RE0077_11 valid till 21 April 2011)
2	Construction Noise Permit (Works Area 13.46 &13.44)	11 Mar 2011	Approved on 29 Mar 2011 (Permit no.

Item	Item Description	Application Date	Permit Status
			GW_RE0214_11 valid till 26 June 2011)
Contract 811B (Works Area V2 & Y)			
1	Construction Noise Permit (for erection of temp. steel bridge at area 13.62)	10 Mar 2011	Licence no.: GW-RE-0195-11 Valid from 25 Mar 11 to 30 Jun 11
2	Construction Noise Permit (for the loading/unloading of spoil activities at the Nam Cheong Barging Point)	11 Mar 2011	Licence no.: GW-RE0209-11 Valid from 26 Mar 11 to 23 Sep 11
3	Construction Noise Permit (Renewal Permit GW-RE0641-10)	24 Mar 2011	Under Assessment
4	WPCO license 13.42B (site area)	4 Jan 2011	License no.: WT00008187-2011 Valid from 8 Feb 11 to 29 Feb 16
5	Registration as Chemical Waste Producer (site areas include 13.42A, 13.42B, 13.42C, 13.41AA, 13.41AB, 13.38, 13.41C & 13.62)	11 Feb 2011	Registration no. WPN 5213-225-G2522-02 Valid on 14 Mar 2011
6	Registration as Chemical	11 Feb 2011	Registration no. WPN

Item	Item Description	Application Date	Permit Status
	Waste Producer (Nam Cheong Barging Point)		5213-269-G2534-01 Valid on 17 Mar 2011
7	WPCO license 13.41A, 13.41C & 13.62 (site area)	10 Mar 2011	Under Assessment
Contract 820 (Works Area L, M, P, R, S, Y, T, V)			
1	Construction Noise Permit (Strut installation for Crane Lifting and Welding Lifting crane and welding at Launching Shaft (0700-2300))	14 Feb 2011	Permit GW-RW0121-11 obtained. Valid until 27 Aug 2011.
Contract 821 (Works Area J, Y)			
1	Construction Noise Permit (24 hour Construction Work at Tai Lin Pai Road J/O Wing Yip Street, Kwai Chung, N.T.)	25 Mar 2011	Under Assessment
2	Construction Noise Permit (Operation of Barging Point (up to 2300hr))	31 Mar 2011	Under Assessment

Item	Item Description	Application Date	Permit Status
Contract 822 (Works Area F, G, H, AC, AE and AG)			
1	Notification that the completion date of site formation at Works Area H is varied.	15 Feb 2011	Acknowledge Receipt (Ref. No. 326895) from EPD received on 16 Feb.
2	Construction Noise Permit for PME operation at Works Area H	4 Mar 2011	License No. GW-RW0179-11, valid from 19:00, 18 Mar 2011 to 23:00, 31 Aug 2011 for Works Area H
Contract 823A (Works Areas D, D1 and E)			
1	WPCO license for Works Area D1 at Nam Hing West Road Site	21 Jan 2011	License granted on 29 Mar 2011. (License no. WT000008675-2011 valid until 31 Mar 2016)
Contract 823B (Works Area D, To Kau Wan Works Area)			
1	WPCO license for To Kau Wan Works Area	7 Feb 2011	Submitted and acknowledge receipt obtained on 18 February 2011
2	WPCO license for Works Area Z	14 Feb 2011	Licence granted on 01 April 2011 (Licence No: WT000008810-2011) , Valid to 31 March 2016
3	WPCO license for Works	14 Feb 2011	Licence granted on 29

Item	Item Description	Application Date	Permit Status
	Area D (North Zone)		March 2011 (Licence No: WT00008663-2011), Valid to 31 March 2016
4	WPCO license for Works Area D (Mid-South Zone)	14 Feb 2011	Licence granted on 29 March 2011 (Licence No: WT00008661-2011), Valid to 31 March 2016
Contract 824 (Works Area B)			
1	WPCO License for Works Area B	8 Dec 2010	License granted on 21 Mar 2011 (License no.: WT00008723-2011 valid to 31 March 2016)
2	Registration as Chemical Waste Producer	11 Oct 2010	Approved on 23 March 2011 (Registration no. WPN:5213-532-K2992-01)
3	Construction Noise Permit for the use of PMEs other than Percussive Piling at Ngau Tam Mei	23 Mar 2011	Under Assessment
Contract 825 (Works Area A)			

Item	Item Description	Application Date	Permit Status
1	Construction Noise Permit for TBM delivery	28 Jan 2011	Permit granted on 10 Feb 2011 (Ref: GW-RN0046-11)
2	Construction Noise Permit for Shaft Excavation	28 Jan 2011	Permit granted on 15 Feb 2011 (Ref: GW-RN0052-11)

Table 3-2 Summary of the status of permits, licences and notifications made, applied and approved under this Project during the previous and reporting month

4. SUMMARY OF EM&A REQUIREMENT

4.1 Air Quality

4.1.1 Air Quality Parameters

In accordance to the EM&A Manual, 24-hour Total Suspended Particulates (TSP) levels were measured at the 17 air monitoring locations in accordance with the EM&A Manual. Monitoring was undertaken at each monitoring location once per every 6 days. Information such as date of monitoring, duration, weather condition, equipment used and monitoring results shall be recorded on the field data sheet developed for the Project. Monitoring results are summarized in Section 5.

4.1.2 Monitoring Methodology and Calibration

Monitoring was undertaken to establish for 24-hour Total Suspended Particulates (TSP) at 17 monitoring locations in the vicinity of the Works Area A, B, C, D, E, F, G, H, J, L, P, Q, R, V1 and V2. Monitoring of 24-hour TSP was carried out using a high volume sampler (HVS) according to Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.

The sampling procedure follows to that described Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA. TSP is sampled by drawing air through a conditioned, pre-weighed filter paper inside the high volume sampler at a controlled rate. After 24-hour sampling the filter paper with retained particles shall be collected and returned to HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd) for drying in a desiccators followed by accurate weighing. TSP levels are calculated from the ratio of the mass of particulate retained on the filter paper to the total volume of air sampled.

The flow rate of the high volume sampler with mass flow controller was calibrated using an orifice calibrator. Initial calibration (five points) was conducted upon installation and prior to commissioning. Calibration was carried out every six months. the detail of calibration is shown in Table 4-1 below. The samplers shall be properly maintained. Prior to dust monitoring commencing, appropriate checks shall be made to ensure that all equipment and necessary power supply are in good working

condition.

Monitoring Station ID	Air Quality Monitoring Location	HVS Serial Number	Last Calibration Date
AM 1	Outside No. 142 Mai Po San Tsuen	467	10/1/2011
AM 2	Yau Tam Mei Village House	468	2/11/2010
AM 3	Kong Tai Road Village House	510	2/11/2010
AM 4	DD110 LOT 482, Wang Toi Shan	521	25/1/2011
AM 5	Leung Uk Tsuen Squats	1276	25/1/2011
AM 6	630 Sheung Tsuen	469	25/1/2011
AM 7	Tse Uk Tusen	1763	25/1/2011
AM 8	No. 306, Sheung Tsuen San Tsuen Village House	520	2/11/2010
AM 9	Sau Shan House, Cheung Shan Estate	529	29/12/2010
AM 10	Yau Ma Hom Resite Village	509	29/12/2010
AM 11	Chung Shun Knitting Centre	1707	15/02/2011
AM 12	Po Leung Kuk Tong Nai Kan College	520	6/12/2010
AM 13	St. Andrew Primary School	524	28/1/2011

Monitoring Station ID	Air Quality Monitoring Location	HVS Serial Number	Last Calibration Date
AM 14	Yaumati Catholic Primary School	407	28/1/2011
AM 15	Between Sorrento and The Waterfront	515	6/12/2010
AM 16	Tower 3, The Waterfront	1282	6/12/2010
AM 17	The Victoria Towers	528	6/12/2010

Table 4-1 Calibration details of HVS

4.1.3 Monitoring Location

According to the EM&A Manual, air quality monitoring was carried out at the locations as shown in Table 4-1 above. The monitoring locations are illustrated in Appendix D.

4.1.4 Action and Limit Levels

With reference to the baseline monitoring results, the Action and Limit Levels for the 24-hour TSP monitoring derived are shown in Table 4-2. In the case of exceedance of Action and/or Limit levels for air quality occur, the Event and Action Plan as stipulated the EM&A Manual shall be implemented.

Monitoring Station ID	24-hour TSP Level in μg/m^3	
	Action Level	Limit Level
AM 1	217.3	260
AM 2	179.4	260
AM 3	154.7	260
AM 4	148.6	260

Monitoring Station ID	24-hour TSP Level in μg/m^3	
	Action Level	Limit Level
AM 5	152.0	260
AM 6	145.6	260
AM 7	149.8	260
AM 8	158.1	260
AM 9	171.2	260
AM 10	174.8	260
AM 11	160.3	260
AM 12	162.5	260
AM 13	180.3	260
AM 14	158.2	260
AM 15	168.8	260
AM 16	155.9	260
AM 17	179.3	260

Table 4-2 Action and Limit Levels for Air Quality

4.2 Air-borne Noise

4.2.1 Noise Parameters

In accordance to the EM&A Manual, construction noise monitoring shall be conducted to obtain one set of 30-minute measurement at each monitoring station between 0700 and 1900 hours on normal weekdays at a frequency of once per week when construction activities are underway. The Leq, L10 and L90 were also recorded at the specified interval.

4.2.2 Monitoring Methodology and Calibration

As referred to the Technical Memorandum (TM) issued under the NCO, sound level

meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. In this baseline monitoring, B&K 2250 sound level meters, which complies with the above-mentioned specifications, were used.

Immediately prior to and following each noise measurement the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the difference between calibration levels obtained before and after the noise measurement is less than 1.0 dB.

The sound level meters and calibrator are verified by the certified laboratory or manufacturer at a regular interval to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications. Detail of calibration is shown in Table 4-3 below:

Monitoring Station ID	**Noise Monitoring Location**	**Serial Number**	**Last Calibration Date**
Sound Level Meters			
CN 1	No. 142 Mai Po San Tsuen	2701830	28/12/2010
CN 2	Mai Po San Tsuen Village House	2701819	28/12/2010
CN 3	Yau Tam Mei Village House	2718893	21/6/2010
CN 4	Yau Tam Mei Village House	2718887	21/6/2010
CN 5	Kong Tai Road Village House	2718895	21/6/2010
CN 6	Kong Tai Road Village House	2718879	21/6/2010

Monitoring Station ID	Noise Monitoring Location	Serial Number	Last Calibration Date
CN 7	372 Tai Kong Po Tsuen	2718881	21/6/2010
CN 8	DD110 LOT 482, Wang Toi Shan	2718882	21/6/2010
CN 9	Leung Uk Tsuen Village House	2718889	21/6/2010
CN 10	DD110 LOT 482, Wang Toi Shan	2718891	21/6/2010
CN 11	DD112, Lot 80, Pak Heung, Yuen Long	2718884	21/6/2010
CN 12	DD108, Nam Hing Lei, Wing Hing Wai	2718892	21/6/2010
CN 13	Tse Uk Tsuen	2718883	21/6/2010
CN 14	Tse Uk Tsuen	2718890	21/6/2010
CN 15	No. 305B - Sheung Tsuen San Tsuen Village House	2718885	21/6/2010
CN 16	DD 114 LOT 1405 Sheung Tsuen	2718888	21/6/2010
CN 18	Sau Shan House	2701831	13/1/2011
CN 19	Sun Fung Centre	2701821	10/1/2011
CN 20	VTC Kwai Chung Training Centre Complex	2718894	21/6/2010
CN 21	Po Leung Kuk Tong Nai Kan College	2701820	15/4/2010
CN 22	Block I, Lai Chi Kok Reception Centre	2709427	11/5/2010

Monitoring Station ID	Noise Monitoring Location	Serial Number	Last Calibration Date
CN 23	HKIVE Haking Wong Waterfront Annex	2701818	10/1/2011
CN 24	St. Andrew Primary School	2701825	17/1/2011
CN 25	St. Mary's Church Mok Hing Yiu College	2709428	16/7/2010
CN 26	Ying Wah College	2701822	13/1/2011
CN 27	Cheong Shun House, Nam Cheong Estate	2709426	11/5/2010
CN 28	Tower 6, Harbour Green	2701817	3/1/2011
CN 29	Yaumati Catholic Primary School	2701815	3/1/2011
CN 30	Man Cheong Street Refuse Collection Point	2701816	30/12/2010
CN 31	Tower 6, Sorrento	2701826	17/1/2011
CN 32	Tower 3, The Waterfront	2701823	30/12/2010
CN 33	Star Tower, The Arch	2701827	17/1/2011
CN 34	The Victoria Towers	2701829	6/1/2011
Calibrator			
Serial Number		**Last Calibration Date**	
10186489		23/5/2010	

Table 4-3 Calibration details of noise monitoring equipments

Note: Due to school closure, monitoring at Tsuen Wan Lutheran School (CN 17) was temporarily suspended. Monitoring would be carried out subject to confirmation of noise sensitive use of the building.

4.2.3 Monitoring Location

According to the EM&A Manual, noise quality monitoring was carried out at the locations as shown in Table 4-3 above. The monitoring locations are illustrated in Appendix D.

4.2.4 Action and Limit Levels

The Action and Limit Levels for the construction noise are shown in Table 4-4 below. In the case of non-compliance of Action and/or Limit level, the Event and Action Plan stipulated in the EM&A Manual shall be implemented.

Time Period	Action	Limit
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A) for residential premises
		70 dB(A) for school and 65 dB(A) during examination period

Table 4-4 Action and Limit Levels for Airborne Construction Noise

4.3 Ground-borne Noise

No ground-borne noise monitoring was conducted in the reporting month since no operation of TBM was carried out.

4.4 Ecological Monitoring

4.4.1 Ecological Monitoring on Avifaunal Communities

Monitoring methodology

In accordance with the Ecological Monitoring Plan, avifaunal communities would be surveyed quantitatively by transect count or/and point count method covering the vicinity of the works area as shown in Table 4-5 below. Birds heard or seen within the survey area would be identified to species level and counted. The nature of construction works within works area conducting during each impact monitoring would also be recorded. Weather condition and other noticeable activities occurring within or in the vicinity of the survey areas would be recorded. The impact monitoring results would be compared to the baseline data collected before

construction. Should any unpredicted indirect ecological impacts arising from the Project be detected, remedial measures would be implemented by the Contractor.

Monitoring location, frequency and duration

In accordance with the EM&A Manual and Ecological Monitoring Plan, ecological monitoring should be conducted at Works Area in MPV, TPP, SSS/ERS, TUW and PHV. With the hoarding erection completed and construction works at MPV, TPP and PHV commenced, ecological monitoring on monthly basis was commenced accordingly. The location, frequency and duration of ecological monitoring at MPV, TPP, SSS/ERS, TUW and PHV are shown in Table 4-5 and figures in Appendix D.

Works Area	**Survey Site**	**Monitoring Location**	**Monitoring Frequency**	**Monitoring Duration**
Mai Po Ventilation Building Works Area (MPV)	MPV-1	• Fishponds in Wetland Conservation Area (WCA) within 500 m from the boundary of MPV works area	Monthly	• During construction phase of MPV works area
Access road leading to TPP	TPP-1/2/3	• The whole alignment of drainage channel KT5 (TPP-1) • The section of drainage channel 95CD along the proposed alignment of access upgrading (TPP-2) • The whole alignment of abandoned meander of conservation interest 43CD-1	Monthly	• During upgrading and operation of access road for construction phase activities

Works Area	Survey Site	Monitoring Location	Monitoring Frequency	Monitoring Duration
		(TPP-3)		
Access road leading to SSS / ERS	SSS-3 [1]	• Agricultural land within 500 m from the boundary of SSS/ ERS works area between Shek Kong Road and Kam Sheung Road (SSS-3)	Monthly	• During construction phase of SSS / ERS works area
Tse Uk Tsuen Works Area (TUW)	TUW – 1/2 (TUW-2 grouped with PHV-1 due to overlapping of survey area)	• Agricultural land within 500 m from the boundary of TUW works area to the south of Kam Sheung Road (TUW-1) • Woodland in Conservation Area (CA) within 500 m from the boundary of TUW works area (TUW-2)	Monthly	• During construction phase of TUW works area
Pat Heung Ventilation Building Works Area (PHV)	PHV-1 (grouped with TUW-2 due to overlapping of survey area)	• Woodland in CA within 500m from the boundary of PHV works area	Monthly	• During construction phase of PHV works area

Table 4-5 Requirement of Construction Impact Monitoring for Avifaunal Group

Note: 1. Construction in vicinity of SSS-1, 2a and 2b has not commenced.

4.4.2 Monitoring of impact at fishpond due to noise/vibrations

In accordance with the Monitoring and Emergency Response Plan, during construction stage, air-borne noise monitoring should be carried out at the respective monitoring location at nearby fishpond (Appendix D) when there are project-related construction activities being undertaken within a radius of 300m from the monitoring location. One set of 30-minute measurement at a frequency of once a week when the above-mentioned construction activities are underway.

As operation of TBM underneath fishponds in Mai Po is not expected in the coming reporting months, no monitoring of ground-borne noise was carried out.

Monitoring of impact due to air-borne noise

Monitoring methodology

With reference to the Monitoring and Emergency Response Plan, the noise acceptance criteria of 75 dB(A) was adopted for the assessment of adverse impact to fisheries due to air-borne noise.

Monitoring location, frequency and duration

The nearest fish-pond located in the vicinity of the works area in Mai Po as shown in Appendix D was identified as a representative air-borne and ground-borne noise/vibration monitoring location.

During construction stage, routine air-borne noise monitoring would be carried out at the respective monitoring location when there are project-related construction activities being undertaken within a radius of 300m from the monitoring station. One set of 30-minute measurement at a frequency of once a week when the above-mentioned construction activities are underway.

Action and Limit Levels

The Action and Limit levels for air-borne noise are defined in the table below. Should

non-compliance of the noise quality criteria occur, actions in accordance with the Table 4-6 as should be carried out.

Time Period	Action Level	Limit Level
All time period	When one documented complaint related to adverse impact to fisheries from fish-pond operator or any abnormal ecological monitoring results	75 dB(A) for air-borne noise

Table 4-6: Action and Limit Level for potential impact at fishpond due to air-borne noise

4.5 Landscape and Visual

Monitoring of the implementation of the tree protection measures during construction phase was conducted in accordance with the requirements of EP condition 2.15 (iv). The landscape and visual monitoring and auditing would be conducted once a month throughout the construction stage and covering the entire project site areas.

4.6 Cultural Heritage

4.6.1 Archaeology

No monitoring and reporting is required since construction at Shek Kong Stabling Sidings (SSS) and Lung Kwu Sheng Tan (LKST) have not started.

4.6.2 Built Heritage

No monitoring and reporting is required since construction at ex-Lai Chi Kok Hospital (LCKH) and SSS have not started.

4.7 Landfill Gas

No monitoring was carried out at Ngau Tam Mei Landfill (NTML) and Rambler Channel Barging Point in this reporting month since there was no construction or excavation within the Ngau Tam Mei Landfill (NTML) and within the Gin Drinker Bays Landfill (GDBL) consultation zone.

5. MONITORING RESULT

5.1 Air Quality

The monitoring schedule is shown in Appendix E. Results of 24-hour TSP level and the graphical presentation of monitoring results are shown in Appendix F.

In the reporting month, there are exceedances of 24-hr TSP Action Level on 1, 7, 12 and 30 March 2011 at AM 3; 5 and 17 March 2011 at AM 4; 7 March 2011 at AM 5, 30 March 2011 at AM 7, 30 March 2011 at AM 8 and 9 March 2011 at AM 16 were recorded in the reporting month. No exceedance of 24-hr TSP Limit Level was recorded in the reporting month. Actions stipulated under the Event and Action Plan (Table 9.4 of the EM&A Manual) were implemented for all exceedances and monitoring frequency was increased.

For the exceedances at AM 3, investigation results revealed that the exceedances might possibly due to construction work at Tai Kong Po Works Area. The 824 Contractor provided additional dust mitigation measures, including covering of stockpile, temporary slope and improving watering frequency and coverage by automatic sprinklers. The situation would be continuously reviewed by IEC.

For the exceedances at AM 4 and 5, investigation results revealed that the exceedance might possibly due to works carried out at northern and middle SSS respectively. The 823A and 823B Contractor was reminded to enhance the dust suppression measure including covering of stockpile and regular watering on haul road. The situation would be continuously reviewed by IEC.

For the exceedance at AM 7, investigation results revealed that the exceedance might possibly due to site preparation works carried out at Tse Uk Tsuen Works Area. The 823A Contractor was reminded to enhance the dust suppression measures. The situation would be continuously reviewed by IEC.

For the exceedance at AM 8, investigation results revealed that the exceedance might possibly due to works carried out at Pat Heung Ventilation Building Works

Area. The 822 Contractor was reminded to enhance the dust suppression measures. The situation would be continuously reviewed by IEC.

For exceedance at AM 16, investigation results revealed that the exceedance might possibly due to the grouting works carried out near Lin Cheung Road Works Area. The 803A&D Contractor was reminded to cover the grout mixing workplace, over 20 cement bags storage area and stockpile stacked at work-front area properly with canvas; and frequent watering the haul road. The situation would be continuously reviewed by IEC.

5.2 Noise

The monitoring schedule is shown in Appendix E. Results of measured noise level, in terms of $L_{eq(30min)}$ and graphical presentations are presented in Appendix F.

In the reporting month, noise exceedances of Limit Level were recorded at HKIVE Haking Wong Waterfront Annex (CN 23) on 18, 25 and 30 March 2011; Ying Wah College (CN 26) on 18, 25 and 30 March 2011; Yaumati Catholic Primary School (CH29); The Waterfront (CN 32) on 2, 7, 17 and 21 March 2011 and The Arch (CN 33) on 2, 7 March 2011.

Regarding the noise exceedances at CN 23, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedance. The noise exceedance recorded on 18 and 25 March 2011 were caused by 805 site works, while the exceedance recorded on 30 March 2011 was mainly caused by other sources. The Contractor implemented mitigation measures to minimize the noise impact.

Regarding the noise exceedances recorded at Ying Wa College (CN 26) on 18, 25 and 30 March 2011, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedance. It was found that the works carried out in 802 might also have caused the noise exceedance. The Contractor implemented further mitigation measures to minimize the noise impact.

Noise exceedances were recorded at Yaumati Catholic Primary School (CN29) during the examination period on 15 March 2011. Actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedances.

For the noise exceedances at The Waterfront (CN 32) and The Arch (CN 33) in West Kowloon, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken and monitoring frequency was increased. The ER, IEC and Contractors were informed of the exceedances. The investigation result revealed that noise source may possibly due to works by 803A, 803B and 803D Contractors. Additional noise mitigation measures proposed by the Contractor were reviewed by IEC and ET and implemented by the 803A, 803B and 803D Contractor to minimize the noise impact. All contractors in WKT works area were remind to enhance the noise mitigation measures to comply with the statutory requirement and minimize noise nuisance to the nearby NSRs.

In addition, there were four noise exceedances of Action Level triggered due to noise complaint during daytime hours received in the reporting month. Please refer to Section 7 for details of complaint.

5.3 Ecological Monitoring

5.3.1 Ecological Monitoring on Avifaunal Communities

Ecological monitoring at MPV

Monthly avifauna monitoring at MPV work site was conducted on 25 March 2011. The weather conditions and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring were summarized in Table 5-1. The MPV-1 survey site comprised about 20 fishponds with most of them being actively managed (Figure C8016/C/XRL/ENS/M51/001 in Appendix D refers). Commonly observed pond management activities during the monitoring include pond aeration, removal of bund weeds and fish feeding. Ongoing construction activities were also recorded at the works area of the project "Proposed Comprehensive Development at Wo Shang Wai, Yuen Long" (hereinafter to be referred to as "Wo Shang Wai Project") located near Point Count Location MPV-1/P9. The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date	Weather Conditions	Noticeable Activities in the MPV-1 Survey Site
25 March 2011	Sunny, windy	• Pond aeration • Fish harvesting

Table 5-1 Weather condition and noticeable activities observed in the MPV-1 survey site during monitoring in March 2011

A total of 261 individuals from 38 avifauna species were recorded from the Point Count Locations at MPV-1 in March 2011 (Table 5-2 refers). The total number of species recorded during the monitoring was 43. The population of the avifauna recorded mainly consisted of Great Cormorant, ardeids (e.g. egrets and herons), sandpipers (e.g. Marsh Sandpiper, Wood Sandpiper and Common Sandpiper), wagtails (e.g. Yellow Wagtail and White Wagtail), Plain Prinia, Yellow-Bellied Prinia, Barn Swallow and other widespread resident species (e.g. Spotted Dove, Chinese Bulbul and Red-whiskered Bulbul). Other recorded waterbirds and wetland-dependent species included Little Grebe, White-breasted Waterhen, Common Moorhen, Little Ringed Plover, Common Kingfisher, Pied Kingfisher, Red-billed Starling and Collared Crow. Detailed records of avifauna at MPV-1 survey site are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline data from November 2009 to January 2010. The number of bird species and abundance recorded from the Point Count Locations of MPV-1, and the total number of species and species of conservation interest recorded from MPV-1 survey site in March 2011 were of similar magnitude as the baseline results (Table 5-2 and Table 5-3 refer). Of particular interest, a flock of around 30 individuals of Great Cormorant was observed roosting on a tree near a pond at Point Count Location MPV-1/P2.

The monitoring results indicated the fishponds within the survey area were utilized by a large number of waterbirds in March 2011 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the Project were

identified.

Survey	MPV-1	
	No. of Species	**Abundance**
25 March 2011	38	261
November 2009 to January 2010 [1] (Source: monthly averaged number obtained in Baseline Bird Survey)	38	306

Note:

1. Monthly average obtained from baseline bird survey.

Table 5-2 Number of species and abundance of avifauna recorded in March 2011 during bird survey at the point count locations of the MPV-1 survey site

Month	Total Number of Species Recorded [1,2]
25 March 2011	43 (12)
November 2009 to January 2010 [3] (Source: monthly averaged number obtained in Baseline Bird Survey)	41 (11)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-3 Total number of avifauna species recorded during bird survey at the MPV-1 survey site

Ecological monitoring at Tai Kong Po (TPP-1)

The avifauna monitoring location for the proposed works area of the TPP access road was sub-divided into three survey sites namely TPP-1, TPP-2 and TPP-3. The TPP-1 survey site is a drainage channel (KT5) with gabion / masonry banks at upper portion. The rest of the channel is trapezoidal with vegetated grasscrete banks on

both sides of the channel. The downstream end of the channel joins up with a main drainage channel (95CD) (Figure C8016/C/XRL/ENS/M51/003 in Appendix D refers).

The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-4. The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	**Weather Condition**	**Noticeable Activities Observed in the TPP-1 Survey Site**
25 March 2011	Overcast	• Construction works within the proposed access road near Point Count Location TPP-1/P1

Table 5-4 Weather Condition and Noticeable Activities Observed in the TPP-1 Survey Site during the Monitoring in March 2011

A total of 195 individuals from 25 avifauna species were recorded from the Point Count Locations at TPP-1 in March 2011 (Table 5-5 refers). The total number of species recorded during the monitoring was 31. The population of the avifauna recorded mainly consisted of Red-billed Starling, Barn Swallow and residents (e.g. Spotted Dove, Yellow-bellied Prinia and Black-collared Starling). Other recorded waterbirds include White-breasted Waterhen and Little Ringed Plover. It is typical in most lowland streams of Hong Kong (polluted and/or channelized at their lower courses) that lowland wetland bird species such as Chinese Pond Heron, White-breasted Waterhen, Common Kingfisher and Grey Wagtail could be found in low densities (Wong *et al*., 2009). Bird activity in channelized streams is largely restricted to exploiting food resources, typically fish or insects (Wong *et al*., 2009) Detailed records of avifauna at TPP-1 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline bird survey conducted from November 2009 to January 2010. The number of bird species and abundance recorded from the Point Count Locations of TPP-1, and the total number of species and species of conservation interest recorded from TPP-1 survey site in March 2011 were of similar magnitude as the baseline

survey results (Table 5-5 and Table 5-6 refer). Meanwhile, there was a decline in the abundance of bird species recorded in March 2011 compared to the baseline monitoring. This was due to the decrease record of sandpipers (e.g. Green Sandpiper and Wood Sandpiper) and White Wagtail. The baseline study also had records of Greater-painted Snipe and Yellow Wagtail, both of which were absent during the monitoring in March 2011.

The monitoring results indicated the drainage channel within the survey area was utilized by waterbirds and water-dependent species in March 2011 during the monitoring. Decrease in the bird abundance was observed. However, this was due to the departure of some winter visitors. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	TPP-1 Survey Site	
	No. of Bird Species	Abundance of Bird Species
25 March 2011	25	195
November 2009 to January 2010 [1]	27	311

Note:

1. Monthly average obtained from baseline bird survey.

Table 5-5 Number of Bird Species and Abundance of Bird Species Recorded in March 2011 Avifauna Monitoring at the Point Count Locations of the TPP-1 Survey Site

Survey Period	Total Number of Bird Species Recorded [1,2]
25 March 2011	31 (5)
November 2009 to January 2010 [3]	27 (6)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-6 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the TPP-1 Survey Site

Ecological monitoring at Tai Kong Po (TPP-2)

The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-7. The TPP-2 survey site covered a section of main drainage channel 95CD, which is a concrete trapezoidal channel with grasscrete banks. Plantation of native or landscape vegetation was observed along the embankment of the channel (Figure C8016/C/XRL/ENS/M51/002 in Appendix D refers). The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	Weather Condition	Noticeable Activities Observed in the TPP-2 Survey Site
25 March 2011	Overcast	• No project-related construction activities located in the vicinity

Table 5-7 Weather Condition and Noticeable Activities Observed in the TPP-2 Survey Site during the Monitoring in March 2011

A total of 39 individuals from 11 avifauna species were recorded from the Point Count Locations at TPP-2 in March 2011 (Table 5-8 refers). The total number of species recorded during the monitoring was 23. The population of the avifauna recorded mainly consisted of Barn Swallow and residents (e.g. Spotted Dove, Yellow-bellied Prinia, Plain Prinia and Common Magpie). Other recorded waterbirds included Little Egret and Little Ringed Plover. It is typical in most lowland streams of Hong Kong (polluted and/or channelized at their lower courses) that lowland wetland bird species such as Chinese Pond Heron, White-breasted Waterhen, Common Kingfisher and Grey Wagtail could be found in low densities (Wong *et al.*, 2009). Detailed records of avifauna at TPP-2 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline bird survey conducted from November 2009 to January 2010. The number of bird species recorded from the Point Count Locations of TPP-2, and the total number of species and species of conservation interest recorded from TPP-2 survey site in March 2011 were of similar magnitude as the baseline survey results (Table 5-8 and Table 5-9 refer). Meanwhile, the bird abundance recorded in March 2011 was lower than that of the baseline results. This was due to the decreased

records of winter visitors such as Little Ringed Plover and White Wagtail.

The monitoring results indicated the main drainage channel within the survey area was utilized by typical lowland stream birds in March 2011 during the monitoring. Decrease in the bird abundance was observed. However, this was due to the departure of some winter visitors. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	TPP-2 Survey Site	
	No. of Bird Species	Abundance of Bird Species
25 March 2011	11	39
November 2009 to January 2010 [1]	13	60

Note:

1. Monthly average obtained from baseline bird survey.

Table 5-8 Number of Bird Species and Abundance of Bird Species Recorded in March 2011. Avifauna Monitoring at the Point Count Locations of the TPP-2 Survey Site

Survey Period	Total Number of Bird Species Recorded [1,2]
25 March 2011	23 (2)
November 2009 to January 2010 [3]	17 (1)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-9 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the TPP-2 Survey Site

Ecological monitoring at Tai Kong Po (TPP-3)

The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-10. The TPP-3 survey site is an abandoned meander (43CD-1) of conservation interest with natural banks and substratum. The earthen banks of the meander were mostly dominated by grasses and weeds. The section near point count location TPP-3/P1 was found to be usually wet though the water was quite stagnant. Due to its close proximity to a village access road of Kam Hing Wai and Shui Mei Tsuen, this section of meander was subject to higher disturbance from villagers and traffic. Point count locations TPP-3/P2 and TPP-3/P3 were only seasonally wet (Figure C8016/C/XRL/ENS/M51/002 in Appendix D refers). The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	Weather Condition	Noticeable Activities Observed in the TPP-3 Survey Site
25 March 2011	Overcast	• No project-related construction activities located in the vicinity

Table 5-10 Weather Condition and Noticeable Activities Observed in the TPP-3 Survey Site during the Monitoring in March 2011

A total of 49 individuals from 13 avifauna species were recorded from the Point Count Locations at TPP-3 in March 2011 (Table 5-11 refers). The total number of

species recorded during the monitoring was 13. The population of the avifauna recorded consisted of widespread resident species (e.g. Spotted Dove, Red-whiskered Bulbul, Chinese Bulbul, Long-tailed Shrike, Masked Laughingthrush, Yellow-bellied Prinia, Common Tailorbird, Japanese White-eye and Black-collared Starling), winter visitors (e.g. Grey Wagtail, Olive-backed Pipit and White-cheeked Starling) and summer visitor Hair-crested Drongo. It is typical in most lowland streams of Hong Kong (polluted and/or channelized at their lower courses) that lowland wetland bird species such as Chinese Pond Heron, White-breasted Waterhen, Common Kingfisher and Grey Wagtail could be found in low densities (Wong *et al*., 2009). Detailed records of avifauna at TPP-3 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline bird survey conducted from November 2009 to January 2010. The number of bird species and abundance recorded from the Point Count Locations of TPP-3, and the total number of species and species of conservation interest recorded from TPP-3 survey site in March 2011 were of similar magnitude as the baseline survey results (Table 5-11 and Table 5-12 refer).

The monitoring results indicated the abandoned meander within the survey area was utilized by typical lowland stream birds in March 2011 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	**TPP-3 Survey Site**	
	No. of Bird Species	**Abundance of Bird Species**
25 March 2011	13	49
November 2009 to January 2010 [1]	14	45

Note:

1. Monthly average obtained from baseline bird survey.

Table 5-11 Number of Bird Species and Abundance of Bird Species Recorded in March 2011 Avifauna Monitoring at the Point Count Locations of the TPP-3 Survey Site

Survey Period	**Total Number of Bird Species Recorded [1,2]**
25 March 2011	13 (1)

November 2009 to January 2010 [3]	14 (1)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-12 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the TPP-3 Survey Site

Ecological monitoring at SSS

Monthly avifauna monitoring at SSS-3 work site was conducted on 24 March 2011 during the construction of SSS / ERS. Construction in the vicinity of SSS-1/2a/2b was yet commenced and ecological monitoring would be conducted according to the construction programme. The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-13. The farmland in SSS-3 survey site displayed a distinctive seasonal crop rotation pattern between wet agriculture (*Ipomoea aquatica*) in summer season and dry agriculture (seasonal flowers such as *Gladiolus gandavensis*) in winter season (Figure C8016/C/XRL/ENS/M51/004 in Appendix D refers). The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	**Weather Condition**	**Noticeable Activities Observed in the SSS-3 Survey Site**
24 March 2011	Overcast	-Erection of site hoarding at Point Count Location SSS-3/P6 -Mainly dry agricultural activities were observed such as farming of vegetables and ornamental flowers

Table 5-13 Weather Condition and Noticeable Activities Observed in the SSS-3 Survey Site during the Monitoring in March 2011

A total of 165 individuals from 31 avifauna species were recorded from the Point Count Locations at SSS-3 in March 2011 (Table 5-14 refers). The total number of species recorded during the monitoring was 37. The population of the avifauna

recorded mainly consisted of ardeids (e.g. Little Egret and Chinese Pond Heron), wagtails (e.g. Yellow Wagtail, Grey Wagtail and White Wagtail) and residents (e.g. Spotted Dove, Red-whiskered Bulbul, Chinese Bulbul, Yellow-bellied Prinia, Japanese White-eye, Scaly-breasted Munia, Eurasian Tree Sparrow and Crested Myna). Little Egret, Chinese Pond Heron, Dusky Thrush and Zitting Cisticola are species of conservation interest which are recorded at this point location. It was found that the dominant species present in dry farmland included resident such as Spotted Dove, Barn Swallow, Eurasian Tree Sparrow, Black-collared Starling and Crested Myna. Meanwhile, the ornamental flower such as peach blossom is attractive to some species such as Common Blackbird, Olive-backed Pipit, Japanese White-eye and Yellow-browed Warbler (Wong *et al*., 2009). Detailed records of avifauna at SSS-3 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline data from November 2009 to January 2010. The number of bird species recorded from the Point Count Locations of SSS-3, and the total number of species and species of conservation interest recorded from SSS-3 survey site in March 2011 were of similar magnitude as the baseline results. Meanwhile, the bird abundance recorded in March 2011 was lower than that of the baseline results. This was due to the decreased records of winter visitors such as White Wagtail and Olive-backed Pipit, and the absence of Red-throated Pipit in March 2011. A decrease of common residents such as Red-whiskered Bulbul, Black-collared Starling and Chinese Bulbul was also recorded.

The monitoring results indicated the agricultural lands within the survey area were utilized by typical bird species found in dry farmland in March 2011 during the monitoring. Decrease in the bird abundance was observed. However, this was mainly due to the departure of some winter visitors. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	**SSS-3 Survey Site**	
	No. of Bird Species	**Abundance of Bird Species**
24 March 2011	31	165
November 2009 to January 2010 [1]	29	263

Note:

1. Monthly average obtained from baseline bird survey.

Table 5-14 Number of Bird Species and Abundance of Bird Species Recorded in March 2011 Avifauna Monitoring at the Point Count Locations of the SSS-3 Survey Site

Survey Period	Total Number of Bird Species Recorded [1,2]
24 March 2011	37 (4)
November 2009 to January 2010 [3]	30 (4)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-15 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the SSS-3 Survey Site

Ecological monitoring at PHV and TUW

Monthly avifauna monitoring at TUW-1 work site was conducted on 24 March 2011 during the construction of TUW. The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-16. The TUW-1 survey site encompassed a large piece of agricultural land located to the south of Kam Sheung Road (i.e. Tse Uk Tsuen). The agricultural land in TUW-1 survey site shared the habitat characteristics of SSS-3 survey site. Similar seasonal alternation between wet and dry agriculture was also recorded from TUW-1 survey site (Figure C8016/C/XRL/ENS/M51/005 in Appendix D refers). The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	Weather Condition	Noticeable Activities Observed in the PHV-1 Survey Site
24 March 2011	Overcast	• No construction activities observed in the vicinity • Mainly dry agricultural activities were observed such as farming of vegetables and ornamental flowers

Table 5-16 Weather Condition and Noticeable Activities Observed in the TUW-1 Survey Site during

the Monitoring in March 2011

A total of 269 individuals from 29 avifauna species were recorded from the Point Count Locations at TUW-1 in March 2011 (Table 5-17 refers). The total number of species recorded during the monitoring was 31. The population of the avifauna recorded mainly consisted of residents (e.g. Red-whiskered Bulbul, Chinese Bulbul, Japanese White-eye, Black-collared Starling, Eurasian Tree Sparrow and Crested Myna). Other recorded waterbirds and wetland-dependent species included Little Egret, Cattle Egret, White-breasted Waterhen and White-throated Kingfisher. It was found that the dominant species present in dry farmland included resident insectivores such as Crested Myna, Spotted Dove, Barn Swallow, Eurasian Tree Sparrow and Black-collared Starling. Meanwhile, the ornamental flowers such as gladioli and peach blossom are attractive to some species such as Common Blackbird, Olive-backed Pipit, Japanese White-eye and Yellow-browed Warbler (Wong *et al.*, 2009). Detailed records of avifauna at TUW-1 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season data from November 2009 to January 2010. The number of bird species and abundance recorded from the Point Count Locations of TUW-1, and the total number of species of conservation interest recorded from TUW-1 survey site in March 2011 were higher than the baseline results (Table 5-17 and Table 5-18 refer). The increase in abundance in March 2011 was due to a large group of Red-whiskered Bulbul and Barn Swallow recorded during monitoring. The increased total number of species recorded was due to the new record of Large Hawk Cuckoo, Plaintive Cuckoo, Common Koel, White-throated Kingfisher, Barn Swallow and Fork-tailed Sunbird.

The monitoring results indicated the agricultural lands within the survey area were utilized by typical bird species found in dry farmland in March 2011 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	**TUW-1 Survey Site**	
	No. of Bird Species	**Abundance of Bird Species**

24 March 2011	29	269
November 2009 to January 2010 [1]	22	154

Note:
1. Monthly average obtained from baseline bird survey.

Table 5-17 Number of Bird Species and Abundance of Bird Species Recorded in March 2011 Avifauna Monitoring at the Point Count Locations of the TUW-1 Survey Site

Survey Period	**Total Number of Bird Species Recorded [1,2]**
24 March 2011	31 (1)
November 2009 to January 2010 [3]	22 (3)

Note:

1. Total number of species recorded included the avifauna recorded from both point count locations and walk transect.
2. The numbers in brackets denote the number of species of conservation interest.
3. Monthly average obtained from baseline bird survey.

Table 5-18 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the TUW-1 Survey Site

Since the extent of PHV-1 survey site is overlapped with that of TUW-2 survey site, the survey data of the TUW-2 and PHV-1 survey sites were reported collectively. Monthly avifauna monitoring at TUW-2 and PHV-1 survey site was conducted on 24 March 2011 during the construction of TUW and PHV. The weather condition and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring are summarized in Table 5-19. The TUW-2 and PHV-1 survey site comprised the woodland in Conservation Area (CA) within 500 m from the boundary of the PHV works area (Figure C8016/C/XRL/ENS/M51/006 in Appendix D refers). The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix G.

Date of Monitoring	**Weather Condition**	**Noticeable Activities Observed in the TUW-2 and PHV-1 Survey Site**
24 March 2011	Overcast	• Construction works located in the vicinity of the survey area

Table 5-19 Weather Condition and Noticeable Activities Observed in the TUW-2 and PHV-1 Survey Site during the Monitoring in March 2011

A total of 15 individuals from 9 avifauna species were recorded from the Point Count Locations at TUW-2 and PHV-1 in March 2011 (Table 5-20 refers). The total number of species recorded during the monitoring was 20. The population of the avifauna recorded consisted largely of residents (e.g. Red-whiskered Bulbul, Chinese Bulbul, Hwamei and Oriental Magpie Robin). It is typical that the forest bird community in Hong Kong is dominated by a few habitat-generalist species, including Chinese Bulbul, Red-whiskered Bulbul, Common Tailorbird and Japanese White-eye (Wong *et al.*, 2009). Other recorded species included for instance, common residents (Blue Whistling Thrush, Scarlet-backed Flowerpecker and Streak-breasted Scimitar Babbler), and common winter visitor Dusky Warbler. A species of conservation interest, Grey-chinned Minivet, was recorded. Detailed records of avifauna at TUW-2 and PHV-1 are presented in Appendix G.

The monitoring results in March 2011 were compared against the dry season results of the baseline data from November 2009 to January 2010. The number of bird species and abundance recorded from the Point Count Locations of TUW-2 and PHV-1, and the total number of species and species of conservation interest recorded from TUW-2 and PHV-1 survey site in March 2011 were of similar magnitude as the baseline results (Table 5-20 and Table 5-21 refer).

The monitoring results indicated the woodland within the survey area was utilized by typical forest birds in March 2011 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the Project were identified.

Survey Period	**TUW-2 and PHV-1 Survey Site**	
	No. of Bird Species	**Abundance of Bird Species**
24 March 2011	9	15
November 2009 to January 2010 [1]	8	19

Note:
1. Monthly average obtained from baseline bird survey.

Table 5-20 Number of Bird Species and Abundance of Bird Species Recorded in March 2011
Avifauna Monitoring at the Point Count Locations of the TUW-2 and PHV-1 Survey Site

Survey Period	Total Number of Bird Species Recorded [1,2]
24 March 2011	20 (1)
November 2009 to January 2010 [3]	16 (0)

Note:

1. Total number of bird species recorded included the avifauna recorded from both point count locations and walk transect.

2. The numbers in brackets denote the number of species of conservation interest.

3. Monthly average obtained from baseline bird survey.

Table 5-21 Total Number of Bird Species Recorded in March 2011 Avifauna Monitoring at the TUW-2 and PHV-1 Survey Site

5.3.2 Monitoring of impact at fishpond due to noise

In accordance with the Monitoring and Emergency Response Plan, impact noise monitoring was conducted at fish pond on weekly basis for assessment of impact at fishponds due to noise. The results are displayed in the table below. It was revealed from the monitoring results that all monitoring results were within the Limit Level of 75 dB(A). Based on the monitoring results, there was no adverse impact at fishpond due to noise.

Monitoring Date	L_{eq}, dB(A)
1/3/2011	53
8/3/2011	54
19/3/2011	50
24/3/2011	50
29/3/2011	55

Table 5-22 Noise monitoring results at fishpond in Mai Po

5.4 Waste Management

The quantities of waste disposed from this Project during the reporting month and the previous 2 months are summarized in the following table:

Reporting Month	**Inert C&D [1]Materials (tonnes)**	**Non-inert C&D [2]Materials (tonnes)**	**Chemical Waste (Litre)**
Contract 802			
January 2011	40.3	1.3	0
February 2011	0	0	0
March 2011	1146	4.8	0
Contract 803A			
January 2011	9025.0	23.1	1000
February 2011	9899.0	15.0	0
March 2011	19824.0	23.2	0
Contract 803B			
January 2011	10857.6	116.2	0
February 2011	5302.3	5.4	0
March 2011	0	0	0
Contract 803D			
January 2011	13973.0	19.1	0
February 2011	1100	1.5	1000
March 2011	3780.0	18.9	0
Contract 805			
January 2011	286.0	4.8	0
February 2011	475.9	0	0
March 2011	221.8	5.3	
Contract 810B			
January 2011	0	0	0
February 2011	0	0	0
March 2011	14521.0	0.2	0
Contract 811A			
January 2011	16615.0	18.1	200
February 2011	7598.9	19.5	0
March 2011	8996.5	29.4	
Contract 811B			
January 2011	9849.5	87.4	0
February 2011	12721.1	44.0	0
March 2011	20013.4	43.8	0
Contract 820			

Reporting Month	**Inert C&D [1]Materials (tonnes)**	**Non-inert C&D [2]Materials (tonnes)**	**Chemical Waste (Litre)**
January 2011	3237.3	22.7	0
February 2011	6520.2	21.1	0
March 2011	10501.6	31.9	0
Contract 821			
January 2011	3717.1	6.1	0
February 2011	1410.0	3.0	0
March 2011	19498.5	4.8	0
Contract 822			
January 2011	18060.1	31.2	0
February 2011	16968.1	13.8	0
March 2011	30841.8	16.7	0
Contract 823A			
February 2011	345.3	39.8	0
March 2011	2497.6	93.8	0
Contract 823B			
February 2011	0	28.8	0
March 2011	33447.2	519.1	0
Contract 824			
January 2011	6500	500	0
February 2011	1252	394	0
March 2011	3102.0	537.5	0
Contract 825			
January 2011	11709.7	13.7	0
February 2011	5181.1	7.0	0
March 2011	14021.9	0	0

Table 5-23 Summary of construction waste generated and disposed

Note:

1. Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.

2. Non-inert C&D materials include steel, paper / cardboard packaging waste, plastics and other wastes such as general refuse.

3. Asbestos waste is not shown.

4. Alternative disposal sites for inert C&D Material from Contract 821 include Pak Sha Tau Quarry, Zhuhai, China.

5. Alternative disposal sites for inert C&D Material from Contract 822 include Lam Tei Quarry and WENT landfill

6. Alternative disposal sites for inert C&D Material from Contract 825 include Ha Ko Po Tsuen Residential Development, Fan Kam Road Ku Tung South Residential Development and Sludge Treatment Facility in Tuen Mun.

5.5. Landscape and Visual

5.5.1 Monitoring Requirement

A Certified Arborist was employed and has conducted inspection and audits and found that the tree protection works being carried out by the civil works and transplanting contractors were in accordance with EP/EIA.

Monitoring of the implementation of the tree protection measures during construction phase was conducted in accordance with the requirements of EP condition 2.15 (iv).

The landscape and visual monitoring and auditing will be conducted on regular basis throughout the construction stage and covering the entire project site areas.

5.5.2 Audit Result

Monthly monitoring and audit was undertaken in accordance with the requirement of EP condition 2.15 (iv)

Tree Transplanting Works at Contract 801

Root ball preparation / wrapping for transplanted trees were recommended to be improved. Pesticide treatment was applied to the palms tree in temporary holding nursery. Reconstruction of rootball was undertaken. Some improvement from previous month but still many trees need to be improved their health condition. Fetiliser application are considered to be required.

Tree Transplanting Work at contract 824

Trees to be transplanted have been carried out root pruning work. Some of the transplanted trees were transplanted to temporary holding nursery.

Tree Transplanting Work 825

Trees have been transplanted to area near new site office. The condition of transplanted trees was satisfactory. Pruning of Important Tree was not yet undertaken.

Tree Protection Work 802

Retained tree within construction was under monitoring and checked. Inspection was carried. Improvement is required to ensure the protective fencing is properly installed.

Tree Protection Work 803C

Trees to be retained have been identified and protected with fencing. Minor insect damage was found on the new foliage and further treatment is required. No works envisaged within the area.

Tree Protection Work 805

Areas underneath retained trees were observed to be used as car parking space. Protective measure should be improved. T8986 have symptom of bark peeling and suffer from canker disease.

Tree Protection Work 811A

Protective fencing was recommended to be improved which was found to be close to the trees. Light weight equipment and materials still stored insides Tree Protection Area. This storage materials are recommended to be removed.

Tree Protection Work 811B

Construction materials are stored within the tree protection area. Protective measures of retained tree should be reinforced to ensure the tree are properly protected.

Tree Protection Work 820

Site hoarding and car park surfacing formed around retained trees. Padding is required to be applied for better tree protection.

Tree Protection Work 821

Some of the trees in contract 821 with extensive decay in trunk and main stem. Contractor is required to apply for tree remove or provide physical support.

Tree Protection Work 822

The overall tree protection measures is required to be further improved. The contractor is required to follow the recommendations given by EP Arborist for the improvement of tree protection.

Tree Protection Work 823A

Tree protection work was commenced. Measures in protecting tree on site should be further improvement.

Tree Protection Work 824

Protective fencing around retained trees was observed insufficient and should be improved. Storage of heavy construction materials within tree protection zone was found. Mitigation action is required to be implemented.

5.6. Landfill Gas

No landfill gas monitoring was conducted at Rambler Channel Barging Point since there was no excavation works conducted in the reporting period.

6. SITE INSPECTION

Regular site inspections attended by representatives from ET and Contractors were carried out at 802/805 in Nam Cheong, 803A, B, D, 810B and 811A/B in West Kowloon, 820/821 in Nam Cheong, 822 in Shing Mun, Shek Yam and So Kwun Wat, Tsing Chau Tsai and Tai Shu Ha Road West, 824 in Tai Kong Po and Ngau Tam Mei, 825 in Mai Po and Siu Lam Barging Point and dates are shown in the following table. In addition to the regular site inspections attended by ET and Contractors, monthly IEC environmental audits attended by IEC, ET and Contractors were held on 16 March 2011 in 802; 16 March 2011 in 803A; 18 March 2011 in 803B; 16 March 2011 in 803D; 16 March 2011 in 810B; 16 March 2011 in 805; 22 March 2011 in 811A; 22 March 2011 in 811B; 24 March 2011 in 820; 24 March 2011 in 821, 14 March 2011 in 822; 23 March 2011 in 823A; 15 March 2011 in 823B; 29 March in 824 and 28 March 2011 in 825.

Contract	**Date of Site Inspections**
802	4/3, 9/3, 16/3 and 23/3
803A	3/3, 9/3, 16/3, 23/3 and 30/3
803B	4/3, 11/3, 18/3 and 25/3
803D	3/3, 9/3, 16/3, 23/3 and 30/3
810B	2/3, 9/3, 16/3, 23/3 and 30/3
805	2/3, 9/3, 16/3, 23/3, 30/3
811A	1/3, 8/3, 15/3, 22/3 and 29/3
811B	8/3, 14/3, 22/3 and 29/3
820	3/3, 10/3, 17/3, 24/3 and 31/3
821	1/3, 8/3, 18/3. 24/3 and 29/3
822	7/3,14/3,21/3 and 28/3
823A	3/3, 10/3 16/3 and 23/3

Contract	Date of Site Inspections
823B	1/3, 9/3, 15/3, 22/3 and 31/3
824	8/3, 15/3 25/3 and 29/3
825	10/3, 18/3, 25/3 and 28/3

Table 6-1: Date of site inspection

All observations have been recorded in the audit checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from these site inspections and Contractor's follow-up action are summarized in Table 6-2 below. No non-compliance was observed.

Item	Description	Contractor's Follow-up Action(s) Undertaken
Contract 802		
1	The dust suppression measure on the exposed ground and haul road was not frequently implemented.	Manual water spraying is adopted for dust suppression.
2	Road sand and mud were washed down to the public drain by workers,; it may cause blockage of drainage system in EVA.	Sand, mud and construction debris have been removed from the road manually before cleaning the EVA.
3	Many chemical drums were placed on soil ground without any leakage container.	Chemical drums have been placed inside the drip tray.
Contract 803A		
1	It was observed that there was not noise mitigation measures provided for drill rig working at works area across The Element.	Noise barrier was provided for drill rig in operation.
2	It was observed that there was no noise mitigation measures	Noise barrier was provided for air compressor in operation.

Item	Description	Contractor's Follow-up Action(s) Undertaken
	provided for air compressor in operation at works area across The Element.	
3	It was observed that the labels of the chemical used in the wastewater treatment plant have been faded and peeled off.	New chemical labels have been displayed at the containers accordingly.
Contract 803B		
1	It was observed that a cement mixing shelters were not properly covered on three sides and top at works area across The Waterfront.	The tarpaulin for the cement mixing shelter was rearranged to properly cover three sides and top.
2	It was observed that there was not noise mitigation measures provided for diesel welding set at works area across The Waterfront..	Noise barrier was provided for diesel welding generator in operation.
3	It was observed that the stockpile on site near the Waterfront was dry.	Frequently water the stockpile and used as backfilling materials after excavation.
Contract 803D		
1	It was observed that a drip tray for oil drums was full with water at works area near Austin Station.	The water was removed and treated as chemical waste.
2	It was observed that air compressors in operation were not provided with noise barriers at work site near Austin Road West.	Noise barriers were provided for the air compressors in operation.
3	It was observed that some chemicals were not placed in drip tray even stored in the chemical store.	The chemicals have been placed in the drip tray accordingly and the workers were reminded it, too.

Item	Description	Contractor's Follow-up Action(s) Undertaken
Contract 805		
1	There was no protection to the gully to prevent inflow of sand and mud possibly brought by rainwater. (16 Mar)	The gully was protected by sand bag layer along with filtering material on 16 Mar 2011.
2	The construction runoff would flow to the adjacent public road. (30 Mar)	Sand bag layer has been provided and exposed ground has been covered by tarpaulin on 1 Apr 2011.
Contract 810B		
1	It was observed that diesel water pump in operation was not provided with noise mitigation measures across The Element.	The diesel water pump was replaced by another pump with noise enclosure.
2	It was observed that the excavation area and the stockpile on site were dry and dusty.	The exposed area was frequently watering to suppress the dust generation.
Contract 811A		
1	Haul road on site was dry and dusty	Watering frequency was increased
2	Chemicals were found not properly stored on site	Chemical were stored properly with drip trays provided underneath
3	Drip trays underneath the generators were not properly maintained	The drip trays were fixed and cleaned up accordingly.
Contract 811B		
1	Stockpiling of excavated materials was found on site without proper covering	Provided impervious sheet for the stockpiling materials
2	The gullies along the site boundary were not properly protected	Sandbags were provided to avoid runoff from entering into the storm drains
3	Some of the drip tray were found filled with water after raining	Water inside the drip trays was cleaned up.
Contract 820		

Item	Description	Contractor's Follow-up Action(s) Undertaken
1	Stockpile of dusty material without covering was observed in FMO (A) and Launching Shaft works area.	Water spraying and tarpaulin sheet covering the stockpile were provided.
2	Oil leakage from air compressor was observed at Rising Main works area.	The air compressor was removed from site.
3	Stoarge of oil drums without drip tray was observed at Lauching Shaft works area.	Drip tray was provided for storage of oil drums.
Contract 821		
1	Soil and debris was observed in the u-channel in the middle of Kwai Chung Ventilation Building works area.	The u-channel was covered to avoid soil and debris falling in it.
2	Stockpile of dusty material without covering was observed in Kwai Chung Ventilation Building works area.	Regular water spraying on the stockpile were provided.
Contract 822		
1	Dust suppression was not implemented for the excavation work at Pat Heung.	Water spraying was carried out during excavation.
2	The cement mixing process was not properly enclosed at Pat Heung	The cement mixing area had been improved with the 3 sides and the top enclosed immediately after the inspection.
3	Excessive dark emission was observed from the generator at Pat Heung.	The plant was moved off the site.
Contract 823A		

Item	Description	Contractor's Follow-up Action(s) Undertaken
1	Ground surface was dry and dusty at Nam Hing West Road Works Area	Watering frequency was enhanced to minimize dust impact.
2	Water within wheel washing bay at Nam Hing West Road Works Area was muddy.	The vehicle washing bay was regularly cleared to remove the silt
Contract 823B		
1	Stockpile of C&D waste was observed near stream in Shek Kong works area.	C&D waste was cleared.
2	Regular watering on main haul road was observed. However, no watering was provided on the haul road near the site formation/excavation area in works area 4.21A and dusty material handling in works area 4.23F.	Water browser and manual water sparing on haul road and stockpile of material was provided.
Contract 824		
1	Chemical waste was not stored properly at Ngau Tam Mei site	Chemical waste was stored properly at the chemical waste store
2	Temporary slope was not covered at the Tai Kong Po site	Temporary slope was covered to minimize dust impact
Contract 825		
1	Chemicals were found without drip tray on site	Drip trays were provided to avoid contamination

Table 6-2 Summary of site inspections, recommendations and follow-up actions

7. NON-COMPLIANCE AND DEFICIENCY

7.1 Summary of Complaint

For this reporting month, a total of 11 environmental complaints were referred from EPD. There are a total of 42 environmental complaints since commencement of the construction. The complaints were handled in accordance to the EM&A Manual and relevant parties including the Engineer's Representative and IEC were informed of the complaints. The details of complaint are summarized as below:

A complaint was referred from EPD on 1 March 2011 about the blasting noise generated by Shek Yam works area. The contractor reviewed the blasting schedule to minimize the potential impact. The investigation results were reviewed by the IEC.

A total of two complaints were referred from EPD on 2 and 14 March 2011 regarding dust and noise from construction at Tsat Sing Kong. Following investigation, the Contractor was reminded to improve mitigation measures including frequent water spraying and covering of stockpiles on-site. 1-hr TSP measurement had been conducted which revealed no exceedance. The investigation results were reviewed by the IEC.

A total of four complaints were referred from EPD on 1, 14 and 17 March 2011 regarding mud being carried off-site and dust nuisance due to construction at Contract 825 MPV site. Following investigation, it is noted that wheel washing and cleansing of site access road had already been provided to avoid mud being carried off-site. Furthermore, the Contractor had implemented covering and hydro-seeding for stockpiles on-site to minimize the dust impact. The Contractor was reminded to ensure that mitigation measures are implemented. 1-hr TSP measurement had been conducted which revealed no exceedance. The investigation results were reviewed by the IEC.

A complaint was referred from EPD on 18 March 2011 regarding daytime noise from construction at Nam Cheong Ventilation Building works area on 24 February

2011. Following investigation, it is noted that trimming/breaking work of top of the D-wall Zone A and breaking of road surface near the Cheung Sha Wan cargo Pier may relate to the complaint. The Contractor was reminded to improve mitigation measures including reduced plants to be operated together and erected portable noise barriers. The investigation results were reviewed by the IEC.

A complaint was referred from EPD on 18 March 2011 regarding nighttime noise from construction at j/o Chui Yu Road and Shum Mong Road on 18 March 2011. Following investigation, it is noted the Contractor carried out the work with full complaince of the Construction Noise Permit. Moreover, the pile removal work at this work area was completed on 23 March 2011 and further noise impact at night should be minimal. The investigation results were reviewed by the IEC.

A complaint was referred from EPD on 30 March 2011 about the dust nuisance causing from the construction site nearby Nam Cheong Park and Sham Mong Road. The case was being investigated by the Contractor and interim report would be provided to EPD in due course.

A complaint was referred from EPD on 31 March 2011 about the dust nuisance causing from the construction site nearby Man Wui Street. The case was being investigated by the Contractor and interim report would be provided to EPD in due course.

7.2 Summary of Exceedance

In the reporting month, noise exceedances of Limit Level were recorded at HKIVE Haking Wong Waterfront Annex (CN 23) on 18, 25 and 30 March 2011; Ying Wah College (CN 26) on 18, 25 and 30 March 2011; Yaumati Catholic Primary School (CH29); The Waterfront (CN 32) on 2, 7, 17 and 21 March 2011 and The Arch (CN 33) on 2, 7 March 2011.

Regarding the noise exceedances at CN 23, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedance. The noise exceedance recorded on 18 and 25 March 2011 were caused by 805 site works, while the exceedance recorded on 30 March 2011 was mainly caused by other sources. The Contractor

implemented mitigation measures to minimize the noise impact.

Regarding the noise exceedances recorded at Ying Wa College (CN 26) on 18, 25 and 30 March 2011, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedance. It was found that the works carried out in 802 might also have caused the noise exceedance. The Contractor implemented further mitigation measures to minimize the noise impact.

Noise exceedances were recorded at Yaumati Catholic Primary School (CN29) during the examination period on 15 March 2011. Actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken. The ER, IEC and Contractor were informed of the exceedances.

For the noise exceedances at The Waterfront (CN 32) and The Arch (CN 33) in West Kowloon, actions identified in the Event and Action Plan (Table 3.4 of the EM&A Manual) were undertaken and monitoring frequency was increased. The ER, IEC and Contractors were informed of the exceedances. The investigation result revealed that noise source may possibly due to works by 803A, 803B and 803D Contractors. Additional noise mitigation measures proposed by the Contractor were reviewed by IEC and ET and implemented by the 803A, 803B and 803D Contractor to minimize the noise impact. All contractors in WKT works area were remind to enhance the noise mitigation measures to comply with the statutory requirement and minimize noise nuisance to the nearby NSRs.

In addition, there were four noise exceedances of Action Level triggered due to noise complaint during daytime hours received in the reporting month. Please refer to Section 7.1 above for details.

In the reporting month, there were exceedances of 24-hr TSP Action Level on 1, 7, 12 and 30 March 2011 at AM 3; 5 and 17 March 2011 at AM 4; 7 March 2011 at AM 5, 30 March 2011 at AM 7, 30 March 2011 at AM 8 and 9 March 2011 at AM 16 were recorded in the reporting month. No exceedance of 24-hr TSP Limit Level was recorded in the reporting month. Actions stipulated under the Event and Action

Plan (Table 9.4 of the EM&A Manual) were implemented for all exceedances and monitoring frequency was increased.

For the exceedances at AM 3, investigation results revealed that the exceedances might possibly due to construction work at Tai Kong Po Works Area. The 824 Contractor provided additional dust mitigation measures, including covering of stockpile, temporary slope and improving watering frequency and coverage by automatic sprinklers. The situation would be continuously reviewed by IEC.

For the exceedances at AM 4 and 5, investigation results revealed that the exceedance might possibly due to works carried out at northern and middle SSS respectively. The 823A and 823B Contractor was reminded to enhance the dust suppression measure including covering of stockpile and regular watering on haul road. The situation would be continuously reviewed by IEC.

For the exceedance at AM 7, investigation results revealed that the exceedance might possibly due to site preparation works carried out at Tse Uk Tsuen Works Area. The 823A Contractor was reminded to enhance the dust suppression measures. The situation would be continuously reviewed by IEC.

For the exceedance at AM 8, investigation results revealed that the exceedance might possibly due to works carried out at Pat Heung Ventilation Building Works Area. The 822 Contractor was reminded to enhance the dust suppression measures. The situation would be continuously reviewed by IEC.

For exceedance at AM 16, investigation results revealed that the exceedance might possibly due to the grouting works carried out near Lin Cheung Road Works Area. The 803A&D Contractor was reminded to cover the grout mixing workplace, over 20 cement bags storage area and stockpile stacked at work-front area properly with canvas; and frequent watering the haul road. The situation would be continuously reviewed by IEC.

Regarding the Action Level dust exceedance at AM 1 measured on 28 February, investigation had been conducted which revealed that the exceedance was not project related. The investigation results were reviewed by the IEC.

7.3 Summary of Notification of Summons, Prosecutions, Non-compliance and Corrective Actions

No notification of summons and prosecutions was received during the reporting month. No non-compliance event was recorded during the reporting period.

8. FUTURE KEY ISSUES

8.1 Construction Works in Coming Months

Works to be undertaken for the following months are summarized below.

Contract 802 (Works Area Q)
Sheet-pilling, bored pile removal, utility diversion, H-pile extraction, pile cap demolition and excavation & lateral supports
Contract 803A (Works Area V1)
Pre-drilling, Diaphragm wall construction, utilities diversion and road works
Contract 803B (Works Area V1)
Bored pile, socketted H-piling works, interface coring and interface coring
Contract 803C (Works Area V1)
NIL (Contract Completed)
Contract 803D (Works Area V1)
Pre-bored H-pile, diaphragm wall, post drilling, utilities diversion and road works
Contract 805 (Works Area N & O)
Demolition and removal of footbridge, sheet-piling work,
Contract 805 (Works Area S)
Demolition of pie cap, removal of footbridge, sheet-piling work
Contract 810B (Works Area V1 & U)
Site Clearance, Site Office Erection, Site Establishment, Hoarding Erection, Pre-drilling, Excavation etc.

Contract 811A (Works Area V2)
Pre-drilling works for bored pile, diaphragm wall and socketted H-piles; construction of diaphragm wall; construction of socketted H-pile; external works to CLP Sub Station at Lin Cheung Road; road diversion, drainage diversion
Contract 811B (Works Area V2 & Y)
Pre-drilling and construction of diaphragm wall, installation of bored piling, installation of pre-bored H-piles, construction of guide walls, installation of diaphragm walls, temporary road construction, construction of temporary footbridge, culvert diversion, operation of Nam Cheong Barging Point,
Contract 820 (Works Area L)
Nil
Contract 820 (Works Area M)
Concreting; Plant de-mobilization; Excavation Work; Grouting
Contract 820 (Works Area P)
Diaphragm wall construction for Box B including breaking and concreting work; Pre-bored H-pile at Box B; Grouting work; Utility diversion; Bulk Excavation for the shaft; Pile Removal Work
Contract 820 (Works Area Q)
Temporary traffic arrangement
Contract 820 (Works Area R)
Utilities diversion
Contract 820 (Works Area S)
Utilities diversion; Excavation Work; Surface re-instatement

Contract 820 (Works Area Y)
Barging Point site setup
Contract 820 (Works Area V2)
Ground treatment works
Contract 821 (Works Area J)
Pipe work for the water-recycling and treatment system, set up of maintenance workshop, blasting, breaking & drilling work at the portal.
Contract 821 (Works Area Y)
Operation of the barging point
Contract 822 (Works Area F)
Adit construction, construction of pipe pile wall, retaining wall construction; Site Establishment
Contract 822 (Works Area G)
Construction of pipe pile wall,
Contract 822 (Works Area H)
Adit construction
Contract 822 (Works Area AC)
No major construction works
Contract 822 (Works Area AE)
No major construction works
Contract 822 (Works Area AG)
No major construction works

Contract 823A (Works Areas D and D1)
Site formation, pre-drilling works
Contract 823B (Works Areas D)
Site formation, pre-drilling works
Contract 823B (To Kau Wan Works Areas)
Set up of stockpiling facility
Contract 823B (Works Areas Z)
Site formation, wheel washing and barging facility set up
Contract 824 (Works Area B)
Bored piling works
Contract 824 (Works Area C)
Pipe piling works at Tai Kong Po Works Area; bridge construction at access road
Contract 824 (Works Area AF)
Nil
Contract 825 (Works Area A)
Shaft construction
Contract 825 (Works Area AA)
Nil

Table 8-1 Summary of construction works in coming months

According to the latest programme, no construction would be commenced at new works area in coming month. Impact monitoring would be continued according to the construction programme.

8.2 Monitoring Schedule for Next Month

The tentative schedule of TSP, noise and ecological monitoring for the next reporting period is presented in Appendix E. According to the latest programme, hoarding erection in vicinity of ecological survey area SSS-2a will be carried out in April, monitoring at SSS-2a would be commenced accordingly.

8.3 Stage 1 Ground Treatment Works at Hoi Wang Road near Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden

With reference to the latest information provided by the Contractor, preparation works for the stage 1 ground treatment works by jet grouting at Hoi Wang Road near Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden was conducted in March 2011 and ground treatment works will be commenced in April 2011.

The Environmental Review Report for such works was prepared by the Contractor and attached in Appendix J. It shows that no significant adverse impact due to ground treatment works at Hoi Wang Road near Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden.

8.4 Modification of Tai Kong Po Emergency Access Point Building

With reference to the latest information, modification of Tai Kong Po Emergency Access Point Building was proposed. The Environmental Review conducted reveals that no significant adverse impact due to the slight increase in footprint size. Please refer to Appendix K for the details.

9. CONCLUSIONS

The Report presents the results of EM&A works and the impact monitoring for the construction works of the XRL project undertaken during the period of 1 March 2011 to 31 March 2011. The major construction activities in the reporting period included foundation works in the West Kowloon Works Areas, Nam Cheong, Kwai Chung, Shing Mun, Shek Yam, Pat Heung, Tai Kong Po, Ngau Tam Mei, Mai Po Works Area and Barging Points.

Impact monitoring for air quality and noise were conducted in accordance with the EM&A Manual in the reporting period. Exceedances of Limit Level in noise monitoring were recorded at HKIVE Haking Wong Waterfront Annex (CN 23), Ying Wah College (CN 26), Yaumati Catholic Primary School (CH29), The Waterfront (CN 32) and The Arch (CN 33). There were four Action Level exceedances in noise monitoring in the reporting month. Exceedances of 24-hour TSP Action Level were recorded at Kong Tai Road Village House (AM 3), DD110 LOT 482, Wang Toi Shan (AM 4), Leung Uk Tsuen Squats (AM 5), Tse Uk Tsuen (AM7), No. 306, Sheung Tsuen San Tsuen Village House (AM8) and Waterfront (AM 16) in the reporting month. There was no exceedance of 24-hour TSP Limit Level. Dust source was identified and the contractor improved mitigation measures accordingly to minimize the dust impact. No environmental notification of summon and prosecution was received in the reporting period.

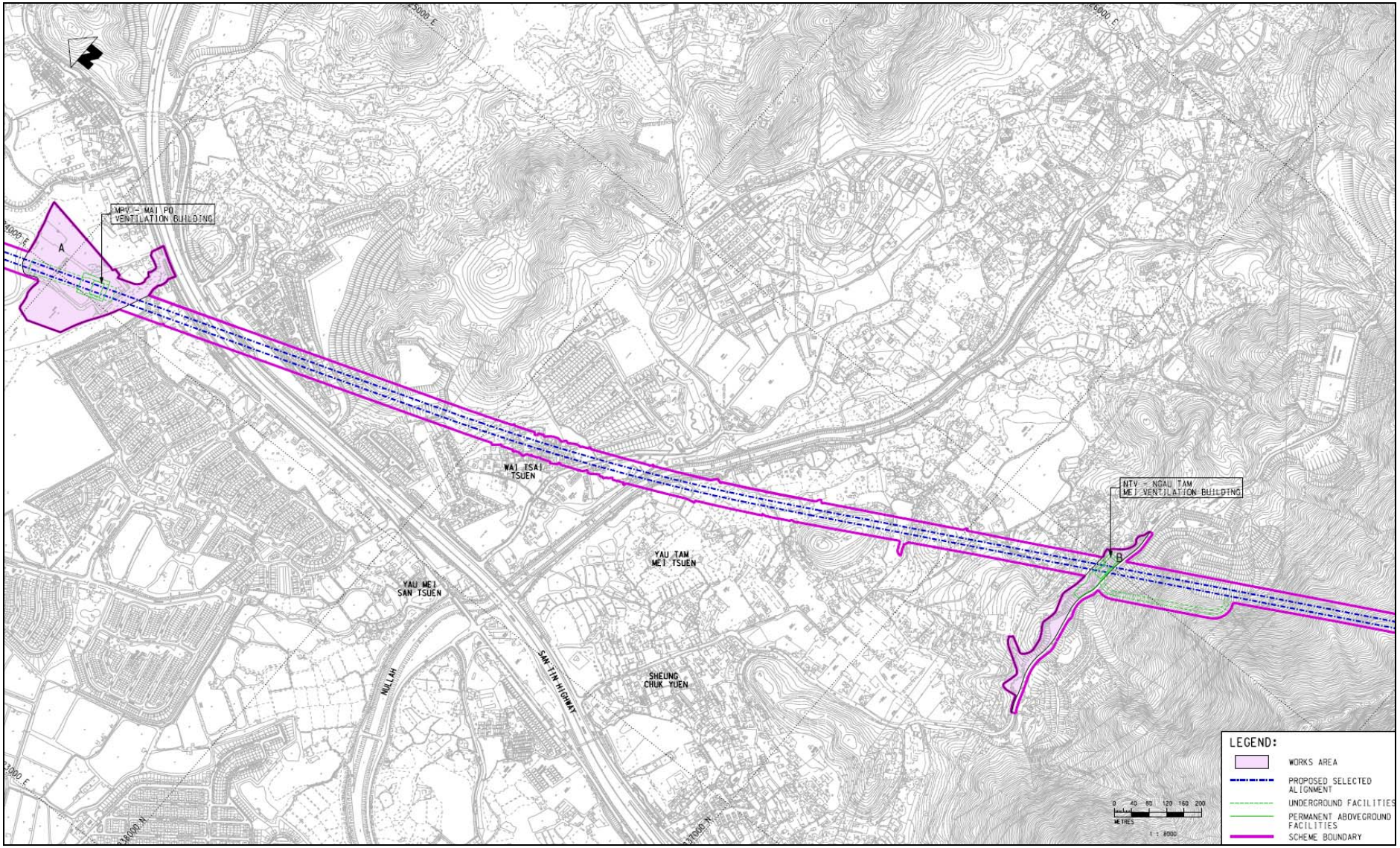
Eleven environmental complaints were received in the reporting period. The environmental complaints received were related to construction dust from construction site near Man Wui Street; construction noise from Nam Cheong Ventilation Building works area; construction noise from works area near Chui Yu Road and Sham Mong Road; construction dust from works area near Chui Yu Road and Nam Cheong Park; blasting noise generated from Shek Yam Works Area; construction dust and noise from construction at Tsat Sing Kong; muddy road surface and dust impact from Mai Po Ventilation Building Works Area. The complaints had been handled in accordance with the procedures stipulated in the EM&A Manual. Investigations were carried out in accordance with the EM&A Manual.

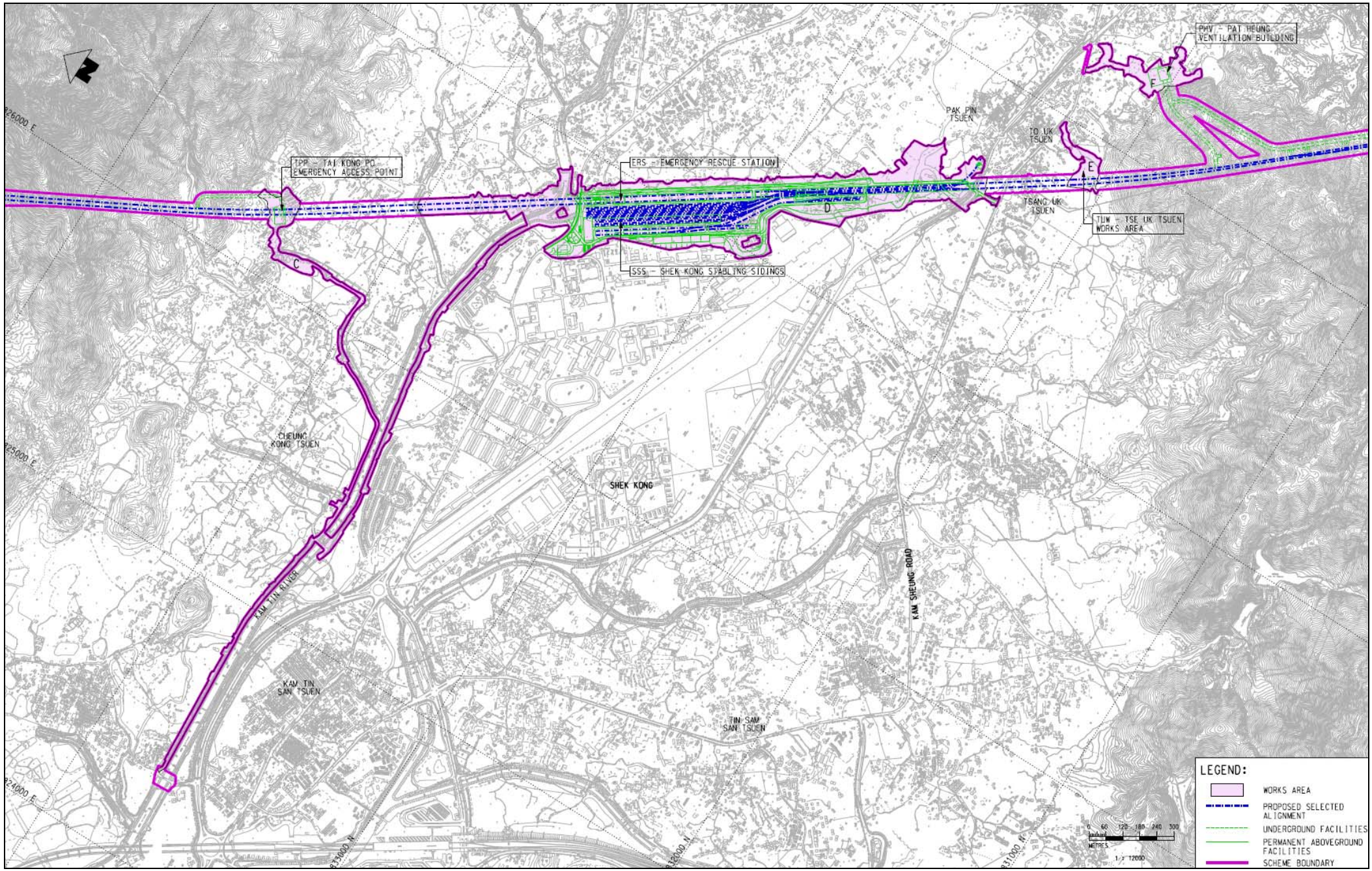
Site inspections were conducted regularly to monitor proper implementation of environmental pollution control and mitigation measures for the Project. No non-compliance to the environmental requirements was identified in the reporting period.

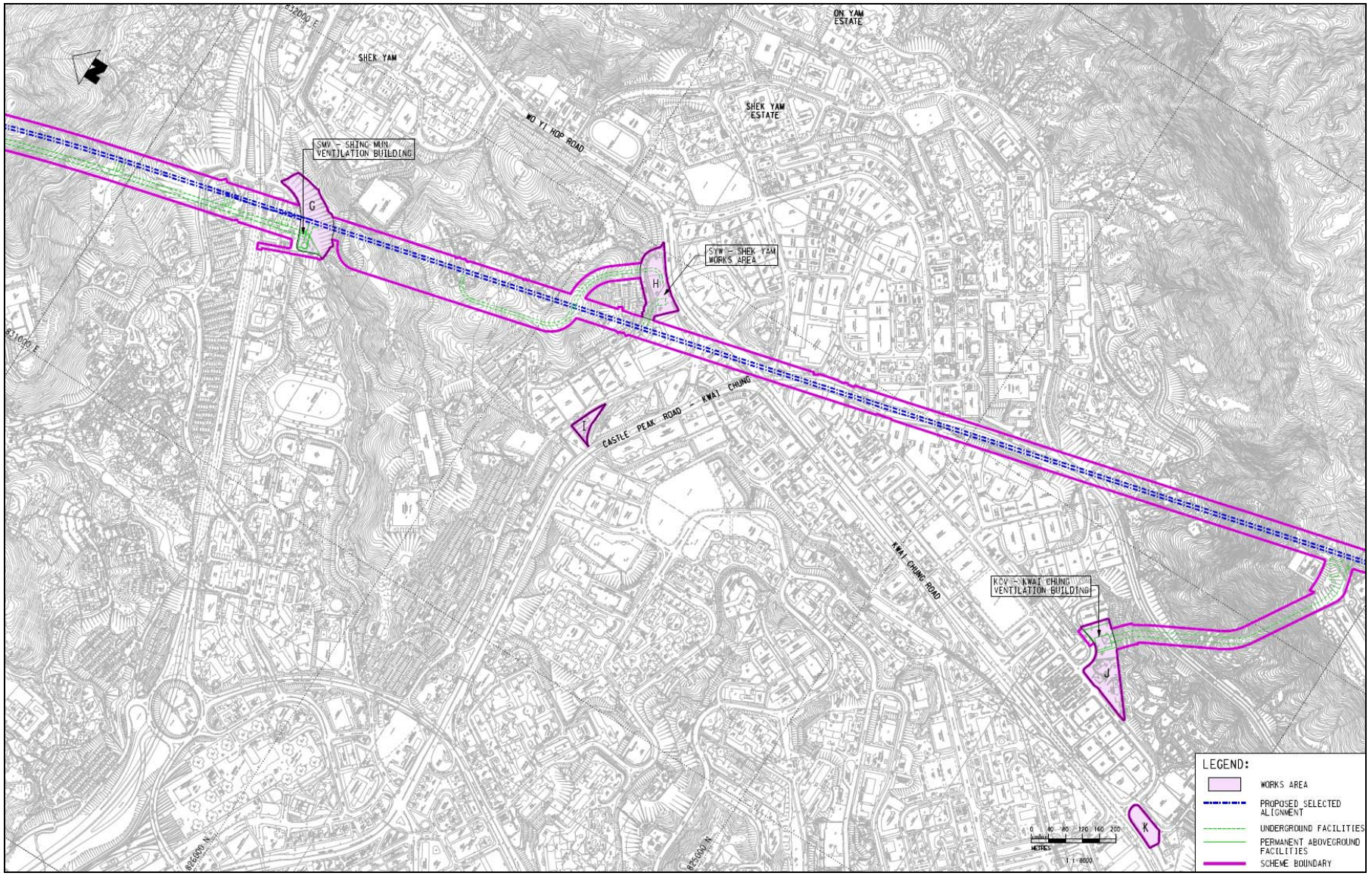
In the reporting period, ground treatment work was proposed by Contractor at Hoi Wang Road. Furthermore, modification of Tai Kong Po Emergency Access Point Building was proposed. Environmental Reviews were conducted which revealed no significant adverse environmental impact due to the proposed changes. It is concluded from the environmental monitoring and audit works for the XRL Project that the construction works were undertaken in an appropriately environmentally sensitive manner in the reporting period. The environmental protection and pollution control measures provided by the contractors were generally acceptable apart from some irregularities which were responded by the respective civil works contractors. The ET would continue the implementation of the environmental monitoring and audit programme in accordance to the EM&A Manual and to a level consistent with MTRCL's Corporate Sustainability Policy.

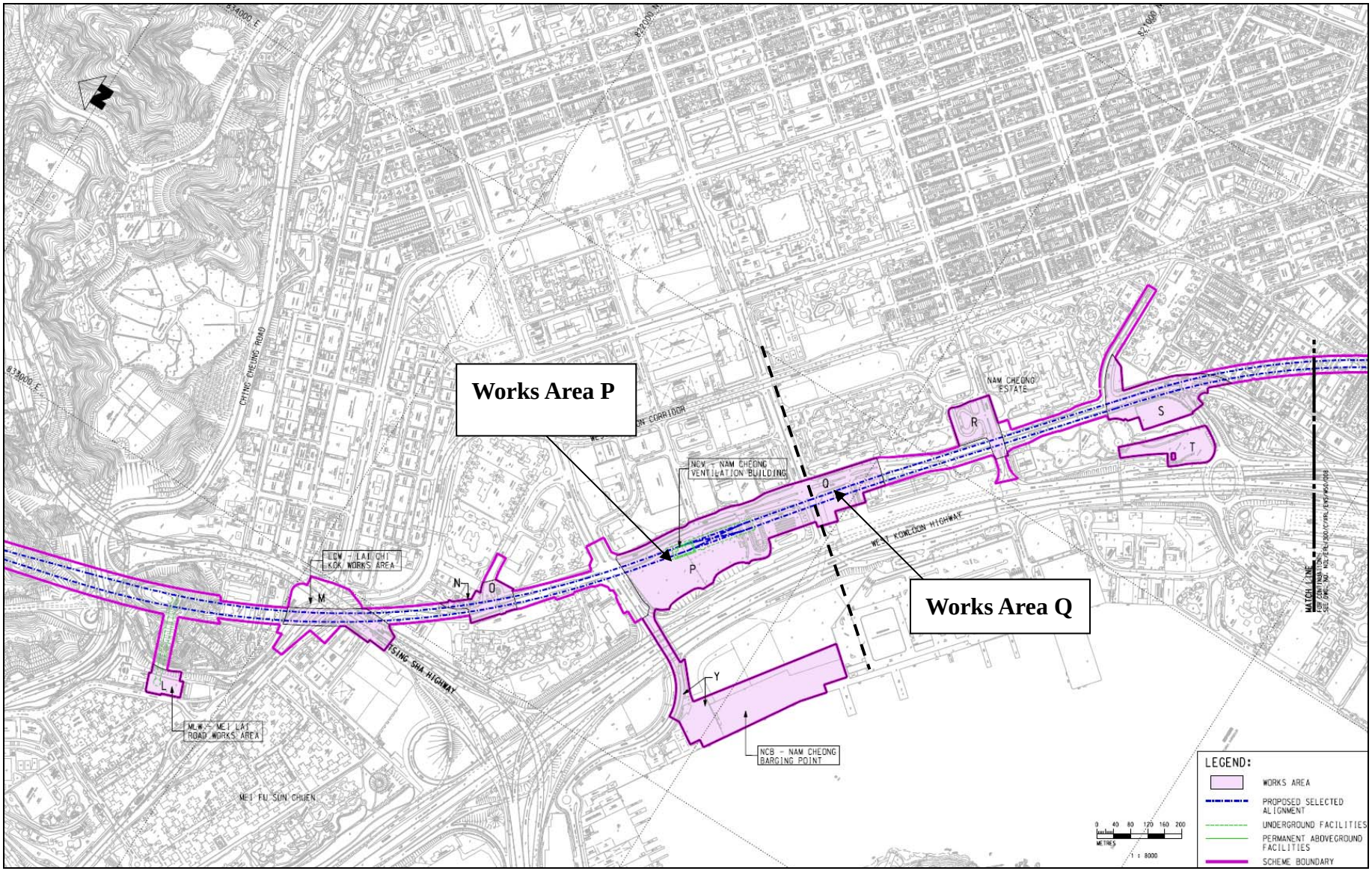
Appendix A

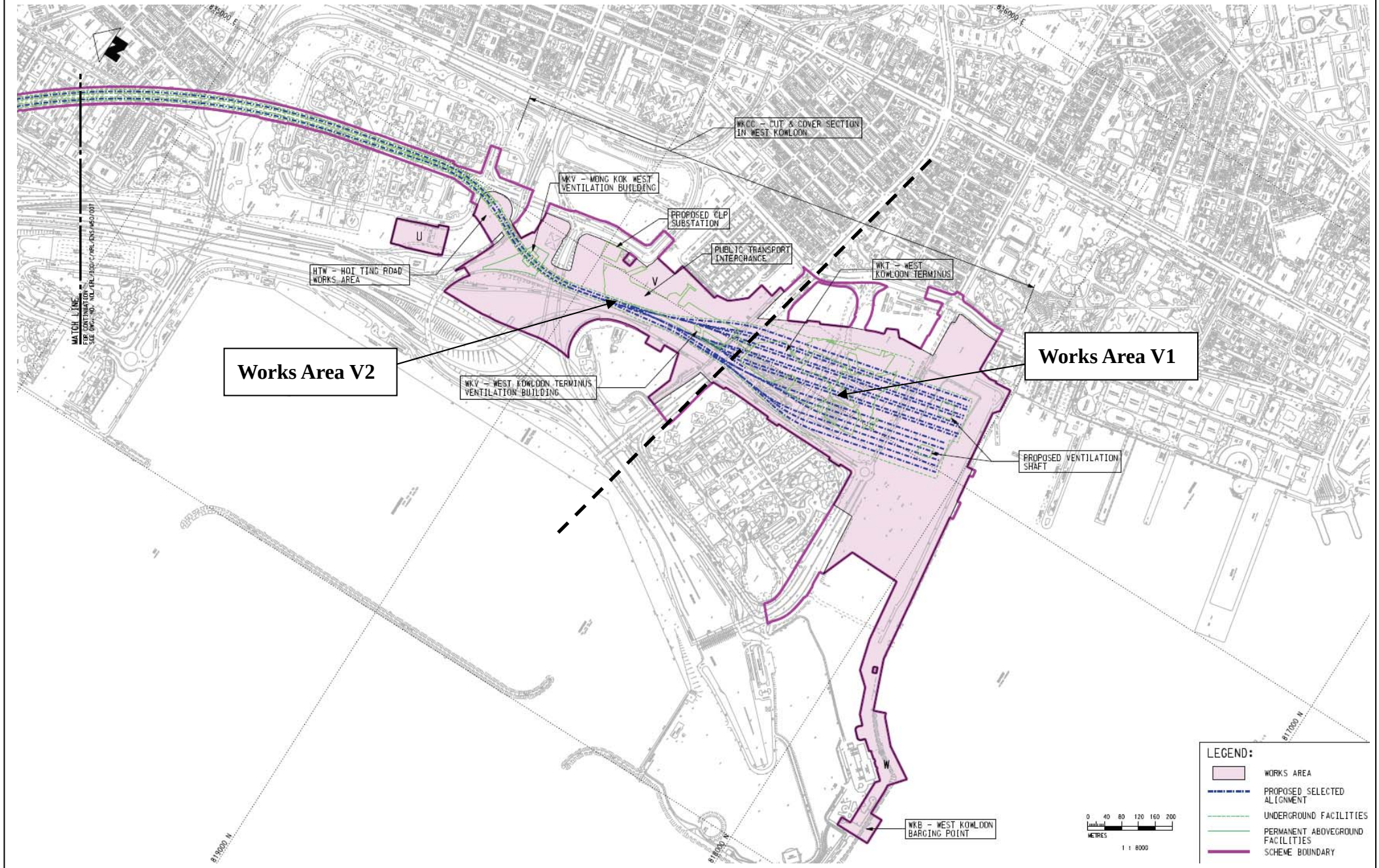
Works Area

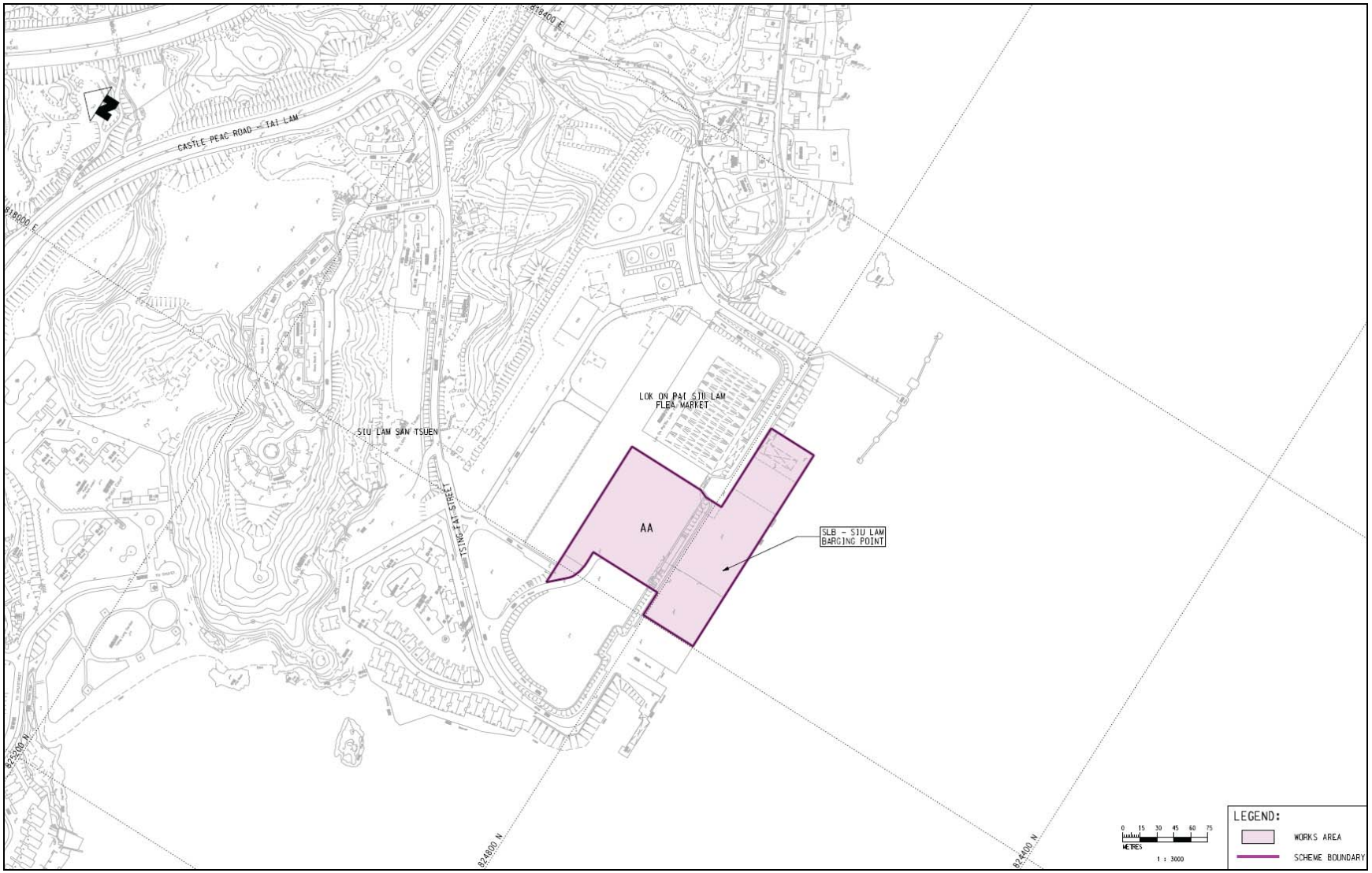

MPV - MAI PO VENTILATION BUILDING
A
NTV - NGAU TAM MEI VENTILATION BUILDING
B
WAI TSAI TSUEN
YAU TAM MEI TSUEN
YAU MEI SAN TSUEN
SHEUNG CHUK YUEN
NULLAH
SAN TIN HIGHWAY
LEGEND:
WORKS AREA
PROPOSED SELECTED ALIGNMENT
UNDERGROUND FACILITIES
PERMANENT ABOVEGROUND FACILITIES
SCHEME BOUNDARY
METRES
1 : 8000

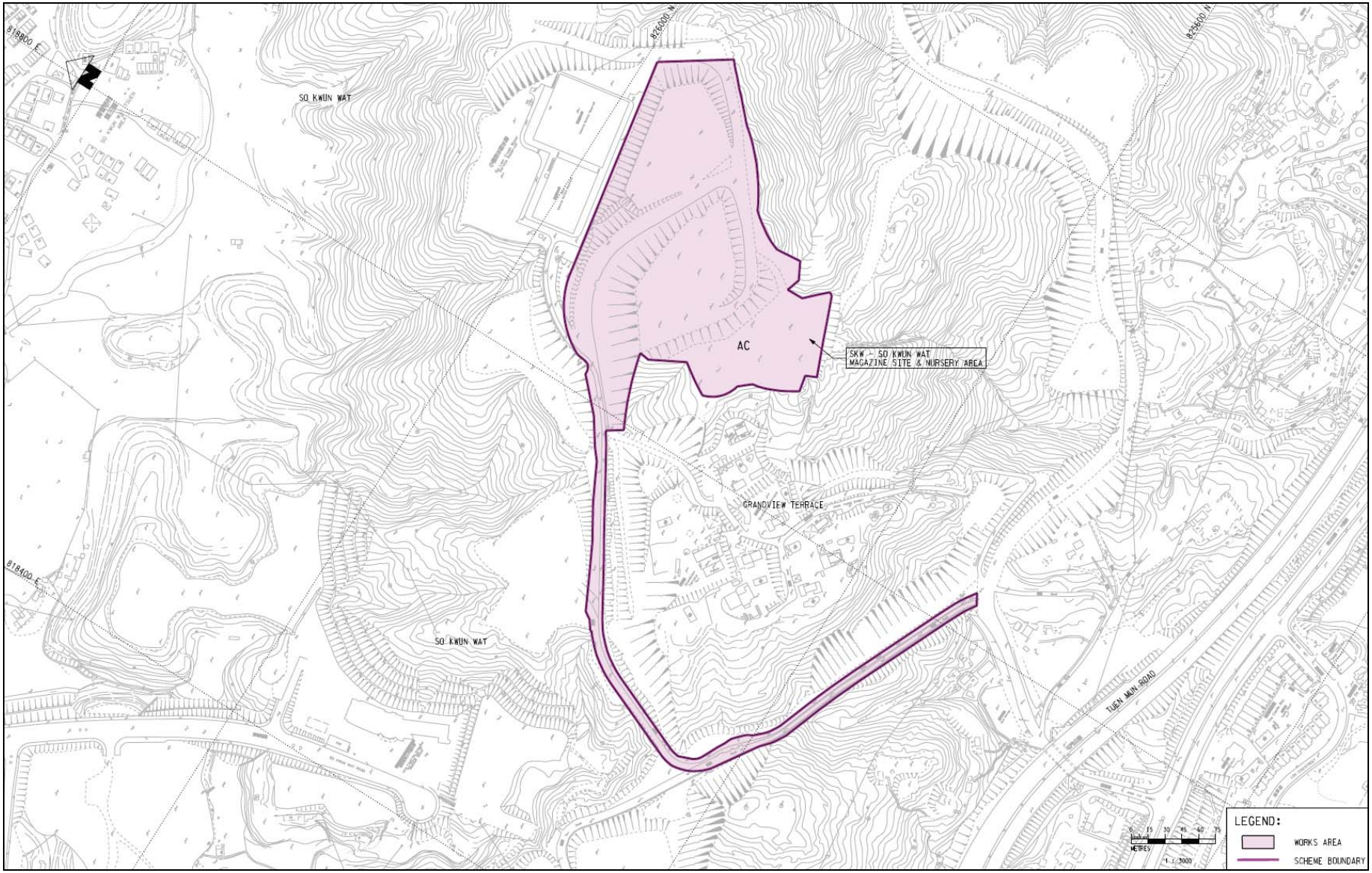

PHV – PAT HEUNG VENTILATION BUILDING
PAK PIN TSUEN
TO UK TSUEN
TSANG UK TSUEN
TUW – TSE UK TSUEN WORKS AREA
TPP – TAI KONG PO EMERGENCY ACCESS POINT
ERS – EMERGENCY RESCUE STATION
SSS – SHEK KONG STABLING SIDINGS
CHEUNG KONG TSUEN
SHEK KONG
KAM TIN RIVER
KAM SHEUNG ROAD
KAU TIN SAN TSUEN
TIN SAM SAN TSUEN
C
D
E
F
826000 E
825000 E
824000 E
833000 N
832000 N
831000 N
0 60 120 180 240 300
METRES
1 : 12000
LEGEND:
WORKS AREA
PROPOSED SELECTED ALIGNMENT
UNDERGROUND FACILITIES
PERMANENT ABOVEGROUND FACILITIES
SCHEME BOUNDARY

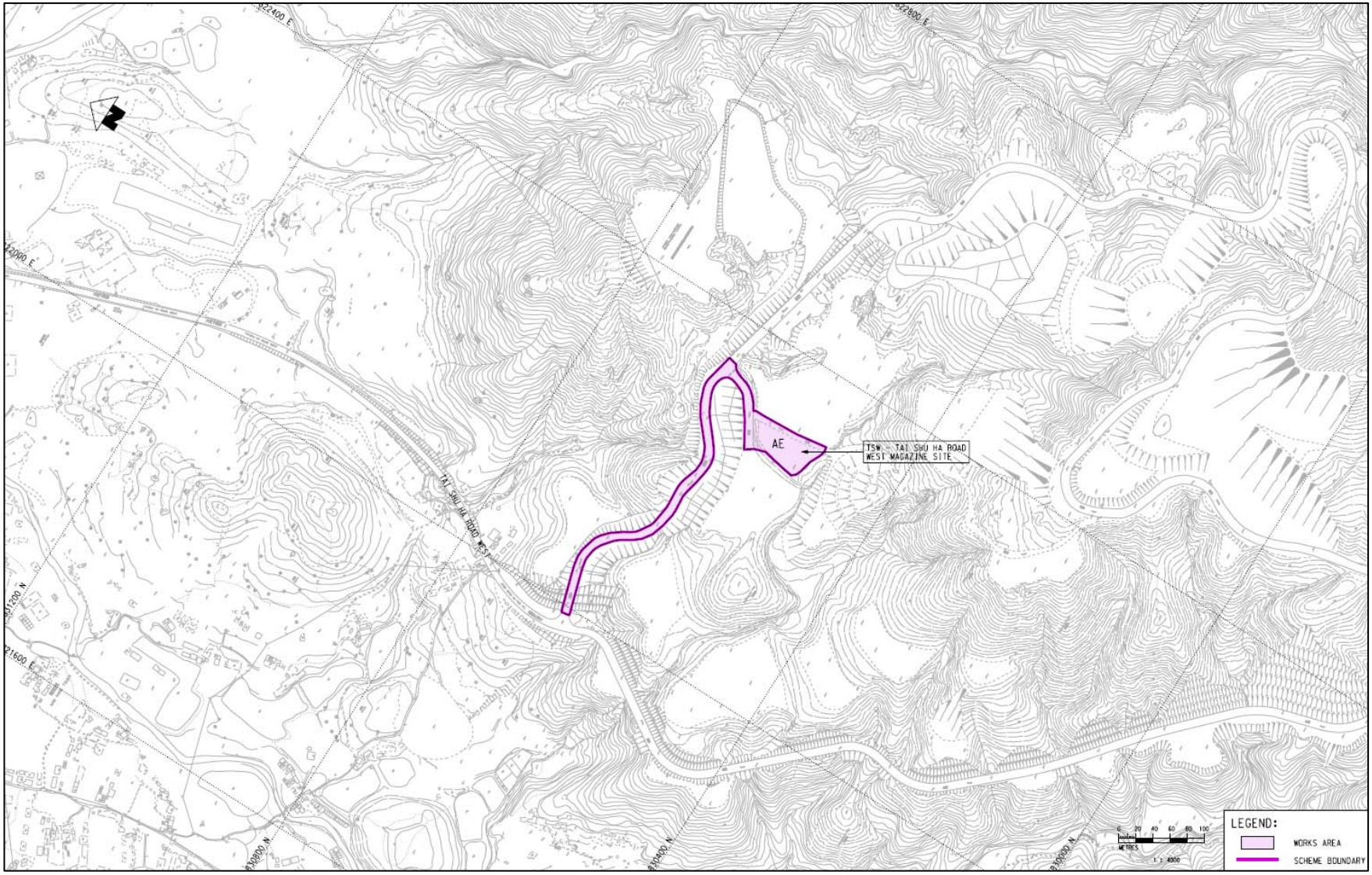

SHEK YAM
ON YAM ESTATE
SHEK YAM ESTATE
WO YI HOP ROAD
SMV - SHING MUN VENTILATION BUILDING
SYW - SHEK YAM WORKS AREA
CASTLE PEAK ROAD - KWAI CHUNG
KWAI CHUNG ROAD
KCV - KWAI CHUNG VENTILATION BUILDING
G
H
I
J
K
831000 E
832000 E
826000 N
825000 N
0 40 80 120 160 200
METRES
1 : 8000
LEGEND:
WORKS AREA
PROPOSED SELECTED ALIGNMENT
UNDERGROUND FACILITIES
PERMANENT ABOVEGROUND FACILITIES
SCHEME BOUNDARY


Works Area P
Works Area Q
CHING CHEUNG ROAD
NAM CHEONG ESTATE
NCV - NAM CHEONG VENTILATION BUILDING
WEST KOWLOON HIGHWAY
LCW - LAI CHI KOK WORKS AREA
TSING SHA HIGHWAY
MLW - MEI LAI ROAD WORKS AREA
NCB - NAM CHEONG BARGING POINT
MEI FU SUN CHUEN
MATCH LINE
LEGEND:
WORKS AREA
PROPOSED SELECTED ALIGNMENT
UNDERGROUND FACILITIES
PERMANENT ABOVEGROUND FACILITIES
SCHEME BOUNDARY

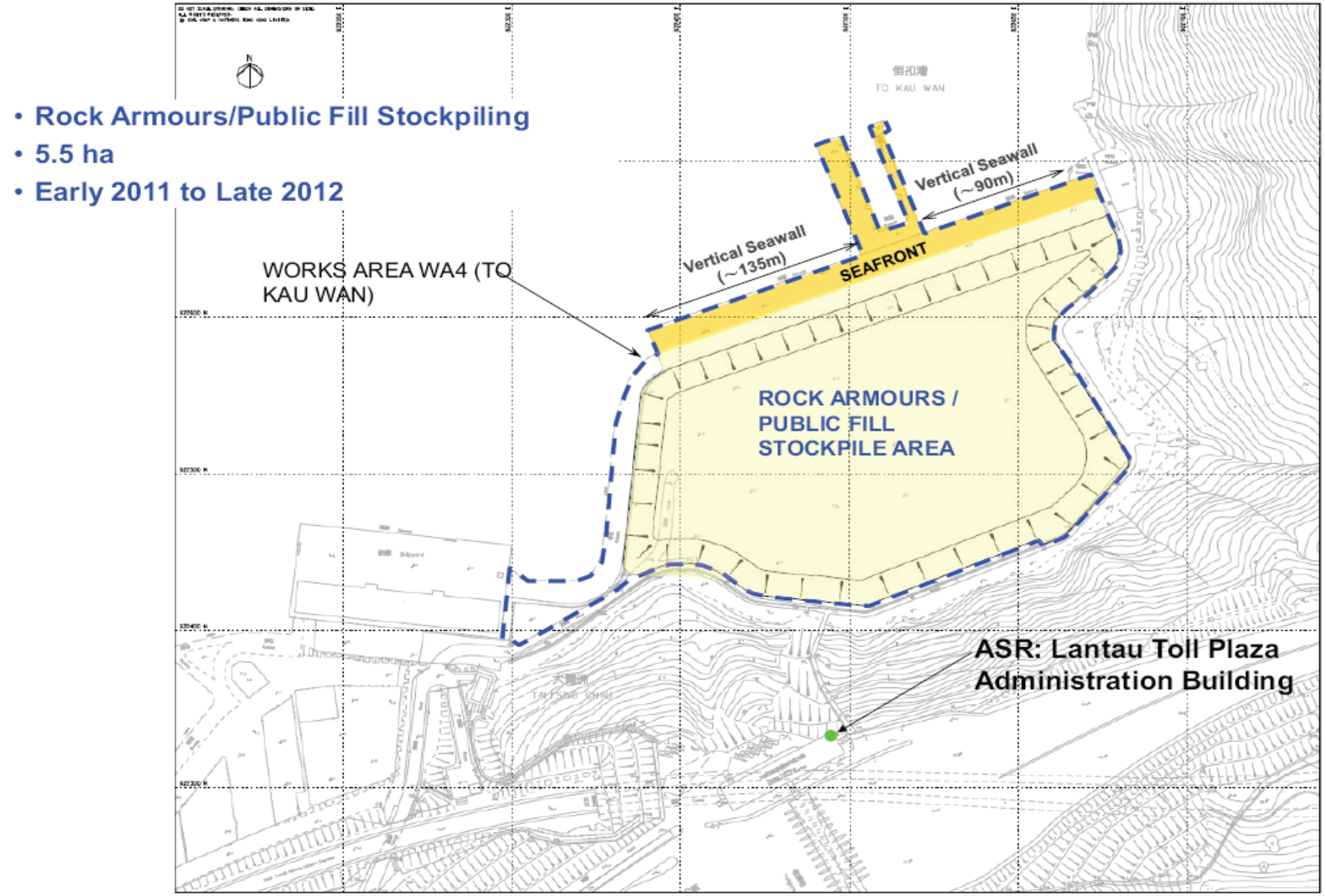

WKCC - CUT & COVER SECTION IN WEST KOWLOON
WKV - MONG KOK WEST VENTILATION BUILDING
PROPOSED CLP SUBSTATION
PUBLIC TRANSPORT INTERCHANGE
WKT - WEST KOWLOON TERMINUS
HTW - HOI TING ROAD WORKS AREA
MATCH LINE FOR CONTINUATION SEE DWG. NO. MEL/800/CIVIL/EKS/WSO/001
Works Area V2
Works Area V1
WKV - WEST KOWLOON TERMINUS VENTILATION BUILDING
PROPOSED VENTILATION SHAFT
WKB - WEST KOWLOON BARGING POINT
U
V
W
836000 E
818000 N
LEGEND:
WORKS AREA
PROPOSED SELECTED ALIGNMENT
UNDERGROUND FACILITIES
PERMANENT ABOVEGROUND FACILITIES
SCHEME BOUNDARY
0 40 80 120 160 200
METRES
1 : 8000


818400 E
CASTLE PEAK ROAD - TAI LAM
818000 E
LOK ON PAI SIU LAM
FLEA MARKET
SIU LAM SAN TSUEN
TSING FAT STREET
AA
SLB - SIU LAM
BARGING POINT
825000 N
824800 N
824400 N
0 15 30 45 60 75
METRES
1 : 3000
LEGEND:
WORKS AREA
SCHEME BOUNDARY


818800 E
818400 E
836600 N
836200 N
SO KWUN WAT
SO KWUN WAT
SO KWUN WAT
AC
SKW - SO KWUN WAT
MAGAZINE SITE & NURSERY AREA
GRANDVIEW TERRACE
TUEN MUN ROAD
0 15 30 45 60 75
METRES
1 : 3000
LEGEND:
WORKS AREA
SCHEME BOUNDARY


822400 E
822800 E
821200 E
821600 E
810800 N
810400 N
810000 N
AE
TSW - TAI SHU HA ROAD WEST MAGAZINE SITE
TAI SHU HA ROAD WEST
0 20 40 60 80 100
METRES
1 : 4000
LEGEND:
WORKS AREA
SCHEME BOUNDARY


821600 E
822000 E
822400 E
22400 N
22000 N
TSING CHAU WAN
TSING CHAU WAN
AG
TCB - TSING CHAU TSAI BARGING POINT
TOLL PLAZA
AIRPORT EXPRESS
NORTH LANTAU HIGHWAY
TSING CHAU TSAI
0 15 30 45 60 75
LEGEND:



MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link Environmental Review Report – Stock Piling Facility in To Kau Wan	SCALE	N.T.S.	DATE	Dec-10
	Location Plan for To Kau Wan Stockpiling Area	DRAWING NO.	Figure 2.1		

Appendix B

Project Management Organization and Contacts of Key Personnel

Title	Name	Telephone
Engineer's Representative		
Construction Manager (802, 805, 820 & 821)	Mr. Bill Clowes	3605 0056
Construction Manager (803 A/B)	Mr. Samuel Lo	3575 5641
Construction Manager (803 D & 810 B)	Mr. KS Lim	3575 5723
Construction Manager (811 A & B)	Mr. Albert Lam	3575 1357
Construction Manager (822, 823 A & 823B)	Mr. Andy Fok	2208 3732
Construction Manager (824 and 825)	Mr. Ivan Chau	2208 3334
Independent Environmental Checker		
Divisional Manager	Dr. Anne Kerr	2828 5793
Environmental Team		
Environmental Team Leader	Mr. Glenn Frommer	2688 1552
Deputy Environmental Team Leader	Mr. Richard Kwan	2688 1179
Contractor		
Contract 802 Contractor		
Project Manager	Frankie Lam	6021 2602
Project Quality and Environmental Manager	Ms. Jasmine Tso	2360 0719
Contract 803A Contractor		
Project Manager	Dick YIU	9426 4657
Site IMS Manager	Nick LAU	9216 9245
Contract 803B Contractor		
Project Manager	Fung Lai Man	9252 4204
Environmental Officer	Mr. C.K. Yau	9203 6046
Contract 803D Contractor		
Project Manager	Dick YIU	9426 4657

Title	Name	Telephone
Site IMS Manager	Nick LAU	9216 9245
Contract 805		
Project Manager	Hobby LAU	9828 0638
Environmental Engineer / Officer	Federick WONG	6330 0519
Contract 810B Contractor		
Project Director	Mr. Smollett LEE	6629 4441
Environmental Manger	Mr. Calvin SZE	9205 9277
Contract 811A Contractor		
Project Manager	Bob Aylmer	2561 8072
Quality, Safety and Environmental Manager	Keith Gordon	3994 8345
Environmental Officer	Kevin Wong	2164 2832
Contract 811B Contractor		
Project Manager	Chris Williams	9669 2665
Construction Manager	Anthony Zervaas	6011 8178
Environmental Manager	Brian Kam	9456 9541
Environmental Officer	Sammie Chan	6407 3833
Contract 820 & 821 Contractor		
Project Director	Alain Hervio	2215 6600/ 6112 9197
Senior QSE Manager	Y. T. So	2215 6631/ 9307 8728
QSE Officer (Environmental)	Chris Siu-hong Chan	2728 1120
Contract 822 Contractor		
Environmental & Quality Manager	Mr. Brian Pickering	6323 5753

Title	Name	Telephone
Environmental Manager / Officer	Mr. David Hung	9765 6151
Environmental Coordinator	Ms. Jane Huang	6491 4620
Contract 823A & B Contractor		
Project Manager	Philip Davies	2411 7600
Environmental Officer	Wendy Ng	2411 7608
Contract 824 Contractor		
Works Manager	Ian Sweeney	9759 8192
Environmental Officer	Patrick Sin	6022 8646
Contract 825 Contractor		
Project Manager	Mr. Nakayama	2482 8101
Environmental Manager	Mr. Kenneth Lau	9723 4718

Appendix C

Implementation Status

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
Ecological Impact (Detailed design Phase / Pre-construction Phase)						
S3.398	- Prior to commencement of channel works, an ecological habitat management plan should be prepared to provide the detailed specifications for the habitats and ecological functions to be provided, and control of colonization of invasive plant species at the mitigation stream habitats and define the long-term management and ecological monitoring and audit requirements for these habitats.	To mitigate the avoidable loss of watercourse habitat	MTR	SSS	Detailed design phase / Prior to commencement of channel works	Ecological Habitat Management Plan (EHMP) formulated and submitted to EPD
S3.388 - S3.397	- The constructed channel in the SSS site should include open channel with ecologically friendly stream feature to mitigate the direct impact due to the loss of a watercourse habitat in Shek Kong.	To mitigate the avoidable loss of watercourse habitat	MTR / DDC	SSS	Detailed design phase	AFCD's comment has been sought during formulation of the EHMP

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.410	- The implementation details of the impact monitoring programme should be described in ecological monitoring plan for EPD approval before commencement of construction activities.	To outline details of ecological impact monitoring	MTR	MPV, TPP, SSS / ERS, PHV and TUW	Before commencement of construction activities	Implemented
S3.327 & S3.412	- A monitoring and emergency response plan (to be prepared by the Contractor), in relation to potential impacts due to groundwater drawdown, will form part of the EM&A requirement in the EM&A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area. The plan should include, but not be limited to, details of monitoring locations and programme, a mechanism to monitor the implication from the works to the groundwater system and fish pond, action levels and emergency responses such as immediate action, remedial action and investigation.	To detect potential impacts due to groundwater drawdown	Contractor	MPV	Before commencement of the tunnelling and MPV construction	AFCD's comment has been sought during formulation of Plan

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.413	- A monitoring and emergency response plan, in relation to impacts due to noise/vibration, should form part of the EM&A requirement in the EM&A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area.	To detect and monitor noise / vibration impacts	Contractor	MPV	Before commencement of bore tunnelling and MPV construction	Implemented
Ecological Impact (Construction Phase)						
S3.325 - S3.326	- Implementation of precautionary measures during tunnelling works.	To avoid potential hydrogeological impacts	Contractor	All works areas	Construction phase	To be implemented as per construction programme
S3.409 to S3.410	- Ecological impact monitoring focusing on habitats and species of conservation interest should be conducted during the construction phase at the MPV, TPP, SSS / ERS, PHV, and TUW sites where a	To monitor potential indirect construction impacts to wildlife	MTR	MPV, TPP, SSS / ERS, PHV, and TUW	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	number of avifauna of conservation interest (e.g. overwintering bird, Greater Painted-snipe) and areas of conservation interest (e.g. country parks, conservation areas, and wetlands) were recorded. - Avifaunal communities should be surveyed quantitatively along transects. Birds heard or seen along the transects should be identified to species and counted. The nature of construction works within works area conducting during each impact monitoring visit should also be recorded. The quantitative monitoring results should be compared to pre-construction condition. The impact monitoring results should be undertaken by qualified ecologist(s) with relevant working experience. - Should any unpredicted indirect ecological impacts arising from the proposed Project be detected, remedial measures should be developed and implemented by the Contractor.		MTR Contractor			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.327 & S3.412	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrological impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	Refer to Item for S3.327 & S3.412.
S3.413	- Implementation of monitoring and emergency response plan on noise and vibration.	To detect and minimize noise / vibration impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	Implemented
S3.364 -S3.369	- Use of quiet construction plant and temporary noise barriers.	To minimise impacts to surrounding habitats	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	- Access to the ventilation building sites should follow existing access roads, such as the maintenance access along the existing drainage channels. - Site hoarding of about 2.4 m high should be erected around the works area of access roads along drainage channels in the TPP and SSS / ERS sites. - Gate and fences should be installed along the construction accesses that are adjacent to public areas. - Gates and hoardings should be provided at the entrances/exits and along the boundary of the works areas respectively to prevent any trespassers from encroaching or will fully disturbing any wild animals and their habitats within the works areas. - A trip-ticket system should be adopted to monitor the disposal of construction and demolition materials. CCTV and warning signs should be provided at the					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	entrance of the proposed temporary and permanent vehicular access.					
3.370 -3.371 and 3.373	- Vegetation located within the works areas should be preserved as far as practicable. - To avoid soil compaction, heavy machinery should not be used in close proximity to vegetation. Soils that become compacted through the activities of the development should be loosened to an appropriate depth to allow seed germination. - All temporarily affected habitats should be reinstated after the completion of works. - Placement of equipment or stockpiles should be confined to designated works areas. Access routes should be confined on existing disturbed land, where practicable.	To minimize impacts to vegetation	MTR / Contractor	All works areas	Construction phase	Implemented
	- Detailed vegetation survey should be conducted in	To minimize impacts to	MTR /	TSW	Prior to	Vegetation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	TSW site prior to commencement of site clearance.	vegetation	Contractor		commencement of site clearance	Survey Report formulated and deposited to EPD
	- To mitigate the loss of the vegetation and habitats, planting of native species should be provided in the areas affected by the Project in TSW site, and other works area, where practicable.	To minimize impacts to vegetation	MTR / Contractor	TSW and all other works areas	Construction phase	To be implemented as per construction programme
S3.372	- The affected individuals of Incense Tree within the NTV works area should be transplanted to nearby suitable habitats prior to the commencement of site clearance at NTV works area as far as practicable. - A detailed vegetation survey covering the affected habitat at NTV works area should be conducted by a suitably qualified botanist / ecologist to identify and record the affected individuals in order to provide	To minimize impacts to vegetation	MTR / Contractor	NTV	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	details for the transplantation scheme prior to the commencement of site clearance. Feasibility and suitability of transplanting the affected individuals would be studied and suitable receptor sites would be identified. The transplantation proposal for the affected individuals should be prepared as necessary and transplantation should be supervised by a suitably qualified ecologist / horticulturist.					
S3.374 - S3.377	- Site hoarding of 2.4 m high should be set up along the boundary of the works areas as far as practicable.	To minimize disturbance to wildlife	Contractor	All works areas	Construction phase	Implemented
	- The erection of hoarding (2.4 m) along KT5 in the area with high Greater Painted-snipe occurrence (e.g. the proposed access road next to KT5) should avoid their breeding season, prior to construction activities in the area.			KT5 (near TPP)	Prior to the construction of access road	Implemented
	- The use of noisy construction equipment such as			KT5 (near TPP)	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	hydraulic breakers should be avoided at the area with high painted-snipe occurrence (e.g. the proposed access road next to KT5) during their breeding season as far as practicable.					
	- Hoardings of 2.4 m height should be put in place before commencement of construction activities. Hoarding at the section along the northern boundary of the MPV works area should be installed first. The duration of hoarding erection should be kept as brief as practicable. - Upon the erection of site hoarding, all construction activities should be conducted within the fenced area.			MPV	Right after possession of site	Implemented
	- Major construction site lighting should point inward and downward. Unnecessary lighting should be turned off outside working hours of the construction sites.			All works area	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.378 - S3.380	- Excavation works carried out within waterbodies should be carried out in dry season where practicable. - Excavation works within the watercourse / drainage channel should be restricted when possible to an enclosed dry section of the watercourse / drainage channel, with containment measures such as bunds and barriers used within the watercourse / drainage channel. - Site runoff should be directed towards regularly cleaned and maintained silt traps and oil / grease separators. The silt and oil / grease separators should be appropriately designed for the local drainage and ground conditions. Tightly sealed closed grab excavators should be deployed where material to be handled is wet. - The flow of the watercourse and drainage channel located with the Project Area should be maintained	To minimise pollution to waterbodies	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	throughout the construction phase.					
Terrestrial Ecological Impact (Post-construction / Operation Phase)						
S3.327 & S3.412	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Post-construction phase	To be implemented as per construction programme
S3.381	- The affected agricultural land should be restored to a condition suitable for agricultural use before handing over to landowners / operators.	To minimize impacts to surrounding habitats	MTR / Contractor	All temporarily occupied agricultural land	Operation phase	To be implemented as per construction programme
S3.382 – S3.384	- Vegetation control in the constructed channels should be implemented to prevent the excessive growth of vegetation that would impede the drainage capacity of the channel. To minimise sedimentation, de-silting should be limited to the dry season	To minimise impacts to constructed channels	MTR	All constructed channels in SSS	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	(November to March). The natural stream bed substrate should not be removed from the channel during de-silting works. - For maintenance de-silting, temporary barrier walls should be used to provide a dewatered zone for de-silting works. Waste material produced during de-silting should be disposed of in a timely and appropriate manner.					
S3.385 & S3.387	- Large areas of reflective material (including glass) should not be used on the outer surfaces of the buildings. - All the major lighting sources should point inward and downward to minimise glare disturbance to wildlife. The intensity of light should also be controlled to the lowest possible level.	To minimise impacts to wildlife	MTR / DDC	All ventilation buildings in northern section and SSS	Detailed design and Operation phases	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.411	- Implementation of ecological habitat management plan. - Ecological monitoring of the mitigation stream habitats according to ecological habitat management plan.	To monitor the wildlife use of the mitigation stream habitat	MTR	Mitigation stream habitat in SSS / ERS	Operation phase	To be implemented as per construction programme
Marine Ecological Impact (Construction Phase)						
Appendix3.6 (S1.102)	- The use of high-speed vessels should also be avoided during the construction and operation of the proposed barging point.	To minimise the indirect impact to Chinese White Dolphin habitat	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix3.6 (S1.103)	- No dumping of rubbish, oil or chemicals would be allowed.	To minimise the pollution to marine habitats	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix3.6	- Deployment of silt curtains around the closed grab dredgers to minimize the suspended sediment impact	To minimise the impact to	Contractor	LKB	Construction	To be implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
(S1.104)	due to dredging activities in dredging region. - To minimize impact on the gorgonians along the coastline near the dredging area, double silt curtains should be deployed around the works area.	subtidal habitats			phase	as per construction programme
Appendix3.6 (S1.106)	- The number of work vessels and small crafts should be minimized. Dredging should be carried out continuously without unnecessary break to prevent unpredictable or sudden noise outbursts at random intervals.	To minimise disturbance impact on Chinese White Dolphin	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix3.7 (S1.83)	- Mitigation measures to control water quality impacts proposed under Section 11 should be adopted.	To minimise indirect impact to intertidal and subtidal flora and fauna	Contractor	WKT	Construction phase	Implemented
Appendix3.6 (S1.105)	- Engines of vessels moored at the barging point would be turned off to minimize unnecessary underwater noise.	To minimise disturbance impact on Chinese White Dolphin	Contractor	LKB	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
Pond Fisheries Impact (Pre-construction Phase)						
S4.51	- A monitoring and emergency response plan, in relation to potential impacts due to groundwater drawdown, will form part of the EM&A requirement in the EM&A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area. The plan should include, but not be limited to, details of monitoring locations and programme, a mechanism to monitor the implication from the works to the groundwater system and fish ponds including their water levels, action levels and emergency responses such as immediate action, remedial action and investigation.	To detect and minimize potential hydrological impacts	Contractor	MPV	Pre-construction phase (Before commencement of the tunnelling and MPV construction)	AFCD's comment has been sought during formulation of Plan
S4.52	- A monitoring and emergency response plan, in relation to impacts due to noise/vibration, should form part of the EM&A requirement in the EM&A	To detect and monitor noise / vibration impacts	Contractor	MPV	Pre-construction phase (Before commencement	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area.				of bore tunnelling and MPV construction)	
S4.45	- Consultation should be conducted with fish operators in Mai Po before tunnelling starts. The method of construction, potential impact and mitigation measures should be fully explained to the operators at the meeting.	Engagement of stakeholders	Contractor / MTR	MPV	Pre-construction phase (Before commencement of tunneling works)	To be implemented as per construction programme
Pond Fisheries Impact (Construction Phase)						
S4.51	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
					Shaft)	
S4.52	- Implementation of the monitoring and emergency response plan on noise and vibration.	To detect and minimize noise / vibration impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	Implemented
S4.40	- Good site practices and proper dust and water quality control measures should be implemented. These include site confinement with fencing/hoarding erection at the perimeter of the works area, stockpile covering by impervious sheeting to avoid spread of construction dust, and proper handling, storage and disposal of chemical waste to avoid contamination of the existing water system, etc.	To minimize the indirect off-site impacts on the adjacent fishponds	Contractor	MPV	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S4.44	Implementation of good site practices during the construction phase: ▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; ▪ Silencers or mufflers on construction equipment should be utilized and properly maintained during the construction program; ▪ Machines and plant (such as trucks) 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, wherever possible, be orientated so that the noise is directed away from the nearby fishponds; ▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities; ▪ Use of movable barrier for certain powered	To minimize disturbance to fishponds by construction noise	Contractor	MPV	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	mechanical equipment (PME); and ▪ Use of noise enclosure or acoustic shed to cover certain stationary PME.					
Pond Fisheries Impact (Post-construction Phase)						
S4.51	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Post-Construction phase	To be implemented as per construction programme
Marine Fisheries Impact (Construction Phase)						
Appendix4.2 (S1.38)	- Mitigation measures to control water quality impacts proposed under Section 11 should be adopted.	To minimize the indirect impact on fisheries resources	Contractor	LKB and WKT	Construction phase	To be implemented as per construction programme
Airborne Noise Impact (Construction Phase)						
S5.120	The following good site practices should be implemented:	To reduce construction noise impact	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction program; ▪ Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program; ▪ Mobile plant, if any, should be sited as far from noise sensitive receivers (NSRs) as possible; ▪ Machines and plant (such as trucks) 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, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and ▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.					
S5.121-S	The following quiet PME should be used:	To reduce construction	MTR /	Works Areas	Construction	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
5.122 and Table 5.22	▪ Pneumatic breaker (SWL=110dB(A)) ▪ Tracked Excavator Fitted with Hydraulic Breaker (SWL=110dB(A)) ▪ Truck Mixer (SWL=100dB(A)) ▪ Tracked Crane (SWL=101dB(A)) ▪ Dump Truck (SWL=103dB(A)) ▪ Tracked Excavator/Loader (SWL=105dB(A)) ▪ Dozer (SWL=111dB(A)) ▪ Road Roller (SWL=101dB(A))	noise impact	Contractor	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, Y, Z, AA, AC, AE, AF, AG and AH	phase	
S5.123 - S5.124	Movable noise barrier should be used for the following PME where practicable: ▪ Mini backhoe ▪ Breaker, mini-robot mounted ▪ Vibratory poker ▪ Handheld breaker ▪ Excavator	To reduce construction noise impact	MTR / Contractor	Works Areas A, C and D	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ Grab ▪ Tracked Crane					
S5.125	Noise enclosure/acoustic shed should be used for the following PME where practicable: ▪ Air compressor ▪ Concrete pump ▪ Grout pump ▪ Shotcrete pump	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q, S, T, U, V and Z	Construction phase	Implemented
S5.125	Acoustic enclosure should be used for enclosing drilling jumbo as fully as possible.	To reduce construction noise impact	MTR / Contractor	Works Areas B, C, F, H and J	Construction phase	To be implemented as per construction programme
S5.127	Silencer should be used for the ventilation fans.	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, F, H, J, L and P	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
						programme
S5.128	Noise insulating fabric should be applied where practicable to cover the following PME: ▪ Drill rig ▪ Grab and chisel ▪ Oscillator & casings ▪ Piling rig ▪ Piling, large diameter bored, reverse circulation drill ▪ Piling, vibrating hammer	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, G, L, M, N, O, Q, R, S, V	Construction phase	Implemented
S5.130	Use of “Noise Insulating Cover” to cover the mucking out points.	To reduce construction noise impact	MTR / Contractor	Works Area L	Construction phase	To be implemented as per construction programme
S5.131	Use of temporary hoardings along the works boundary.	To reduce construction noise impact	MTR / Contractor	Works Areas B and D	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S5.134-S5.136	Use of saw instead of mini-robot mounted breaker and oscillator pile for removal of superstructures	To reduce construction noise impact	MTR / Contractor	Works Areas N, O and S	Construction phase	Implemented
S5.137	Scheduling of construction works outside school examination periods	To reduce construction noise impact	MTR / Contractor	Works Areas G, J, K, L, N, O, P, Q, Y, U, V and AH	Construction phase	Implemented
S5.193	Airborne construction noise monitoring should be conducted in accordance with EM&A Manual to monitor the airborne noise impact.	To monitor airborne noise impact	MTR / Contractor	Proposed monitoring locations	Construction phase	Implemented
Airborne Noise Impact (Operation Phase)						
S5.113 and Table 5.21	The maximum permissible sound power levels (Max SWLs) for the fixed plant should be complied with during the selection of equipment and mitigation measures.	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	MPV, NTV, PHV, SMV, KCV, NCV, MKV, WKV and WKT	Detailed design and operation phases	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S5.140	Noise barrier should be erected as follow: ▪ A 8m high barrier along the access road on eastern side of SSS; and ▪ 5.5m barrier along western boundary facing Leung Uk Tsuen squats.	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	SSS	Detailed design and operation phases	To be implemented as per construction programme
S5.140	Installation of 13m absorptive panels on both sides and full length of ERS.	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	ERS	Detailed design and operation phases	To be implemented as per construction programme
S5.196	Noise commissioning test is recommended to monitor the ground-borne noise level complying with NCO.	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring locations	Operation phase	To be implemented as per construction programme
Ground-borne Noise Impact (Construction Phase)						
S6.82	Ground-borne construction noise monitoring should be conducted in accordance with EM&A Manual to	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring	Construction phase	To be implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	monitor the ground-borne noise impact.			locations		as per construction programme
S6.85	Construction groundborne noise measurement results should be used to further update the ground-borne noise prediction where appropriate.	To update the predicted ground-borne noise levels.	MTR / Contractor	TBM tunneling section	Construction phase	To be implemented as per construction programme
S6.83	Conduct tests of the FDL of the train to update the ground-borne noise prediction and the recommended mitigation measures as necessary.	To confirm the predicted ground-borne noise levels	MTR	-	Prior to the final design of the trackform and the extent of each type of trackform, and after the proposed train in operation outside Hong	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
					Kong	
S6.84	Conduct vibration borehole testing at two carefully selected locations along the proposed tunnel alignment to determine the LSR values under certain geological conditions. The ground-borne noise predictions and the recommendation on mitigation measures should be updated as necessary.	To confirm the predicted ground-borne noise levels	MTR	Proposed two locations	Prior to the commencement of construction works	To be implemented as per construction programme
Ground-borne Noise Impact (Operation Phase)						
S6.87	Noise commissioning test is recommended to monitor the ground-borne noise level complying with NCO.	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring locations	Operation phase	To be implemented as per construction programme
Landscape and Visual Impact (Construction Phase)						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
Table 7.10	All existing trees should be carefully protected during construction as far as possible in accordance with ETWB TCW No. 29/2004 and 3/2006.	To minimize landscape and visual impacts during construction phase	Contractor	Works areas	Detailed design and construction phases	Implemented
	Trees should be retained on site as far as possible. Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled depending on stated criteria in the Tree Removal Applications to be submitted separately in accordance with ETWBC 2/2004 and 3/2006. Wood resulting from tree removal should be recycled as mulch or soil conditioner which could be used within the Project or in other projects as much as possible.		Contractor			
	Control of night-time lighting glare.		Contractor			
	Erection of decorative screen hoarding to screen off undesirable views of the construction site having consideration of safety and security.		Contractor			
	Reuse of existing topsoil where possible for new		Contractor			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	planting areas within the project.					
Landscape and Visual Impact (Operation Phase)						
Table 7.11	Compensatory tree planting should be incorporated into the proposed Project where space is available	To minimize landscape and visual impacts during operation phase	MTR	Works areas	Detailed design and operation phases	To be implemented as per construction programme
	Landscape and visual enhancement treatments		MTR			
	Compensatory habitat proposal for natural stream course at SSS		MTR			
	Reinstatement of works area in Nam Cheong Park to integrate with the existing park.		MTR			
	Tall buffer tree planting should be incorporated provide screening to ventilation buildings, engineering structures and associated facilities.		MTR			
	Roof greening to mitigate the visual impact of VB on the VSRs at high level.		MTR			
	Vertical greening would be incorporated where practicable to visually soften the façade of ventilation building and/or noise barrier		MTR			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	Incorporation of aesthetically pleasing streetscape design which would be responsive to adjacent landscape context.		MTR			
	Roadside amenity trees to enhance the landscape and visual quality of the existing and proposed road.		MTR			
	Reinstatement of disturbed areas to match adjacent area or to condition to suit future landuse.		MTR			
	Aesthetically pleasing design as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities so as to blend in the buildings and structures to the adjacent landscape and visual context.		MTR			
	Control of Operation Night-time Glare		MTR			
	Incorporation of aesthetically pleasing design to boundary fence so as to blend in the structure to the adjacent landscape and visual context.		MTR			
	The scale, location, disposition and design of the ventilation shafts at WKCD would be further reviewed		MTR			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	and submitted to relevant parties (e.g. WKCDA and PlanD) for agreement.					
Cultural Heritage Impact						
S8.100 – S8.103	• Conduct further investigation (a minimum of 18 trial pits, 1m x 1.5m) to confirm any archaeological remains exist in the inaccessible areas (**NOL/ERL/300/C/XRL/ENS/M55/303- 304 & 306-307**). If archaeological data collected from these 18 test pits is insufficient to ascertain the	To confirm any archaeological remains exist in the inaccessible areas and to preserve archaeological remains if any	MTR	Proposed rescue excavation area in SSS and other archaeologica	Prior to construction phase	Further Archaeological Investigation has been conducting

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	archaeological potential of the inaccessible areas, additional test pits should be conducted • Conduct rescue excavation to preserve archaeological remains by detailed records if found (**NOL/ERL/300/C/XRL/ENS/M55/307**)			l deposit areas identified in the further archaeological investigation		according to Archaeological Action Plan formulated
S8.103	Conduct archaeological watching brief during construction works at TUW for identification of any historical finds during construction phase	To identify any historical finds in the works area	MTR	TUW	Construction phase	To be implemented as per Archaeological Action Plan formulated
S8.104	Conduct regular site audit during the construction of barging point to confirm that no excavation works is conducted at Lung Kwu Sheung Tan archaeological deposit area.	To avoid direct impact	MTR	LKST barging point and associated access road	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
						programme
S8.105	Restriction of works boundary of TPP to be extended to relics discovered area outside TPP.	To avoid direct impact	MTR	TPP	Construction phase	Implemented
S8.107, S8.128	Avoid works areas at the sites of the identified built heritage structures as far as practicable. Identified earth shines within works boundary of SSS and TPP will be relocated by local villagers prior to commencement of construction works at SSS and TPP.	To avoid direct impact	MTR	Earth shines (NHL-04,TKP-02 and LET-07)	Prior to construction phase	Implemented
S8.109, S8.125	Vibration monitoring at Lai Chi Kok Hospital: ▪ Prior to commencement of construction works, the location and installation of the monitoring stations should be discussed and agreed with AMO, Hong Kong Institution for Promotion of Chinese Culture (the "NPO", selected organization for the Revitalisation Scheme), the Commissioner for Heritage's Office and relevant parties before installation. ▪ Compliance monitoring of vibration limits should be	To monitor vibration impacts on the identified vibration sensitive historical buildings	MTR	Ex-Lai Chi Kok Hospital	Before construction phase; Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	conducted and reported as a requirement of EM&A programme.					
S8.110, S8.126	▪ A further condition survey and appropriate consolidation works (e.g. installation of temporary propping or reinforced timber beam to maintain the stability of structure etc.), if required, will be carried out on Blocks P Q, W and the inaccessible area of LCKH prior to construction. It should be discussed and agreed in advance with AMO, NPO, the Commissioner for Heritage's Office and relevant parties,	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	Ex-Lai Chi Kok Hospital	Detailed design	To be implemented as per construction programme
S8.112, S8.127	▪ If consent is given by the property owner, a condition survey will be carried out at Cheung Yuen prior to the commencement of works in SSS. The survey should be discussed and agreed in advance with AMO and property owner prior to commencement of survey.	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	Cheung Yuen	Prior to construction phase	To be implemented as per construction programme
S8.112,	▪ If consent is given by the property owner, vibration	To monitor vibration	MTR	Cheung Yuen	Construction	To be

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S8.127	monitoring at LET-06 (Cheung Yuen) will be conducted when excavation works are being conducted within 50m radius from the house. The monitoring location should be discussed and agreed with AMO and property owner before installation.	impacts on the identified vibration sensitive historical buildings			phase	implemented as per construction programme
S8.113, S8.124	▪ Control of vibration levels from the proposed blasting and excavation activities within a peak particle velocity (ppv) limit of 25mm/s to prevent potential vibration impact to all identified built heritage resources.	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	All works area where blasting and excavation activities are involved	Construction phase	To be implemented as per construction programme
S8.114 - S8.115	▪ Use of sensibly designed screen hoardings for reducing the potential visual impact.	To minimize visual impacts	MTR	All identified heritage buildings in all works areas	Detailed design and construction phase	To be implemented as per construction programme
Land Contamination Impact						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S9.28 – S9.33	Remediation of Contaminated Soil ▪ After excavation, confirmation sampling and testing shall be conducted from the sidewalls and at base of the excavations to ensure complete excavation of contaminated soils. ▪ Bioremediation (biopiling) / ex-situ chemical oxidation are proposed to remediate the contaminated soil recorded in Sites H and Q. Remediation Report(s) (RR) for contaminated works area(s) should be prepared by the Land Contamination Specialist to detail the remediation process and demonstrate that contaminated soils are all removed, properly handled and disposal of. The remediated soil should be reused on site to minimise the waste disposal.	To remediate contaminated soil	Contractor	Sites H and Q	Site remediation	To be implemented as per construction programme
S9.35(i)	For construction works of the alignment close to Ngau Tam Mei Landfill ▪ As a general precautionary measure, visual inspection of excavated materials should be conducted to screen soil for signs of contamination (e.g. discoloration, stains and odour). The	Acting as a general precautionary measure to screen soil for signs of contamination during tunnel boring works under/close to Ngau Tam Mei Landfill	MTR/Contractor	Within the Landfill Boundary where signs of contamination is identified	During Tunnel Boring within Ngau Tam Mei Landfill Boundary	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	inspection process should also be assisted by a photo ionization detector (PID) for volatile organics. If suspected materials are encountered during tunnel boring, sampling and testing for the parameters recommended in Table 6.1 of CAP should be undertaken to verify any contamination. The suspected soil bored out during excavation and tunnel boring should be temporary stockpiled and if laboratory analysis indicated exceedance of relevant RBRG levels, remediation works, should be undertaken depending on the quantity and quality of contaminated soil identified.				Section	
S9.35(ii)	For construction works at CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok Tsui Road ▪ As a general precautionary measure, visual inspection of excavated materials should be conducted to screen soil for signs of contamination (e.g. discoloration, stains and odour). The inspection process should also be assisted by a photo ionization detector (PID) for volatile organics. If suspected materials are encountered during tunnel boring, further sampling and testing	Acting as a general precautionary measure to screen soil for signs of contamination during tunnel boring/ excavation at CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok Tsui Road	MTR/Contractor	Area close to CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok Tsui Road	During Tunnel Boring/ excavation works near CLP transformer station at Lai Cheung Road and Petrol Filling Station at	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	should also be undertaken to verify any contamination. The soil bored out during excavation and tunnel boring should be temporary stockpiled and if laboratory analysis indicated exceedance of relevant RBRG levels, remediation works, should be undertaken depending on the quantity and quality of contaminated soil identified.			where signs of contamination is identified	82 Tai Kok Tsui Road	
S9.35 (iii)	For sites with contamination identified (Site H and Site Q) the following environmental mitigation measures should be undertaken during the course of the site remediation: ▪ Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; ▪ Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; ▪ Supply of suitable clean backfill material is needed after excavation; ▪ The chemical oxidant proposed (RegenOxTM) as a contaminant mass reduction technology. Comprises a solid oxidant complex (sodium	To minimise the potentially adverse environmental impacts arising from the handling of potentially contaminated materials.	Contractor	Sites H and Q /during transportation	Site remediation and prior to construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). These chemical will be securely stored, separately and way from sources of ignition or oxidizable items. Handling will & will be undertaken by persons specifically trained and wearing appropriate PPE. ▪ Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions; ▪ Speed control for the trucks carrying contaminated materials should be enforced; and ▪ Vehicle wheel and body washing facilities at the site's exist points should be established and used.					
S9.35(iv)	In order to minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation, the Occupation Safety and Health Ordinance (OSHO) (Chapter 509) and its subsidiary Regulations should be followed by all site	To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation	Contractor	Sites H and Q	Site remediation and prior to construction phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	personnel working on the site at all times. In addition, the following basic health and safety measures should be implemented as far as possible: ▪ Set up a list of safety measures for site workers; ▪ Provide written information and training on safety for site workers; ▪ Keep a log-book and plan showing the contaminated zones and clean zones; ▪ Maintain a hygienic working environment; ▪ Avoid dust generation; ▪ Provide face and respiratory protection gear to site workers; ▪ Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers; and ▪ Provide first aid training and materials to site workers.					
9.35(v)	For Areas Feasible or Infeasible for On-Site Inspection and Site Investigation	(i) To identify areas with land contamination concern, report	MTR/ Contractor	Areas Infeasible for On-Site	After land resumption and prior to the	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	(i) Phase 2 supplementary SI works ▪ Upon site access is granted, site inspection should be carried out to ascertain any contaminative sources and hotspot of contamination within the site. ▪ The sampling and testing schedule as recommended in the approved CAP should then be updated based on respective site situation and the number of sampling locations may be significantly reduced. A revised CAP should then be submitted to EPD for endorsement. ▪ For supplementary CARs and RAP(s), upon completion of SI and laboratory testing, supplementary CARs should be submitted to EPD for endorsement. If contamination is identified, RAP(s) should also be submitted to EPD for endorsement. ▪ The revised CAPs and supplementary CARs and /or RAP(s) should be submitted in separate packages for different works area depending on the schedule of land resumption and the commencement of construction works for each works area.	laboratory results and propose remediation measures if necessary. (ii) To ensure remediation works have been undertaken to before the commencement of any construction works of the Project that may disturb the ground of the south-western portion of the MPV.		Inspection and Site Investigation and WSW	construction works commencement at respective sites	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ RR(s) should be submitted to demonstrate completion of remediation works before construction work starts at the site. (ii) WSW ▪ According to WSW EP Condition 3.14, the Project Proponent of the WSW development shall prepare and submit CAR/RAP to EPD within 2 months after commencement of construction of the WSW development and the recommendations in the endorsed CAR/RAP shall be fully implemented before the commencement of any construction works that may disturb the ground of the relevant sites. ▪ This project will ensure that the completion of remediation works before the construction works at contaminated areas start.					
Waste Management Implications (Construction Phase)						
S10.107	Recommendations for good site practices: ▪ Prepare a Waste Management Plan approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites; ▪ Training of site personnel in, site cleanliness,	To implement good site practice for handling, sorting reuse and recycling of C&D materials	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	proper waste management and chemical handling procedures; ▪ Provision of sufficient waste disposal points and regular collection of waste; ▪ Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; ▪ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and ▪ Separation of chemical wastes for special handling and appropriate treatment.					
S10.108	Recommendations for waste reduction measures: ▪ Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); ▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; ▪ Encourage collection of aluminium cans by	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; ▪ Proper storage and site practices to minimize the potential for damage or contamination of construction materials; ▪ Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and ▪ Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					
S10.109	The Contractor should prepare and implement a Waste Management Plan (WMP) as a part of the Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities.	To keep trace of the generation, minimization, reuse and disposal of C&D materials in the Project	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S10.112	Storage of materials on site may induce adverse environmental impacts if not properly managed, recommendations to minimise the impacts include: ▪ Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; ▪ Maintain and clean storage areas routinely; ▪ Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and ▪ Different locations should be designated to stockpile each material to enhance reuse.	To minimise potential impacts of waste storage and enhance reusable volume	Contractor	All work areas	Construction phase	Implemented
S10.113	Waste hauliers must hold a valid permit for the collection of waste as stipulated in their permits. Removal of waste should be done in a timely manner.	To collect and remove waste generated	Contractor	All work areas	Construction phase	Implemented
S10.114-115	Implementation of trip-ticket system to monitor waste disposal and control fly-tipping. Set up warning signs at vehicular access points reminding drivers of designated disposal sites and penalties of an offence.	To monitor disposal of waste and control fly-tipping	Contractor	All work areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	Installation of close-circuited television at access points of vehicles to monitor and prevent illegal dumping.					
S10.117	Recommendations for excavated materials within works areas: ▪ Several ramps should be used for transportation of different materials as far as practicable (at SSS/ERS site, both soft and hard materials could be generated with the provision of three ramps, each of them can be used for single material for primary separation). Each ramp should be used for transportation of a single material as far as practicable. ▪ If a conveyor system is used, materials should be transported separately on the belts, it is therefore proposed that more than one conveyor belt should be installed if possible. If more than one material is needed to be transported on a single belt, each material should be stockpiled separately once they are removed from the excavation face to the ground and the belt should operate at different times with different materials as far as practicable. ▪ Enclosure should also be provided for the conveyor	To mitigate and minimize the potential impacts from the storage and transportation of materials within works areas	Contractor	All works areas	Construction Phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	belt, as far as practicable to minimize the of dust generation. ▪ Different locations should be designated for each material during stockpiling. Stockpiling may be needed when the conveyor system is under constraint or when the spoil could not be transported away from works area immediately after excavation. Cover should be provided to dusty stockpiles to avoid the materials from being wind-blown or flushed away by water. It is expected that water spraying system should also be equipped to moisten the materials.					
S10.119	Wet spoil generated from TBM construction, construction of bored piles and D-wall should be properly handled before disposal to Taishan and Fill Banks respectively for reuse in other projects. Dry materials should be mixed with the wet spoil or by the use of lime to reduce water content where applicable.	To minimise impacts to disposal outlet from reception of wet spoil	Contractor	All works areas	Construction phase	Implemented
S10.120	Wheelwash facilities should be provided before the trucks leave the works area.	To minimise dust impact	Contractor	All works areas	Construction phase	Implemented
S10.121	The Contractor should ensure the on-site separation from inert portion. The waste delivered to landfill should not contain any	To meet the requirement for disposal at landfill	Contractor and Waste haulier	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	free water or have water content more than 70% by weight. The haulier must ensure suitable amount of waste would be loaded on different types of trucks used. A one-week notice should be given to EPD with information on Contractor's name and respective contact details.					
S10.125	This will generally follow the PNAP 25 in handling of dredged/excavated sediment. The dredged / excavated sediments would be loaded onto barges and transported to existing designated disposal sites allocated by the MFC according to their levels of contamination, as presented below: ▪ For Type 1 sediment, the sediments will be excavated/dredged and transport to designated CEDD Facilities, typically at South Cheung Chau and/or Ninepin. ▪ For Type 2 sediment, the sediments will be dredged/excavated and transport to designated CEDD Facilities, typically at East Sha Chau for confined marine disposal. ▪ For Type 3 sediment, it would require special treatment/disposal before confined marine disposal at CEDD Facilities, typically at East Sha Chau. In	To dispose sediment in an authorized and least impacted way	Contractor	All works areas with sediments concern	Detailed Design and Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	order to have the least potential of loss of contaminants to the marine environment, containment of the sediments in geosynthetic containers is proposed when transporting the sediment. Field trials are recommended to be undertaken during the detailed design stage to establish the optimum handling method for this approach. The details of the disposal methodology could therefore be confirmed during the detailed design stage, prior to construction.					
S10.126	The basic requirements and procedures for dredged / excavated sediment disposal specified under PNAP 252 shall be followed.	To dispose sediment in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction phase	Implemented
S10.127	The Project Proponent will agree in advance with MFC of CEDD on the site allocation by submitting a Construction & Demolition Material Management Plan. The final disposal sites and arrangement will be determined by the MFC and a dumping permit will be obtained from the DEP prior to the commencement of the dredging and excavation works.	To determine the best handling and disposal option of the sediments.	MTR/ Contractor	All works areas with sediments concern	Detailed Design and Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S10.128	The contractor for the dredging/ excavation works shall apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. The contractor shall apply for all necessary permits from relevant authorities for the disposal of dredged / excavated sediment.	To dispose the sediments in an authorized way.	Contractor	All works areas with sediments concern	Construction phase	Implemented
S10.129	If temporary stockpiling of sediments is necessary, the sediment should be covered by tarpaulin and earth bunds or sand bag barriers should be provided on site to prevent leachate from entering the drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by lining avoiding contaminating the soil or groundwater underneath.	To prevent the cross contamination of surrounding soils and water bodies	Contractor	All works areas with sediments concern	Construction phase	Implemented
S10.130	The dredged / excavated sediment should be transported by covering trucks to designated barging points. The barge transporting the sediments to the designated disposal site should be equipped with tight fitting seals to prevent leakage. Besides, the barge should not be filled to a level that would cause overflow of materials or laden water during loading or transportation.	To prevent overflowing of sediments to the surrounding area and water bodies	Contractor	All works areas with sediments concern / trucks / barges	Construction phase	Implemented
S10.131	Loading of the dredged / excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding	To prevent overflowing of sediments to the surrounding area and	Contractor	Barging points	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	water.	water bodies				
S10.132	In order to minimise the potential odour emissions during the dredging / excavation operation and transportation of the sediment, the dredged / excavated sediment placed on barges should be properly covered as far as practicable. Requirement of the *Air Pollution Ordinance (Construction Dust) Regulation*, where relevant, should be adhered to during the construction phase of the Project.	To minimise dust and odor impacts to surrounding environment	Contractor	All works areas with sediments concern / Barging points	Construction phase	Implemented
S10.134	Workers should wear protective gloves when carrying out the dredging / excavation works. Adequate washing and cleaning facilities should be provided on site.	To minimise the exposure to the contaminated sediments	Contractor	All works areas with sediments concern	Construction phase	Implemented
S10.135	For allocation of sediment disposal site and application of marine dumping permit, another proposal for sampling and chemical testing of the sediment will be prepared and submitted to the EPD for approval following the procedures in PNAP 252. The approved detailed sampling and chemical testing will be carried out prior to the commencement of the dredging/excavation activities to confirm the sediment disposal method. The contamination levels of the marine	To analyse the sediments quality and determine the best disposal option	Contractor	All works areas with sediments concern	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	sediment to be dredged / excavated have to be analysed and recorded. After carrying out the sampling and testing, a Sediment Quality Report (SQR) will be prepared for EPD approval as required under the *Dumping at Sea Ordinance* to agree and confirm the quantities and extent of the contamination of the sediments prior to the dredging/ construction contract being tendered. The SQR will include the sampling details, the chemical testing results, quality control records, proposed classification and delineation of sediment according to the requirements of the Appendix A of PNAP 252.					
S10.136	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. Containers used for storage of chemical waste should : ▪ Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; ▪ Have a capacity of less than 450 litres unless the specifications have been approved by EPD; and ▪ Display a label in English and Chinese in	To properly store the chemical waste within works areas	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	accordance with instructions prescribed in Schedule 2 of the *Waste Disposal (Chemical Waste) (General) Regulation*.					
S10.137	The chemical storage areas should: ▪ Be clearly labelled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; ▪ Be enclosed on at least 3 sides; ▪ 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 that area, whichever is the greatest; ▪ Have adequate ventilation; ▪ Be covered to prevent rainfall from entering; and ▪ Be properly arranged so that incompatible materials are adequately separated.	To prepare appropriate storage areas for chemical waste at works areas	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S10.138	Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.	To clearly label the chemical waste at works areas	Contractor	All works areas	Construction phase	Implemented
S10.139	A trip-ticket system should be operated in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* to monitor all movements of chemical waste. The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.	To monitor the generation, reuse and disposal of chemical waste	Contractor	All works areas	Construction phase	Implemented
S10.140	General refuse should be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes.	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	All works areas	Construction phase	Implemented
S10.141	The recyclable component of general refuse, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of	To facilitate recycling of recyclable portions of refuse	Contractor	All works areas	Construction phase	Implemented

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	recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.					
S10.142	The Contractor should carry out a training programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins should also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	All works areas	Construction phase	Implemented
Waste Management Implications (Operation Phase)						
S10.146-10.147	Chemical waste: ▪ The requirements stipulated in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* should be followed in handling of chemical waste as in construction phase. ▪ A trip-ticket system should be operated in accordance with the *Waste* Disposal *(Chemical Waste) (General) Regulation* to monitor all movements of chemical wastes which would be	To avoid environmental impacts in handling, storage and disposal of chemical waste	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	collected by a licensed collector to a licensed facility for final treatment and disposal. ▪ The recommendations proposed for the mitigation of impacts from chemical waste in construction phase should also be followed (refer to S10.104-S10.106).					
S10.148-S10.149	General refuse: ▪ Provide recycling bins at designated areas for proper recycling of papers, aluminium cans and plastics bottles. ▪ Separation from other waste types and collected by licensed collectors at daily basis to minimize the potential impacts from odour and vermin.	To separate general refuse from other waste types and proper disposal of the refuse	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme
S10.150	Industrial waste: ▪ Separation of reusable components like steel before collection by licensed collector	To recycle useful materials from industrial waste and proper disposal	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme
Water Quality Impact (Construction Phase)						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.128 - S11.153	Construction site run-off and general construction activities: ▪ The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	To control water quality impact from construction site runoff and general construction activities	MTR / Contractor	All works areas	Construction phase	Implemented
S11.154	Groundwater seepages from uncontaminated area: ▪ In case seepage of uncontaminated groundwater occurs, groundwater should be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process should also be discharged into the storm system via silt traps.	To control water quality impact from groundwater from uncontaminated area	MTR / Contractor	All works areas	Construction phase	Implemented
S11.155	As the proposed WKT is near the Victoria Harbour, high ground water level regime due to both tidal effects and rainwater infiltration is anticipated. A cofferdam wall should be built to limit groundwater inflow to the excavation works areas in the WKT site.	To control water quality impact from groundwater from uncontaminated area	MTR / Contractor	WKT	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.156	To monitor the tide and groundwater relationship, it is recommended to install groundwater level loggers at the nearest tidal areas (i.e. near Mai Po).	To monitor the groundwater level	MTR / Contractor	Mai Po	Construction phase	Implemented
S11.157 - S11.158	Site Runoff or Groundwater from contaminated areas: ▪ No directly discharge of groundwater from contaminated areas should be adopted. ▪ Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in the areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to *Guidance Note for Contaminated Land Assessment and Remediation* and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS. ▪ If wastewater treatment is to be deployed for	To control water quality impact from contaminated groundwater	MTR / Contractor	Excavation areas where contaminated ground-water is found	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range. ▪ All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal. ▪ If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of the TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the					

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	recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.					
S11.128 - S11.136, S11.160	Barging points: Mitigation measures for control water quality impact from surface run-off should be applied. The following good site practices should also be adopted: ▪ all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	To control water quality impact from barging point	MTR / Contractor	All barging Points	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material ▪ construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site ▪ loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation					
S11.161	Effluent discharge: There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality should meet the requirements specified in the discharge licence. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes. If monitoring of the treated effluent quality from the works areas is required during the construction phase	To control water quality impact from effluent discharge from construction site	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.					
S11.162	Accidental spillage of chemicals: Contractor should register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes**.**	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	Implemented
S11.163	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	To be implemented as per construction programme
S11.164	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: ▪ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. ▪ Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. ▪ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.					
S11.165	Surface construction works at or in close proximity of watercourses or seafront: ▪ The proposed surface construction works should be carried out in dry season as far as practicable where the flow in the river channel or stream is low. ▪ The use of less or smaller construction plants may be specified to reduce the disturbance to the riverbed or pond deposits.	To control water quality impact from construction works at or in close proximity of watercourses or seafront	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ Temporary sewerage system should be designed to prevent wastewater from entering the river, streams and sea. ▪ Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. ▪ Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. ▪ Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. ▪ Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. ▪ Mitigation measures to control site run-off from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	of the waterfront within the work sites to intercept the run-off. ▪ Construction effluent, site run-off and sewage should be properly collected and/or treated. ▪ Any works site inside the water courses should be temporarily isolated. The water flow should be temporarily diverted to downstream by using PVC pipes, steel arrays in concrete case or similar, restricting the excavation works to be conducted within an enclosed dry section of the channel. This works arrangement would provide a dry zone for excavation works within the river channel and would prevent the conveyance of suspended sediment downstream. Dewatering at works section should be conducted prior to the commencement of works. Further limiting or reducing the works area inside the water courses should be considered during wet season or rainstorm event in order to reduce the area of exposed surface. ▪ Silt curtain should be installed around the construction activities at or near the watercourses to minimize the potential impacts due to accidental					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	spillage of construction wastes and excavated materials. ▪ Proper shoring may need to be erected in order to prevent soil or mud from slipping into the watercourses. ▪ Supervisory staff should be assigned to station on site to closely supervise and monitor the works.					
S11.166	Surface construction works close to water gathering grounds: ▪ The conditions as specified in WSD guidelines on protection of Water Gathering Ground should be followed or observed where practicable	To control water quality impact from surface construction works close to Water Gathering Ground	MTR / Contractor	Works areas close to water gathering ground	Construction phase	To be implemented as per construction programme
S11.167	Dredging of marine sediments at LKST: ▪ Closed grab dredger should be used to minimize the loss of sediment during the raising of the loaded grabs through the water column. ▪ No more than one closed grab dredger should be operated at any one time. ▪ Double silt curtains should be deployed around the dredging operations as far as practicable.	To minimize the loss of fine sediment to suspension during dredging of marine sediments at LKST	MTR / Contractor	Marine dredging at LKST	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ The descent speed of grabs should be controlled to minimize the seabed impact speed. ▪ Barges should be loaded carefully to avoid splashing of material. ▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals in order to prevent leakage of material during loading and transport. ▪ All barges should be filled to a level which ensures that material does not spill over during loading and transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.					
S11.83 and S11.165	Diversion of watercourse: ▪ The excavation works at the existing stream in Shek Kong/ Kam Tin Nullah should be carried out by approved methods by the Engineer to minimise erosion. Should excavation works be carried out at the designated section of water course, temporary river diversion should be conducted prior to the commencement of works to avoid water flowing into works area. The temporary diversion of water	To control water quality impact due to diversion of watercourse	MTR / Contractor	Watercourse to be diverted in Shek Kong	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	flow should be performed by appropriate means, such as completing the construction of the proposed channel section for carrying diverted flow prior to excavation works, or other similar methods, as approved by the Engineer to suit the works condition. This works arrangement would provide a dry zone for excavation works within the river channel and would prevent the conveyance of suspended sediment downstream. Dewatering at works section should also be conducted prior to the commencement of works. ▪ Mitigation measures for minimizing the water quality impact for surface construction works at or close to the watercourses should also be applied.					
S. 11.169 - 11.173	Hydrogeological Impact: For the cut and cover tunnels and associated excavations for vent buildings and emergency access/escape points, the following measures should be in place in order to mitigate any drawdown effects to the groundwater table during the operation of the temporary dewatering works: ▪ Toe grouting should be applied beneath the toe level of the temporary/permanent cofferdam walls	To control groundwater hydrogeological impact and groundwater drawdown	MTR/ Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	as necessary to lengthen the effective flow path of groundwater from outside and thus control the amount of water inflow to the excavation. ▪ Recharge wells should be installed as necessary outside the excavation areas. Water pumped from the excavation areas should be recharge back into the ground. The bored tunnels should be constructed using a closed face tunnel boring machine to limit water inflow into the excavation face. The cutter head for the machine will be sealed during excavation and therefore the water inflow from the face will be very small. Precast undrained linings should be installed and back grouted behind the tunnel boring machine as it advances along the alignment to minimize the potential inflow of water behind the cutter head. The Contractor should initially adopt suitable water control strategies while undertaking the excavation works. The water control strategies are shown as follow:					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ Probing Ahead: As normal practice, the Contractor will undertake rigorous probing of the ground ahead of tunnel excavation works to identify zones of significant water inflow. The probe drilling results will be evaluated to determine specific grouting requirements in line with the tunnel advance. In such zones of significant water inflow that could occur as a result of discrete, permeable features, the intent would be to reduce overall inflow by means of cut-off grouting executed ahead of the tunnel advance. ▪ Pre-grouting: Where water inflow quantities are excessive, pre-grouting will be required to reduce the water inflow into the tunnel. The pre-grouting will be achieved via a systematic and carefully specified protocol of grouting. ▪ In principle, the grout pre-treatment would be designed on the basis of probe hole drilling ahead of the tunnel face. In the event of excessive drawdown being observed within the ground water table as a result of the tunnelling works even after incorporation of the water					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	control strategies, post-grouting will be applied as described below: ▪ Post-grouting: Groundwater drawdown will be most likely due to inflows of water into the tunnel that have not been sufficiently controlled by the pre-grouting measures. Where this occurs post grouting will be undertaken before the lining is cast. Whilst unlikely to be required in significant measure, such a contingency should be allowed for reduction in permeability of the tunnel surround (by grouting) to limit inflow to acceptable levels. A detailed groundwater monitoring programme should be developed in detailed design stage to monitor both the proposed works and the impact of those works on the adjacent area.					
Water Quality Impact (Operation Phase)						
S11.174	Tunnel run-off and drainage: ▪ Track drainage channels discharge should pass through oil/grit interceptors/chambers to remove	To control runoff from rail track	MTR / DDC	Tunnels and rail tracks	Operation phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	oil, grease and sediment before being pumped to the foul sewer/holding tank for further disposal. ▪ The silt traps and oil interceptors should be cleaned and maintained regularly. ▪ Oily contents of the oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible.					programme
S11.175 – S11.176	Sewage effluents: ▪ Connection of domestic sewage generated from the Project should be diverted to the foul sewer wherever possible. If public sewer system is not available, sewage tanking away services or on-site sewage treatment facilities should be provided to prevent direct discharge of sewage to the nearby storm system and all the discharge should comply with the requirements stipulated in the TM-DSS. ▪ For handling, treatment and disposal of other operation stage effluent, the practices outlined in ProPECC PN 5/93 should be adopted where applicable.	To control water quality impact from sewage effluent discharge ventilation buildings, SSS and WKT	MTR / DDC	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.177-S11.181	Shek Kong Stabling Sidings (SSS): ▪ All the maintenance areas within the SSS should be housed or covered to prevent generation of contaminated rainwater runoff. All wastewater generated from the maintenance and cleaning activities should be collected and diverted to oil interceptor or other appropriate treatment facilities for proper treatment so that it satisfies the requirements stipulated in the TM-DSS. ▪ In case there is no pubic sewer available for the SSS during the operation phase, all wastewater generated or collected in the SSS should be tankered away for proper disposal to prevent direct discharge of any wastewater to the nearby surface water system. ▪ Oil interceptors should be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass would be provided to avoid overload of the interceptor's capacity. ▪ All waste oils and fuels should be collected and handled in compliance with the Waste Disposal Ordinance. Site drainage should be well maintained and good management practices should be observed	To control water quality impacts from the operation of Shek Kong Stabling Sidings	MTR/DDC	SSS	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	to ensure that oils and chemicals are managed, stored and handled properly and do not enter the nearby water streams. Areas for chemical storage should be securely locked. The storage area should 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 that area, whichever is the greatest, to minimize the impacts from any potential accidents. In case of the occurrence of accidental spillage of chemicals, it is required to take immediate actions to control the release of chemicals. ▪ Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes.					
S11.182	For any future maintenance desilting of the newly constructed or diverted watercourses, temporary barrier walls should be used to provide a dry zone for desilting work. Maintenance desilting should be carried out	To control water quality impact due to maintenance desilting of the newly	MTR	Diverted watercourses in Shek Kong	Operation phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	during periods of low flow in the dry season.	constructed or diverted watercourses				construction programme
Air Quality (Construction Phase)						
S 12.78	For concrete batching plant, the requirements and mitigation measures stipulated in the *Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)* should be followed and implemented.	To minimize dust impacts	MTR / Contractor	Concrete batching plant at works area V	Construction phase	To be implemented as per construction programme
Table 12.9 and Table 12.12	The design emission concentration of dust collector for different types of silos for concrete batching plant should be: ▪ Dust collector for each small Cement Silo ≤ 30 mg/m^3 ▪ Dust collector for each Large Capacity Cement Silo ≤ 50mg/m^3 ▪ Dust collector for each PFA Silo ≤ 30 mg/m^3 ▪ Dust collector for each Mixer ≤ 40 mg/m3 During operation of concrete batching plant:	To minimize dust impacts	MTR / Contractor	Concrete batching plant at works area V	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ The aggregates should be unloaded from the tipper trucks to the receiving hopper equipped with enclosures on 3 sides and top cover, and water spraying system. ▪ The cement and PFA should be directly loaded into the silo via a flexible duct. Dust collectors should be installed at the cement/PFA silo based on the above design emission rates. ▪ The aggregates should be stored in fully enclosed overhead storage bins. The top of overhead storage bins should be covered with cladding. Water spraying system should be installed at the top of storage bins for watering the aggregates, and aggregate storage bins should be fully enclosed. ▪ The whole process of weighing and mixing of cementitious material should be performed in a fully enclosed environment. The mixers shall equip with the dust collectors based on the above design emission rates. ▪ The concrete should be directly loaded from the mixer into the transit mixer of a truck in “wet” form.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ Haul road within the site should be paved. Wheel washing pit should be installed at the gate of the concrete batching plant. Water spraying system should be installed along the haul road.					
Table 12.10	(1) Cut & Cover Areas and Stockpiles in the vicinity of adits/shafts: (a) Heavy construction activities at Cut & Cover Areas, Storage of materials at Stockpiles - Active areas for heavy construction activities, loading & unloading materials at stockpiles ▪ The specified requirements for cut & cover areas and stockpiles at Shek Kong, Nam Cheong and West Kowloon works areas are as follows: (i) Shek Kong works area – active area minimized to 15% of total area, watering with complete coverage of active area ten times a day. (ii) Nam Cheong works area – active area minimized to 30% of total area, watering with complete coverage of active stockpile area four	To minimize dust impacts	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	times a day. (iii) West Kowloon works area – active area minimized to 15% of total area, watering with complete coverage of active area eight times a day. ▪ For other sites, the active area would be minimized to 30% of the total area, water spraying system would be applied on the active area and watering with complete coverage of active area four times a day would be required. ▪ The remaining inactive area would be well covered with impervious sheeting at all work sites. (b) Trucks - Transportation of materials ▪ Wheel wash facilities provided at the site exit. The vehicles should be washed before leaving the stockpiles. The spoils should also be well covered before leaving the site in order to minimise generation of dusty materials. ▪ The haul roads within the site should be paved and water spraying would be provided to keep the wet condition.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	▪ For the Shek Kong works area, watering paved haul roads once per hour would be provided. (2) Temporary stockpiles within barging facilities: (a) Loading point - Loading of spoils from trucks onto stockpile ▪ Water spraying should be provided at the loading points to suppress the dust impact. (b) Storage of materials - Active area for loading & unloading materials ▪ Water spraying system should be applied on the active area and watering with complete coverage of active area four times a day is required.					
Table 12.11	Barging facilities: (1) Haul road within barging facilities - Transportation of spoils to the barging points ▪ All road surfaces within the barging facilities should be paved and water spraying should be provided to keep the wet condition. For paved haul roads at West Kowloon and Nam Cheong, watering	To minimize dust impacts	MTR / Contractor	All barging points	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	haul road once per hour is required. (2) Unloading of materials - Unloading of spoil materials ▪ The unloading process should be undertaken within enclosed tipping hall. Water spraying and dust curtain should be provided at the discharge point for dust suppression. (3) Trucks - Vehicles leaving the barging facilities ▪ Vehicle wheel washing facilities should be provided at site exit. (4) Transportation of spoils to one of the Nam Cheong Barging Point ▪ Fully enclosed conveyor system should be adopted for transportation of spoils from shaft to the barging point.					
S 12.78	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: ▪ Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces	To minimize dust impacts	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	and unpaved roads, particularly during dry weather. ▪ Use of frequent watering for particularly dusty construction areas and areas close to ASRs. ▪ Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines. ▪ Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. ▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. ▪ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. ▪ Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. ▪ Imposition of speed controls for vehicles on					

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	unpaved site roads. 8 kilometers per hour is the recommended limit. ▪ Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. ▪ Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. ▪ Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed. ▪ Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.					
S12.94	Environmental monitoring and audit for dust emission should be conducted in accordance with EM&A Manual during the construction phase of the Project to check	To monitor dust impact	MTR / Contactor	Proposed monitoring locations	Design and operation phases	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	compliance with legislative requirements.					
Air Quality (Operation Phase)						
S12.48	The vent shafts of the stations should be designed to be sited at more than 5m from any opening at the adjacent building	To alleviate the adverse air quality impact in the stations	MTR	WKT	Design and operation phases	To be implemented as per construction programme
S12.50	The design of the mechanical air ventilation for PTI should follow EPD's ProPECC PN1/98 Control of Air Pollution in Semi-confined Public Transport Interchanges.	To alleviate the adverse air quality impact in the PTI	MTR	PTI at the ground floor of ventilation building complex at WKT	Design and operation phases	To be implemented as per construction programme
Hazard to Life						
S13.96/ S13.99	Improved truck design to reduce the amount of combustibles in the cabin and fuel carried in the fuel tank should be minimised to reduce the duration of any fire.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	The truck should be brand new, diesel powered and equipped with fuel and battery isolation switches, front exhaust spark arrester, 1 x 9 kg water based and 1 x 9 kg dry chemical powder fire extinguishers. This should be combined with monthly vehicle inspection					construction programme
S13.96	The explosive truck accident frequency should be minimized by implementing a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude. In addition, drivers should be selected based on good safety record, and medical checks.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase.	Implemented
S13.96	The contractor should as far as practicable combine the explosive deliveries for a given work area.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase	Implemented
S13.96	The explosive truck fire involvement frequency should be minimized by implementing a better emergency response and training to make sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity AFFF-type extinguishers.					
S13.96	A minimum headway between two consecutive truck conveys of at least 10 min is recommended	To meet the ALARP requirement	MTRC/ Contractor	Along explosives transport route.	Construction phase.	Implemented
S13.96/ S13.105	Only the required quantity of explosives for a particular blast should be transported to avoid the return of unused explosives to the magazines. If disposal is required for small quantities, disposal should be made in a controlled and safe manner by a Registered Shotfirer.	To reduce the risk during explosives transport	MTRC/ Contractor	-	Construction phase	Implemented
S13.97	Blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions.	To ensure that the risks from the proposed explosives storage and transport would be	MTRC / Contractor	Works areas at which explosives would be	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		acceptable		stored and/or used.		
S13.97	Emergency plan (ie magazine operational manual) shall be developed to address uncontrolled fire in magazine area and transport. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals.	To reduce the risk of fire	MTRC/ Contractor	Explosive Magazine and along explosives transport route.	Construction phase	Implemented
S13.97	Adverse weather working guideline should be developed to clearly define procedure for transport explosives during thunderstorm.	To ensure safe transport of explosives	MTRC/ Contractor	Along explosives transport route.	Construction phase	Implemented
S13.98	Delivery vehicles shall not be permitted to remain within the secured fenced off magazine store area.	To reduce the risk of fire within the magazine	MTRC / Contractor	Explosive Magazine	Construction phase	Implemented
S13.98	Good house-keeping within and outside of the magazine to ensure that combustible materials (including vegetation) are removed and not allowed to accumulate.	To reduce the risk of fire within the magazine	MTRC / Contractor	Explosive Magazine	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S13.99/ S13.101	Use only experienced driver(s) with good safety record. Training should be provided to ensure it covers all major safety subjects.	To ensure safe transport of explosives	MTRC/ Contractor	-	Construction phase	Implemented
S13.99	Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers before delivery.	To ensure that the risks from the proposed explosives storage and transport would be acceptable	MTRC/ Contractor	Explosive magazine	Construction phase	Implemented
S13.99	Detonators shall not be transported in the same vehicle with other Class 1 explosives	To reduce the risk of explosion during the transport of cartridge emulsion	MTRC / Contractor	-	Construction phase	Implemented
S13.99	During transport of the explosives within the tunnel, hot work should not be permitted in the vicinity of the explosives offloading or charging activities.	To ensure safe transport of explosives	MTRC/ Contractor	Along explosives transport route.	Construction phase	Implemented
S13.99	Ensure that packaging of detonators remains intact until	To reduce the risk of	MTRC/	-	Construction	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	handed over at blasting site.	explosion during the transport of detonator	Contractor		phase	
S13.99	Horizontal fire screen on cargo deck and vertical fire screen mounted at least 150 mm behind the drivers cab and 100 mm from the steel cargo compartment, the vertical screen shall protrude 150 mm in excess of all three (3) sides of the steel cargo compartment.	To reduce the risk during explosives transport	MTRC/ Contractor	-	Construction phase	Implemented
S13.104	Ensure that cartridge emulsion with high water content should be preferred. Also, the emulsion with perchlorate formulation should be avoided.	To ensure safe explosives to be used	MTRC/ Contractor	-	Construction phase	Implemented
Landfill Gas Hazard – Design and Construction Phases						
S14.73 & S14.86	- All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices should be posted warning of the potential hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone, Barging Point	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
				and Nursery Site		
S14.73	- Those staff who work in, or have responsibility for "at risk" areas, including all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.73	- During all works, safety procedures will be implemented to minimise the risks of fires and explosions and asphyxiation of workers (especially in confined space).	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.73	- Safety officers, specifically trained with regard to landfill gas related hazards and the appropriate actions to take in adverse circumstances will be present on all worksites throughout the works.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
				Zone		programme
S14.73, S14.86, S14.87	- Smoking and naked flames will be prohibited within confined spaces. 'No Smoking' and 'No Naked Flame' notices in Chinese and English will be posted prominently around the construction site. Safety notices should be posted warning of the potential hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone, Barging Point and Nursery Site	Construction phase	To be implemented as per construction programme
S14.73	- Welding, flame-cutting or other hot works may only be carried out in confined spaces when controlled by a 'permit to work' procedure, properly authorised by the Safety Officer. The permit to work procedure will set down clearly the requirements for continuous monitoring of methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure will also require the presence of an appropriately qualified person who	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	shall be responsible for reviewing the gas measurements as they are made, and who shall have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise will be permitted to carry out hot works in confined areas.					
S14.73	- A mechanical ventilation system must be in use at all times during which personnel are engaged in works inside the tunnel or excavation and be evacuated in the event of power outages. Work must not be carried out in the absence of mechanical ventilation and supervision of adequately trained safety personnel. In exceptional case where work is carried out under non-ventilated condition, any electrical equipment used, such as motors and extension cords, should be intrinsically safe.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S14.73	- Adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus sets should be made available on site.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.86	- Raising the site office 500mm above ground.	Protect the workers from landfill gas hazards	Contractor	Barging Point	Construction phase	To be implemented as per construction programme
S14.86	- Utilities services connected to the site office and the annulus around these service entry points should be properly sealed.	Protect the workers from landfill gas hazards	Contractor	Barging Point	Construction phase	To be implemented as per construction programme
S14.74	- Construction works to be undertaken in confined space should follow the relevant Regulations under Chapter 59 Factories and Industrial Undertakings	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML	Construction phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	Ordinance and Chapter 509 Occupational Health and Safety Ordinance.			Consultation Zone		construction programme
S14.73	- Monitoring of methane, carbon dioxide and oxygen inside the XRL tunnels.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.75	- A walkover survey to monitor flammable gas at all joints and cracks, if identified, upon completion of the tunnel work. Rectifications, such as sealing of cracks and inspection of tunnel seals, shall be carried out for any signs of the presence of flammable gas. The survey should be conducted under non-ventilated condition and before starting the work of the day.	Confirm no landfill gas ingress into the XRL tunnels	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.76	- Weekly monitoring of methane, carbon dioxide and oxygen in the form of a walkover survey at 20m intervals for section of tunnels under NTML and 50m	Confirm no landfill gas ingress into the XRL tunnels	Contractor	XRL tunnels within the NTML	Construction phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	interval within the NTML Consultation Zone should be conducted after completion of the tunnel construction works and not less than 3 months before commencement of operation. The survey should be conducted under non-ventilated condition and before starting the work of the day.			Consultation Zone		construction programme
S14.77	- A summary of the monitoring results should be submitted to EPD for record before the commencement of operational phase. The results should be reviewed and agreed with EPD before the commencement of operation to determine the monitoring requirements during the operational phase	To review and agree the monitoring requirement during the operational phase	MTR/Contractor	-	Before operation	To be implemented as per construction programme
S14.78	- Appropriate sealant will be applied to joints to prevent the ingress of groundwater, which will also form a low permeability gas barrier. Good workmanship and adequate construction supervision will be required to ensure the actual works are implemented as per the design requirements. This	Protect the XRL tunnels from landfill gas hazards	Design Engineer/ Contractor	XRL tunnels within the NTML Consultation Zone	Design and Construction phases	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	will be implemented by MTRC's Material and Workmanship Specification.					
S14.79	- Adequate ventilation will be needed as part of the tunnel design to act as an active gas control when needed.	Protect the XRL tunnels from landfill gas hazards	Design Engineer	XRL tunnels within the NTML Consultation Zone	Design phase	To be implemented as per construction programme
S14.80	- Upon completion of the landfill gas protection measures, a report on the implemented landfill gas protection measures with relevant as-built drawings and other detailed information showing that the design measures mentioned in this assessment to protect the tunnels from landfill gas hazard have been properly incorporated should be submitted to EPD.	Ensure landfill gas protection measures have been completed	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
Landfill Gas Hazard – Operation Phase						
S14.76	- Ventilation of the tunnels should be switched on for half an hour before the first train is expected (the	Protect the operation of the XRL from landfill gas	MTR	XRL tunnels within the	Operation phase	To be implemented

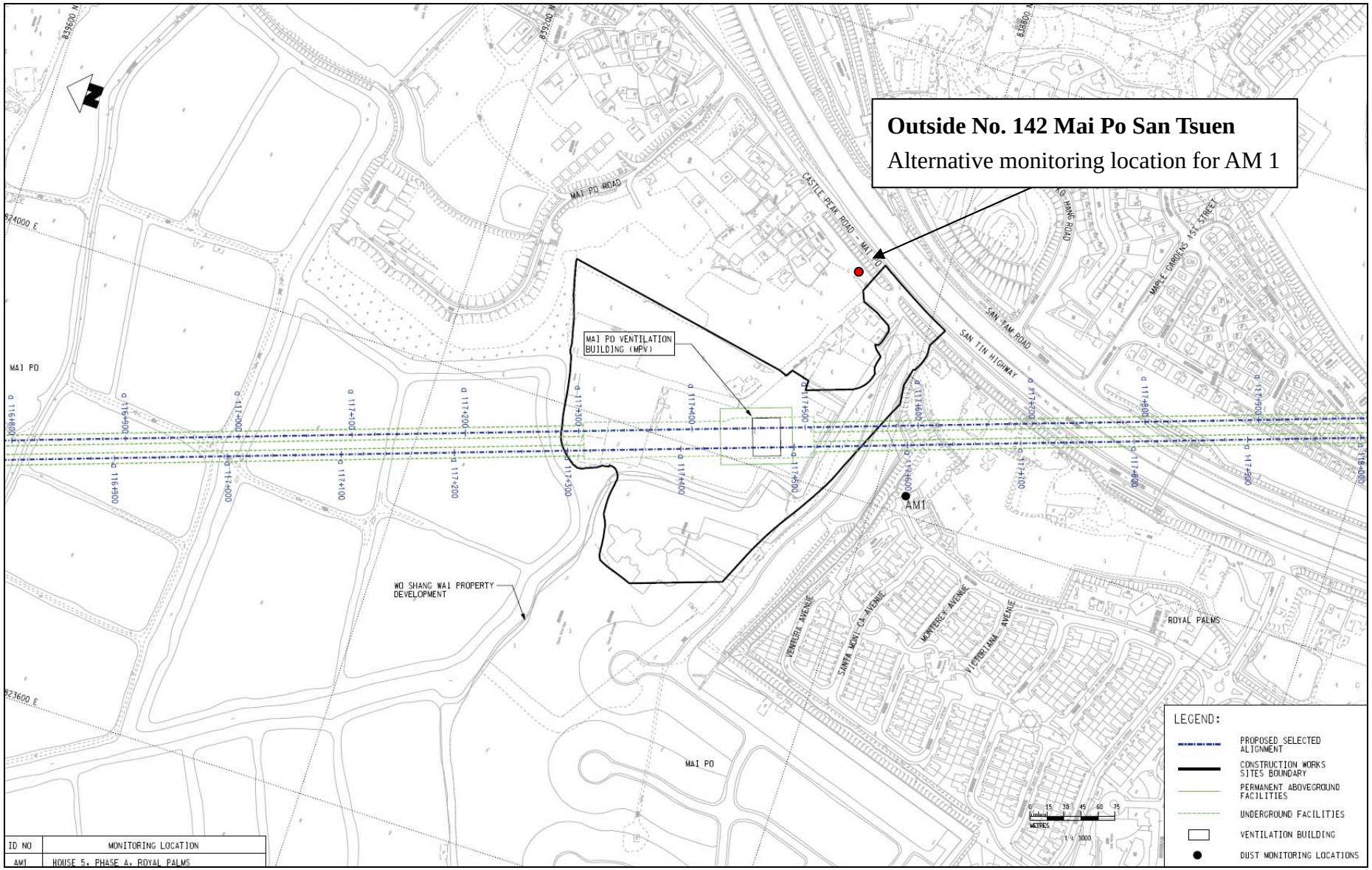
EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	requirement to implement this measure is subject to findings of the review of landfill gas monitoring data with EPD before the commencement of operation).	hazards		NTML Consultation Zone		as per construction programme
S14.76	- All maintenance personnel and station staff working within the tunnels should be educated in the dangers of landfill gas and the signs and symptoms of asphyxia.	Protect the workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.76	- Smoking within the tunnels should be prohibited at all times.	Protect the operation of the XRL and workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.76	- An assumed presence of landfill gas should be adopted at all times by maintenance workers and a strictly regulated “work permit procedure” involving training, ventilation, gas monitoring (as detailed in	Protect the workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation	Operation phase	To be implemented as per construction

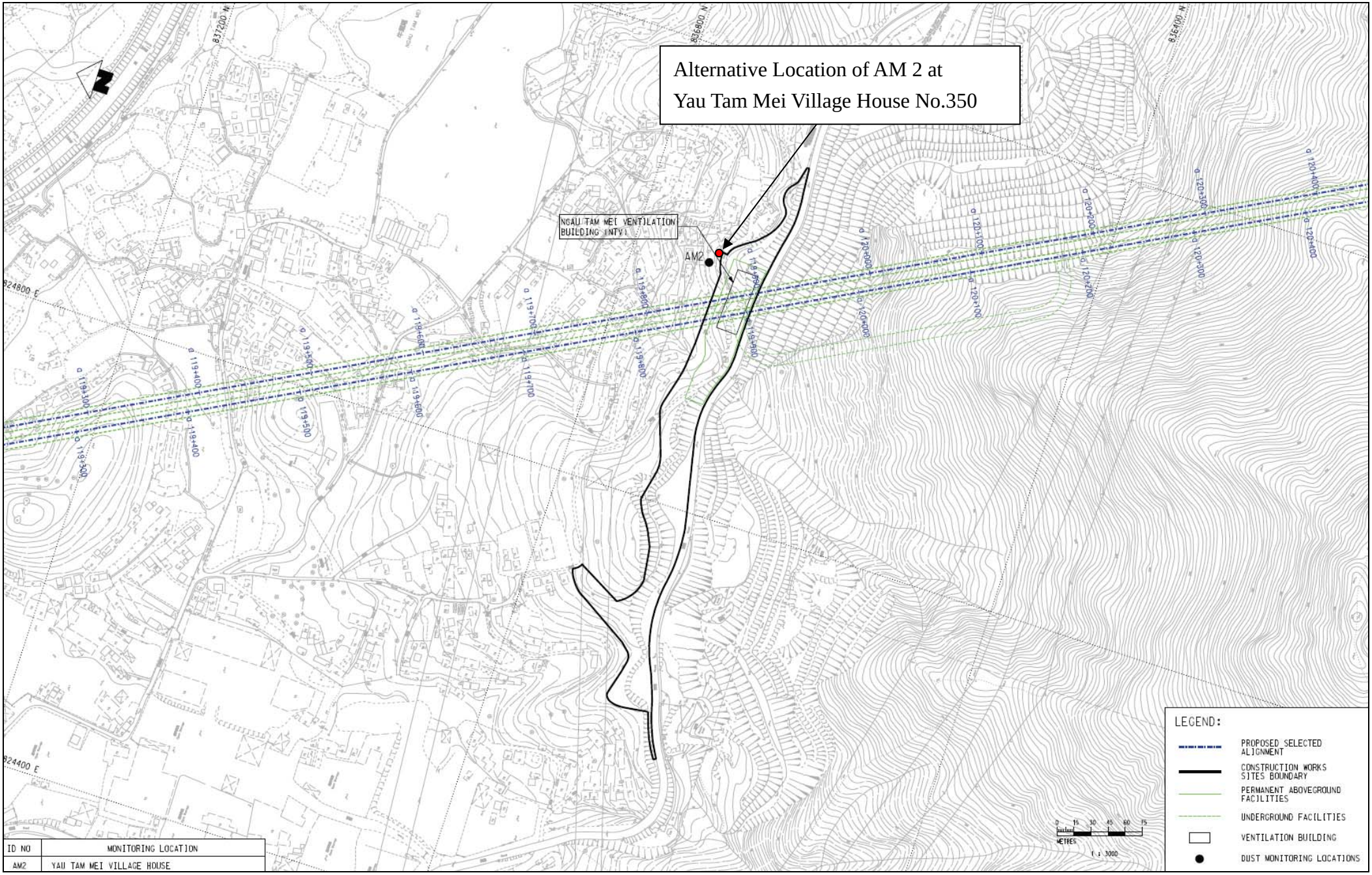
EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	the Construction recommendations section), safety tracking and communication with maintenance staff, enforcement of the no smoking order.			Zone		programme
S14.82 & S14.83	- The monitoring requirement during the operational phase should be discussed with EPD before the commencement of operation. Weekly monitoring of methane, carbon dioxide and oxygen in the form of a walkover survey at 20m intervals for section of tunnels under NTML and 50m interval within the NTML Consultation Zone is tentatively proposed. The survey should be conducted under non-ventilated condition and before the first train operates and start-up of ventilation, if applicable. A summary of the monitoring results should be submitted to EPD for record at the end of the monitoring period.	Confirm no landfill gas ingress into the XRL tunnels	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.84	- An annual walkover survey in the tunnels within the Consultation Zone of the NTML should be conducted to test for the presence of flammable gas at joints and	Confirm no landfill gas ingress into the XRL	MTR	XRL tunnels within the NTML	Operation phase	To be implemented as per

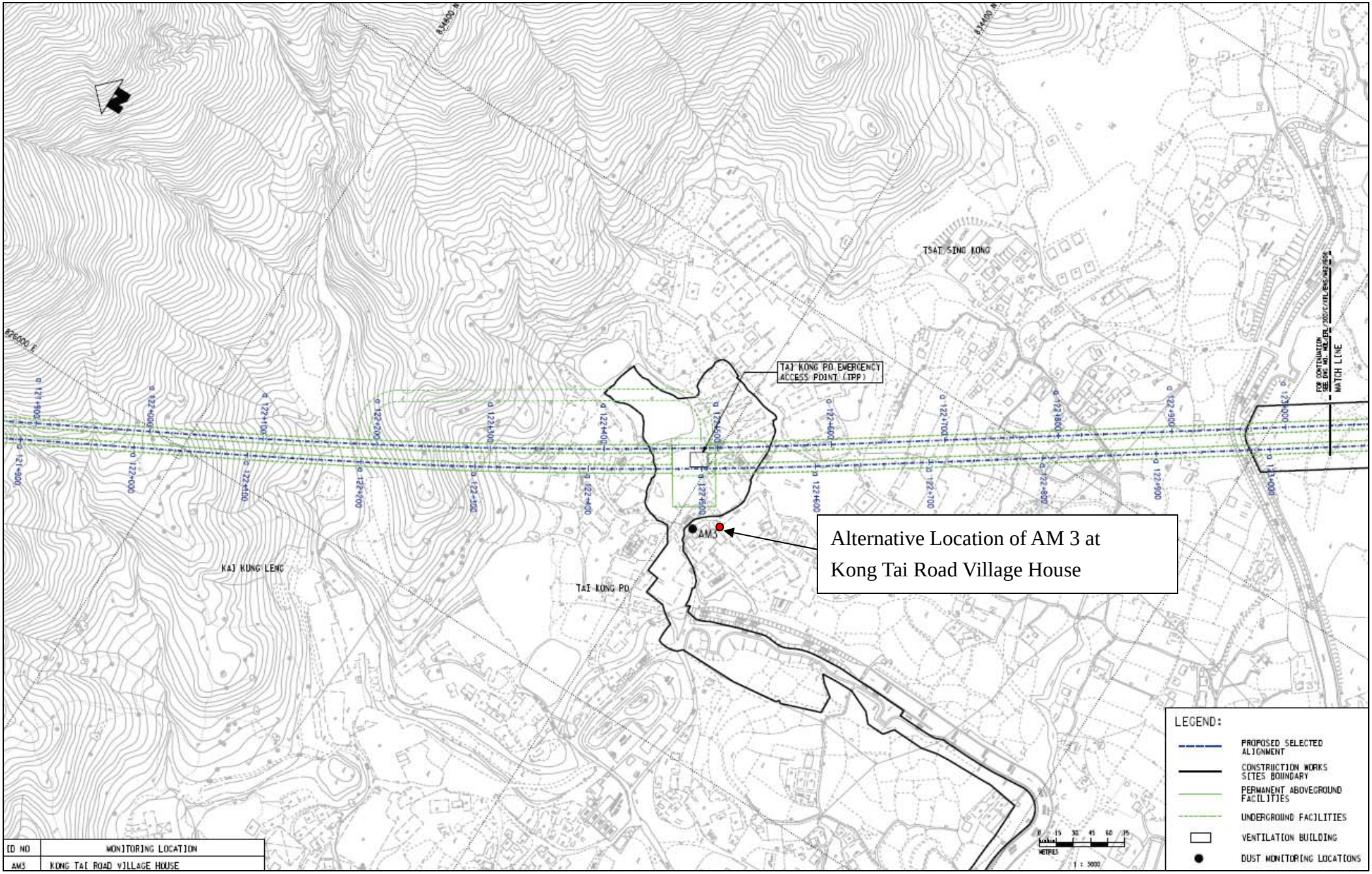
EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	cracks, if identified. Rectifications, such as sealing of cracks and inspection of tunnel seals, should be carried out for any signs of presence of flammable gas. The survey should be conducted under non-ventilated condition and before the first train operates and start-up of ventilation, if applicable.	tunnels		Consultation Zone		construction programme

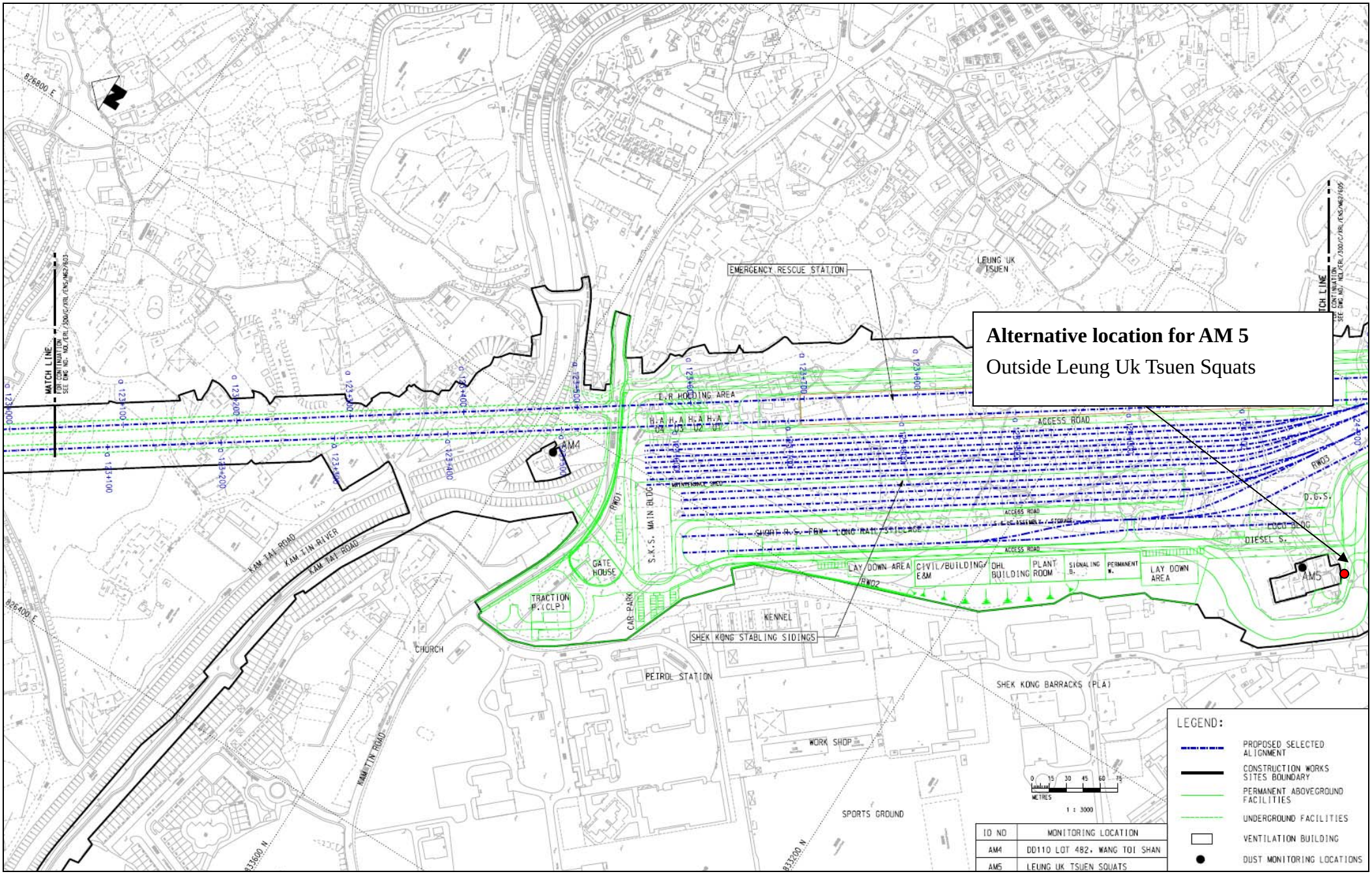
Appendix D

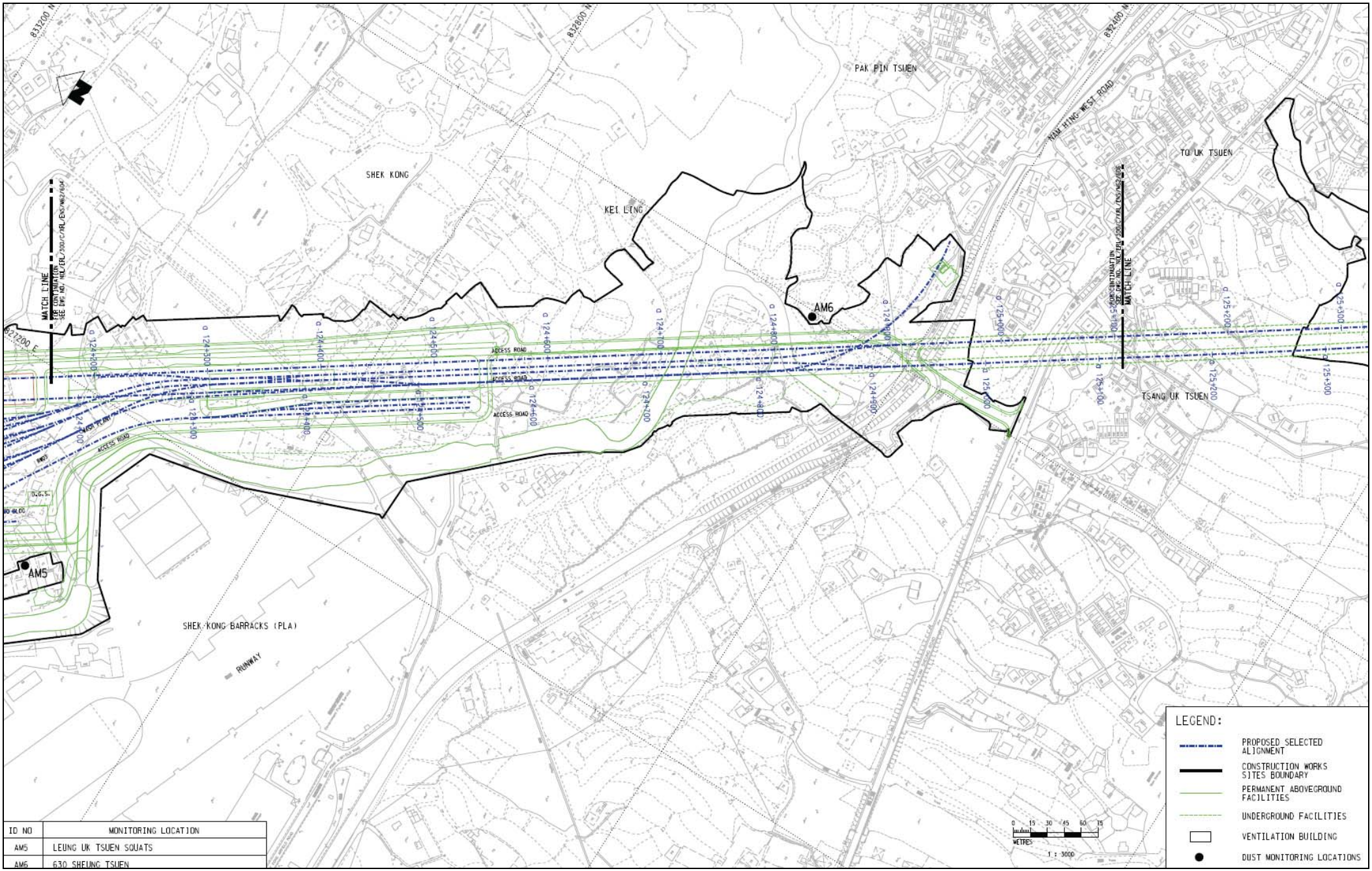
Monitoring Locations


Outside No. 142 Mai Po San Tsuen
Alternative monitoring location for AM 1
MAI PO VENTILATION BUILDING (MPV)
WO SHANG WAI PROPERTY DEVELOPMENT
AM1
MAI PO
MAI PO ROAD
CASTLE PEAK ROAD - MAI PO
SAN TIN HIGHWAY
SAN TAM ROAD
ROYAL PALMS
VENTURA AVENUE
SANTA MONICA AVENUE
MONTEREY AVENUE
VICTORIANA AVENUE
MARIE CURIENS 1ST STREET
839600 N
824000 E
823600 E
ID NO
MONITORING LOCATION
AM1
HOUSE 5, PHASE 4, ROYAL PALMS
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATIONS
METRES
1 : 3000

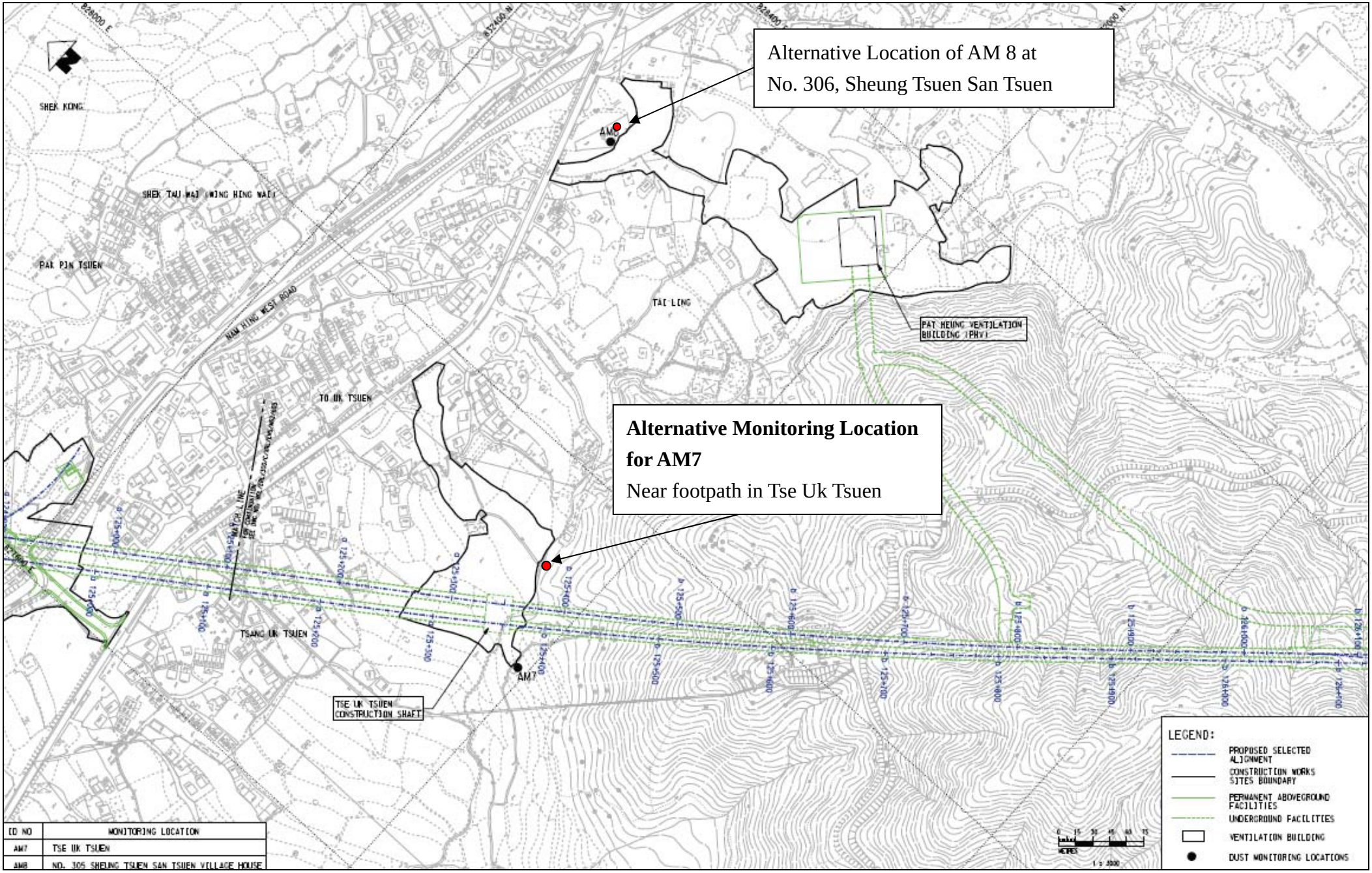

Alternative Location of AM 2 at
Yau Tam Mei Village House No.350
NGAU TAM MEI VENTILATION BUILDING (NTV)
AM2
837200 N
836800 N
836400 N
824800 E
824400 E
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATIONS
METRES
1 : 3000
ID NO | MONITORING LOCATION
AM2 | YAU TAM MEI VILLAGE HOUSE

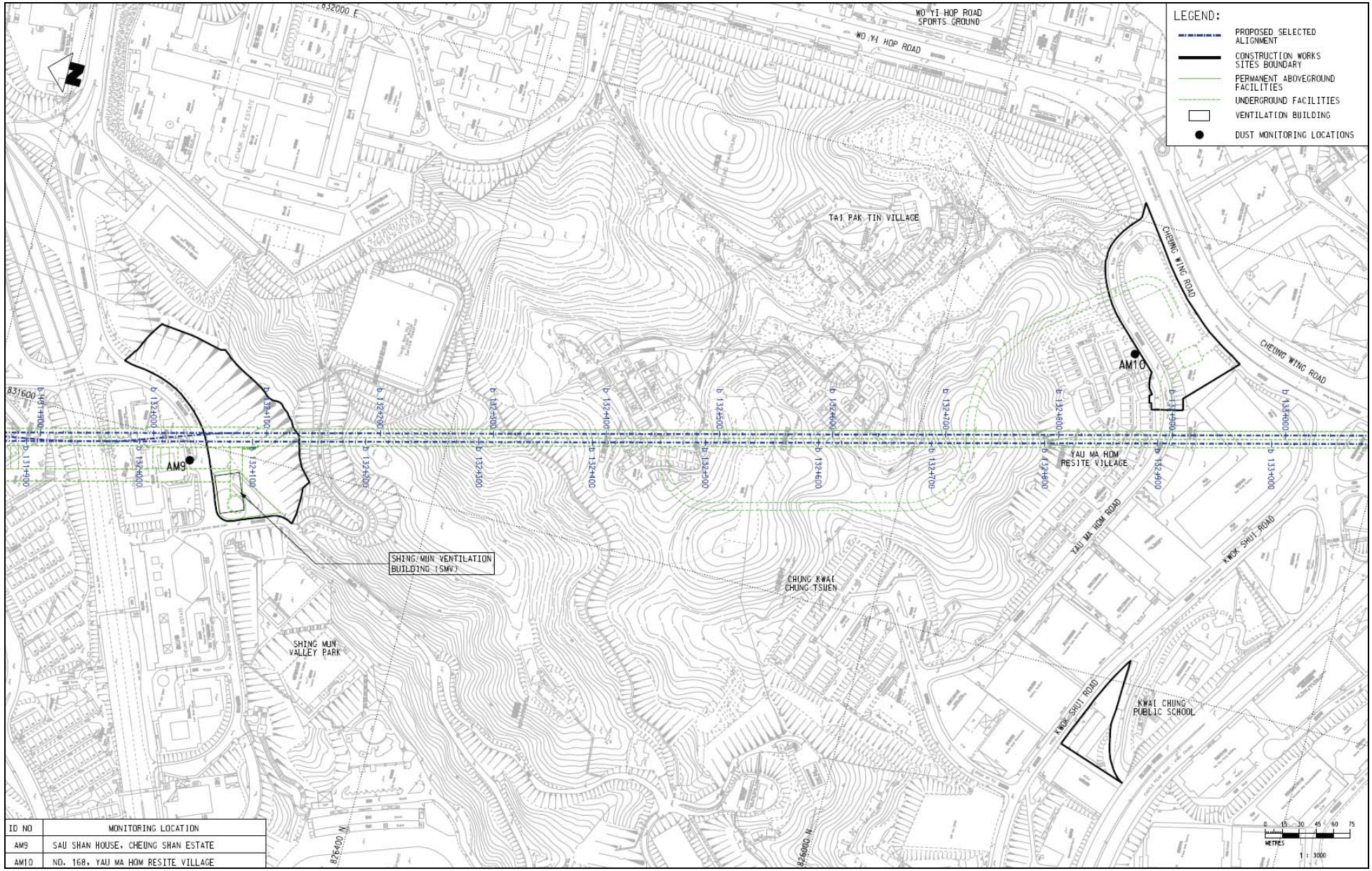

TSAT SING KONG
TAI KONG PO EMERGENCY ACCESS POINT (TPP)
AM3
Alternative Location of AM 3 at Kong Tai Road Village House
KAI KONG LENG
TAI KONG PO
MATCH LINE
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATIONS
ID NO
MONITORING LOCATION
AM3
KONG TAI ROAD VILLAGE HOUSE


Alternative location for AM 5
Outside Leung Uk Tsuen Squats
EMERGENCY RESCUE STATION
LEUNG UK TSUEN
MATCH LINE
ACCESS ROAD
T.R HOEDING AREA
AM4
AM5
S.K.S. MAIN BLDG.
GATE HOUSE
TRACTION P.(CLP)
CAR PARK
KENNEL
SHEK KONG STABLING SIDINGS
CHURCH
PETROL STATION
WORK SHOP
SHEK KONG BARRACKS (PLA)
SPORTS GROUND
KAM TAI ROAD
KAM TIN RIVER
KAM TIN ROAD
LAY DOWN AREA
CIVIL/BUILDING E&M
OHL BUILDING
PLANT ROOM
SIGNALING B.
PERMANENT W.
LAY DOWN AREA
D.G.S.
DIESEL S.
826800 E
826400 E
833600 N
833200 N
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATIONS
METRES
1 : 3000
ID NO
MONITORING LOCATION
AM4
DD110 LOT 482, WANG TOI SHAN
AM5
LEUNG UK TSUEN SQUATS

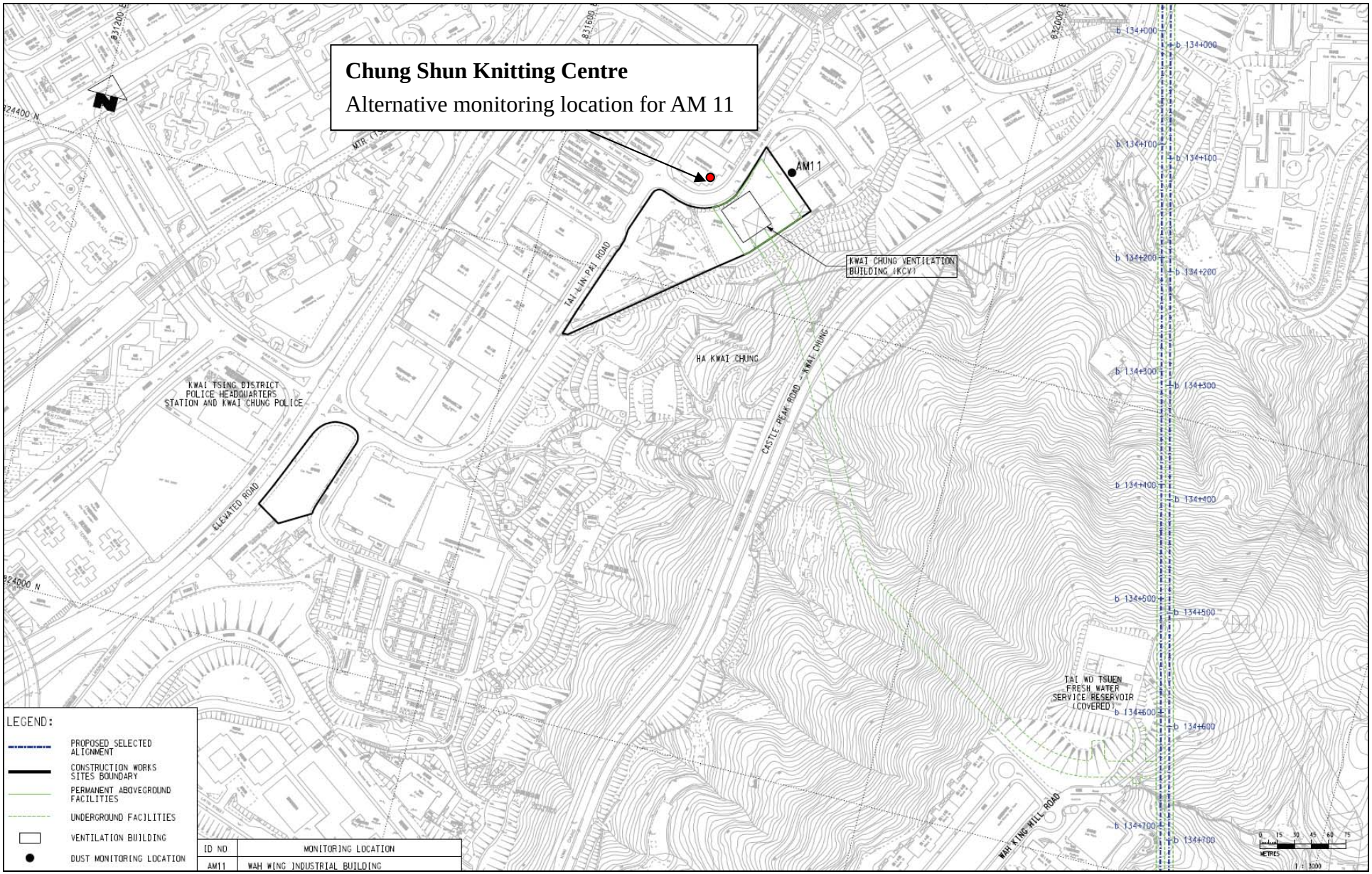


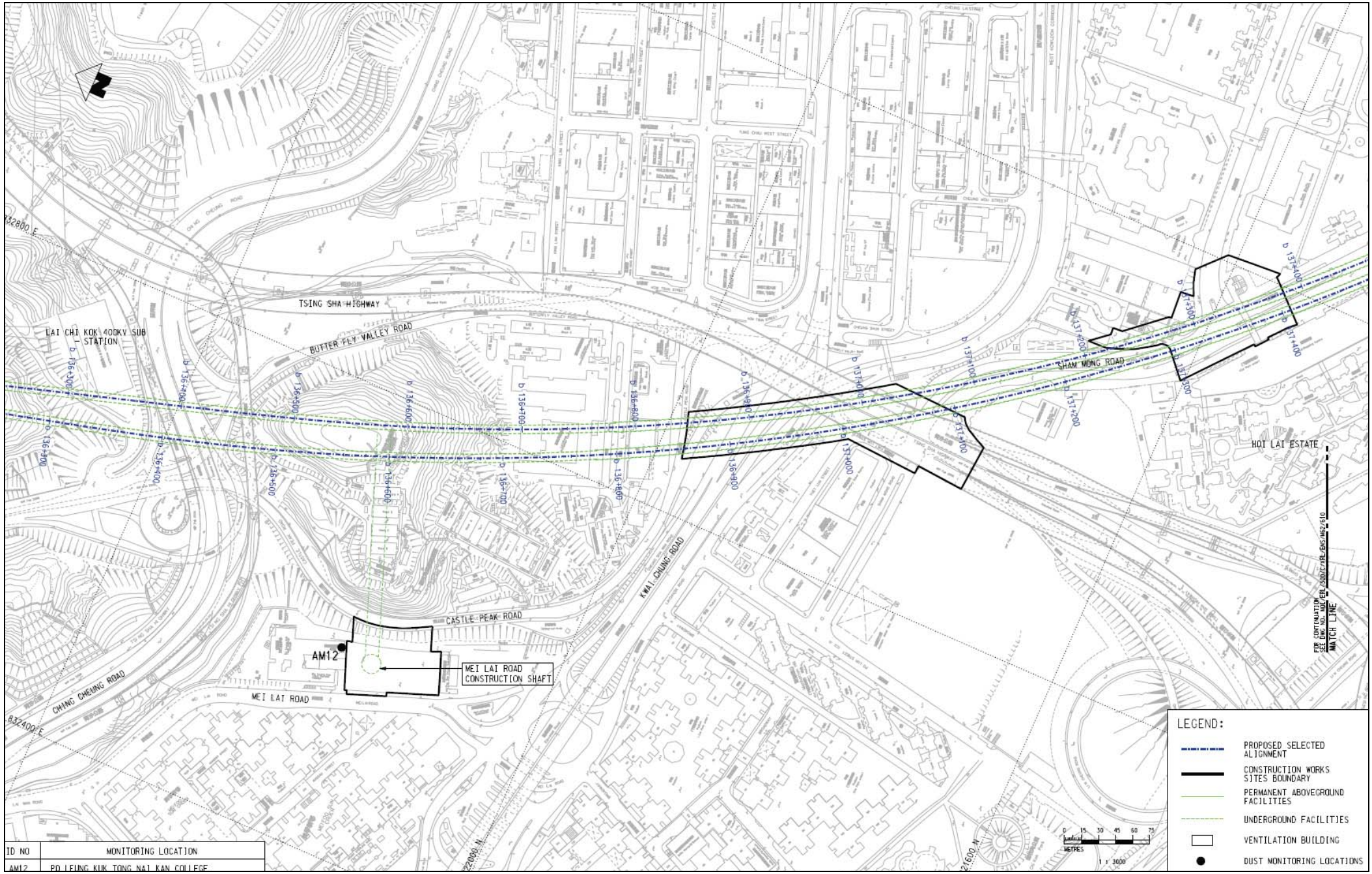
ID NO	MONITORING LOCATION
AM5	LEUNG UK TSUEN SQUATS
AM6	630 SHEUNG TSUEN


Alternative Location of AM 8 at
No. 306, Sheung Tsuen San Tsuen
Alternative Monitoring Location for AM7
Near footpath in Tse Uk Tsuen
AM8
AM7
SHEK KONG
SHEK TAU WAI (WING HING WAI)
PAK PIN TSUEN
WANG HING WEST ROAD
TAI LONG
PAT HEUNG VENTILATION BUILDING (PHV)
TO UK TSUEN
TSANG UK TSUEN
TSE UK TSUEN CONSTRUCTION SHAFT
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATIONS
ID NO
MONITORING LOCATION
AM7
TSE UK TSUEN
AM8
NO. 305 SHEUNG TSUEN SAN TSUEN VILLAGE HOUSE

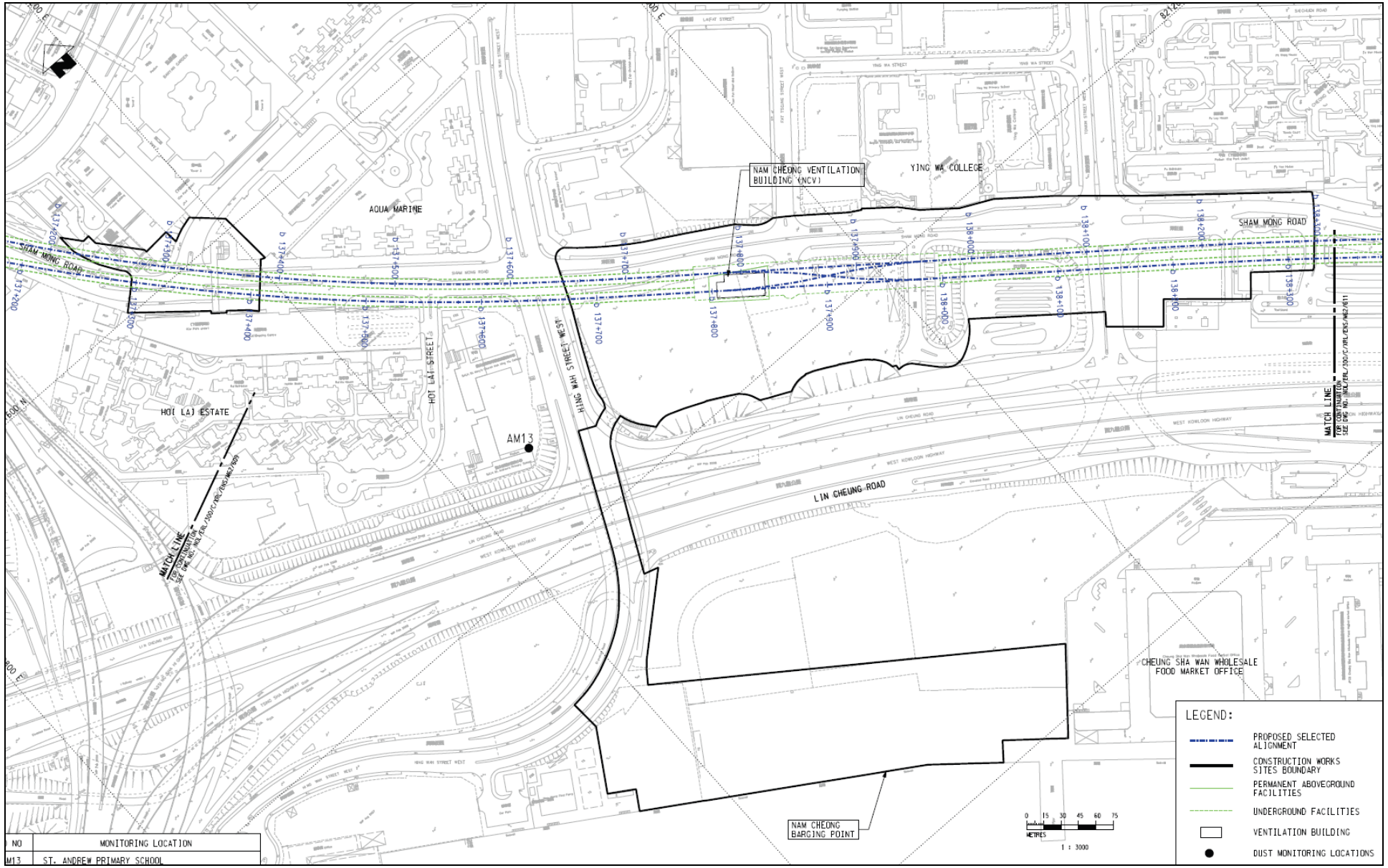


ID NO	MONITORING LOCATION
AM9	SAU SHAN HOUSE, CHEUNG SHAN ESTATE
AM10	NO. 168, YAU MA HOM RESITE VILLAGE

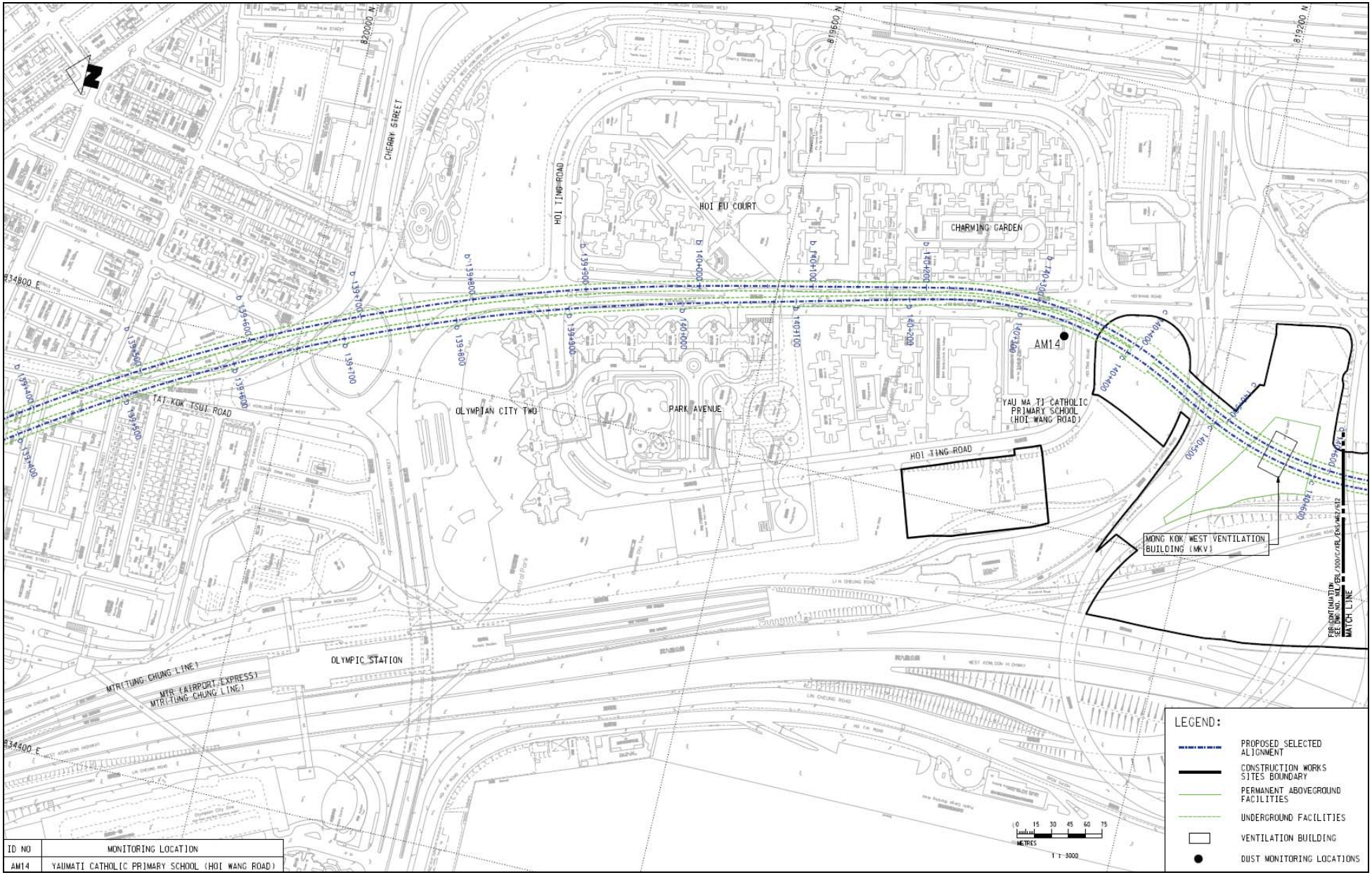

Chung Shun Knitting Centre
Alternative monitoring location for AM 11
AM11
KWAI CHUNG VENTILATION BUILDING (KCV)
TAI KLIN PAI ROAD
HA KWAI CHUNG
CASTLE PEAK ROAD - KWAI CHUNG
KWAI TSING DISTRICT POLICE HEADQUARTERS STATION AND KWAI CHUNG POLICE
ELEVATED ROAD
TAI WO TSUEN FRESH WATER SERVICE RESERVOIR (COVERED)
WAH KING HILL ROAD
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
DUST MONITORING LOCATION
ID NO
MONITORING LOCATION
AM11
WAH WING INDUSTRIAL BUILDING



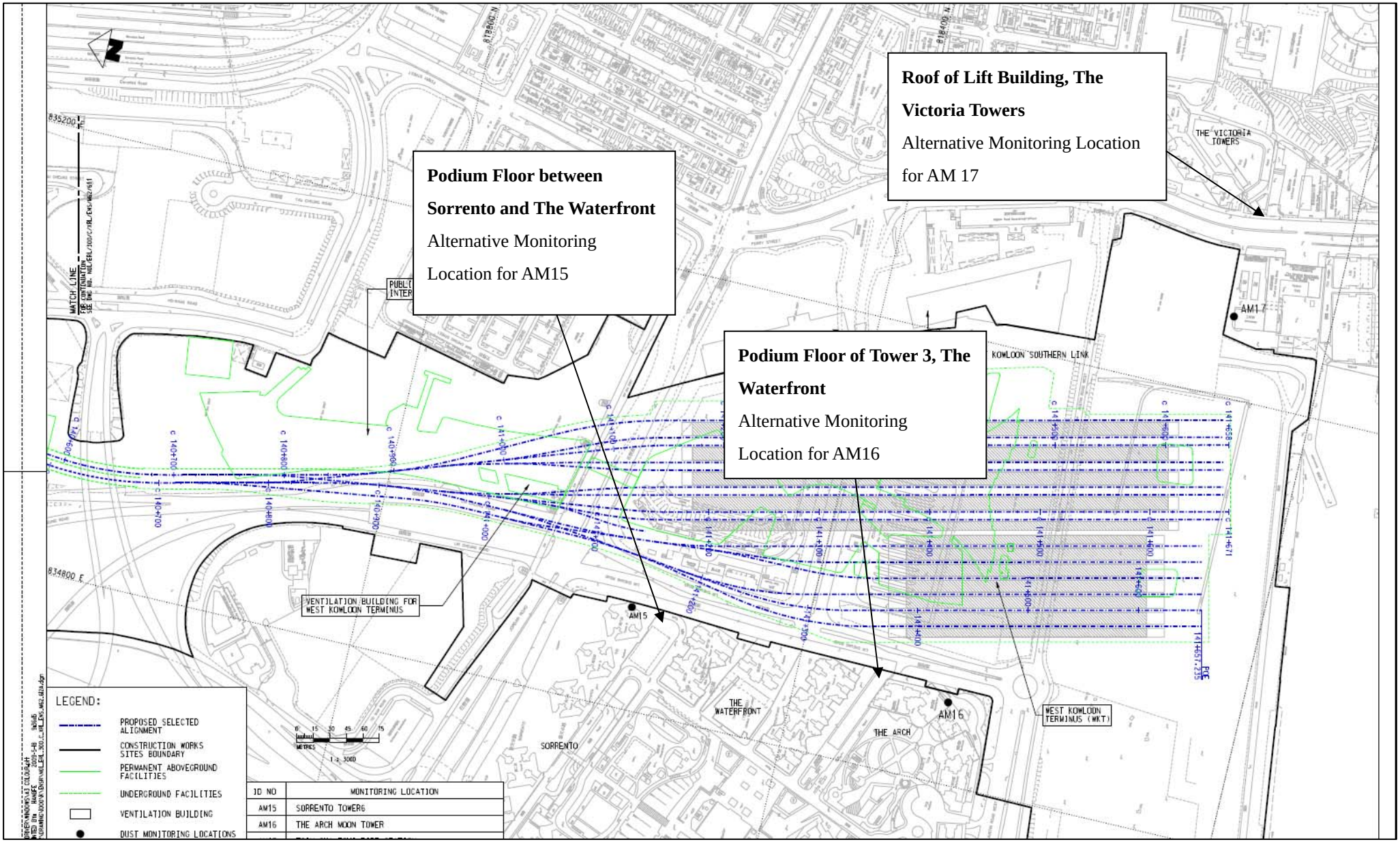
ID NO	MONITORING LOCATION
AM12	PO LEUNG KUK TONG NAI KAN COLLEGE



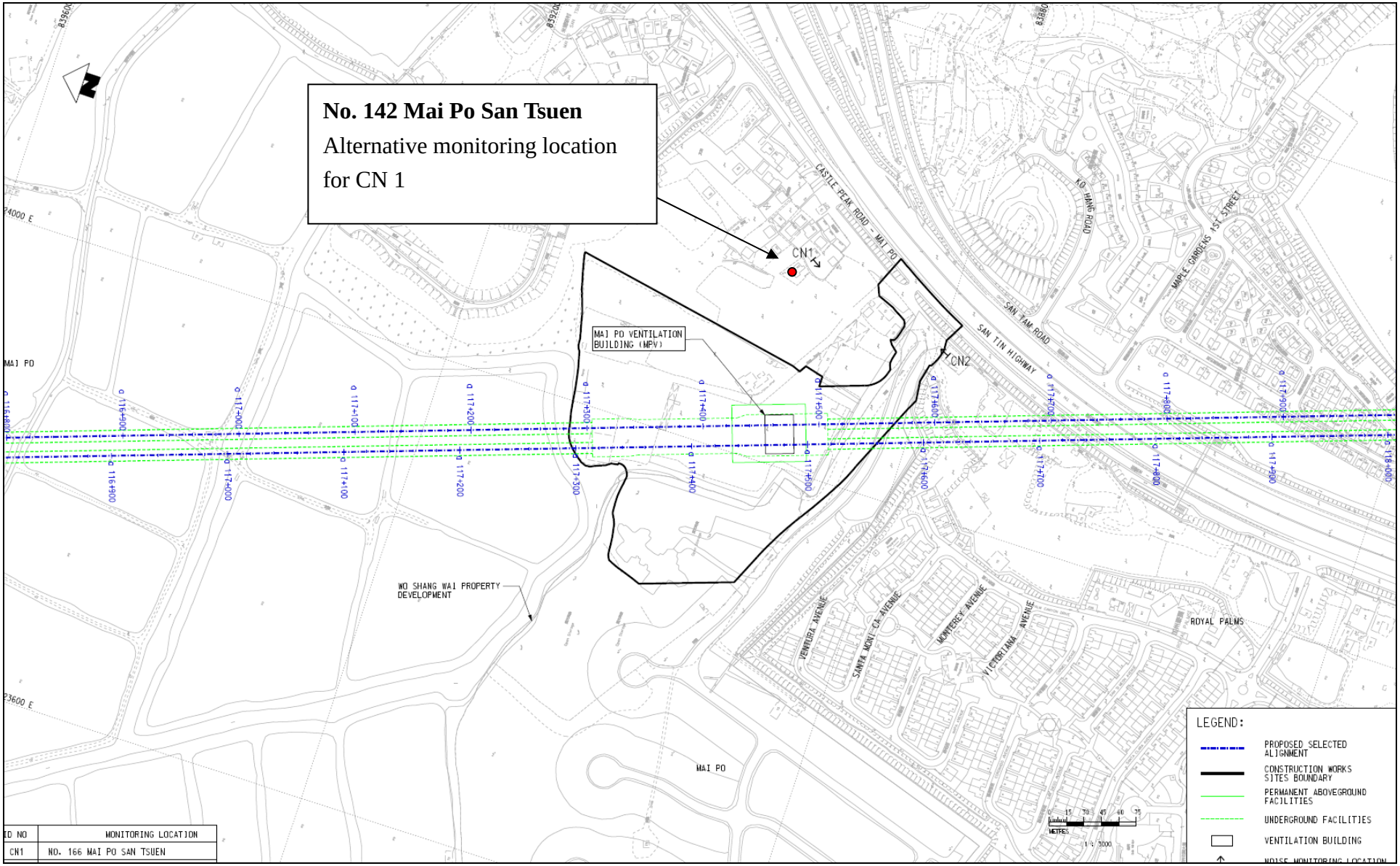
NO	MONITORING LOCATION
M13	ST. ANDREW PRIMARY SCHOOL

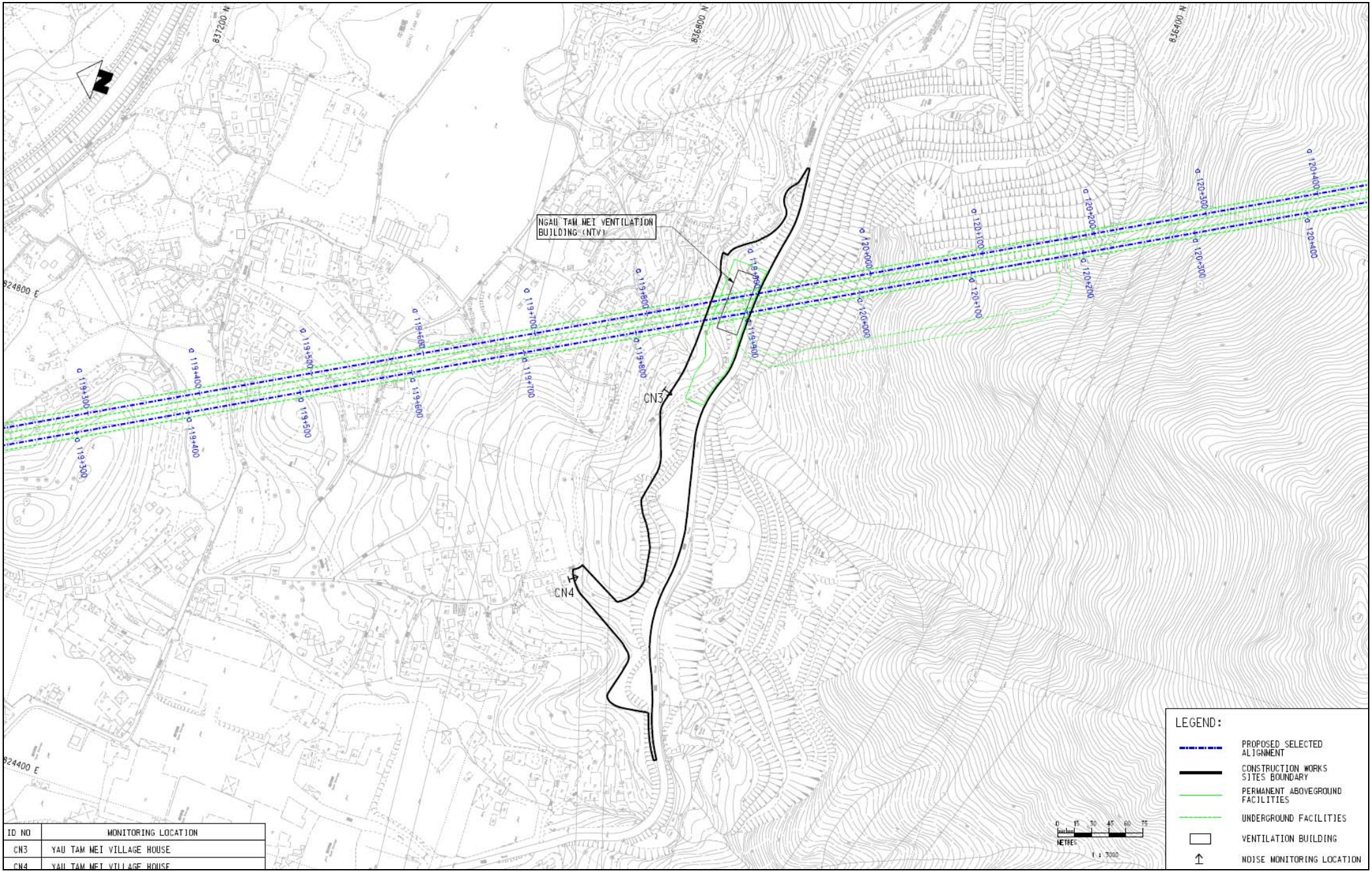


ID NO	MONITORING LOCATION
AM14	YAUMATI CATHOLIC PRIMARY SCHOOL (HOI WANG ROAD)

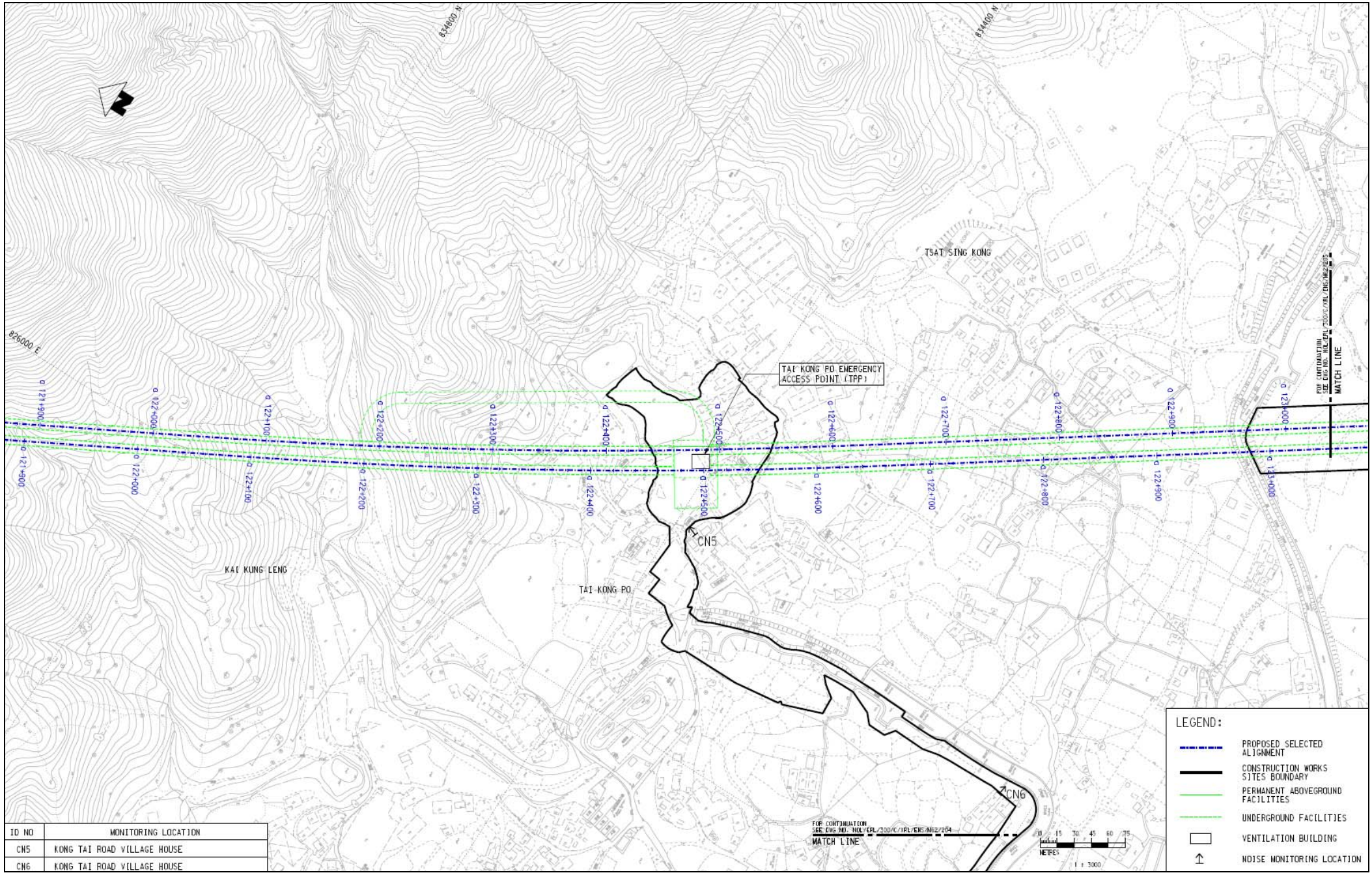


Dust monitoring locations


No. 142 Mai Po San Tsuen
Alternative monitoring location for CN 1
CN1
CN2
MAI PO VENTILATION BUILDING (MPV)
WO SHANG WAI PROPERTY DEVELOPMENT
MAI PO
CASTLE PEAK ROAD - MAI PO
KO HANG ROAD
MAPLE GARDENS
1ST STREET
SAN TAM ROAD
SAN TIN HIGHWAY
VENTURA AVENUE
SANTA MONICA AVENUE
MONTEREY AVENUE
VICTORIANA AVENUE
ROYAL PALMS
24000 E
23600 E
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
NOISE MONITORING LOCATION
METRES
1 : 3000
ID NO
MONITORING LOCATION
CN1
NO. 166 MAI PO SAN TSUEN



ID NO	MONITORING LOCATION
CN3	YAU TAM MEI VILLAGE HOUSE
CN4	YAU TAM MEI VILLAGE HOUSE



ID NO	MONITORING LOCATION
CN5	KONG TAI ROAD VILLAGE HOUSE
CN6	KONG TAI ROAD VILLAGE HOUSE

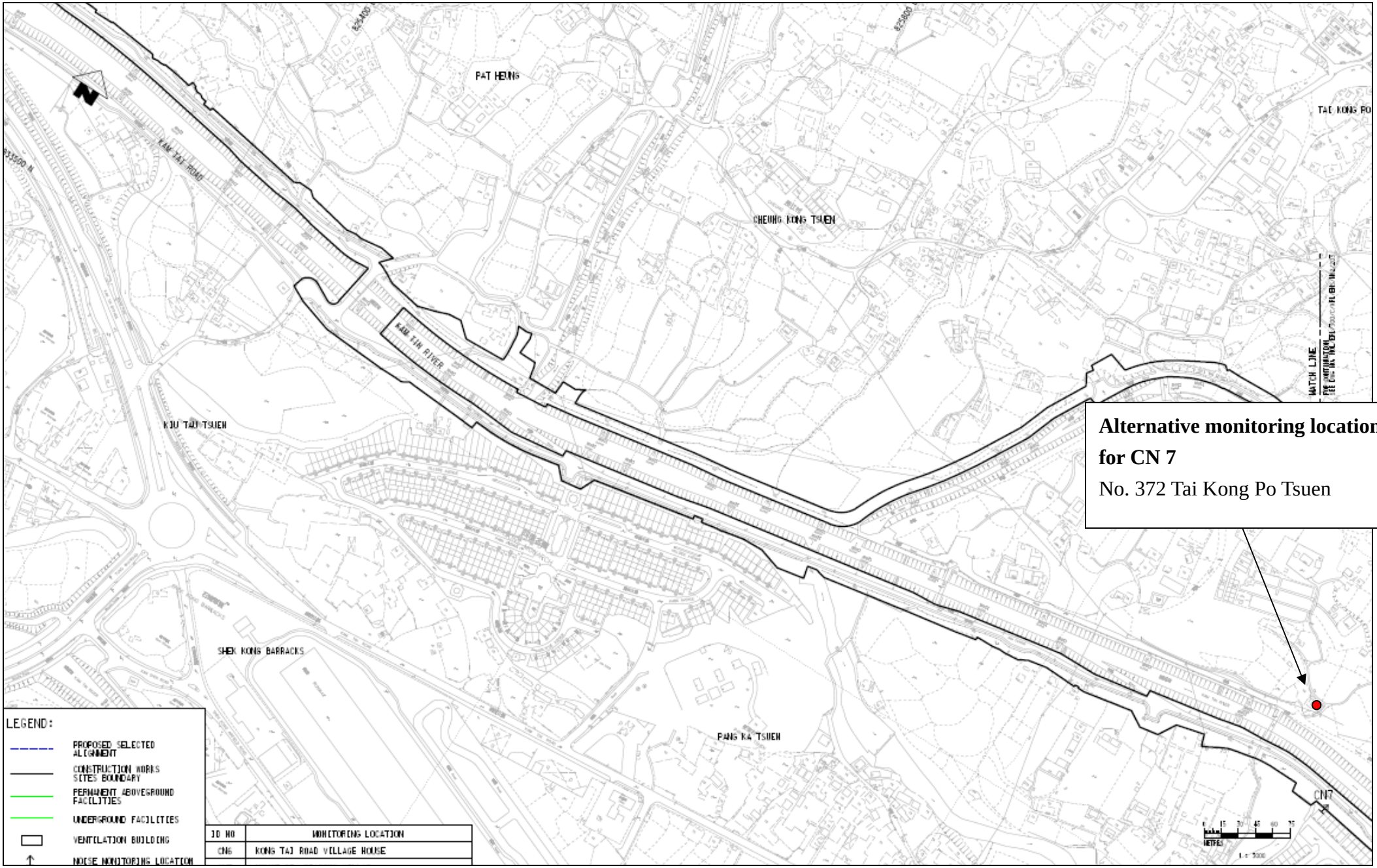
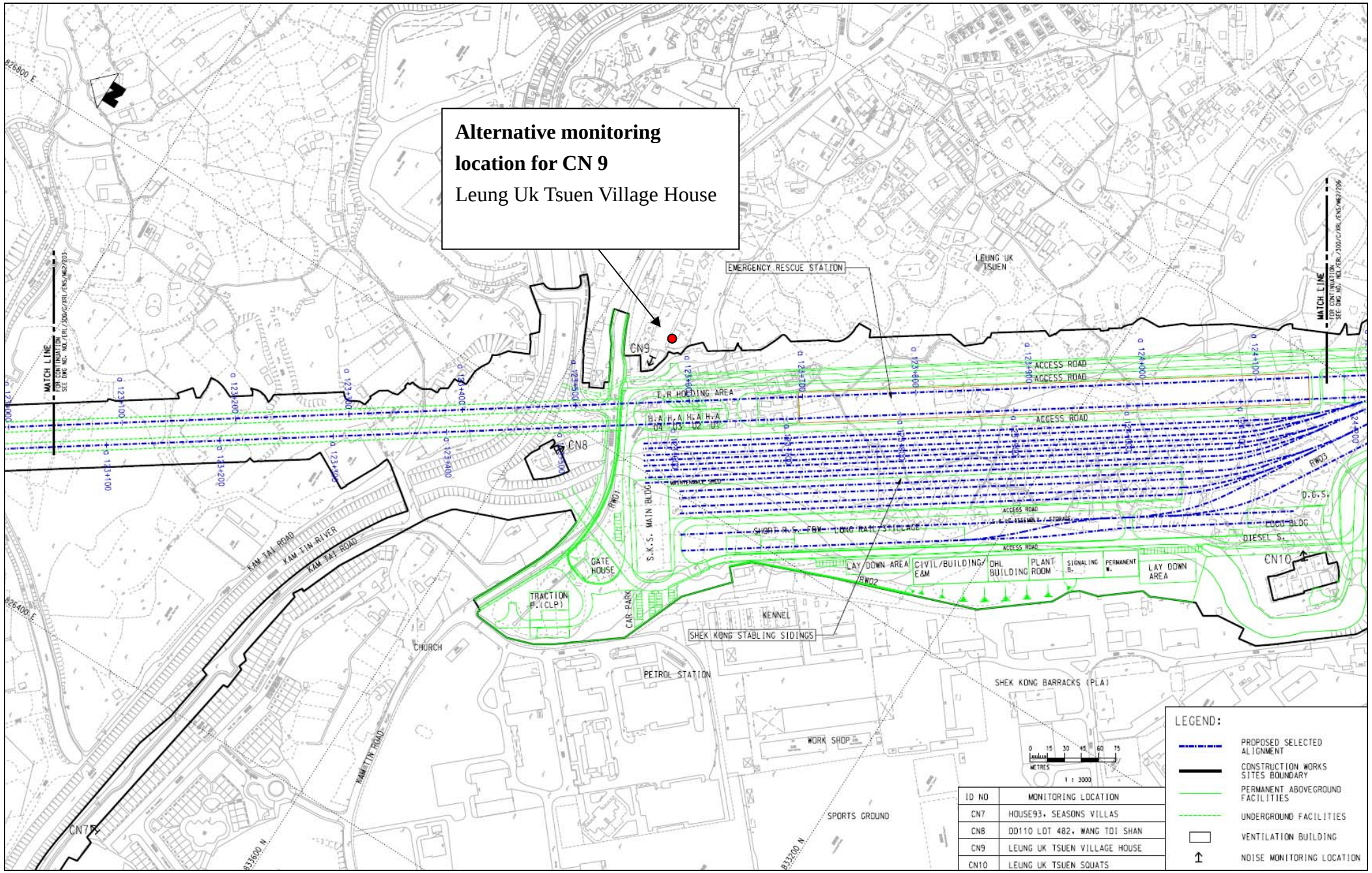
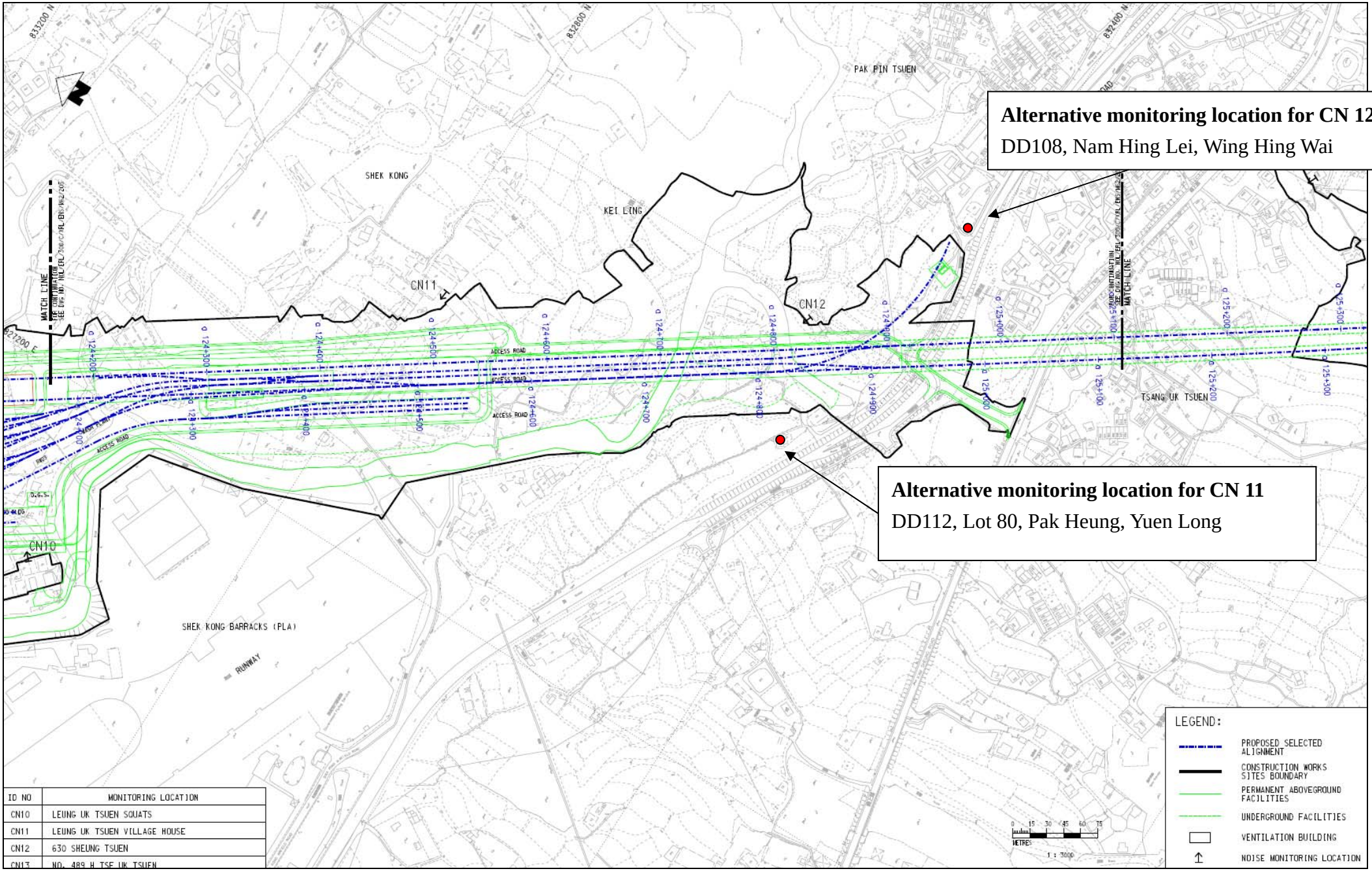
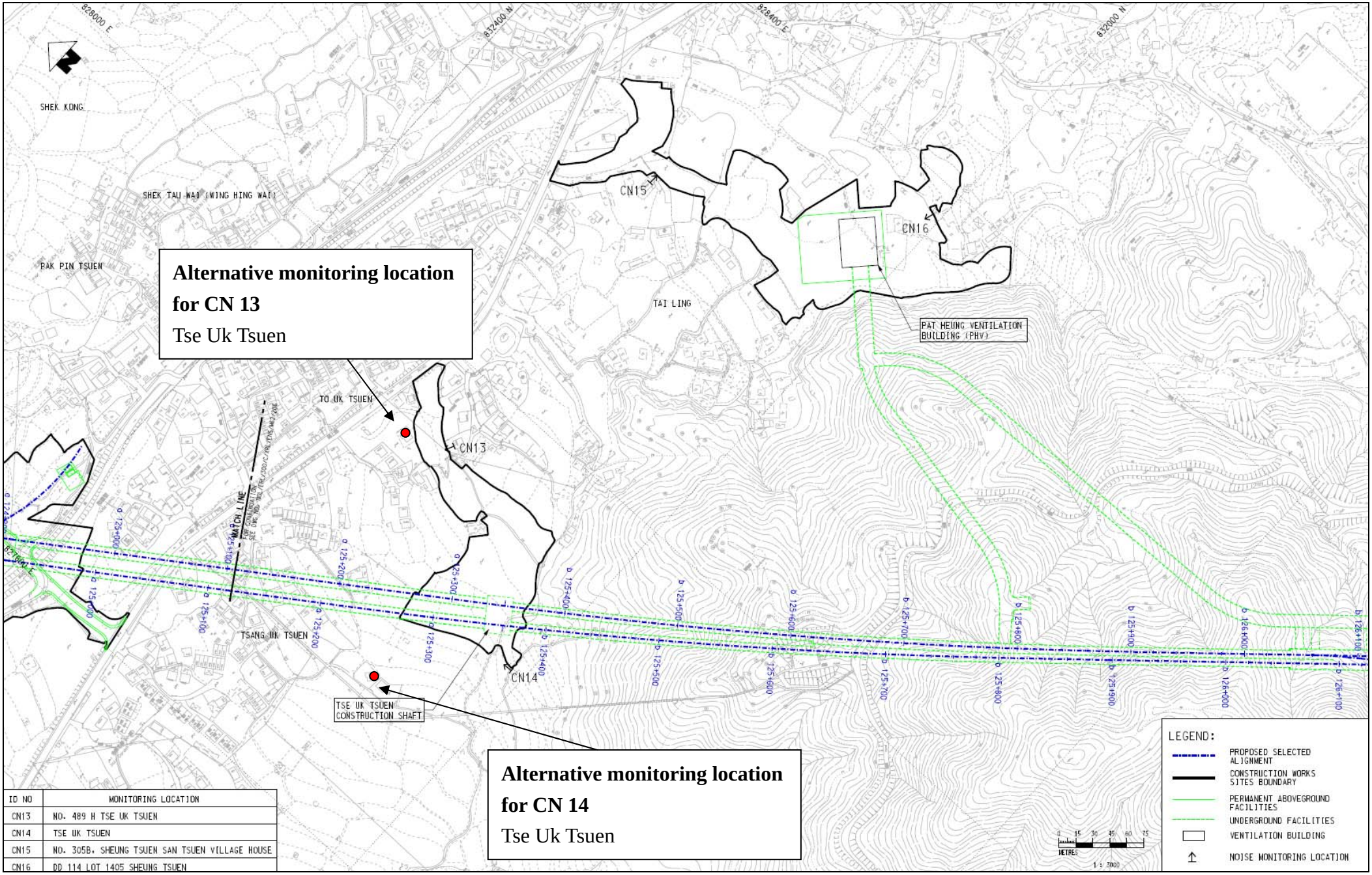


Figure 2 – Noise Monitoring Locations

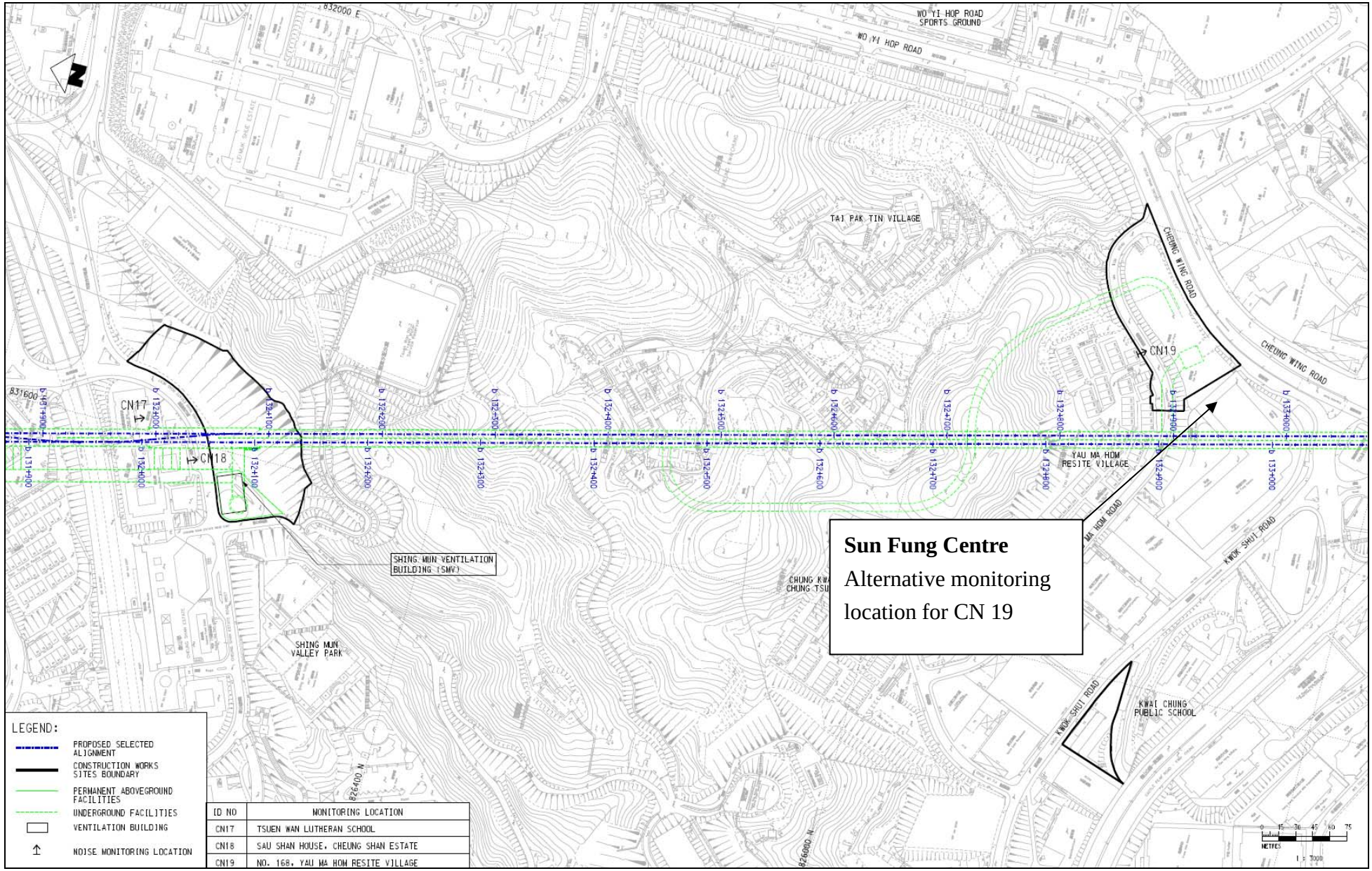

Alternative monitoring location for CN 9
Leung Uk Tsuen Village House
EMERGENCY RESCUE STATION
LEUNG UK TSUEN
CN9
CN8
CN10
CN7
E.R HOLDING AREA
ACCESS ROAD
MAINTENANCE SHED
S.K.S. MAIN BLDG
GATE HOUSE
TRACTION P.(CLP)
CAR PARK
KENNEL
SHEK KONG STABLING SIDINGS
LAY DOWN AREA
CIVIL/BUILDING E&M
OHL BUILDING
PLANT ROOM
SIGNALING B.
PERMANENT W.
LAY DOWN AREA
RW01
RW02
RW03
D.G.S.
COCO BLDG
DIESEL S.
KAM TAI ROAD
KAM TIN RIVER
KAM TIN ROAD
CHURCH
PETROL STATION
WORK SHOP
SHEK KONG BARRACKS (PLA)
SPORTS GROUND
MATCH LINE
826800 E
826400 E
833600 N
833200 N
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
NOISE MONITORING LOCATION
METRES
1 : 3000
ID NO | MONITORING LOCATION
CN7 | HOUSE93, SEASONS VILLAS
CN8 | DD110 LOT 482, WANG TOI SHAN
CN9 | LEUNG UK TSUEN VILLAGE HOUSE
CN10 | LEUNG UK TSUEN SQUATS



ID NO	MONITORING LOCATION
CN10	LEUNG UK TSUEN SQUATS
CN11	LEUNG UK TSUEN VILLAGE HOUSE
CN12	630 SHEUNG TSUEN
CN13	NO. 489 H TSE UK TSUEN



ID NO	MONITORING LOCATION
CN13	NO. 489 H TSE UK TSUEN
CN14	TSE UK TSUEN
CN15	NO. 305B, SHEUNG TSUEN SAN TSUEN VILLAGE HOUSE
CN16	DD 114 LOT 1405 SHEUNG TSUEN


832000 E
WO YI HOP ROAD SPORTS GROUND
WO YI HOP ROAD
TAI PAK TIN VILLAGE
CHEUNG WING ROAD
CHEUNG WING ROAD
CN19
CN17
CN18
831600
SHING MUN VENTILATION BUILDING (SMV)
SHING MUN VALLEY PARK
YAU MA HOM RESITE VILLAGE
MA HOM ROAD
KWOK SHUI ROAD
KWOK SHUI ROAD
KWAI CHUNG PUBLIC SCHOOL
826400 N
826000 N
METRES
1 : 7000
Sun Fung Centre
Alternative monitoring location for CN 19
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
NOISE MONITORING LOCATION
ID NO | MONITORING LOCATION
CN17 | TSUEN WAN LUTHERAN SCHOOL
CN18 | SAU SHAN HOUSE, CHEUNG SHAN ESTATE
CN19 | NO. 168, YAU MA HOM RESITE VILLAGE

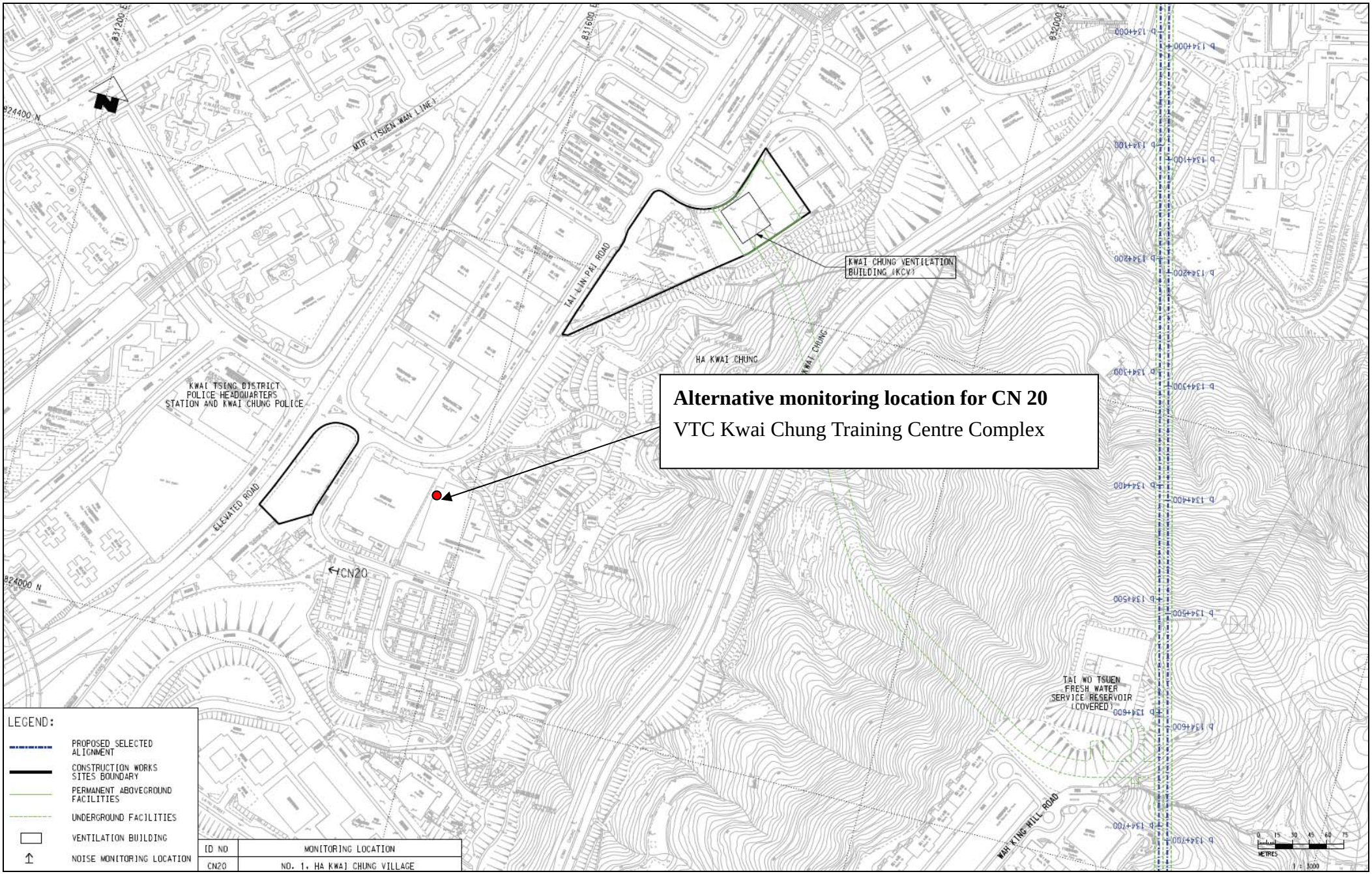
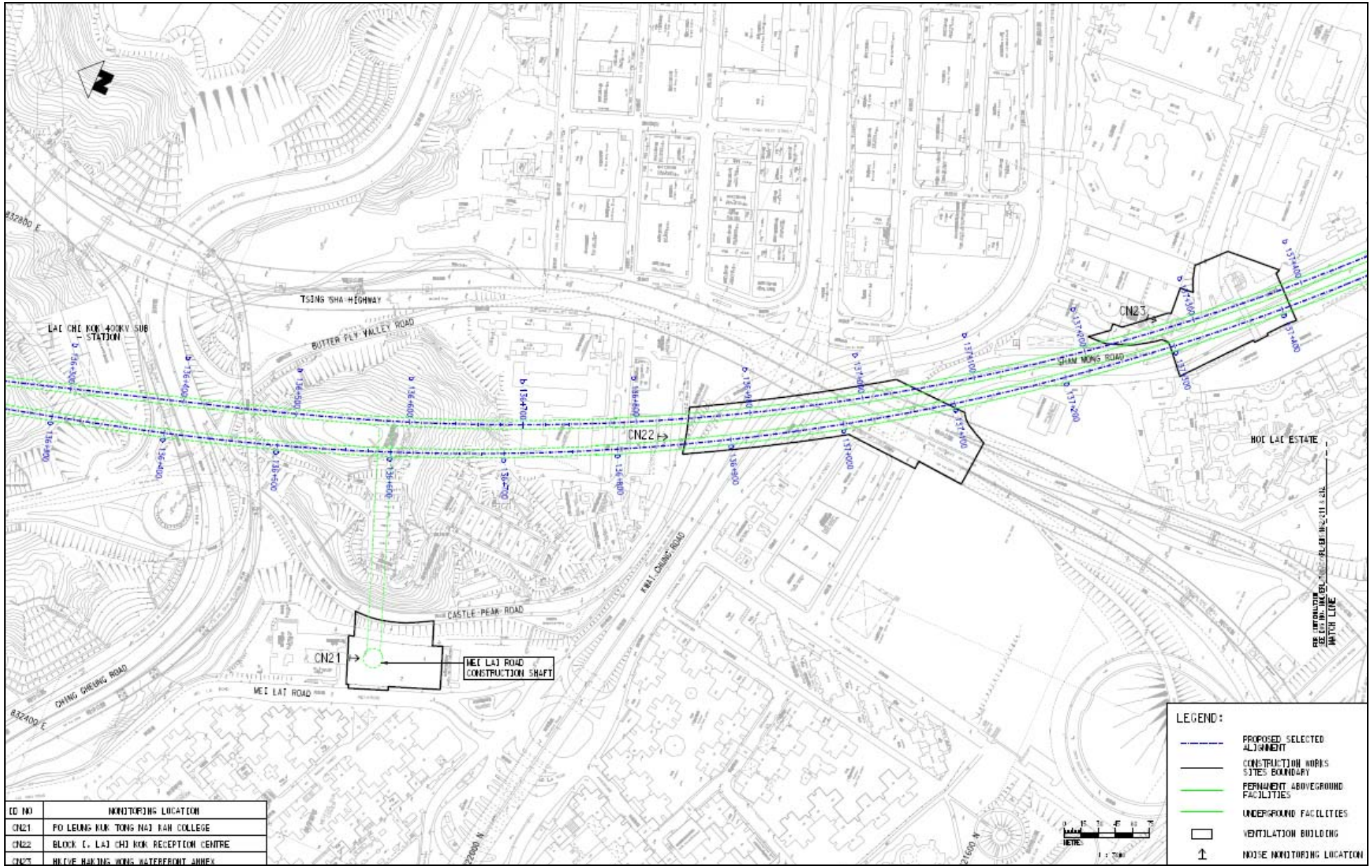
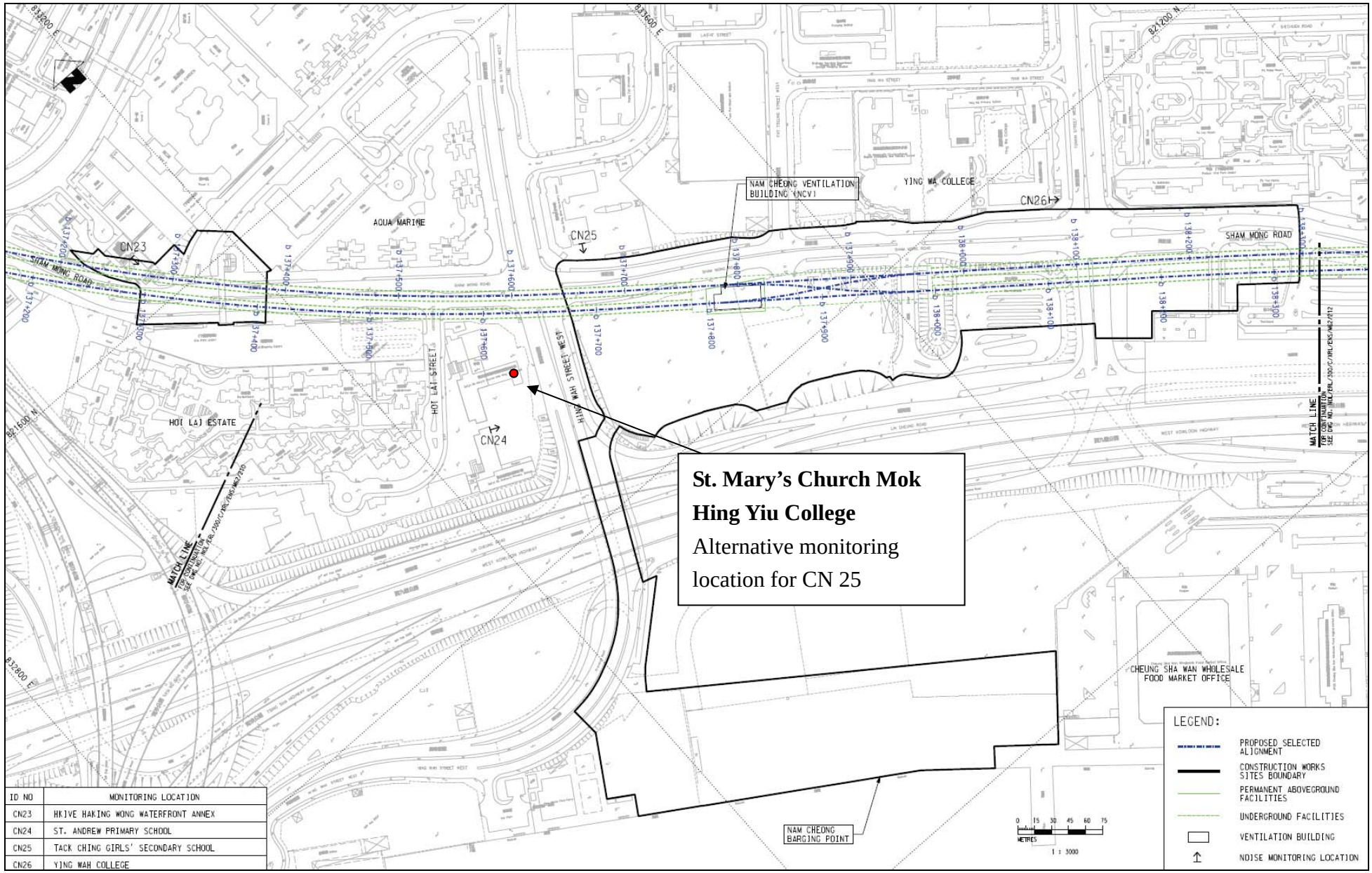


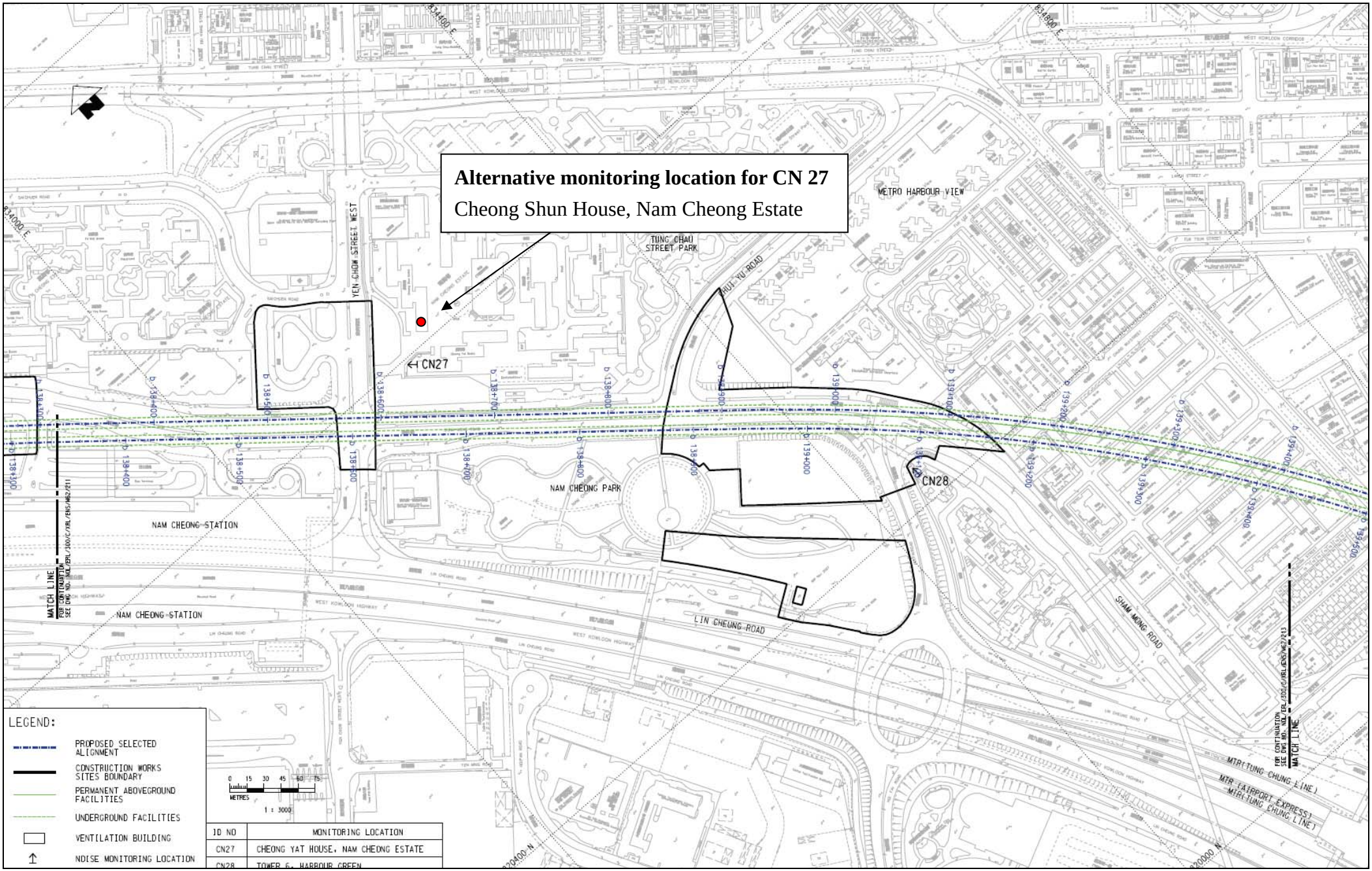
Figure 3 – Noise Monitoring Location

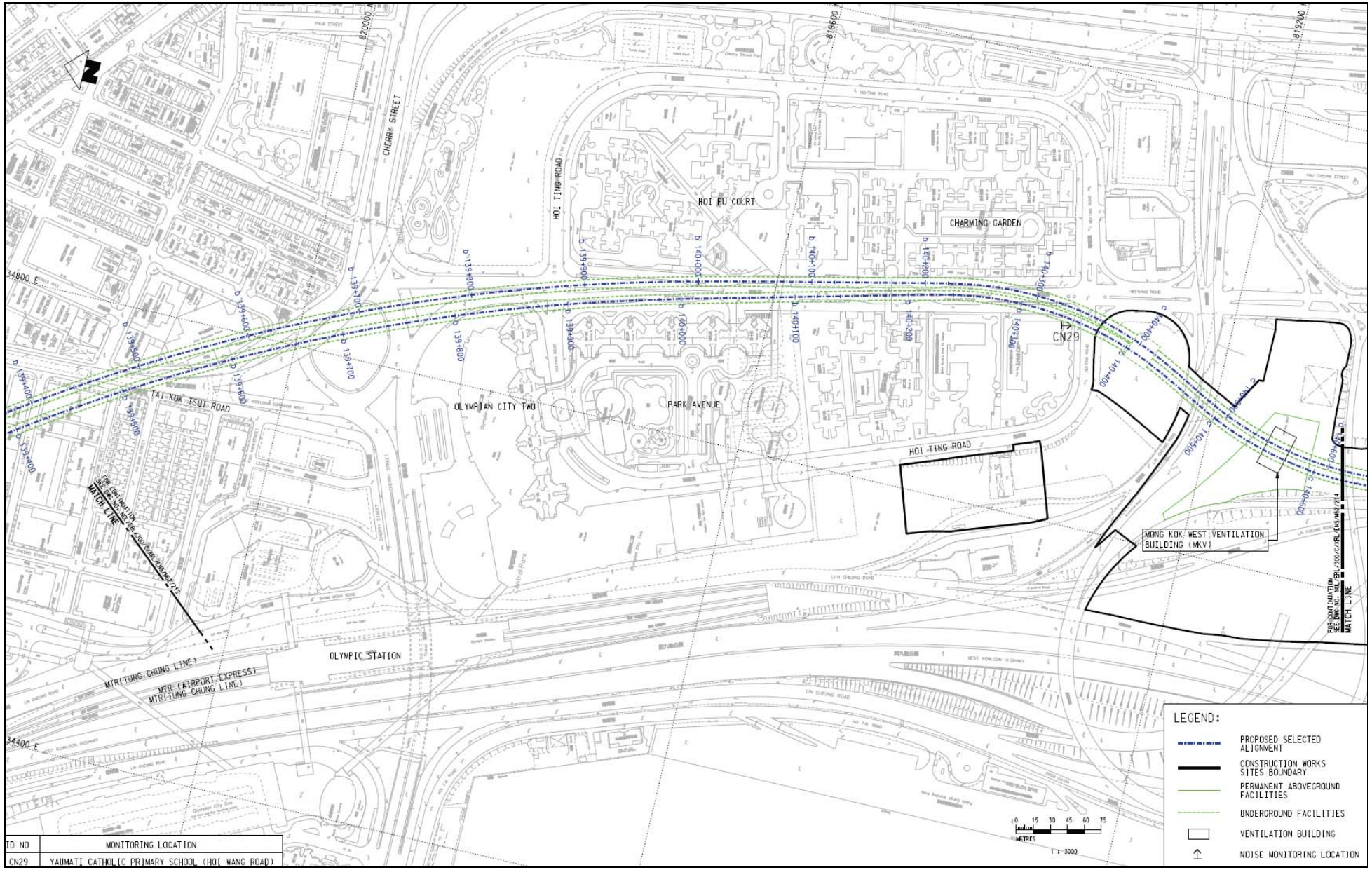


ID NO	MONITORING LOCATION
CN21	PO LEUNG KUK TONG NAI RAN COLLEGE
CN22	BLOCK C, LAI CHI KOK RECEPTION CENTRE
CN23	HOLYE HAKKING WONG WATERFRONT ANNEX

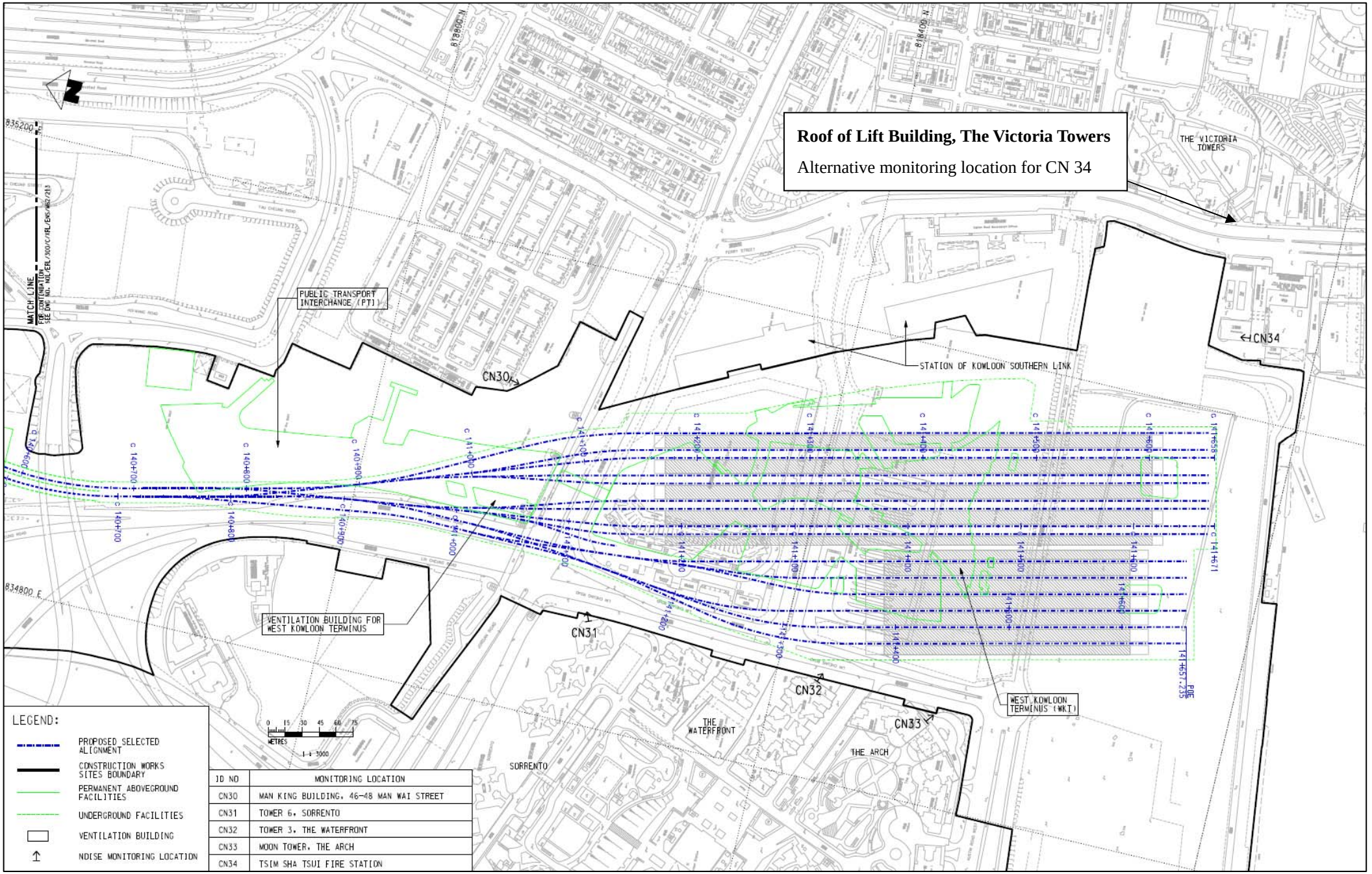


ID NO	MONITORING LOCATION
CN23	HKIVE HAKING WONG WATERFRONT ANNEX
CN24	ST. ANDREW PRIMARY SCHOOL
CN25	TACK CHING GIRLS' SECONDARY SCHOOL
CN26	YING WAH COLLEGE

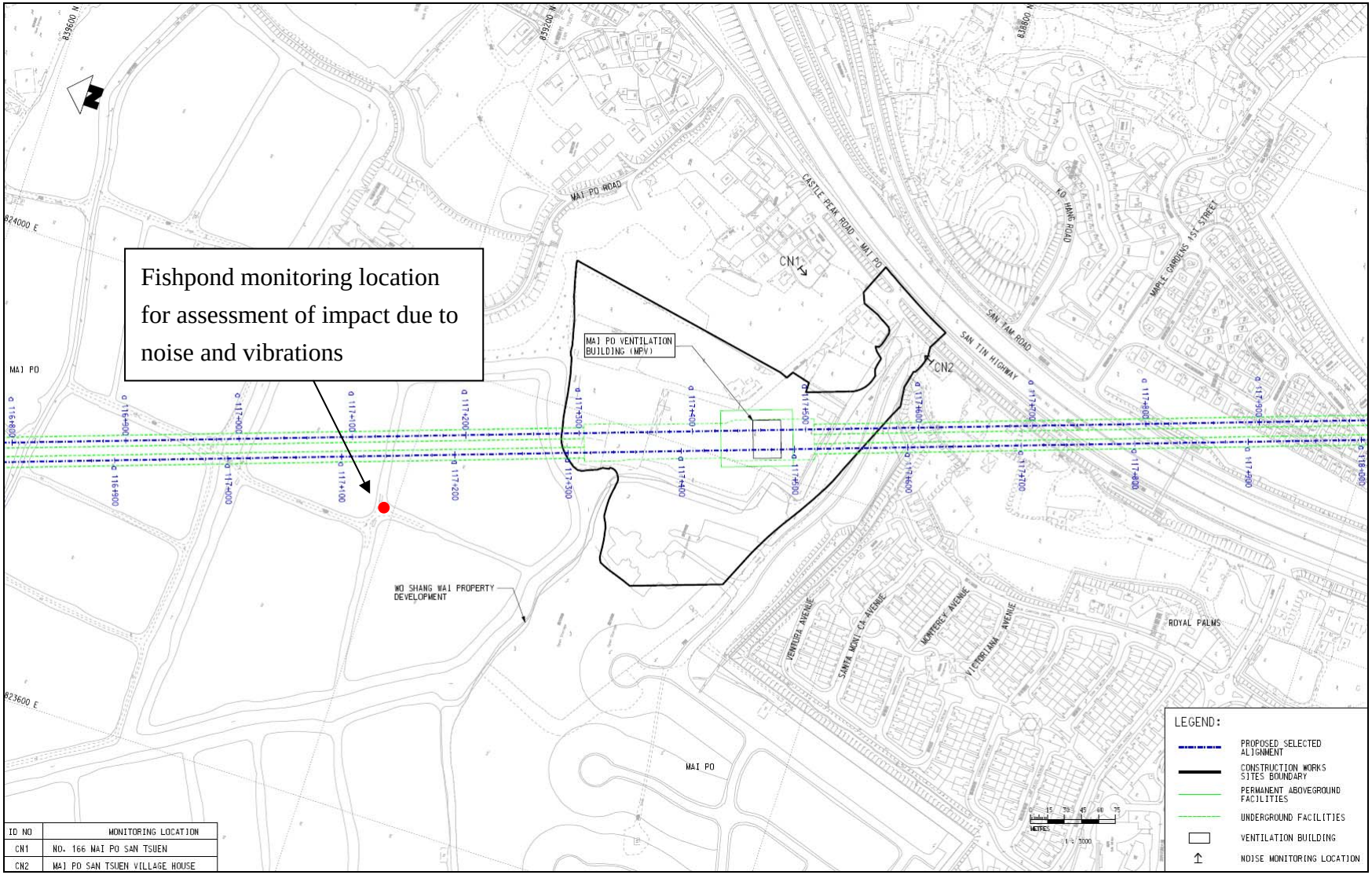

Alternative monitoring location for CN 27
Cheong Shun House, Nam Cheong Estate
CN27
CN28
NAM CHEONG PARK
NAM CHEONG STATION
NAM CHEONG STATION
TUNG CHAU STREET PARK
METRO HARBOUR VIEW
YEN CHOW STREET WEST
HUI YU ROAD
LIN CHEUNG ROAD
SHAM MONG ROAD
WEST KOWLOON HIGHWAY
MATCH LINE
FOR CONTINUATION SEE DWG NO. XOL/EBL/300/C/XRL/ENS/MW2/2411
MATCH LINE
FOR CONTINUATION SEE DWG NO. XOL/EBL/300/D/XRL/ENS/MW2/2413
MTR (TUNG CHUNG LINE)
MTR (AIRPORT EXPRESS)
MTR (TUNG CHUNG LINE)
LEGEND:
PROPOSED SELECTED ALIGNMENT
CONSTRUCTION WORKS SITES BOUNDARY
PERMANENT ABOVEGROUND FACILITIES
UNDERGROUND FACILITIES
VENTILATION BUILDING
NOISE MONITORING LOCATION
0 15 30 45 60 75
METRES
1 : 3000
ID NO
MONITORING LOCATION
CN27
CHEONG YAT HOUSE, NAM CHEONG ESTATE
CN28
TOWER 6, HARBOUR GREEN



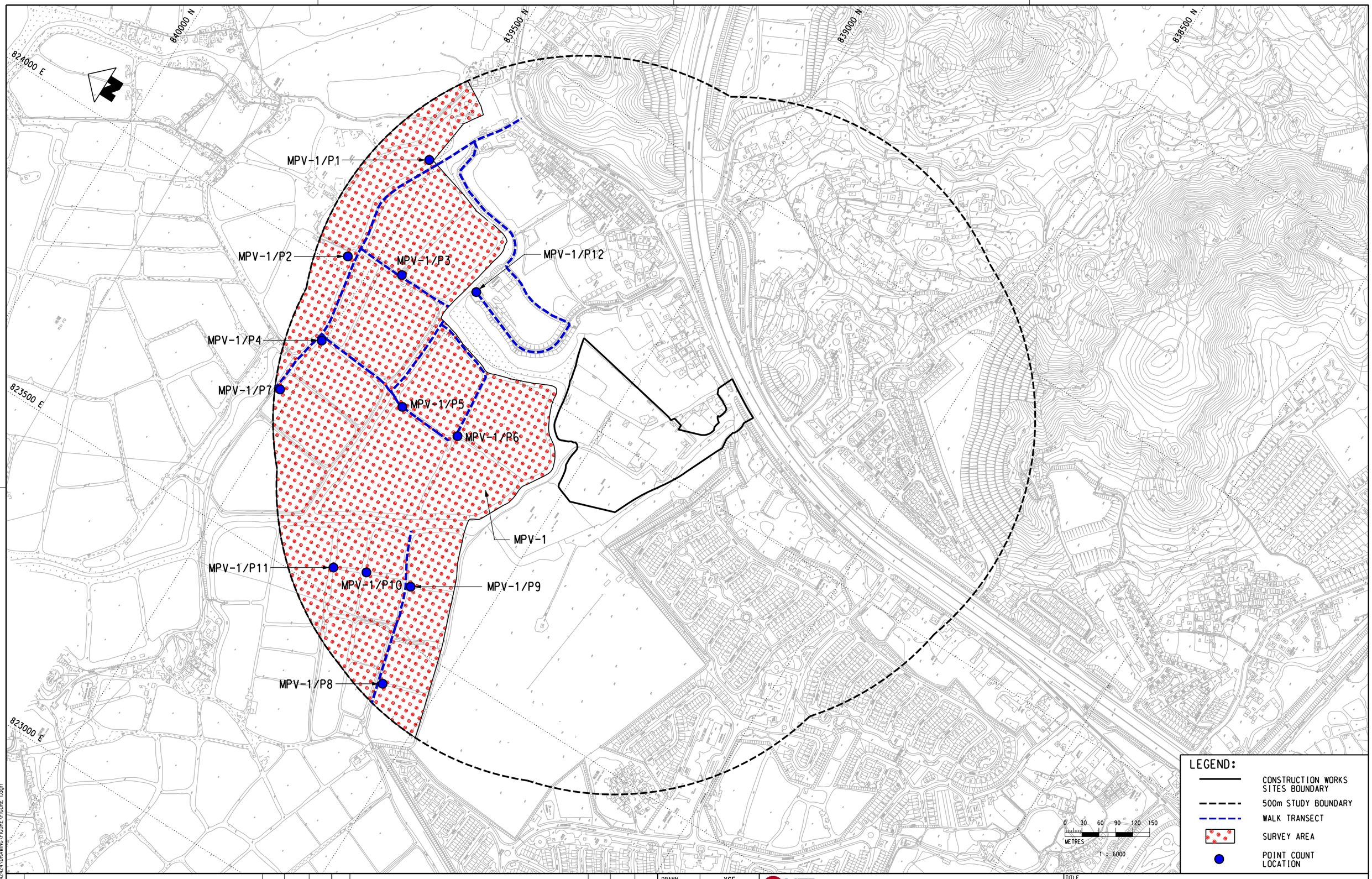
ID NO	MONITORING LOCATION
CN29	YAUMATI CATHOLIC PRIMARY SCHOOL (HOI WANG ROAD)



Noise monitoring locations



Fishpond monitoring location



REV	DESCRIPTION	BY	DATE	APPROVED

REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	XCF
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	10/OCT./2008

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EXPRESS RAIL LINK

ORIGINATOR

AECOM

CADD REF.
FIGURE 1.dgn

TITLE
NOL / ERL-300
BASELINE BIRD SURVEY FOR EIA
PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR MPV-1

SCALE	FIGURE NO.	REV.
1 : 6000 (A3)	FIGURE 1	–

PLOT DRV: r:\ustrnset\MTR\PLOTDRVER\WINDOWS\A3 COLOUR.pH
MODELNAME: Default PRINTED BY: CHENYG 2010-2-5
FILENAME: p:\PROJECTS\60042424\DRAWINGS\FIGURE 1.dgn 859947

834500 N
834000 N
833500 N
824000 E
824500 E
825000 E
825500 E

43CD-1
TPP-3/P3
TPP-3/P1
TPP-3/P2
TPP-3
TPP-2/P4
95CD
TPP-2/P3
TPP-2
TPP-2/P2
TPP-2/P1

0 30 60 90 120 150
METRES
1 : 6000

LEGEND:
- CONSTRUCTION WORKS SITES BOUNDARY
- 500m STUDY BOUNDARY
- WALK TRANSECT
- SURVEY AREA
- POINT COUNT LOCATION

PLOT DRV
MODELNAME:
FILENAME: F:\lastmod\WATER\PLOTDRV\ERWINDOWS\AS COLOUR.plt
DEFAULT
DATA\PROJECTS\60412470\DRAWING\FIGURE\FIGURE 2.dgn
PRINTED BY: spmyg
2009-11 13:51:44

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

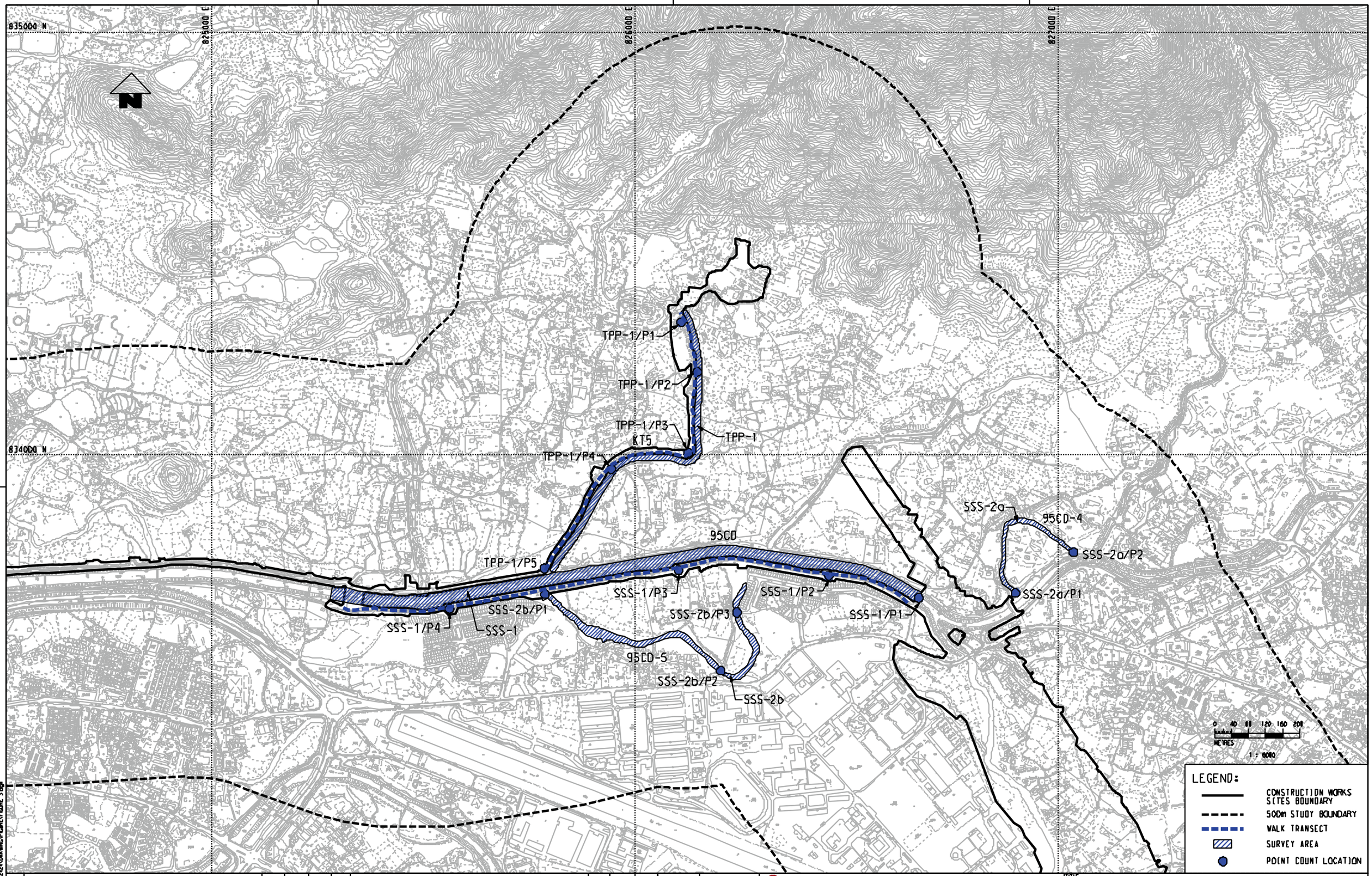
DRAWN	YJP
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	14/SEP./2009

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EXPRESS RAIL LINK
ORIGINATOR
AECOM
CADD REF. FIGURE 2.dgn

TITLE
NOL / ERL-300
BASELINE BIRD SURVEY FOR EIA
PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR TPP-2 AND TPP-3

SCALE	FIGURE NO.	REV
1 : 6000 (A3)	FIGURE 2	-



REV	DESCRIPTION	BY	DATE	APPROVED
REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	Y.JP
DESIGNED	TWF
CHECKED	K.CC
APPROVED	PL
DATE	14/SEP./2009

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ENDORSEMENT

AECOM

CADD REF FIGURE 3.dgn

TITLE

NOL / ERL-300

BASELINE BIRD SURVEY FOR EIA

PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR TPP-1, SSS-1,SSS-2a AND SSS-2b

SCALE 1 : 8000 (A3)

FIGURE NO. FIGURE 3

REV. -

PLOT DRW: c:\autocad\MTRYLO\DRIVER\NODEFLAS COLOUR.ctb
ADDED/MODIFIED BY: Cheryl
PLOTTED BY: 204-rm
FILENAME: P:\PROJECTS\60422\DIAGRAMS\FIGURE 3.dgn
19:13:40

827500 E
828000 E
828500 E
827000 E
833500 N
833000 N
832500 N
832000 N
831500 N

SSS-3

SSS-3/P1
SSS-3/P2
SSS-3/P3
SSS-3/P4
SSS-3/P5
SSS-3/P6
SSS-3/P7
SSS-3/P8
SSS-3/P9
SSS-3/P10
SSS-3/P11
SSS-3/P12

LEGEND:

- CONSTRUCTION WORKS SITES BOUNDARY
- 500m STUDY BOUNDARY
- WALK TRANSECT
- POINT COUNT LOCATION
- ACTIVE AGRICULTURE
- INACTIVE AGRICULTURE
- ACTIVE FISHPOND
- INACTIVE FISHPOND/POND
- REEDBED/FRESHWATER MARSH
- WATERCOURSE
- DRAINAGE CHANNEL
- GRASSLAND
- SEASONALLY WET GRASSLAND
- SECONDARY WOODLAND
- SHRUBLAND
- PLANTATION
- DEVELOPED AREA/WASTEGROUND

0 30 60 90 120 150
METRES
1 : 6000

PLOT DRV
MODELNAME
FILENAME: P:\mastmain\MTRPLOTDRIVER\WINDOWS\AS COLOUR.pltPLOTTED BY: CHWIYP 14/8/24
Default DATE: 2009-11
DATA\PROJECTS\60412621\PLOT\MRG\FIGURE\FIGURE 4.dgn

REV	DESCRIPTION	BY	DATE	APPROVED

REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YJP
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	07/DEC./2009

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ORIGINATOR
AECOM

CADD REF.
FIGURE 4.dgn

TITLE
NOL / ERL-300
BASELINE BIRD SURVEY FOR EIA
PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR SSS-3

SCALE	FIGURE NO.	REV
1 : 6000 (A3)	FIGURE 4	-

827500 E
828000 E
828500 E
833500 N
833000 N
832500 N
832000 N
831500 N

TUW-1/P1
TUW-1/P2
TUW-1/P3
TUW-1/P4
TUW-1/P5
TUW-1/P6
TUW-1/P7
TUW-1

LEGEND:

- CONSTRUCTION WORKS SITES BOUNDARY
- 500m STUDY BOUNDARY
- WALK TRANSECT
- POINT COUNT LOCATION
- ACTIVE AGRICULTURE
- INACTIVE AGRICULTURE
- ACTIVE FISHPOND
- INACTIVE FISHPOND/POND
- REEDBED/FRESHWATER MARSH
- WATERCOURSE
- DRAINAGE CHANNEL
- GRASSLAND
- SEASONALLY WET GRASSLAND
- SECONDARY WOODLAND
- SHRUBLAND
- PLANTATION
- DEVELOPED AREA/WASTEGROUND

0 30 60 90 120 150
METRES
1 : 6000

PLOT DRV: P:\ustmaan\MTRPLOTDRIVER\WIN00RSV.AS COLOUR.pltr
MODELNAME: Default
PLTCHANGE: DATA\PROJECTS\60412621\PLOT\MXD\FIGURE 5.MXD
PLOTTED BY: CHWIYU 2009-11 14:54:44

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YJP
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	07/DEC./2009

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ORIGINATOR: AECOM

CADD REF.: FIGURE 5.dgn

TITLE
NOL / ERL-300
BASELINE BIRD SURVEY FOR EIA
PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR TUW-1

SCALE	FIGURE NO.	REV
1 : 6000 (A3)	FIGURE 5	-

826000 E
827000 E
828000 E
829000 E
832000 N
833000 N
831000 N

TUW-2 and PHV-1/P2

TUW-2 and PHV-1/P1

TUW-2 AND PHV-1

LEGEND:

- CONSTRUCTION WORKS SITES BOUNDARY
- 500m STUDY BOUNDARY
- WALK TRANSECT
- SURVEY AREA
- POINT COUNT LOCATION

0 40 80 120 160 200
METRES
1 : 8000

REV	DESCRIPTION	BY	DATE	APPROVED
REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	CYG
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	07/DEC./2009

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ORIGINATOR

AECOM

CADD REF

FIGURE 6.dgn

TITLE

NOL / ERL-300

BASELINE BIRD SURVEY FOR EIA

PROPOSED SURVEY AREA, POINT COUNT LOCATION AND WALK TRANSECT FOR TUW-2 AND PHV-1

SCALE 1 : 8000 (A3)

FIGURE NO. FIGURE 6

REV. -

PLOT DIN: r:\admin\MTR\PLOTDRIVER\WINDOWS\A3 COLOUR.pltPLOTTED BY: TANGP 2009-12-14:15:04
MODIFIED BY: Darfoon
FILENAME: P:\PROJECTS\60042210\DRAWING\FIGURE\FIGURE 6.dgn

Appendix E

Monitoring Schedule

Monitoring Schedule in the Reporting Month (01 Mar 2011 - 31 Mar 2011)

	CN1	CN2	CN3	CN4	CN5	CN6	CN7	CN8	CN9	CN10	CN11	CN12	CN13	CN14	CN15	CN16
Date	No. 142 Mai Po San Tsuen	Mai Po San Tsuen Village Hse	Yau Tam Mei Village House	Yau Tam Mei Village House	Kong Tai Road Village House	Kong Tai Road Village House	House 93, Seasons Villas	DD110 LOT 482, Wang Toi Shan	Leung Uk Tsuen Village House	Leung Uk Tsuen Squats	Leung Uk Tsuen Village House	630 Sheung Tsuen	No. 489H Tse Uk Tsuen	Tse Uk Tsuen	No. 305B - Sheung Tsuen San Tsuen Village	DD 114 LOT 1405 Sheung Tsuen
01-Mar-11				√	√	√	√									
02-Mar-11	√								√							
03-Mar-11																
04-Mar-11			√					√		√	√	√	√	√		
05-Mar-11																
06-Mar-11																
07-Mar-11	√														√	√
08-Mar-11				√	√	√			√	√	√					
09-Mar-11							√									
10-Mar-11			√													
11-Mar-11		√						√				√	√	√		
12-Mar-11																
13-Mar-11																
14-Mar-11															√	√
15-Mar-11	√		√	√	√	√			√	√						
16-Mar-11							√				√					
17-Mar-11		√														
18-Mar-11								√				√	√	√		
19-Mar-11																
20-Mar-11																
21-Mar-11	√														√	√
22-Mar-11			√	√	√	√	√		√	√						
23-Mar-11											√					
24-Mar-11								√								
25-Mar-11		√										√	√	√		
26-Mar-11																
27-Mar-11																
28-Mar-11															√	√
29-Mar-11			√	√	√	√			√							
30-Mar-11	√						√			√						
31-Mar-11		√									√					

Monitoring Schedule in the Reporting Month (01 Mar 2011 - 31 Mar 2011)

	CN18	CN19	CN20	CN21	CN22	CN23	CN24	CN25	CN26	CN27	CN28	CN29	CN30	CN31	CN32	CN33	CN34
Date	Sau Shan House	Sun Fung Centre	VTC Kwai Chung	Po Leung Kuk Tong Nai Kan College	Block I, Lai Chi Kok Reception Centre	HKIVE Haking Wong Waterfront Annex	St. Andrew Primary School	St. Mary's Church Mok Hing Yiu College	Ying Wah College	Cheong Shun House, Nam Cheong Estate	Tower 6, Harbour Green	Yaumati Catholic Primary School	Man Cheong Street Refuse Collection Point	Tower 6, Sorrento	Tower 3, The Waterfront	Star Tower, The Arch	The Victoria Towers
01-Mar-11												√					
02-Mar-11						√			√		√				√	√	√
03-Mar-11																	
04-Mar-11		√	√	√	√		√	√		√							
05-Mar-11																	
06-Mar-11																	
07-Mar-11	√														√	√	√
08-Mar-11		√	√										√	√			
09-Mar-11												√					
10-Mar-11				√			√	√									
11-Mar-11					√	√			√	√	√						
12-Mar-11																	
13-Mar-11																	
14-Mar-11														√			
15-Mar-11		√										√					
16-Mar-11	√															√	√
17-Mar-11			√				√	√					√		√		
18-Mar-11				√	√	√			√	√	√						
19-Mar-11																	
20-Mar-11																	
21-Mar-11	√														√	√	√
22-Mar-11		√										√	√	√			
23-Mar-11																	
24-Mar-11			√				√	√									
25-Mar-11				√	√	√			√	√	√						
26-Mar-11																	
27-Mar-11																	
28-Mar-11	√																
29-Mar-11		√										√	√	√			
30-Mar-11			√	√	√	√	√	√	√	√	√						
31-Mar-11															√	√	√

Monitoring Schedule in the Next Reporting Month (01 Apr 2011 - 30 Apr 2011)

	CN1	CN2	CN3	CN4	CN5	CN6	CN7	CN8	CN9	CN10	CN11	CN12	CN13	CN14	CN15	CN16
Date	No. 142 Mai Po San Tsuen	Mai Po San Tsuen Village Hse	Yau Tam Mei Village House	Yau Tam Mei Village House	Kong Tai Road Village House	Kong Tai Road Village House	House 93, Seasons Villas	DD110 LOT 482, Wang Toi Shan	Leung Uk Tsuen Village House	Leung Uk Tsuen Squats	Leung Uk Tsuen Village House	630 Sheung Tsuen	No. 489H Tse Uk Tsuen	Tse Uk Tsuen	No. 305B - Sheung Tsuen San Tsuen Village	DD 114 LOT 1405 Sheung Tsuen
01-Apr-11								√				√	√	√		
02-Apr-11																
03-Apr-11																
04-Apr-11									√	√					√	√
05-Apr-11																
06-Apr-11			√	√		√	√									
07-Apr-11																
08-Apr-11	√	√			√			√			√	√	√	√		
09-Apr-11																
10-Apr-11																
11-Apr-11															√	√
12-Apr-11			√	√		√	√		√	√						
13-Apr-11																
14-Apr-11																
15-Apr-11	√	√			√			√			√	√	√	√		
16-Apr-11																
17-Apr-11																
18-Apr-11															√	√
19-Apr-11			√	√		√	√		√	√						
20-Apr-11																
21-Apr-11	√	√			√			√			√	√	√	√		
22-Apr-11																
23-Apr-11																
24-Apr-11																
25-Apr-11																
26-Apr-11			√	√		√	√		√	√					√	√
27-Apr-11																
28-Apr-11																
29-Apr-11	√	√			√			√			√	√	√	√		
30-Apr-11																

Monitoring Schedule in the Next Reporting Month (01 Apr 2011 - 30 Apr 2011)

	CN18	CN19	CN20	CN21	CN22	CN23	CN24	CN25	CN26	CN27	CN28	CN29	CN30	CN31	CN32	CN33	CN34
Date	Sau Shan House	Sun Fung Centre	VTC Kwai Chung	Po Leung Kuk Tong Nai Kan College	Block I, Lai Chi Kok Reception Centre	HKIVE Haking Wong Waterfront Annex	St. Andrew Primary School	St. Mary's Church Mok Hing Yiu College	Ying Wah College	Cheong Shun House, Nam Cheong Estate	Tower 6, Harbour Green	Yaumati Catholic Primary School	Man Cheong Street Refuse Collection Point	Tower 6, Sorrento	Tower 3, The Waterfront	Star Tower, The Arch	The Victoria Towers
01-Apr-11																	
02-Apr-11																	
03-Apr-11																	
04-Apr-11	√											√	√	√			
05-Apr-11																	
06-Apr-11						√			√		√				√	√	√
07-Apr-11		√	√	√			√	√		√							
08-Apr-11					√												
09-Apr-11																	
10-Apr-11																	
11-Apr-11	√																
12-Apr-11		√										√	√	√			
13-Apr-11						√			√		√				√		√
14-Apr-11			√	√			√	√		√						√	
15-Apr-11					√												
16-Apr-11																	
17-Apr-11																	
18-Apr-11	√																
19-Apr-11		√										√	√	√			
20-Apr-11						√			√		√				√	√	√
21-Apr-11			√	√			√	√		√							
22-Apr-11																	
23-Apr-11																	
24-Apr-11																	
25-Apr-11																	
26-Apr-11	√	√										√	√	√			
27-Apr-11						√			√		√				√		√
28-Apr-11			√	√			√	√		√						√	
29-Apr-11					√												
30-Apr-11																	

Actual Construction Dust (24-hr TSP) Impact Monitoring Schedule - March 2011

Note 1: **TSP** denotes Total Suspended Particulate

Mar-2011						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
		1 AM3, AM5, AM6, AM7, AM8	2	3 AM11, AM12, AM13, AM14, AM15, AM16, AM17	4	5 AM1, AM2, AM4, AM9, AM10
6	7 AM3, AM5, AM6, AM7, AM8	8	9 AM11, AM12, AM13, AM14, AM15, AM16, AM17	10	11 AM1, AM2, AM4, AM9, AM10	12 AM3, AM5, AM6, AM7, AM8
13	14	15 AM11, AM12, AM13, AM14, AM15, AM16, AM17	16	17 AM1, AM2, AM4, AM9, AM10	18 AM3, AM5, AM6, AM7, AM8	19
20	21 AM11, AM12, AM14, AM15, AM16, AM17	22 AM13[#]	23 AM1, AM2, AM4, AM9, AM10	24 AM3, AM5, AM6, AM7, AM8	25	26 AM11, AM12, AM13, AM14, AM15, AM16, AM17
27	28	29 AM1, AM2, AM4, AM9, AM10	30 AM3, AM5, AM6, AM7, AM8	31		

[#] 24-hr TSP impact monitoring for AM13 was proposed from 21 March 2011 to 22 March 2011 due to power supply shortage

Tentative Construction Dust (24-hr TSP) Impact Monitoring Schedule - April 2011

Note 1: **TSP** denotes Total Suspended Particulate

Apr-2011						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
					1 AM11, AM12, AM13, AM14, AM15, AM16, AM17	2 AM1, AM2, AM4, AM9, AM10
3	4 AM3, AM5, AM6, AM7, AM8	5	6 AM11, AM12, AM13, AM14, AM15, AM16, AM17	7	8 AM1, AM2, AM4, AM9, AM10	9 AM3, AM5, AM6, AM7, AM8
10	11 AM11, AM12, AM13, AM14, AM15, AM16, AM17	12	13	14 AM1, AM2, AM4, AM9, AM10	15 AM3, AM5, AM6, AM7, AM8	16 AM11, AM12, AM13, AM14, AM15, AM16, AM17
17	18	19	20 AM1, AM2, AM3, AM4, AM5, AM6, AM7, AM8, AM9, AM10	21 AM11, AM12, AM13, AM14, AM15, AM16, AM17	22	23
24	25	26 AM1, AM2, AM3, AM4, AM5, AM6, AM7, AM8, AM9, AM10	27 AM11, AM12, AM13, AM14, AM15, AM16, AM17	28	29 AM1, AM2, AM4, AM9, AM10	30 AM3, AM5, AM6, AM7, AM8

Appendix E Monitoring Schedule

Works Area	Survey Site	Date of Survey in March 2011	Tentative Date of Survey in April 2011
MPV	MPV-1	25 March 2011	12 April 2011
Access road leading to TPP	TPP-1	25 March 2011	12 April 2011
Access road leading to TPP	TPP-2	25 March 2011	12 April 2011
Access road leading to TPP	TPP-3	25 March 2011	12 April 2011
Access road leading to SSS / ERS	SSS-2a	N/A	12 April 2011
Access road leading to SSS / ERS	SSS-3	24 March 2011	19 April 2011
TUW	TUW-1	24 March 2011	19 April 2011
TUW	TUW-2 (grouped with PHV-1 due to overlapping of survey area	24 March 2011	19 April 2011
PHV	PHV-1 (grouped with TUW-2 due to overlapping of survey area)	24 March 2011	19 April 2011

Appendix F

Graphical Plots of Monitoring Results

APPENDIX F: Air Quality Monitoring Results - 24-hour TSP Monitoring

- AM1

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
05-Mar-11	176.8	217.3	260.0
11-Mar-11	121.5	217.3	260.0
17-Mar-11	173.0	217.3	260.0
23-Mar-11	121.1	217.3	260.0
29-Mar-11	185.6	217.3	260.0

- AM2

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
05-Mar-11	83.3	179.4	260.0
11-Mar-11	65.5	179.4	260.0
17-Mar-11	101.7	179.4	260.0
23-Mar-11	51.5	179.4	260.0
29-Mar-11	131.8	179.4	260.0

- AM3

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
01-Mar-11	**244.3**	154.7	260.0
07-Mar-11	**170.8**	154.7	260.0
12-Mar-11	**235.2**	154.7	260.0
18-Mar-11	154.0	154.7	260.0
24-Mar-11	137.3	154.7	260.0
30-Mar-11	**201.2**	154.7	260.0

- AM4

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
05-Mar-11	**160.9**	148.6	260.0
11-Mar-11	114.4	148.6	260.0
17-Mar-11	**199.4**	148.6	260.0
23-Mar-11	63.5	148.6	260.0
29-Mar-11	97.5	148.6	260.0

- AM5

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
01-Mar-11	102.6	152.0	260.0
07-Mar-11	**174.0**	152.0	260.0
12-Mar-11	109.1	152.0	260.0
18-Mar-11	90.6	152.0	260.0
24-Mar-11	92.8	152.0	260.0
30-Mar-11	151.7	152.0	260.0

- AM6

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
01-Mar-11	94.6	145.6	260.0
07-Mar-11	132.5	145.6	260.0
12-Mar-11	82.5	145.6	260.0
18-Mar-11	122.9	145.6	260.0
24-Mar-11	139.8	145.6	260.0
30-Mar-11	111.9	145.6	260.0

- AM7

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
01-Mar-11	96.9	149.8	260.0
07-Mar-11	143.5	149.8	260.0
12-Mar-11	74.1	149.8	260.0
18-Mar-11	101.2	149.8	260.0
24-Mar-11	60.3	149.8	260.0
30-Mar-11	**170.8**	149.8	260.0

- AM8

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
01-Mar-11	89.2	158.2	260.0
07-Mar-11	157.0	158.2	260.0
12-Mar-11	104.7	158.2	260.0
18-Mar-11	100.3	158.2	260.0
24-Mar-11	78.9	158.2	260.0
30-Mar-11	**168.7**	158.2	260.0

Remark: - Bold value indicated an Action level exceedance
- Bold & Italic value indicated an Limit level exceedance

APPENDIX F: Air Quality Monitoring Results - 24-hour TSP Monitoring

- AM9

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
05-Mar-11	87.8	171.2	260.0
11-Mar-11	98.4	171.2	260.0
17-Mar-11	167.9	171.2	260.0
23-Mar-11	64.2	171.2	260.0
29-Mar-11	126.7	171.2	260.0

- AM10

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
05-Mar-11	110.3	174.8	260.0
11-Mar-11	123.4	174.8	260.0
17-Mar-11	49.4	174.8	260.0
23-Mar-11	70.2	174.8	260.0
29-Mar-11	128.9	174.8	260.0

- AM11

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	112.5	160.3	260.0
09-Mar-11	96.7	160.3	260.0
15-Mar-11	114.4	160.3	260.0
21-Mar-11	65.0	160.3	260.0
26-Mar-11	95.2	160.3	260.0

- AM12

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	102.5	162.5	260.0
09-Mar-11	130.7	162.5	260.0
15-Mar-11	84.0	162.5	260.0
21-Mar-11	104.7	162.5	260.0
26-Mar-11	53.8	162.5	260.0

- AM13

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	94.4	180.3	260.0
09-Mar-11	141.0	180.3	260.0
15-Mar-11	91.4	180.3	260.0
22-Mar-11	126.6	180.3	260.0
26-Mar-11	54.4	180.3	260.0

- AM14

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	84.7	158.2	260.0
09-Mar-11	128.2	158.2	260.0
15-Mar-11	83.2	158.2	260.0
21-Mar-11	112.0	158.2	260.0
26-Mar-11	41.0	158.2	260.0

- AM15

Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	108.6	168.8	260.0
09-Mar-11	164.0	168.8	260.0
15-Mar-11	115.7	168.8	260.0
21-Mar-11	162.0	168.8	260.0
26-Mar-11	61.2	168.8	260.0

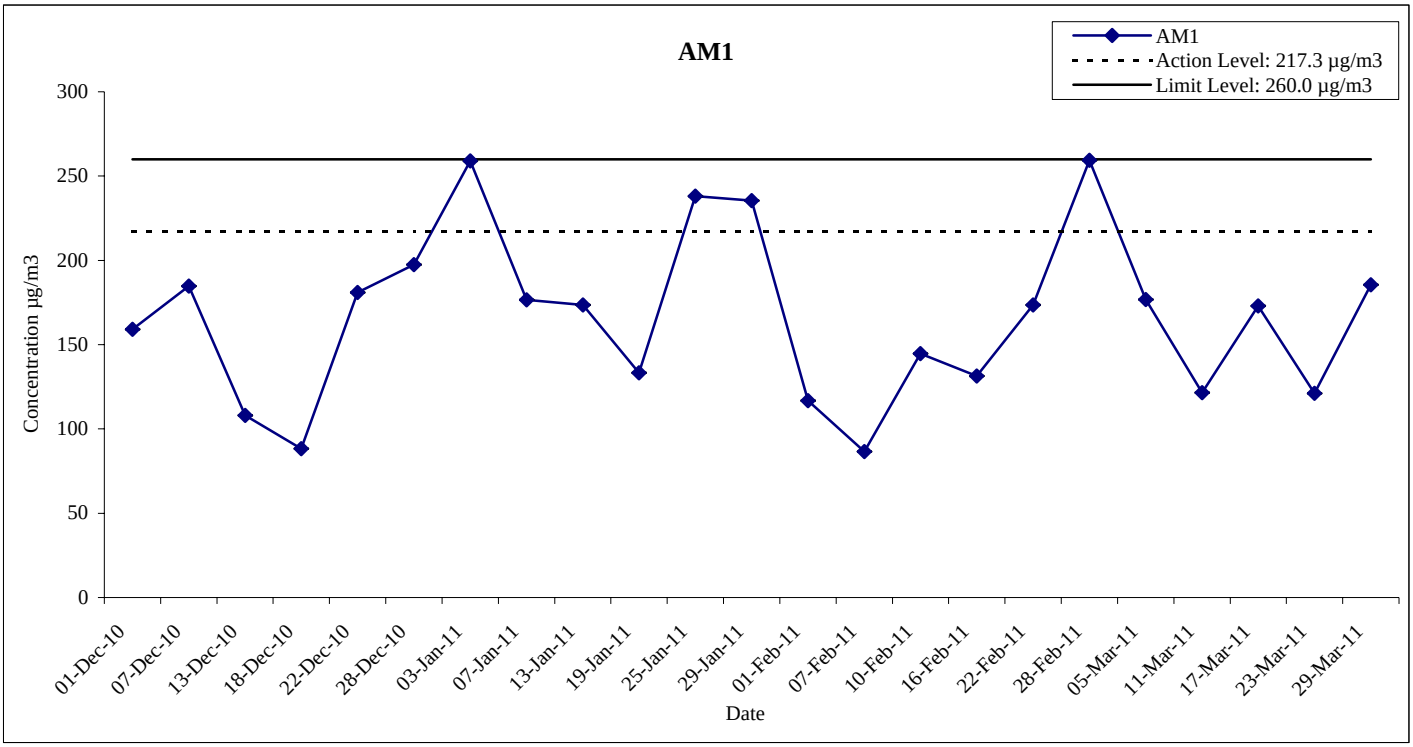
- AM16

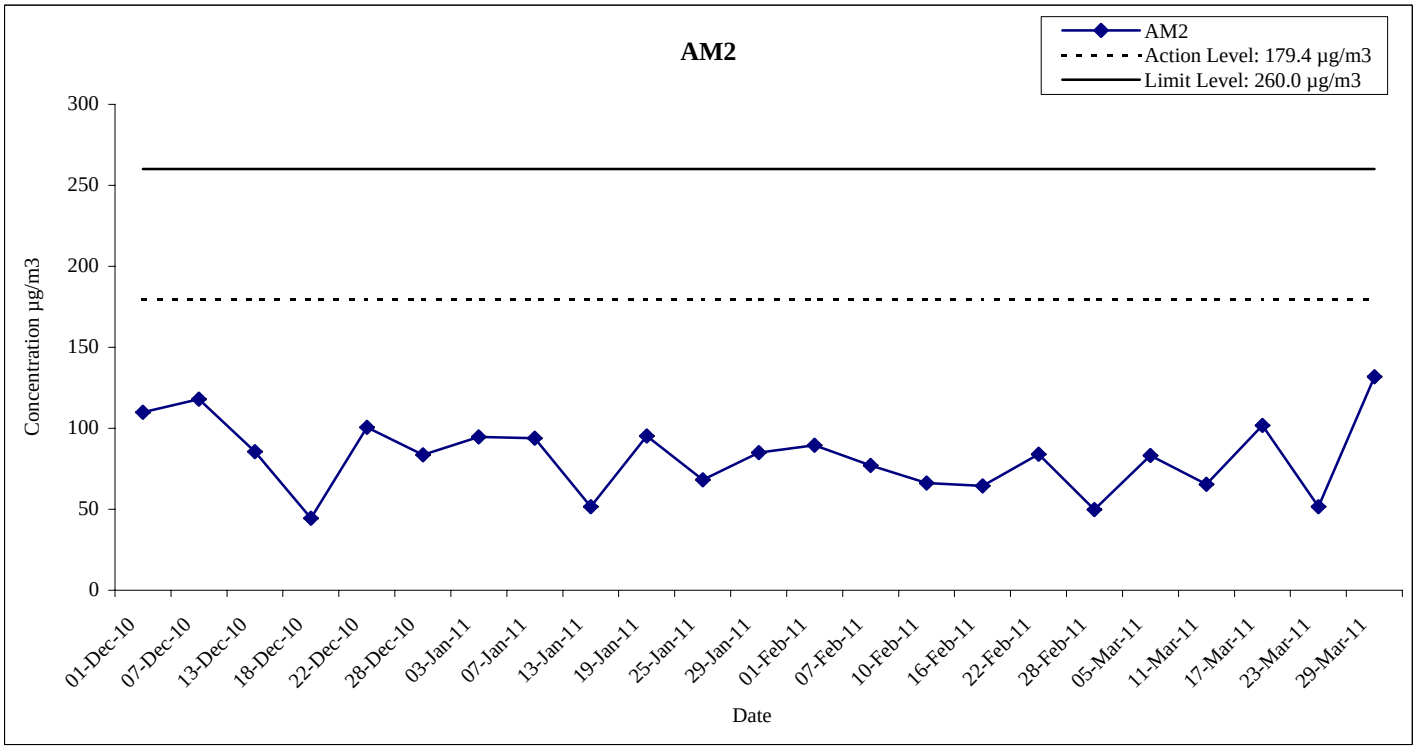
Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	98.0	155.9	260.0
09-Mar-11	**172.7**	155.9	260.0
15-Mar-11	93.7	155.9	260.0
21-Mar-11	132.9	155.9	260.0
26-Mar-11	110.1	155.9	260.0

- AM17

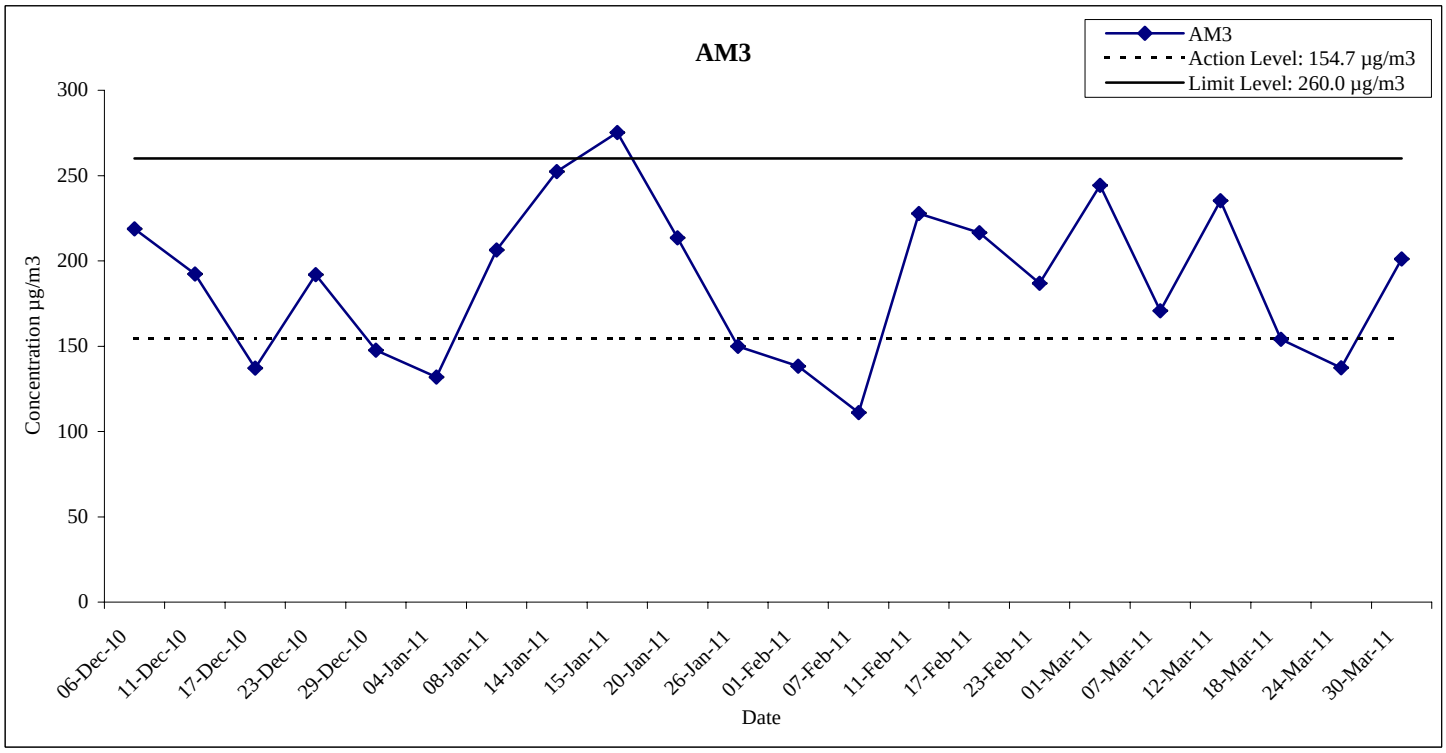
Date	24-hour TSP Monitoring Results	Action Level	Limit Level
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
03-Mar-11	42.0	179.3	260.0
09-Mar-11	140.7	179.3	260.0
15-Mar-11	140.4	179.3	260.0
21-Mar-11	70.2	179.3	260.0
26-Mar-11	136.0	179.3	260.0

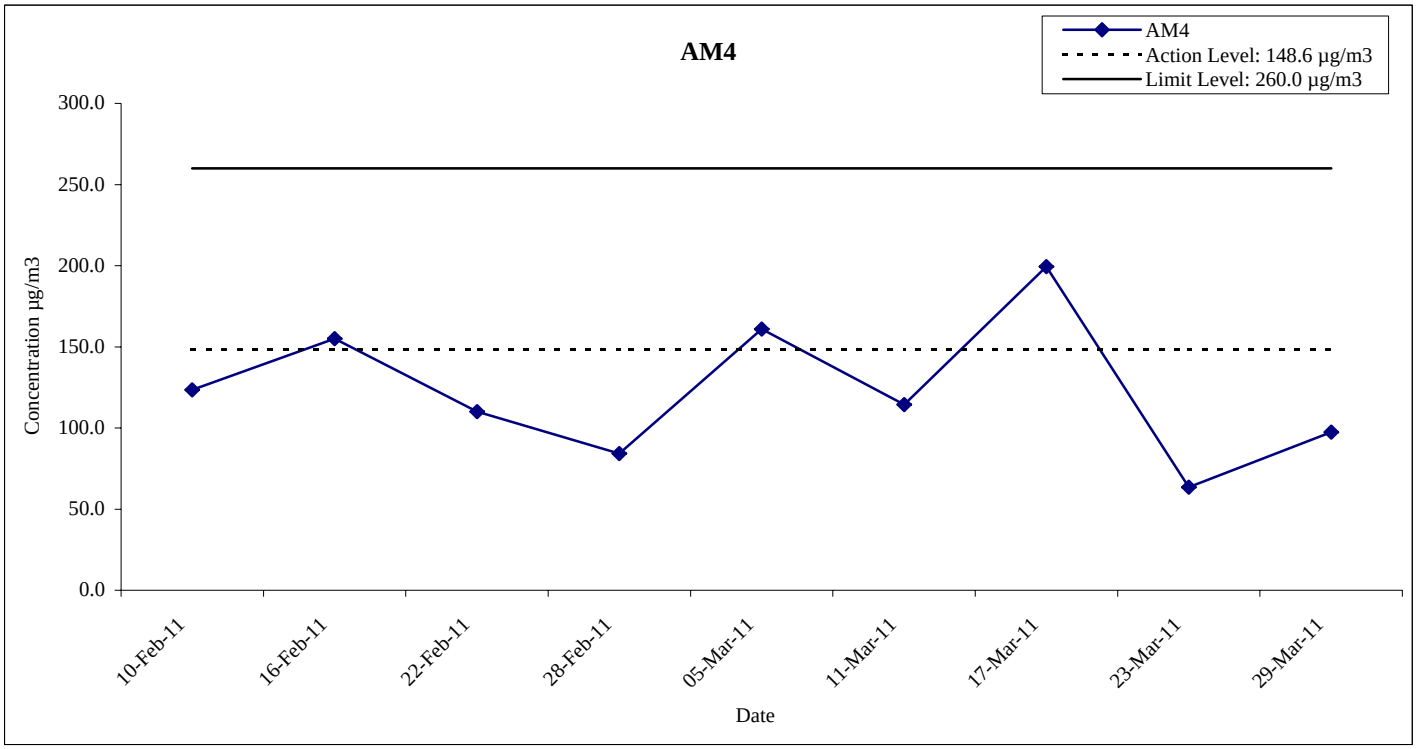
Remark: Bold value indicated an Action level exceedance
Bold & Italic value indicated an Limit level exceedance



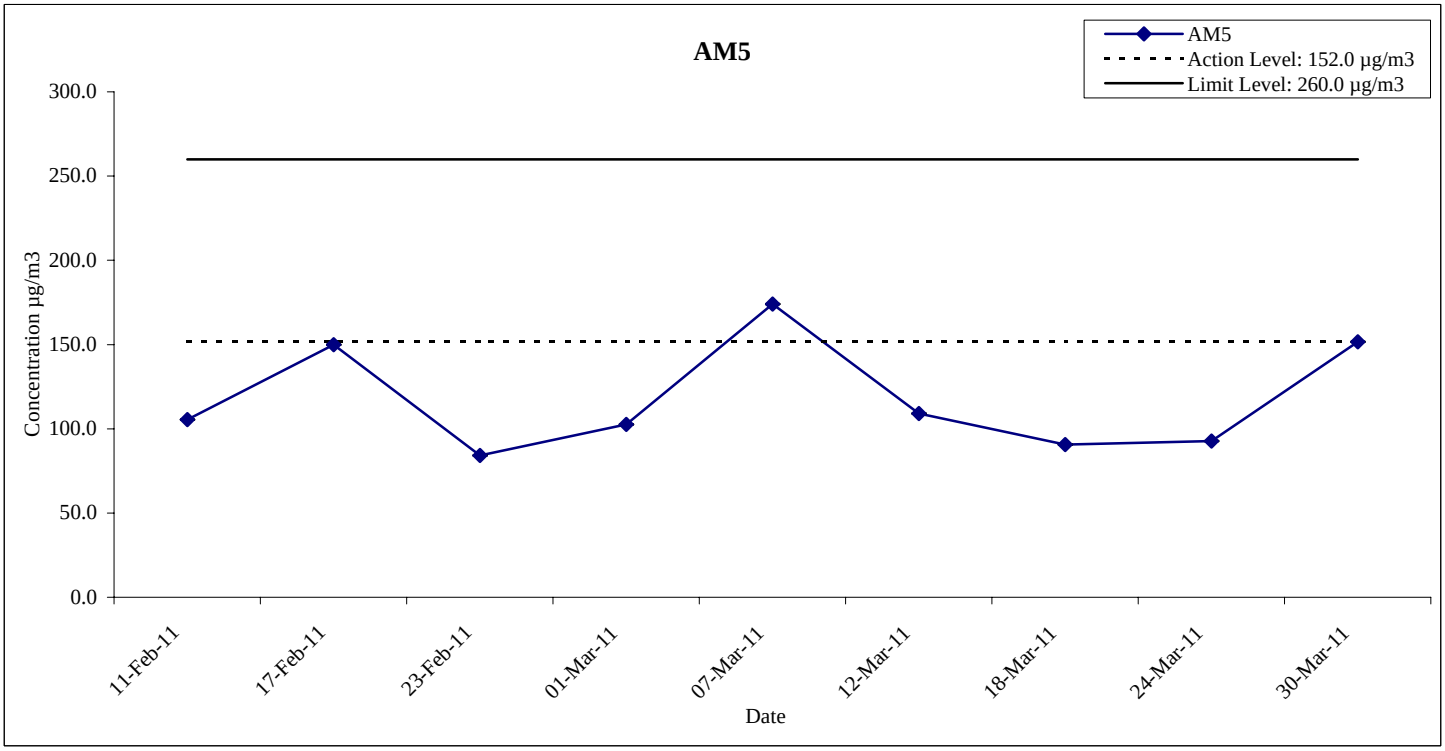


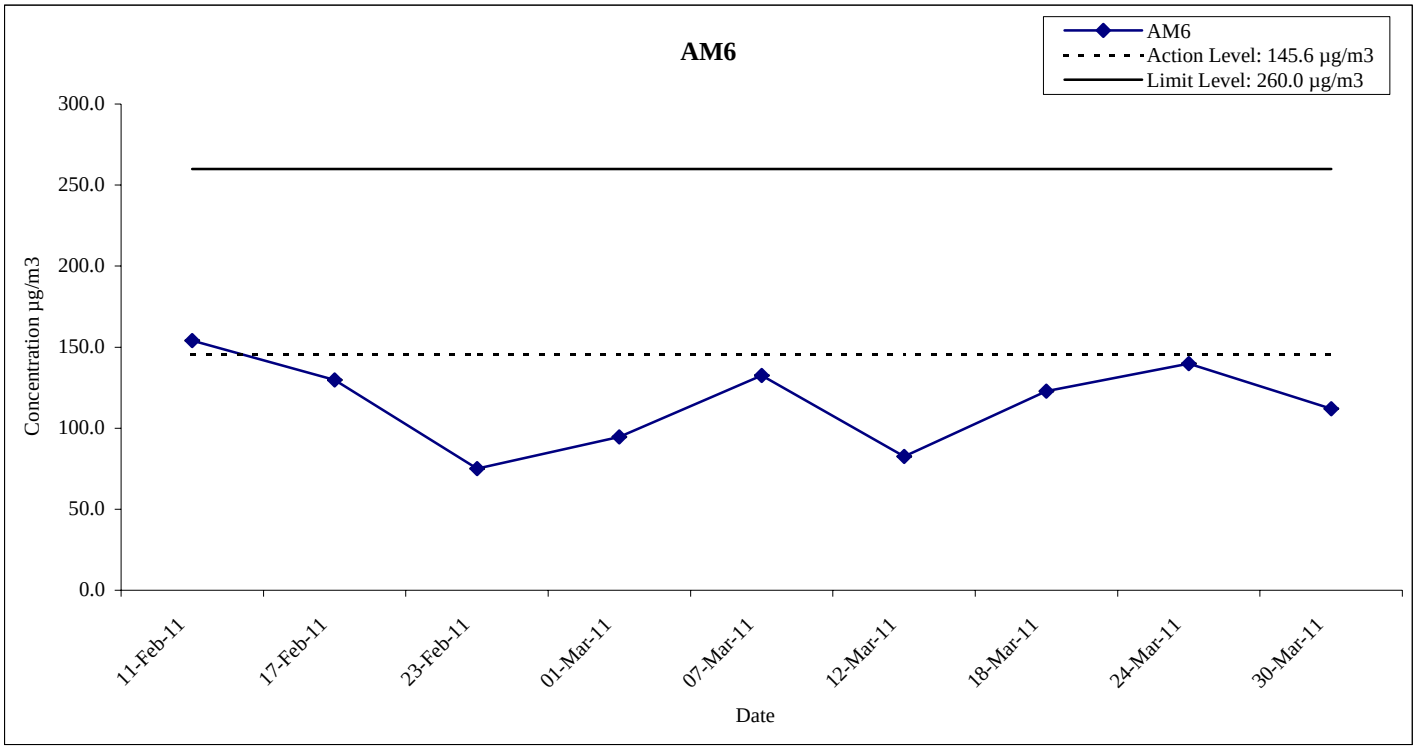
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM1 and AM2**	**Date**	**2011**
		APPENDIX	**F**



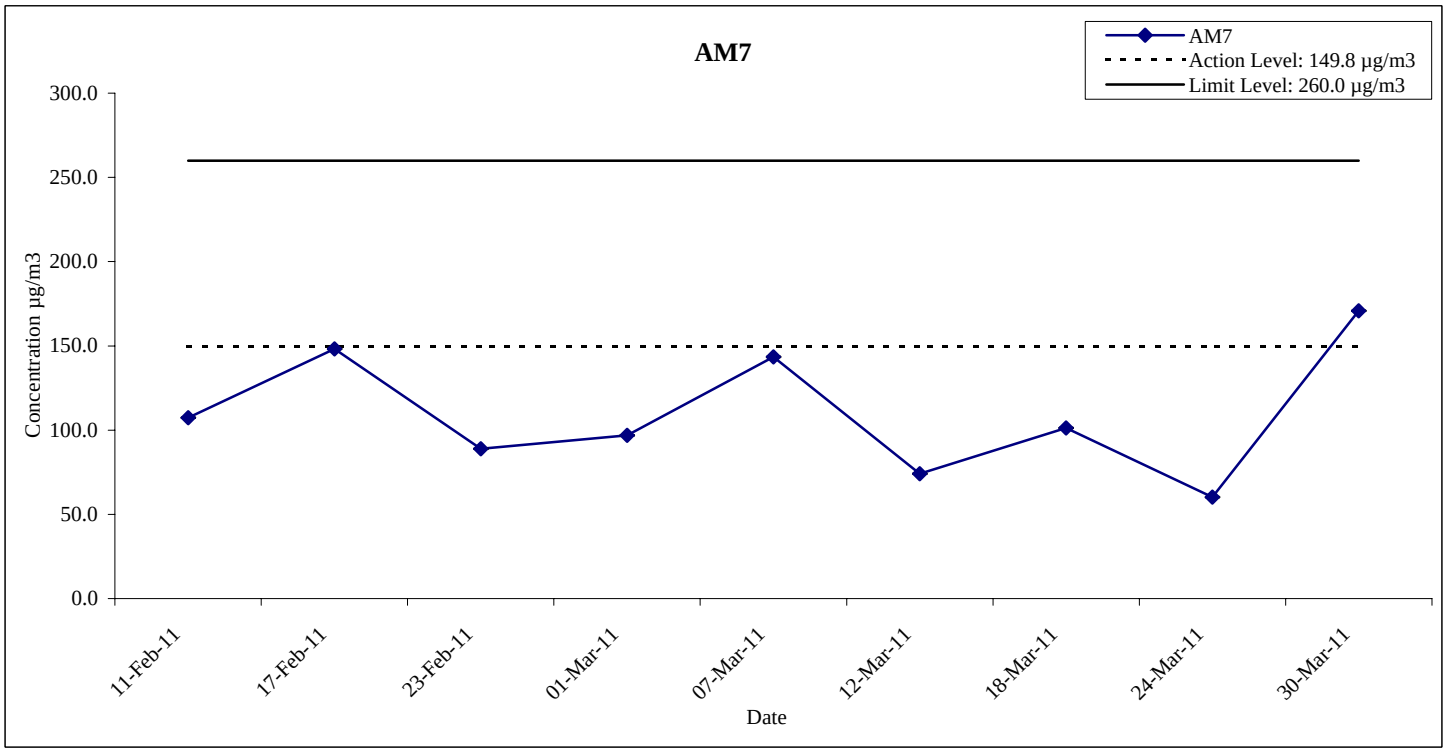


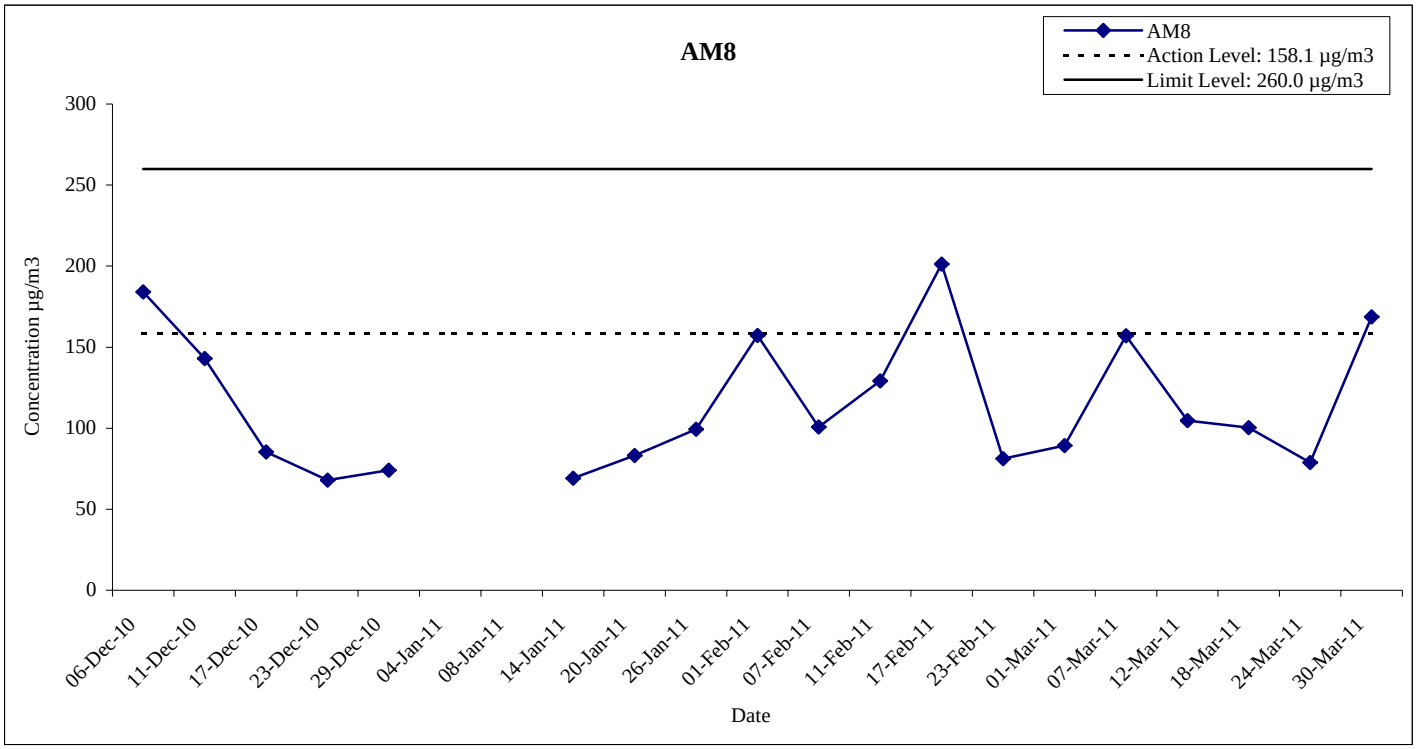
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM3 and AM4**	**Date**	**2011**
		APPENDIX	**F**





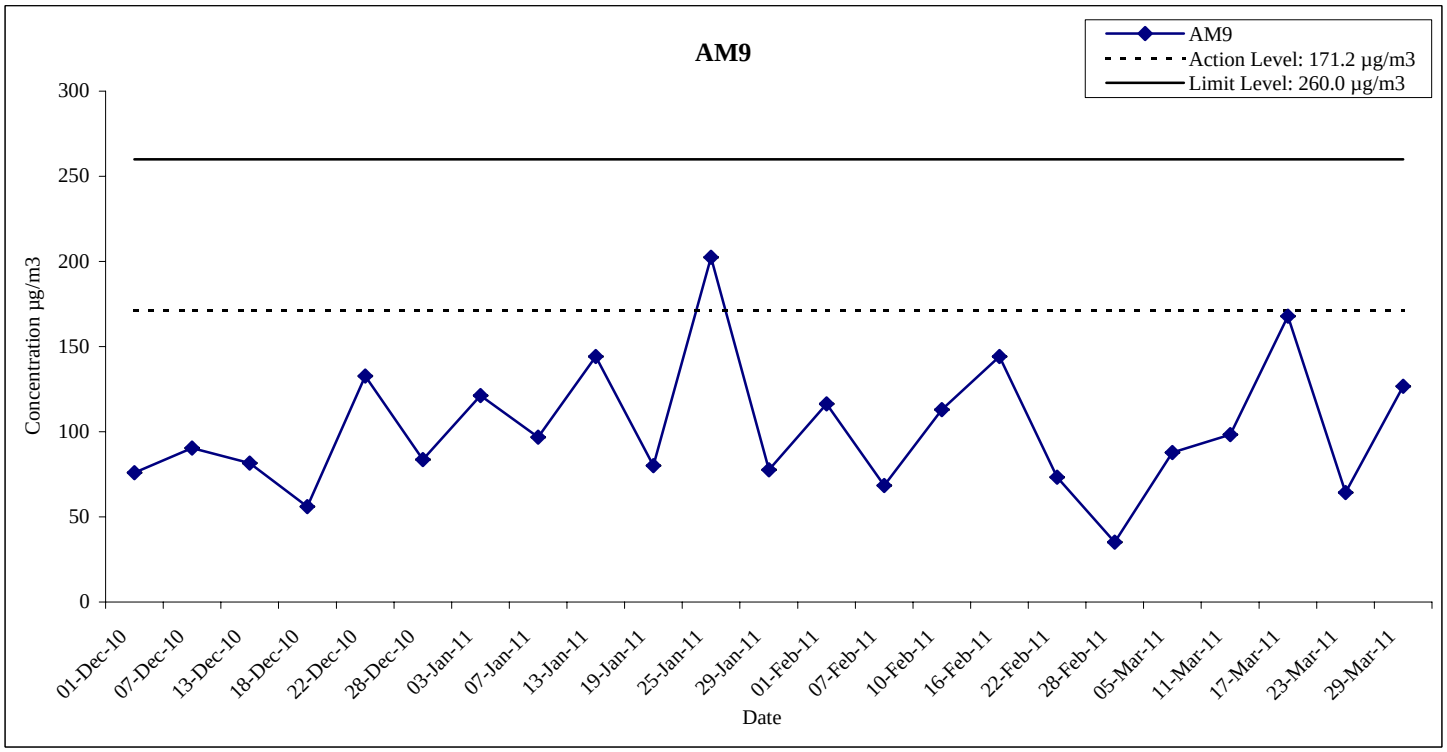
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM5 and AM6**	**Date**	**2011**
		APPENDIX	**F**

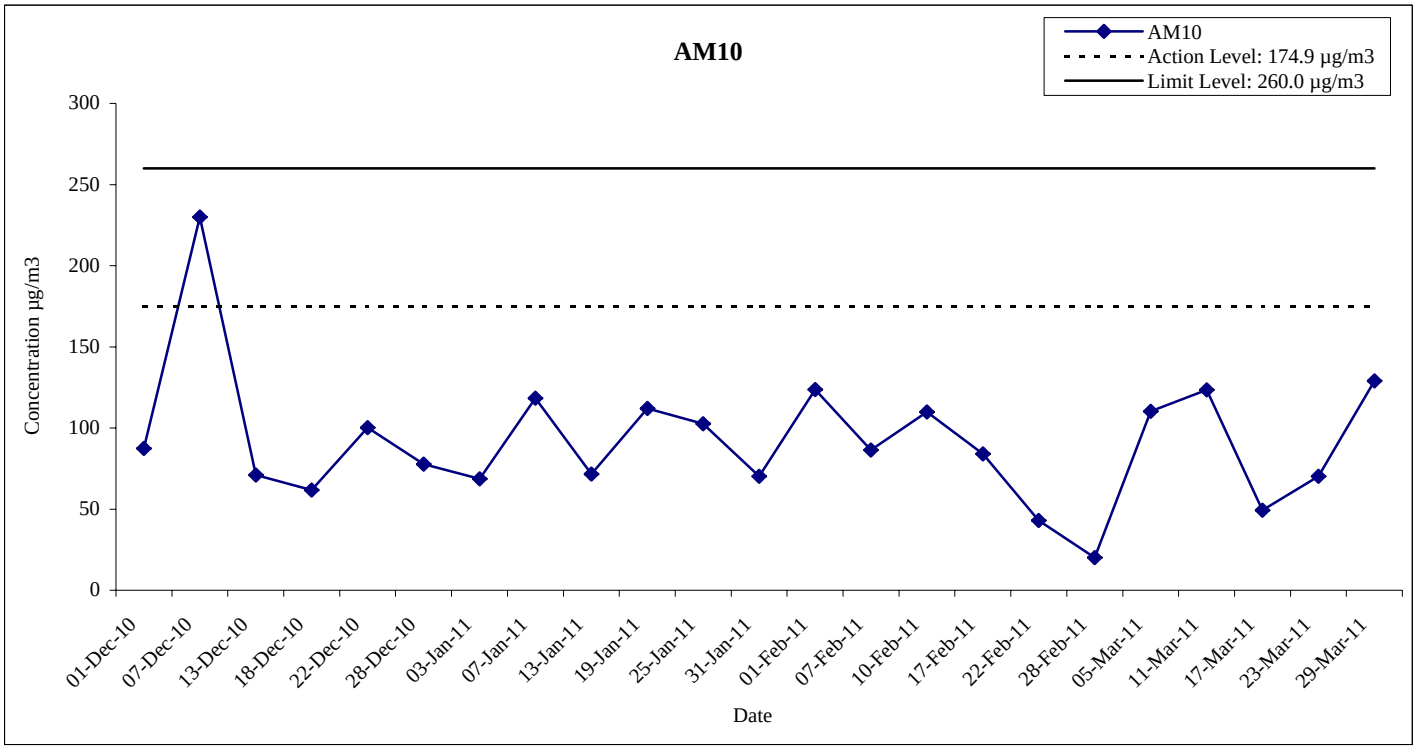




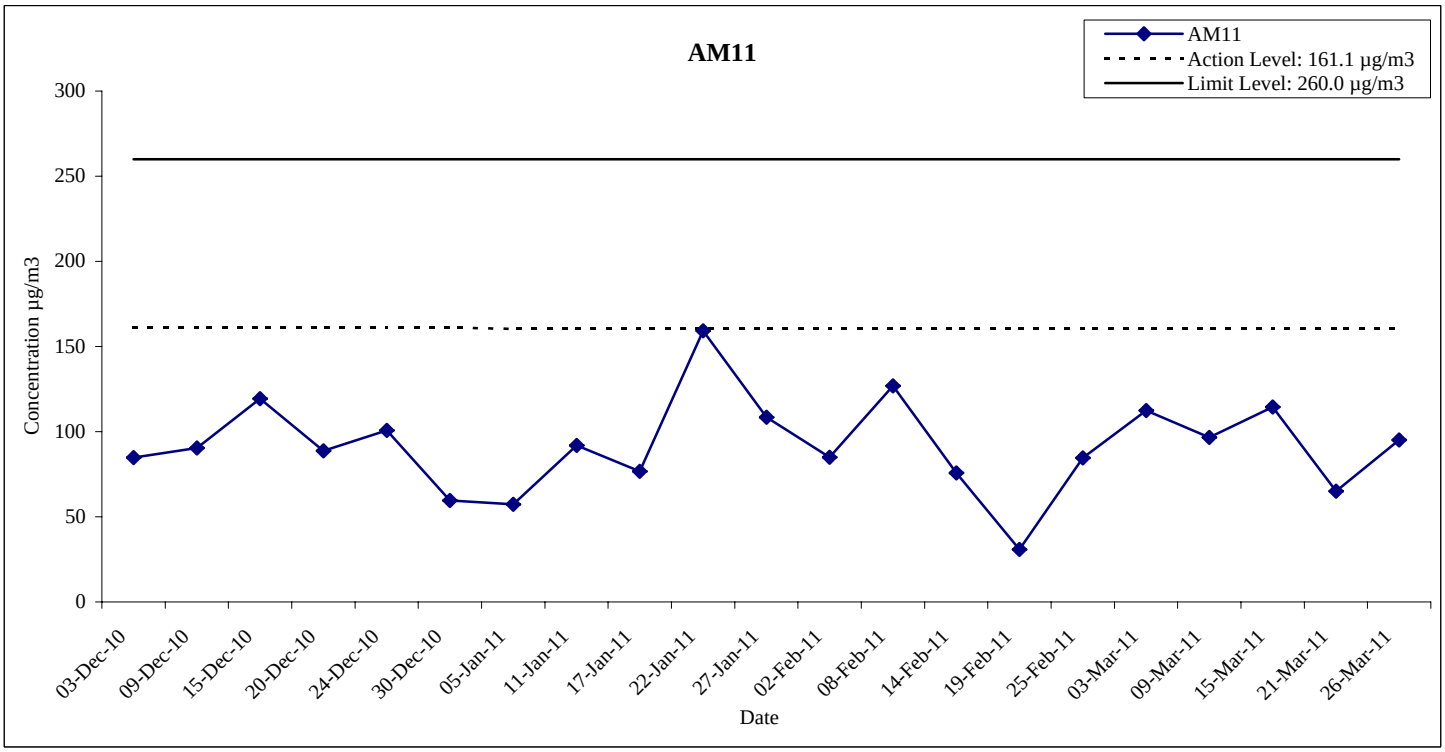
Remarks:
Impact monitoring for AM8 was suspended on 4 and 8 January 2011 due to the termination of power supply by original house owner and it was resumed on 14 January 2011.

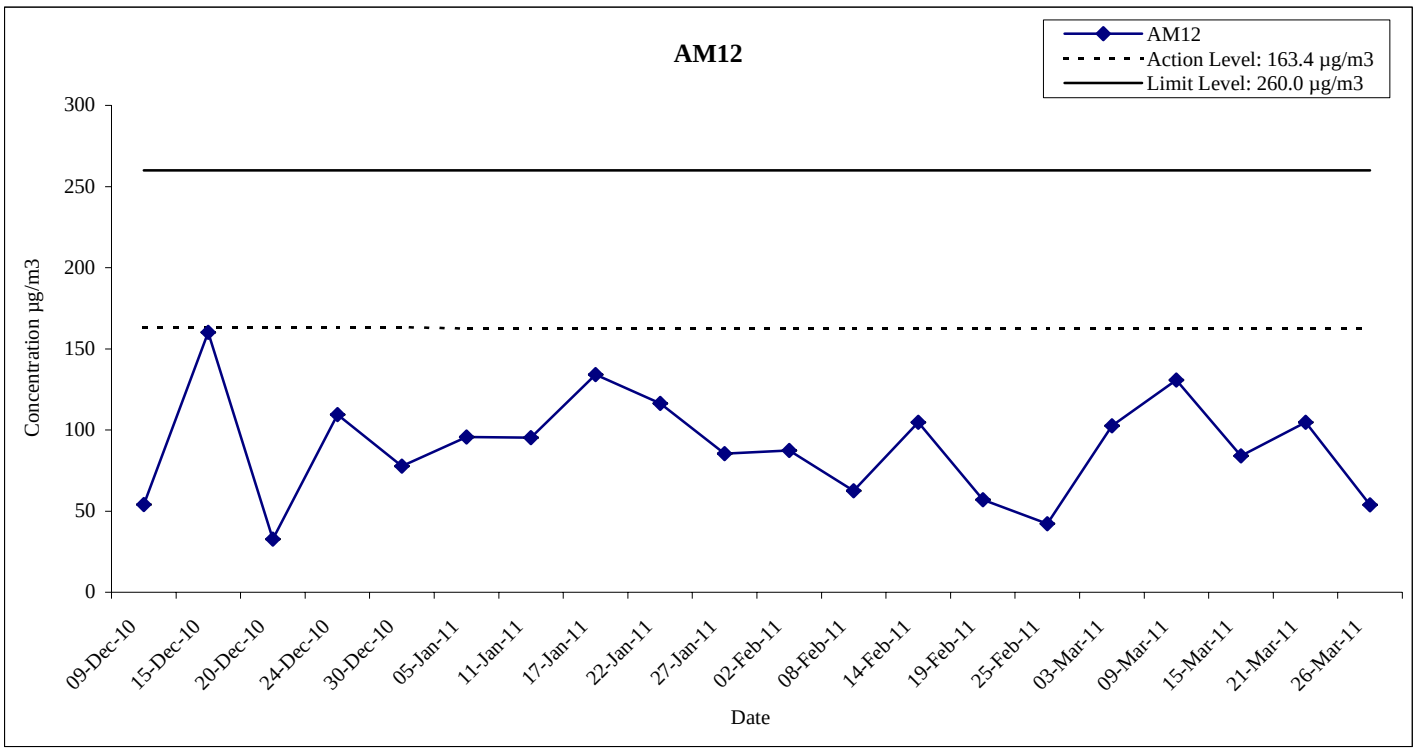
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM7 and AM8**	**Date**	**2011**
		APPENDIX	**F**



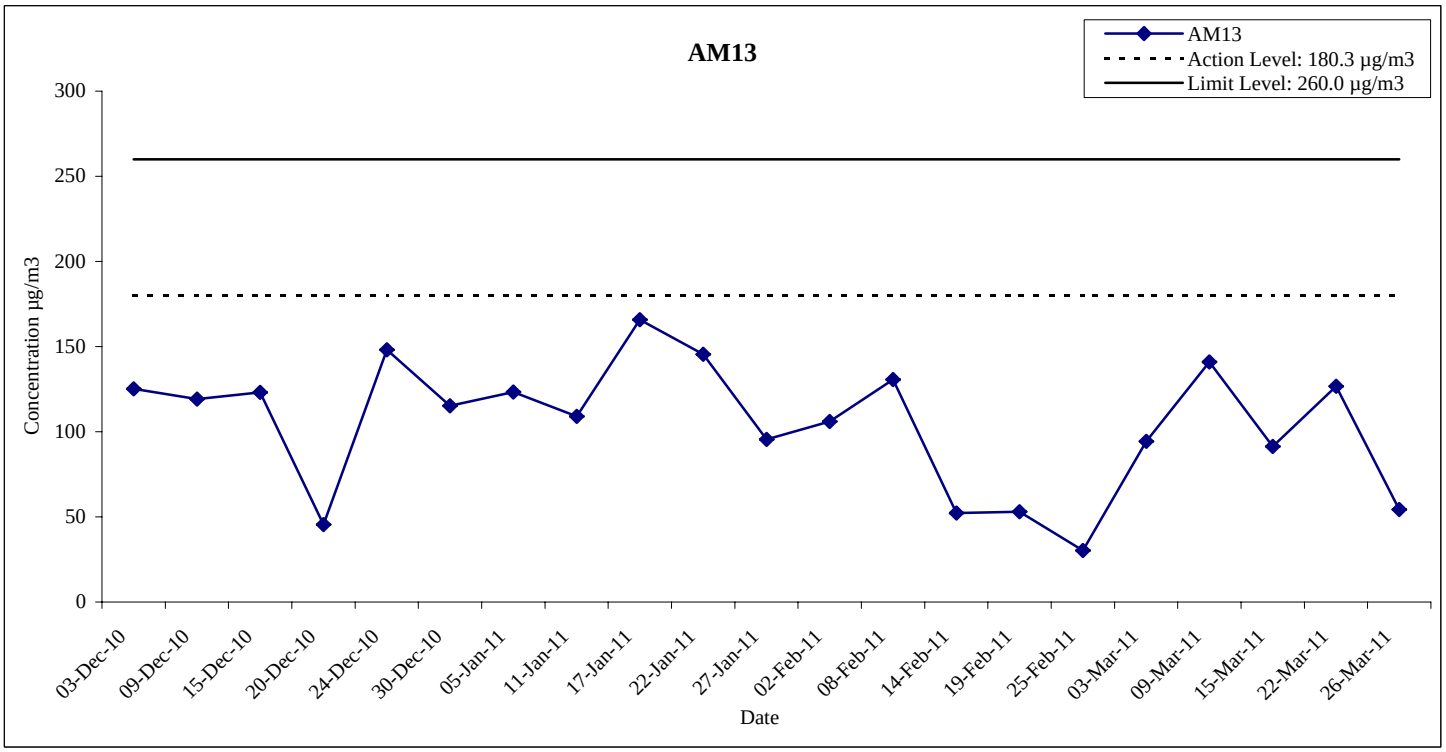


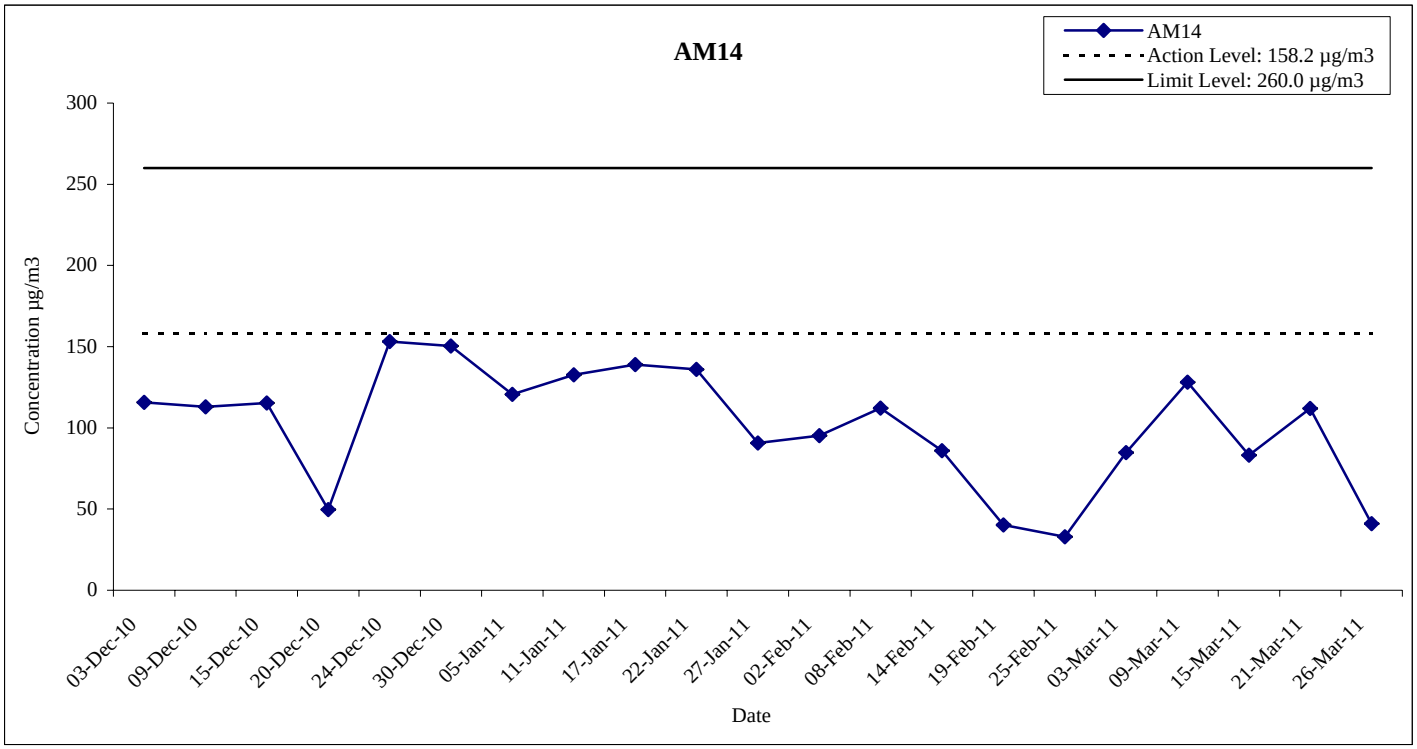
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM9 and AM10**	**Date**	**2011**
		APPENDIX	**F**



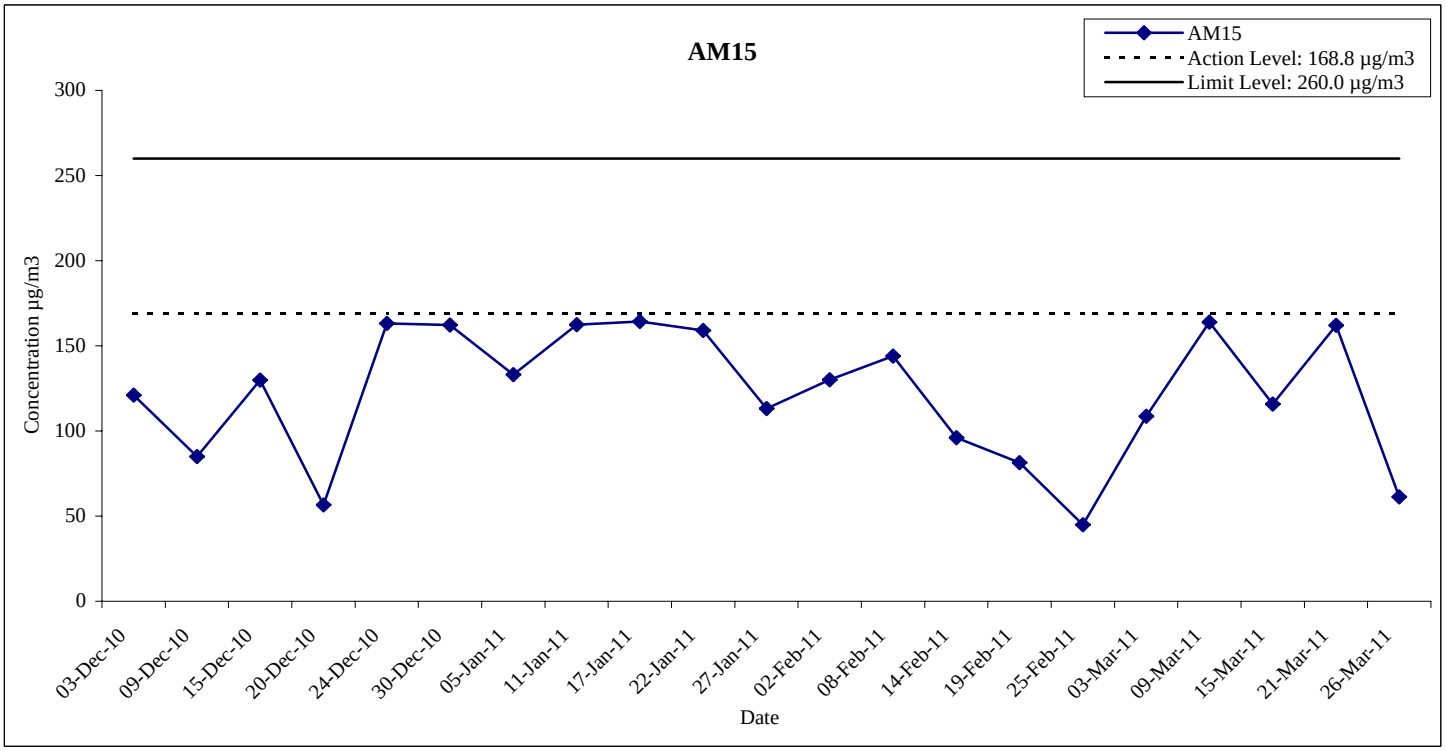


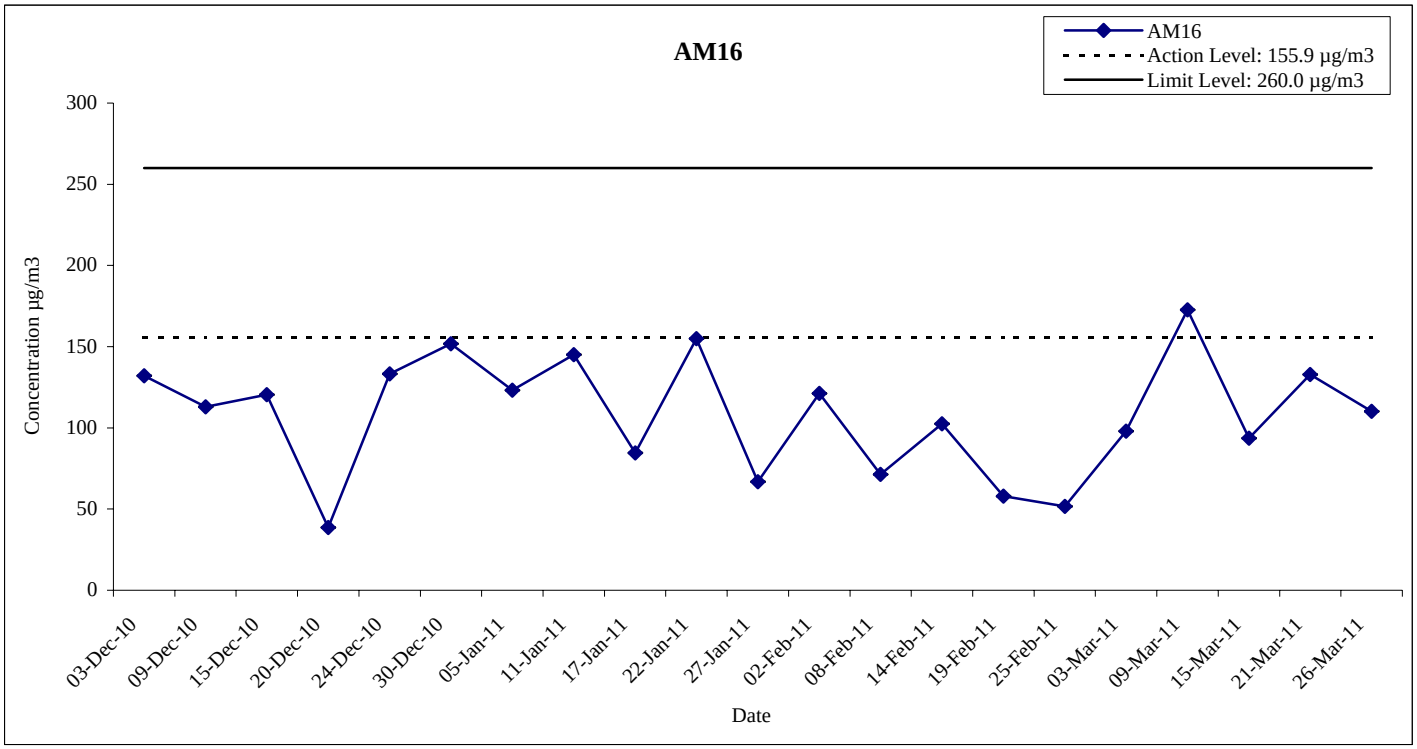
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM11 and AM12**	**Date**	**2011**
		APPENDIX	**F**



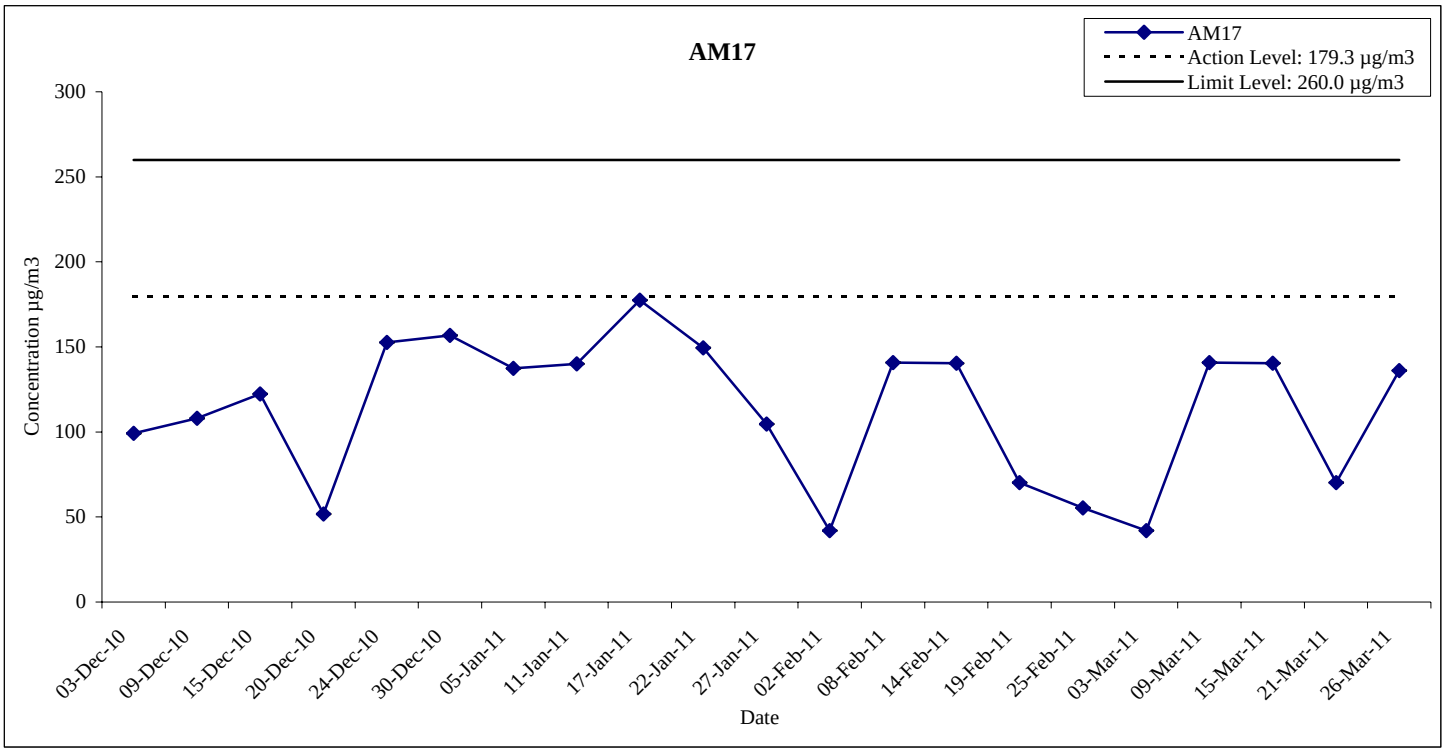


MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM13 and AM14**	**Date**	**2011**
		APPENDIX	**F**





MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Results for Location AM15 and AM16**	**Date**	**2011**
		APPENDIX	**F**



MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of 24-hour TSP** **Monitoring Result for Location AM17**	**Date**	**2011**
		APPENDIX	**F**

APPENDIX F: Noise Monitoring Results

- CN1

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	67	75	N
7-Mar-11	66	75	N
15-Mar-11	67	75	N
21-Mar-11	68	75	N
30-Mar-11	65	75	N

- CN2

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
11-Mar-11	68	75	N
17-Mar-11	64	75	N
25-Mar-11	68	75	N
31-Mar-11	68	75	N

- CN3

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	55	75	N
10-Mar-11	65	75	N
15-Mar-11	68	75	N
22-Mar-11	57	75	N
29-Mar-11	55	75	N

- CN4

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
1-Mar-11	50	75	N
8-Mar-11	50	75	N
15-Mar-11	50	75	N
22-Mar-11	51	75	N
29-Mar-11	52	75	N

- CN5

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
1-Mar-11	69	75	N
8-Mar-11	69	75	N
15-Mar-11	69	75	N
22-Mar-11	74	75	N
29-Mar-11	68	75	N

- CN6

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
1-Mar-11	70	75	N
8-Mar-11	66	75	N
15-Mar-11	62	75	N
22-Mar-11	60	75	N
29-Mar-11	61	75	N

- CN7

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
1-Mar-11	66	75	N
9-Mar-11	66	75	N
16-Mar-11	65	75	N
22-Mar-11	64	75	N
30-Mar-11	67	75	N

- CN8

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	66	75	N
11-Mar-11	75	75	N
18-Mar-11	71	75	N
24-Mar-11	75	75	N

- CN9

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	65	75	N
8-Mar-11	59	75	N
15-Mar-11	62	75	N
22-Mar-11	70	75	N
29-Mar-11	65	75	N

- CN10

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	58	75	N
8-Mar-11	60	75	N
15-Mar-11	63	75	N
22-Mar-11	66	75	N
30-Mar-11	67	75	N

- CN11

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	62	75	N
8-Mar-11	59	75	N
16-Mar-11	61	75	N
23-Mar-11	66	75	N
31-Mar-11	66	75	N

- CN12

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	63	75	N
11-Mar-11	57	75	N
18-Mar-11	60	75	N
25-Mar-11	60	75	N

Note:
- As EPD has comment on the proposed alternative noise monitoring location of CN11 and CN11 will be relocated, the monitoring results at CN11 during the reporting month is for reference only.

APPENDIX F: Noise Monitoring Results

- CN13

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	60	75	N
11-Mar-11	71	75	N
18-Mar-11	66	75	N
25-Mar-11	64	75	N

- CN14

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	60	75	N
11-Mar-11	53	75	N
18-Mar-11	54	75	N
25-Mar-11	55	75	N

- CN15

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
7-Mar-11	69	75	N
14-Mar-11	66	75	N
21-Mar-11	69	75	N
28-Mar-11	70	75	N

- CN16

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
7-Mar-11	55	75	N
14-Mar-11	59	75	N
21-Mar-11	54	75	N
29-Mar-11	60	75	N

- CN18

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
7-Mar-11	60	75	N
14-Mar-11	61	75	N
21-Mar-11	61	75	N
28-Mar-11	66	75	N

- CN19

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
7-Mar-11	75	75	N
16-Mar-11	70	75	N
21-Mar-11	75	75	N
28-Mar-11	75	75	N

- CN20

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	70	75	N
8-Mar-11	71	75	N
15-Mar-11	70	75	N
22-Mar-11	71	75	N
29-Mar-11	70	75	N

- CN21

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	69	70	N
10-Mar-11	70	70	N
17-Mar-11	69	70	N
24-Mar-11	69	70	N
30-Mar-11	69	70	N

- CN22

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	73	75	N
11-Mar-11	73	75	N
18-Mar-11	73	75	N
25-Mar-11	73	75	N
30-Mar-11	72	75	N

- CN23

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	70	70	N
11-Mar-11	67	70	N
18-Mar-11	78	70	Y
25-Mar-11	77	70	Y
30-Mar-11	76	70	Y

Note:

- Impact monitoring at Tsuen Wan Lutheran School (CN 17) had been temporarily suspended since December 2010 due to school closure. Monitoring at this location will be resumed subject to confirmation of school operation or other noise sensitive use at CN 17.
- Noise limit level of CN21, CN24, CN25, CN26 & CN29, which are school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

APPENDIX F: Noise Monitoring Results

- CN24

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	68	70	N
10-Mar-11	67	70	N
17-Mar-11	67	65	N*
24-Mar-11	70	70	N
30-Mar-11	69	70	N

Remarks: * Daytime baseline noise level of CN24 is 67dB(A). As the noise monitoring result on 17 Mar 11 does not exceed baseline noise level. It does not considered as exceedance.

- CN25

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	70	70	N
10-Mar-11	69	70	N
17-Mar-11	69	70	N
24-Mar-11	69	70	N
30-Mar-11	67	70	N

- CN26

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	70	70	N
11-Mar-11	66	70	N
18-Mar-11	71	70	Y
25-Mar-11	66	65	Y
30-Mar-11	66	65	Y

- CN27

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
4-Mar-11	65	75	N
11-Mar-11	65	75	N
18-Mar-11	66	75	N
25-Mar-11	65	75	N
30-Mar-11	65	75	N

- CN28

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	74	75	N
11-Mar-11	71	75	N
18-Mar-11	71	75	N
25-Mar-11	71	75	N
30-Mar-11	70	75	N

- CN29

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
1-Mar-11	68	70	N
9-Mar-11	69	70	N
15-Mar-11	70	65	Y
22-Mar-11	70	70	N
29-Mar-11	69	70	N

- CN30

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
8-Mar-11	68	75	N
17-Mar-11	69	75	N
22-Mar-11	70	75	N
29-Mar-11	70	75	N

- CN31

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
8-Mar-11	74	75	N
14-Mar-11	74	75	N
22-Mar-11	74	75	N
29-Mar-11	74	75	N

- CN32

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	78	75	Y
7-Mar-11	78	75	Y
17-Mar-11	78	75	Y
21-Mar-11	79	75	Y
31-Mar-11	74	75	N

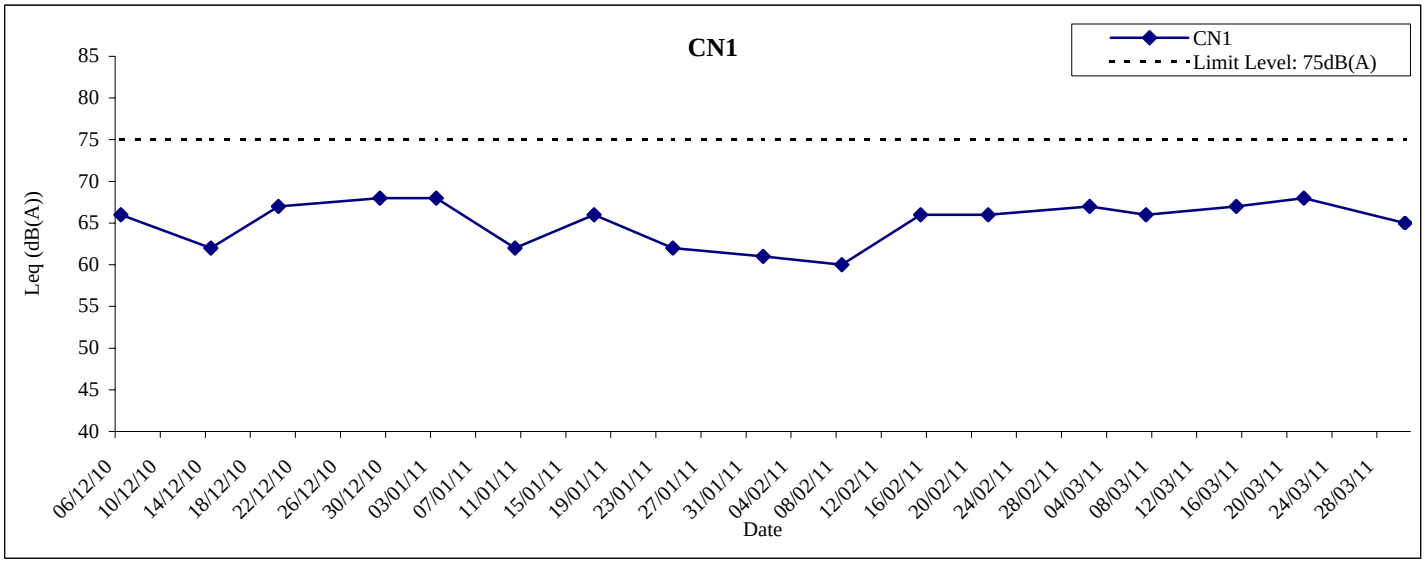
- CN33

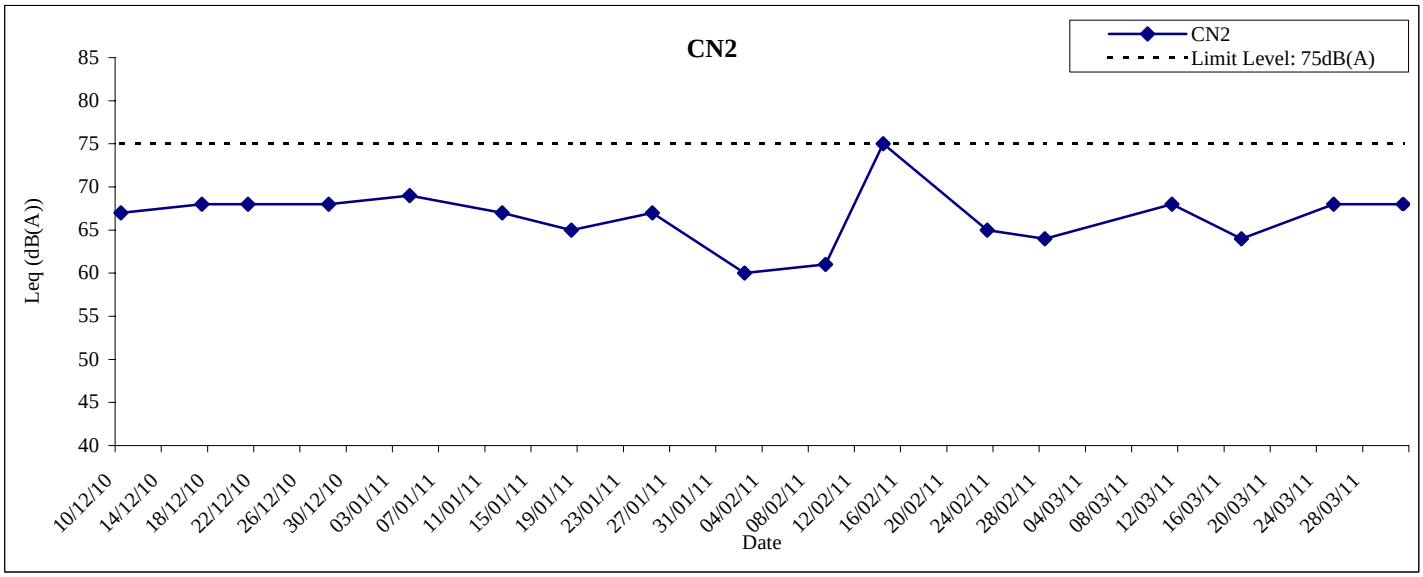
Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	78	75	Y
7-Mar-11	76	75	Y
16-Mar-11	71	75	N
21-Mar-11	75	75	N
31-Mar-11	75	75	N

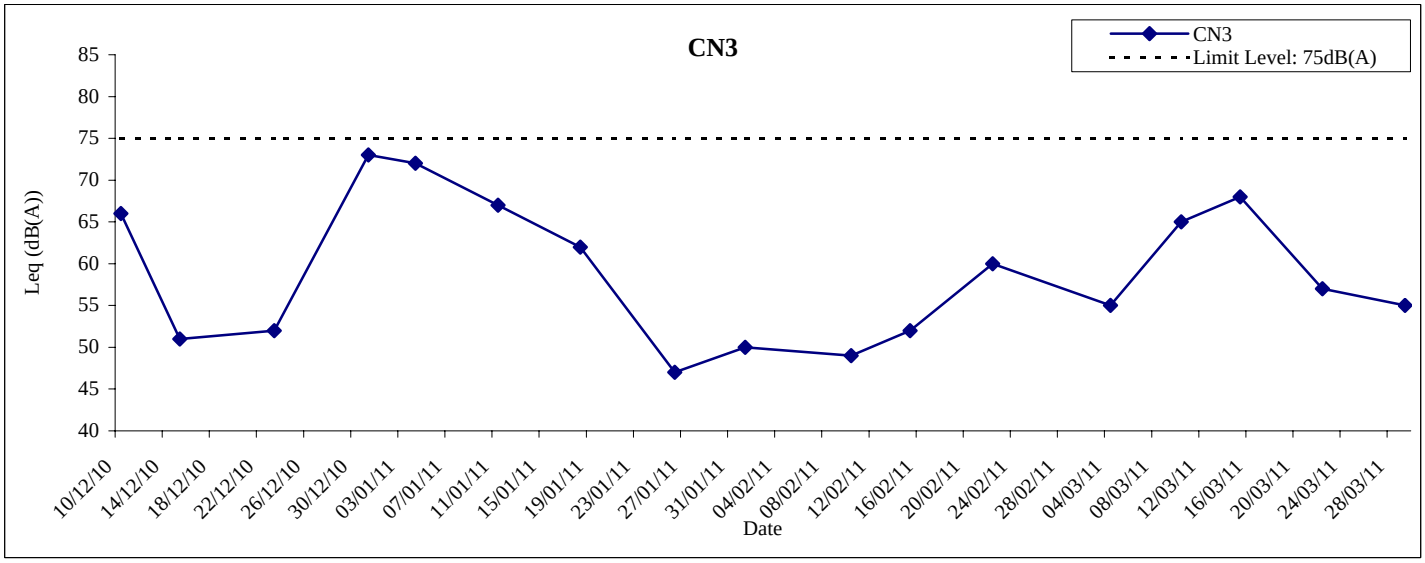
- CN34

Date	Noise Monitoring Results	Limit Level	Exceedance?
	Leq, dB(A)	Leq, dB(A)	
2-Mar-11	73	75	N
7-Mar-11	74	75	N
16-Mar-11	73	75	N
21-Mar-11	72	75	N
31-Mar-11	72	75	N

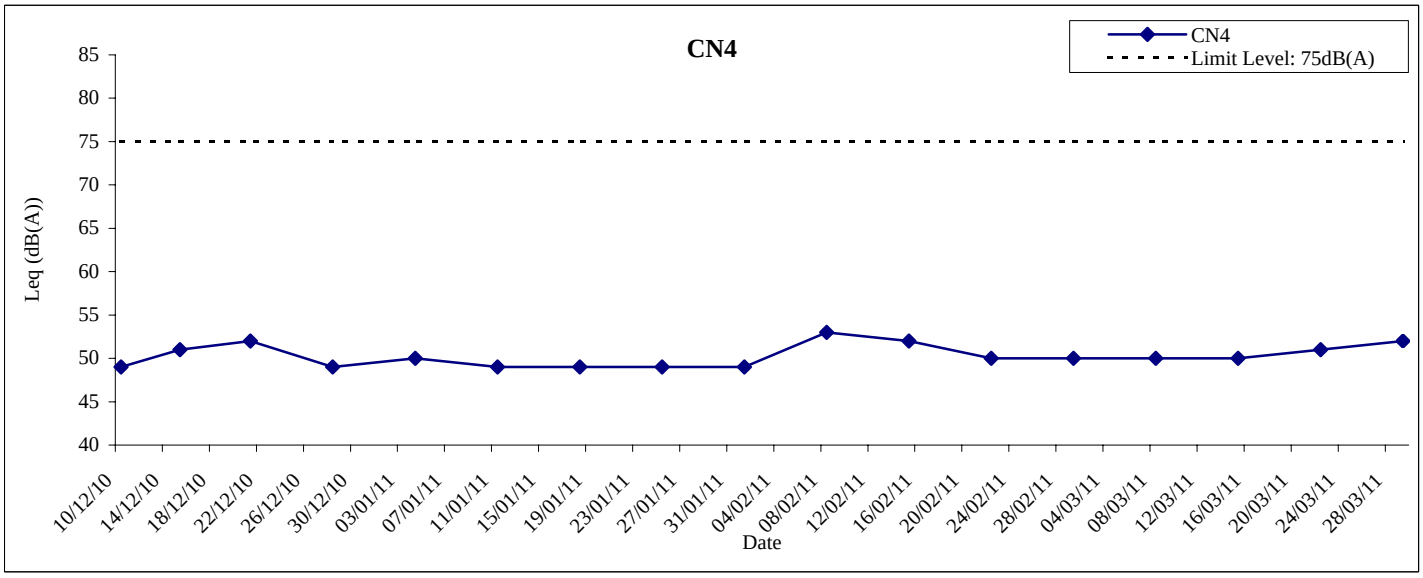
Note:
- Noise limit level of CN21, CN24, CN25, CN26 & CN29, which are school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

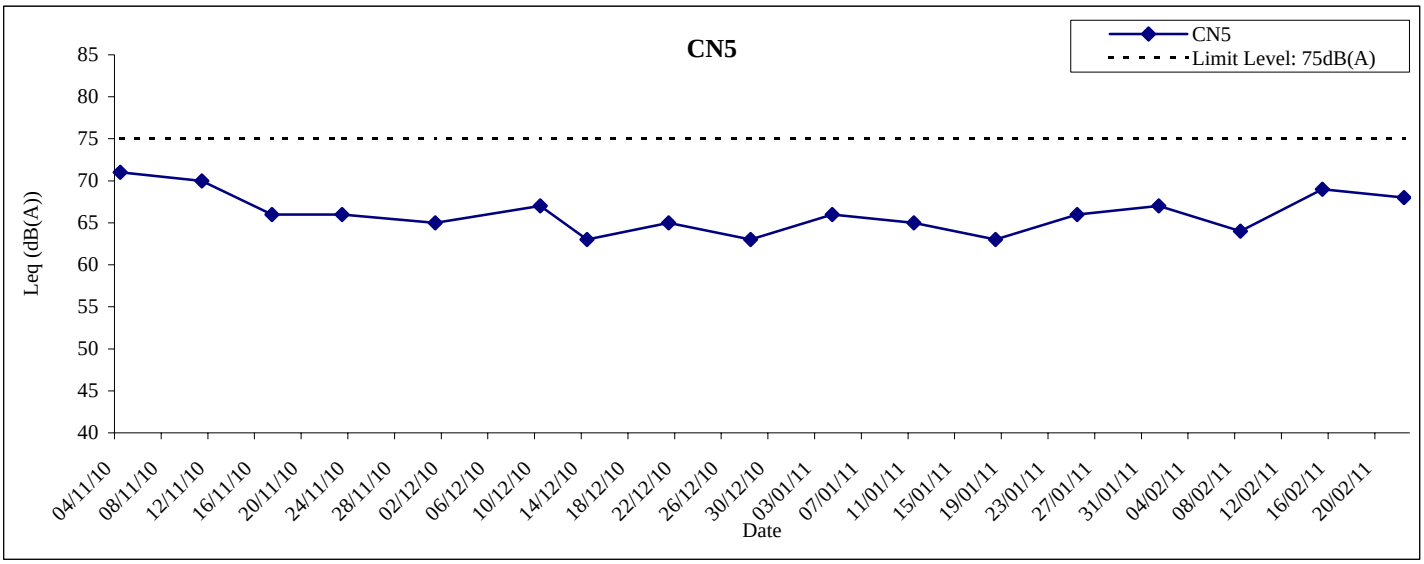


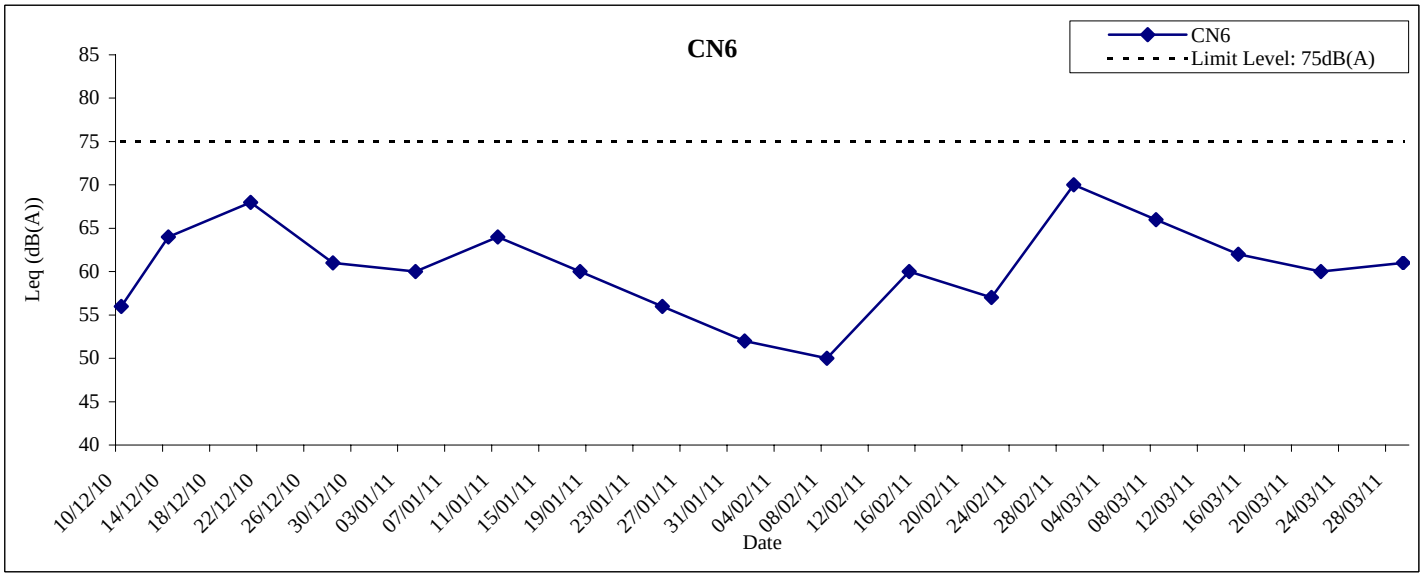




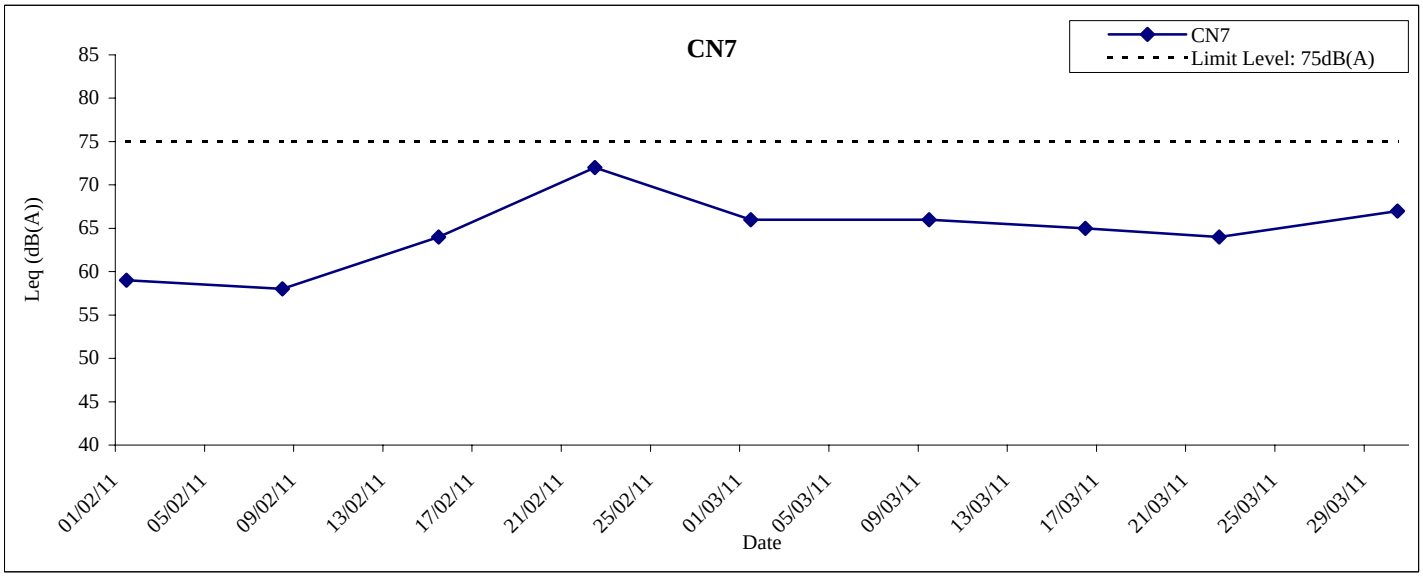
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN1, CN2 and CN3**	**Date**	**2011**
		APPENDIX	**F**

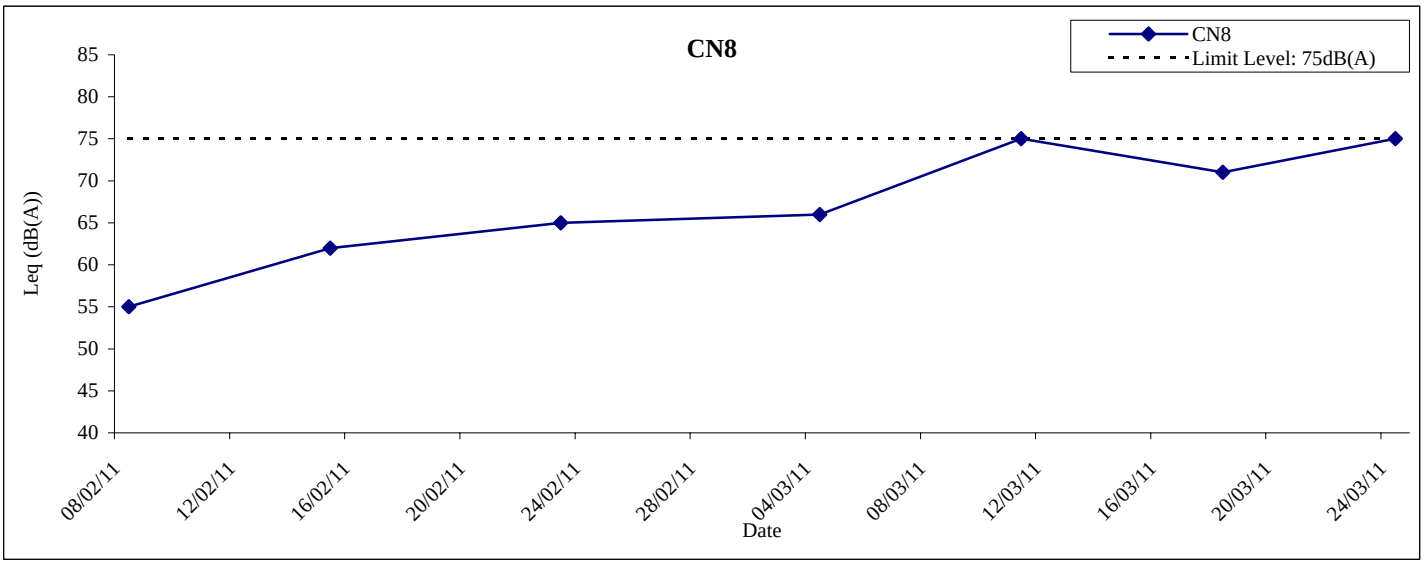


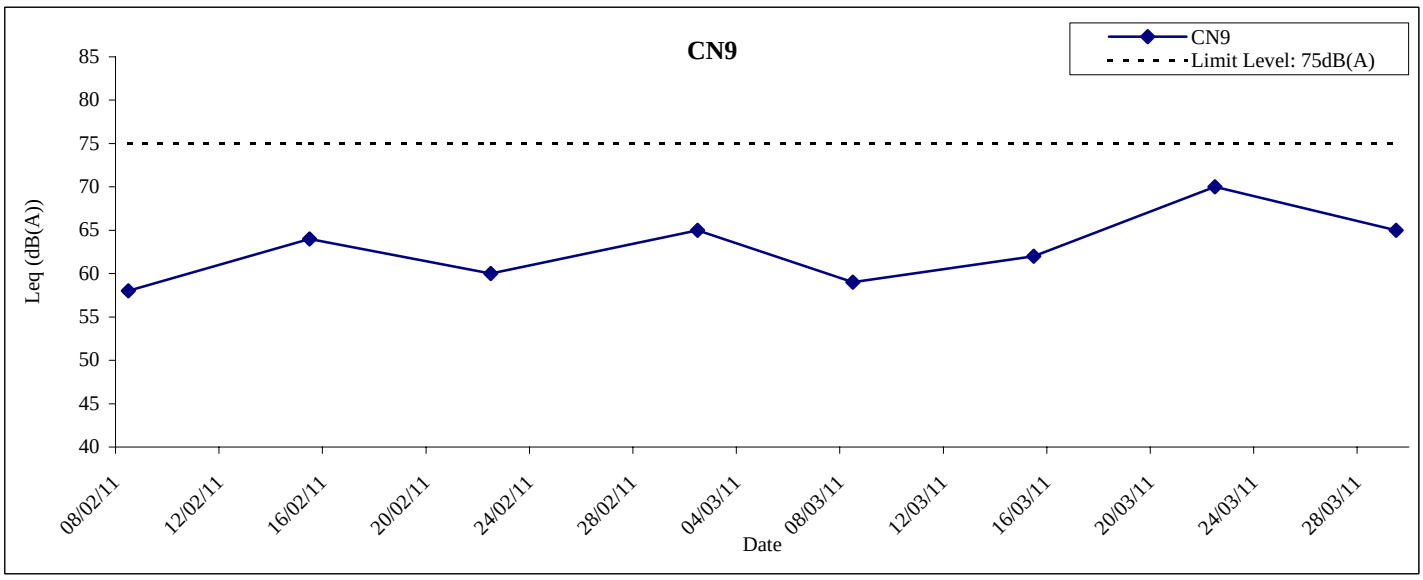




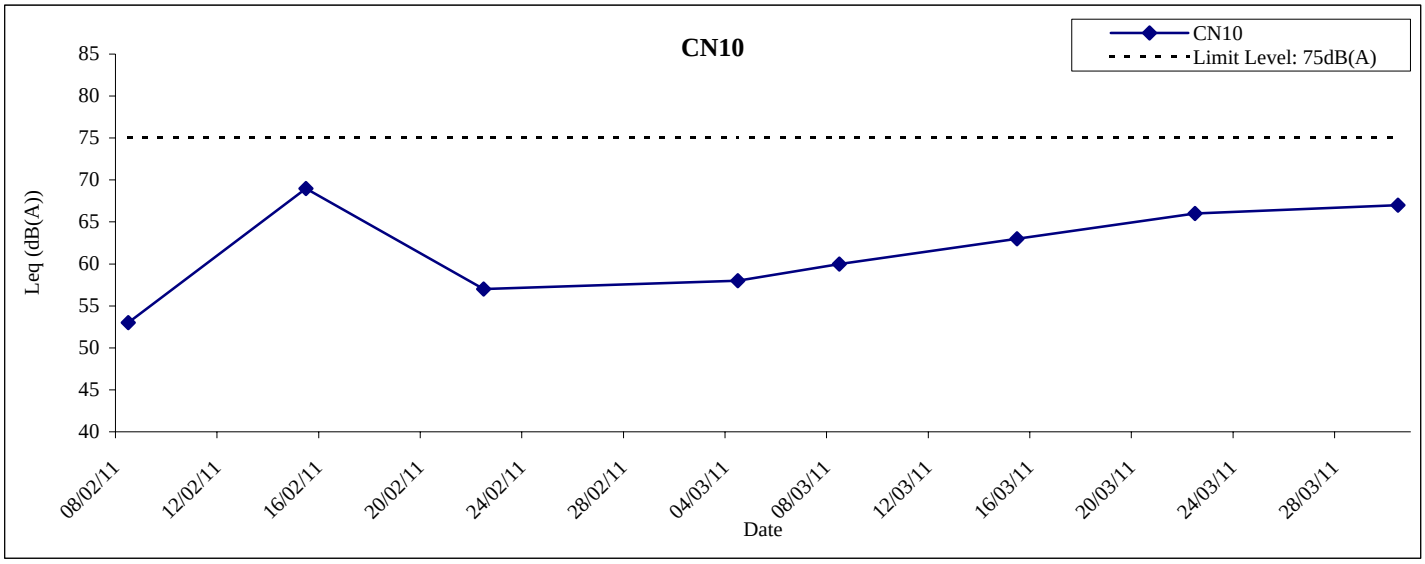
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN4, CN5 and CN6**	**Date**	**2011**
		APPENDIX	**F**

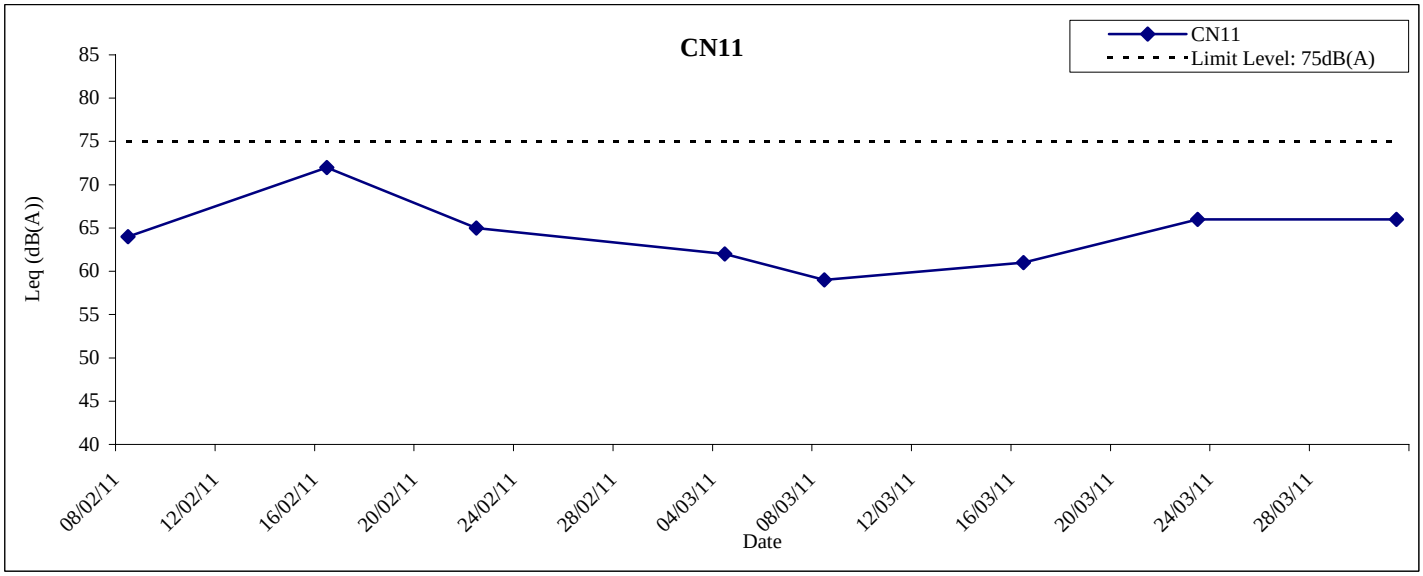


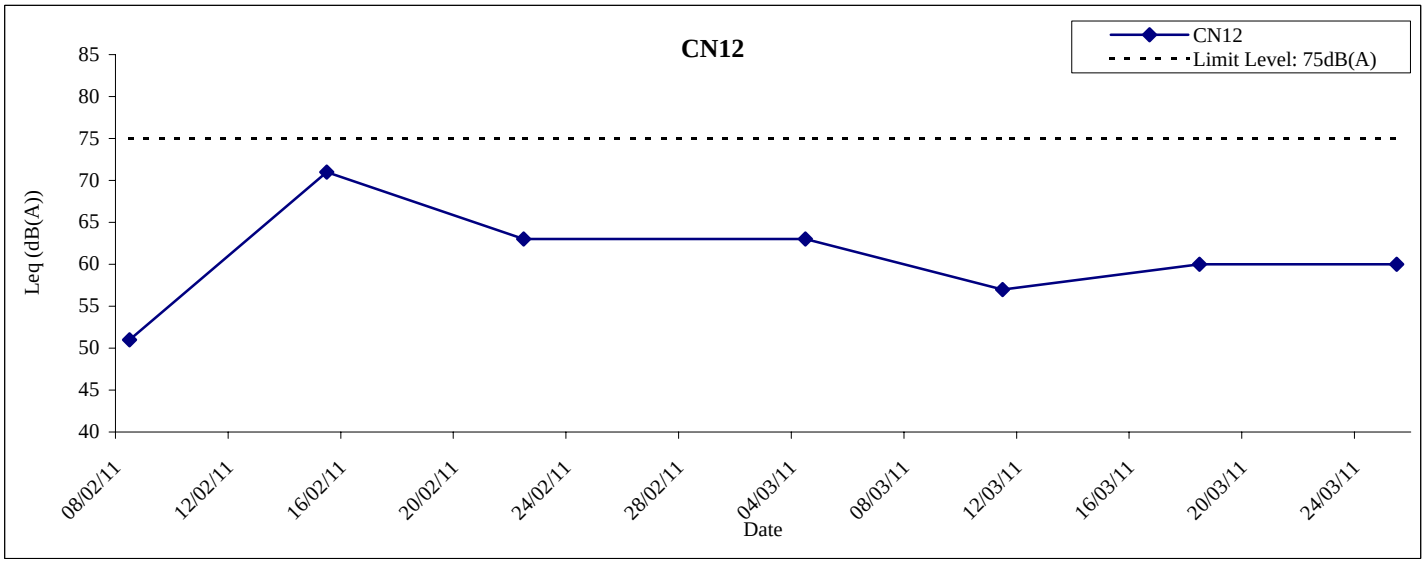




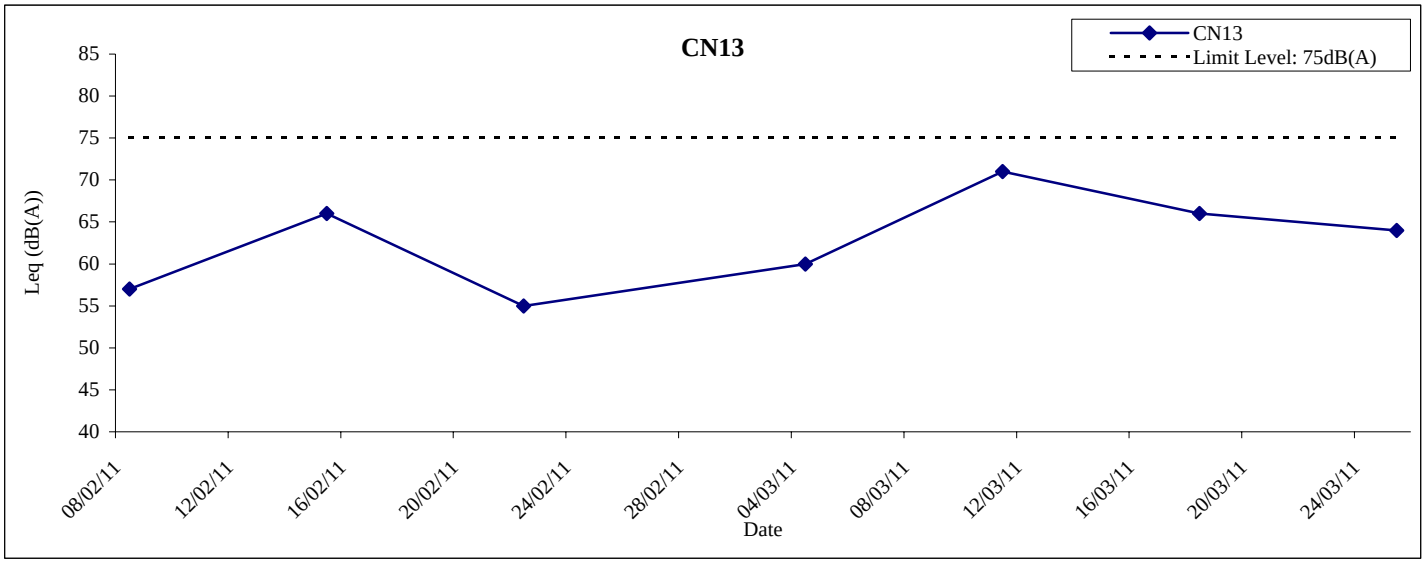
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN7, CN8 and CN9**	**Date**	**2011**
		APPENDIX	**F**

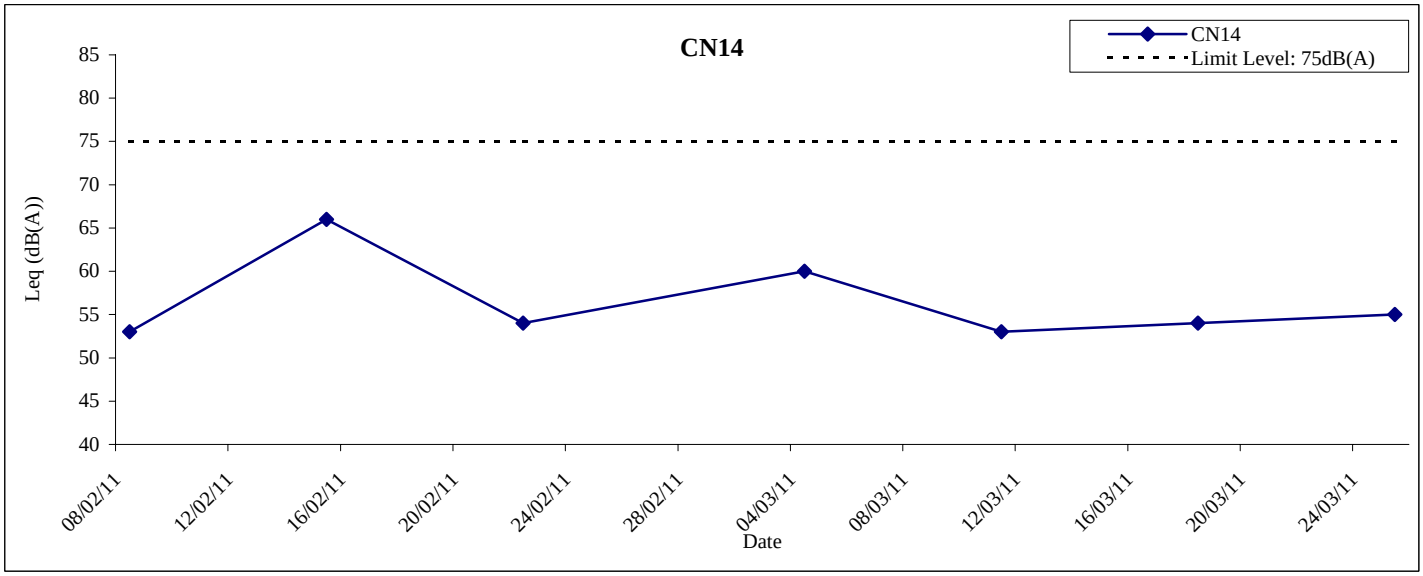


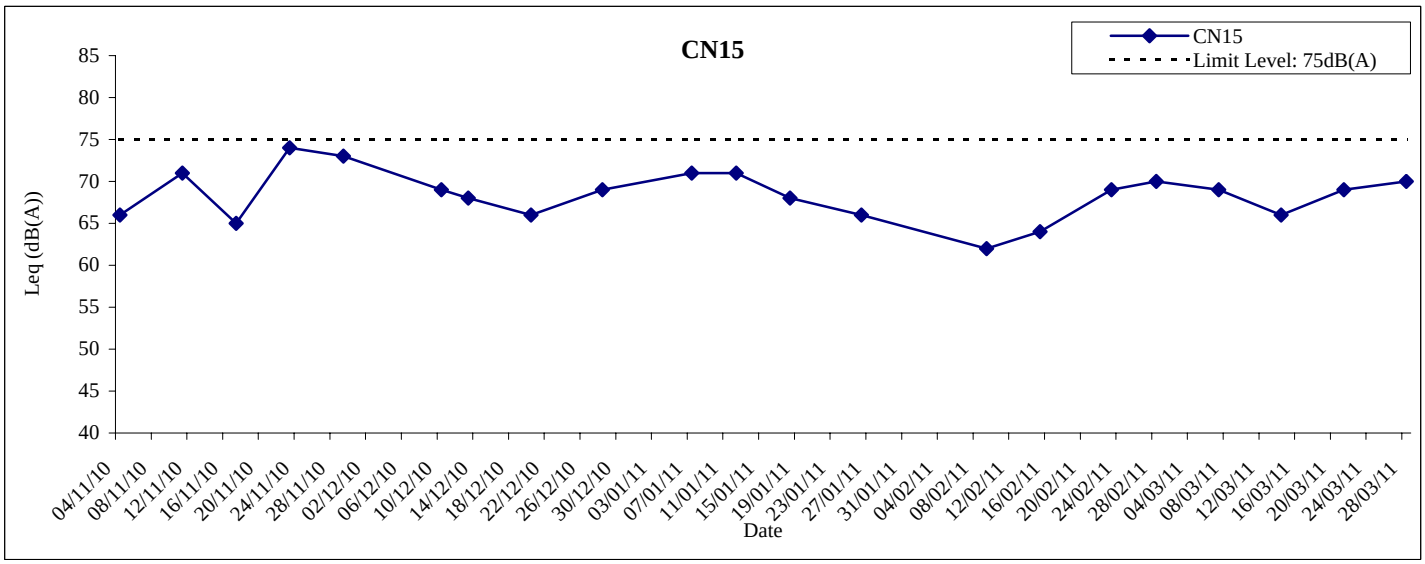




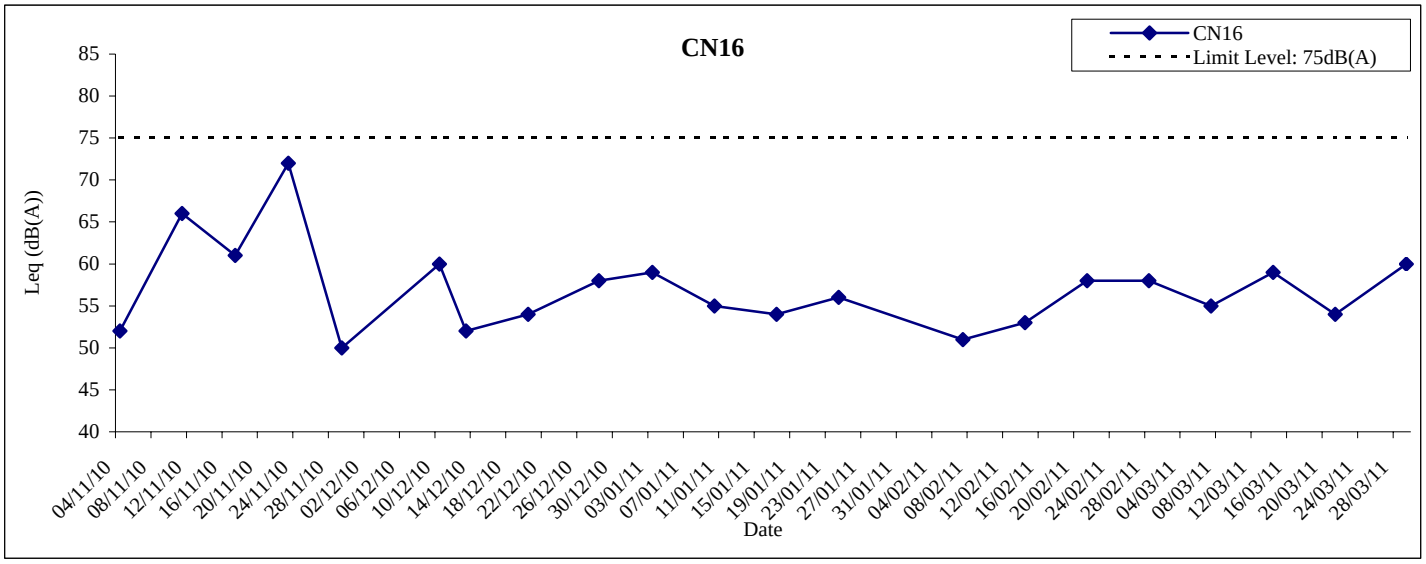
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN10, CN11 and CN12**	**Date**	**2011**
		APPENDIX	**F**

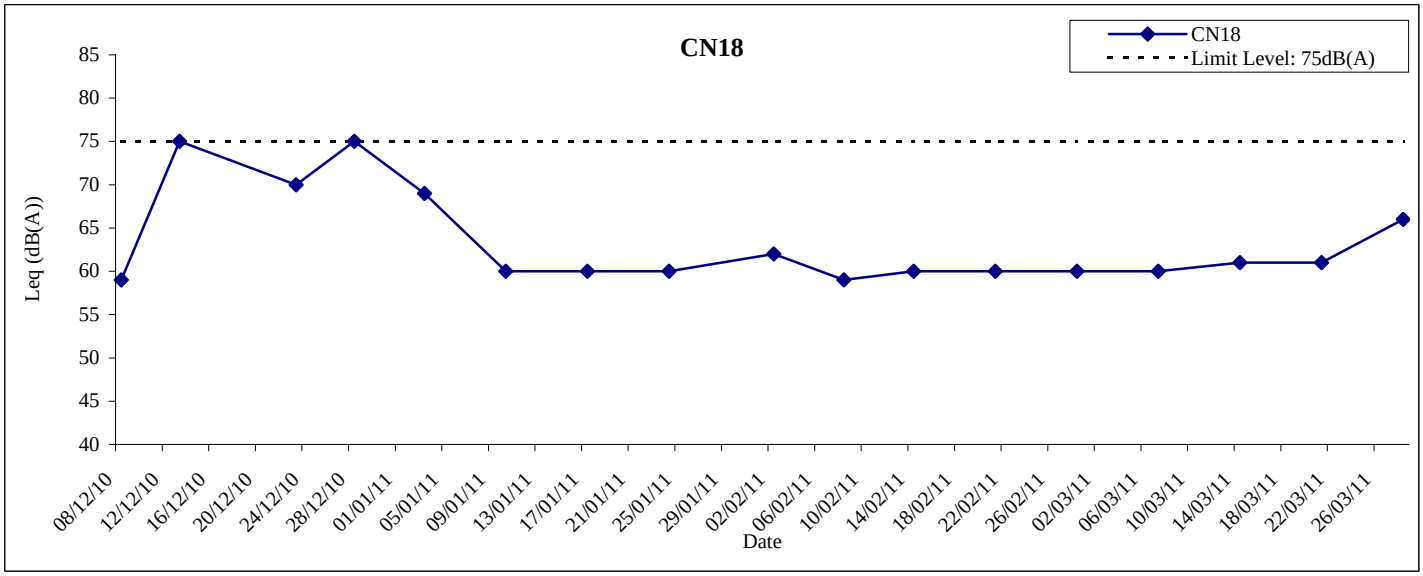


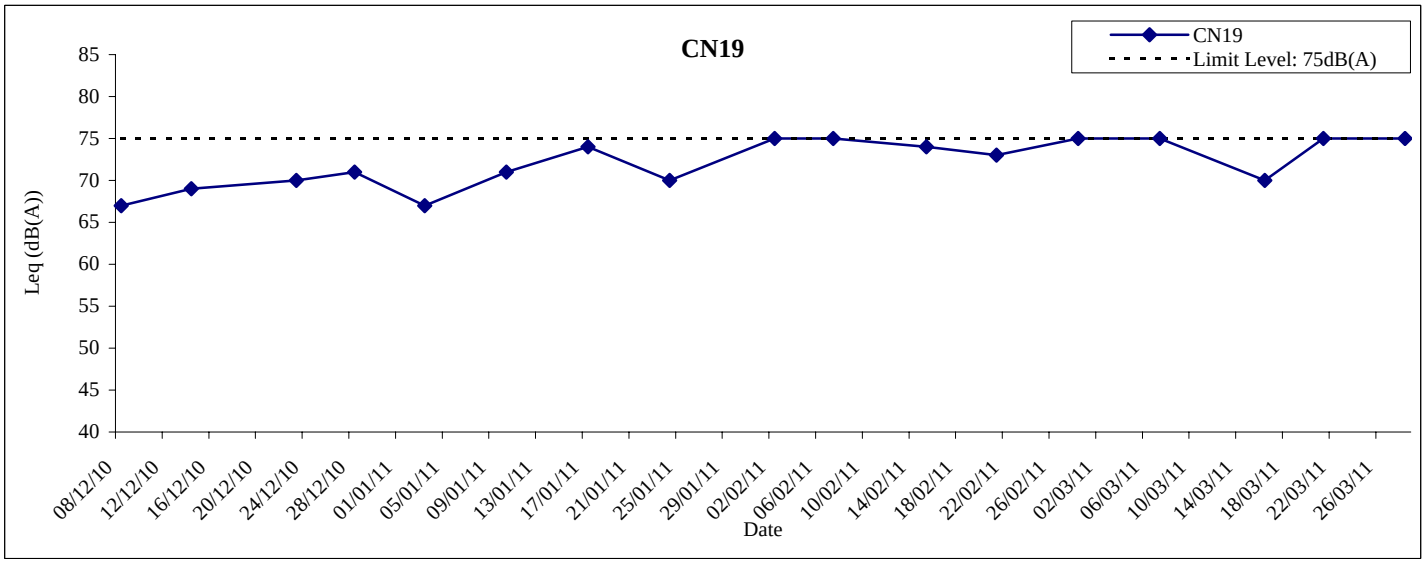




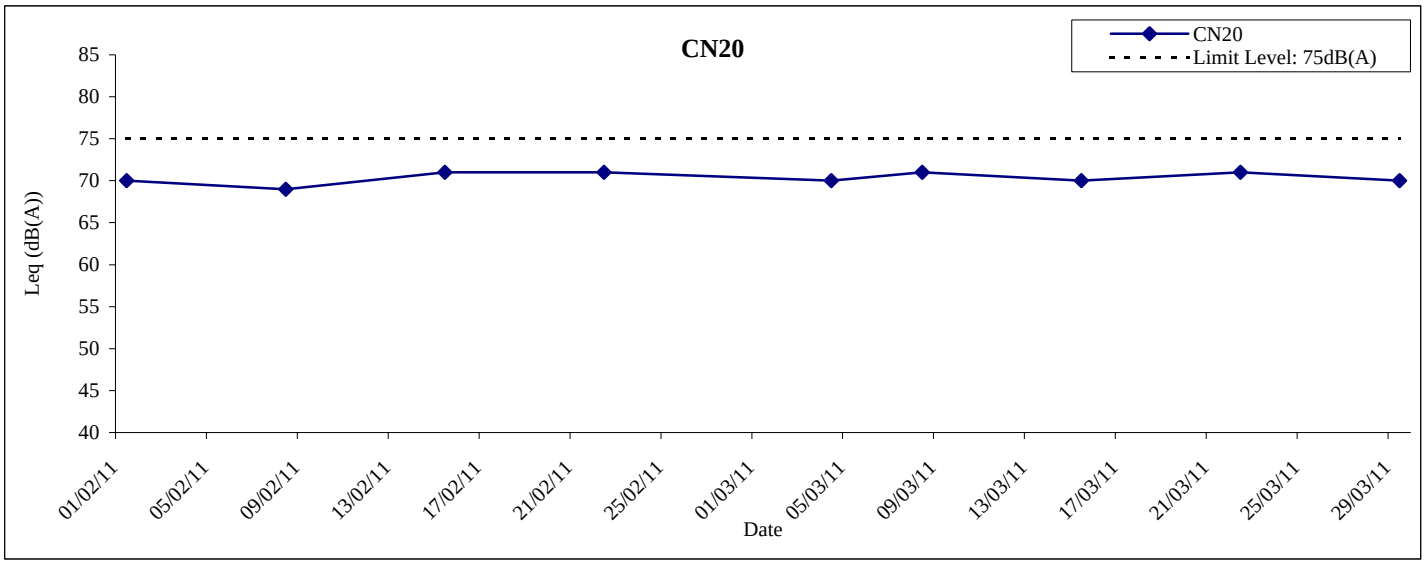
MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN13, CN14 and CN15**	**Date**	**2011**
		APPENDIX	**F**

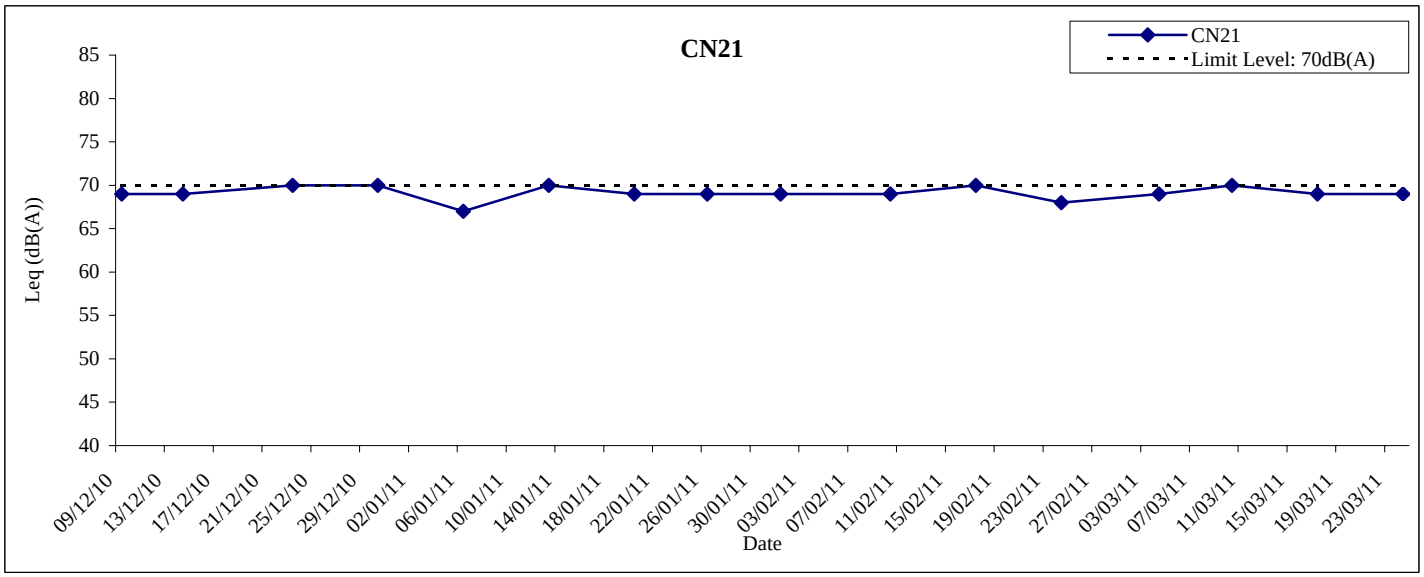


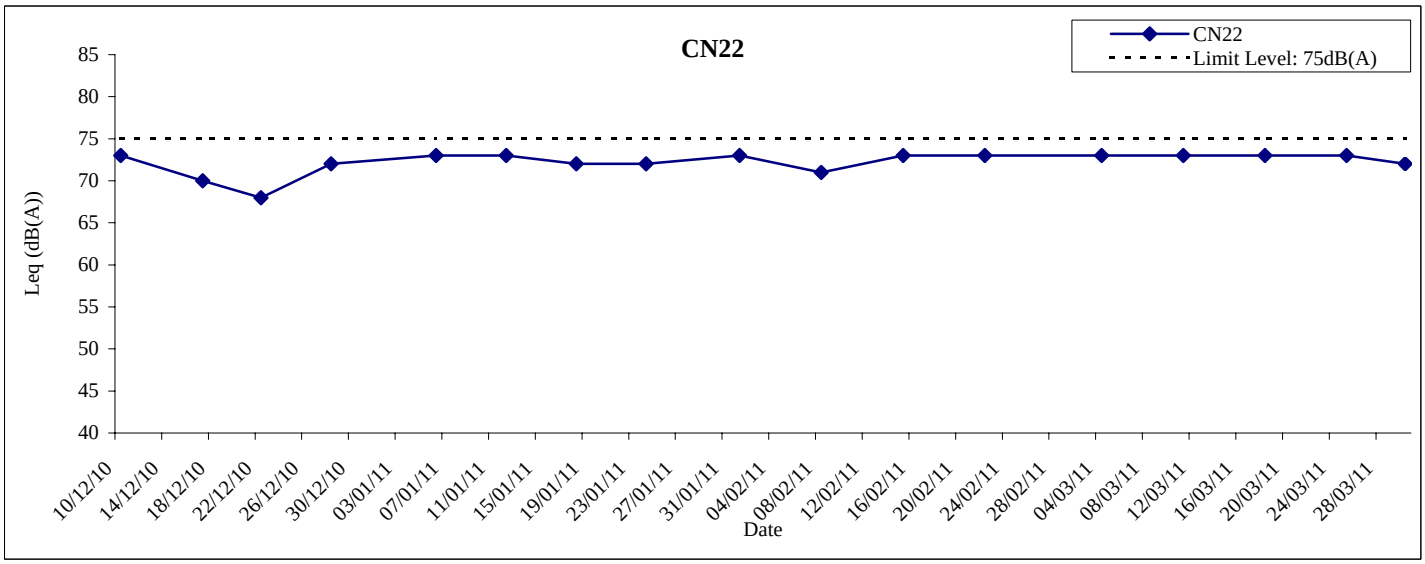




MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN16, CN18 and CN19**	**Date**	**2011**
		APPENDIX	**F**

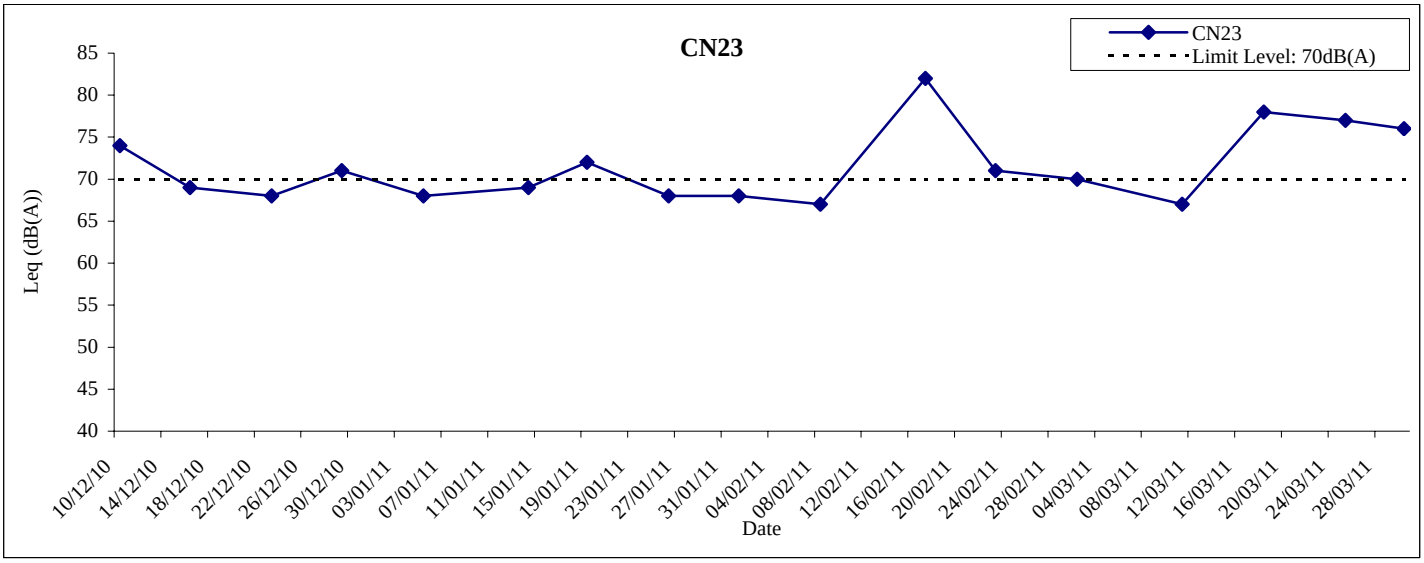


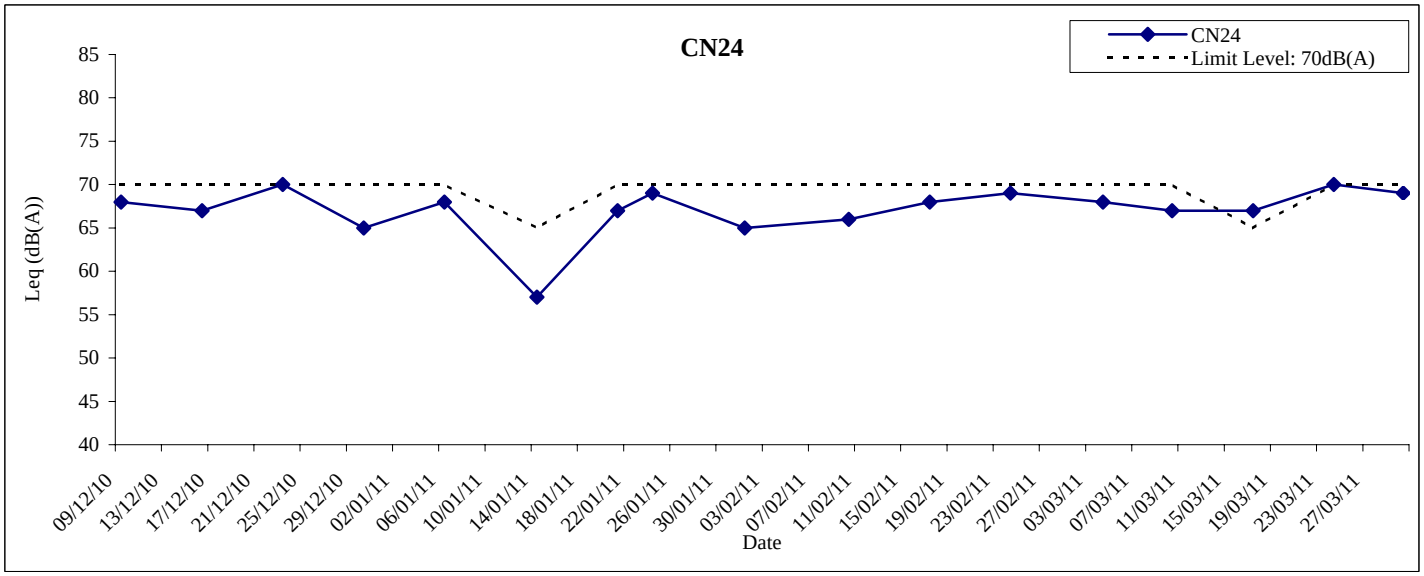


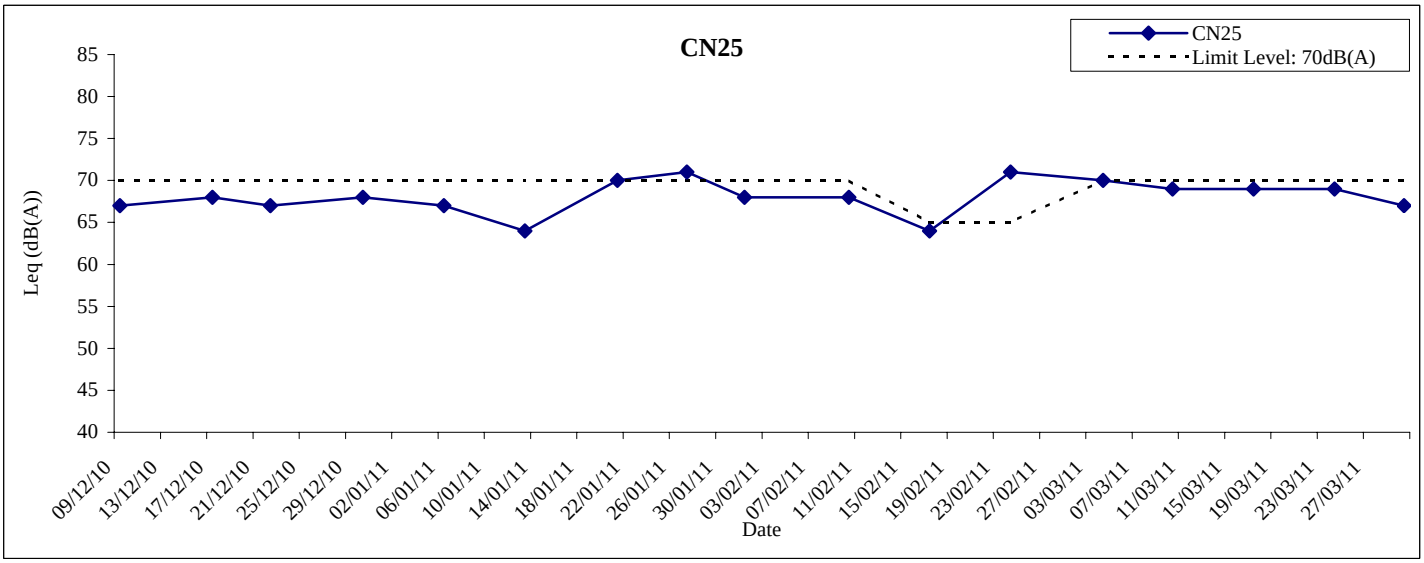


Remarks:
Noise limit level of CN21, which is school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN21, CN22 and CN23**	**Date**	**2011**
		APPENDIX	**F**





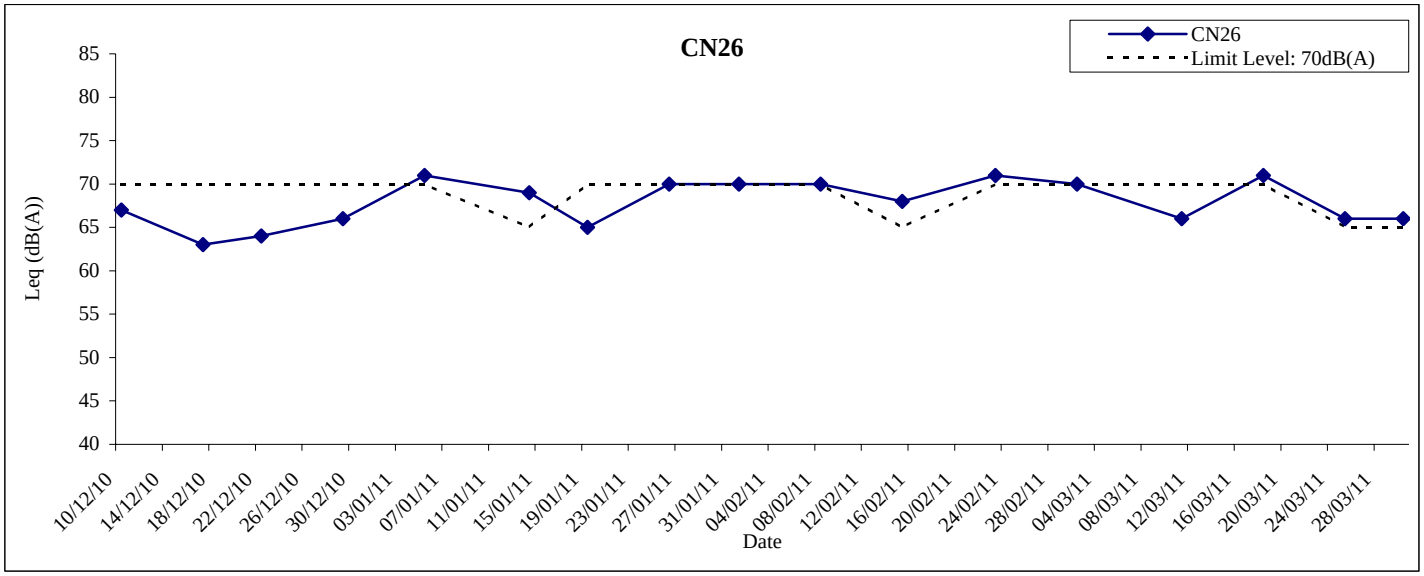


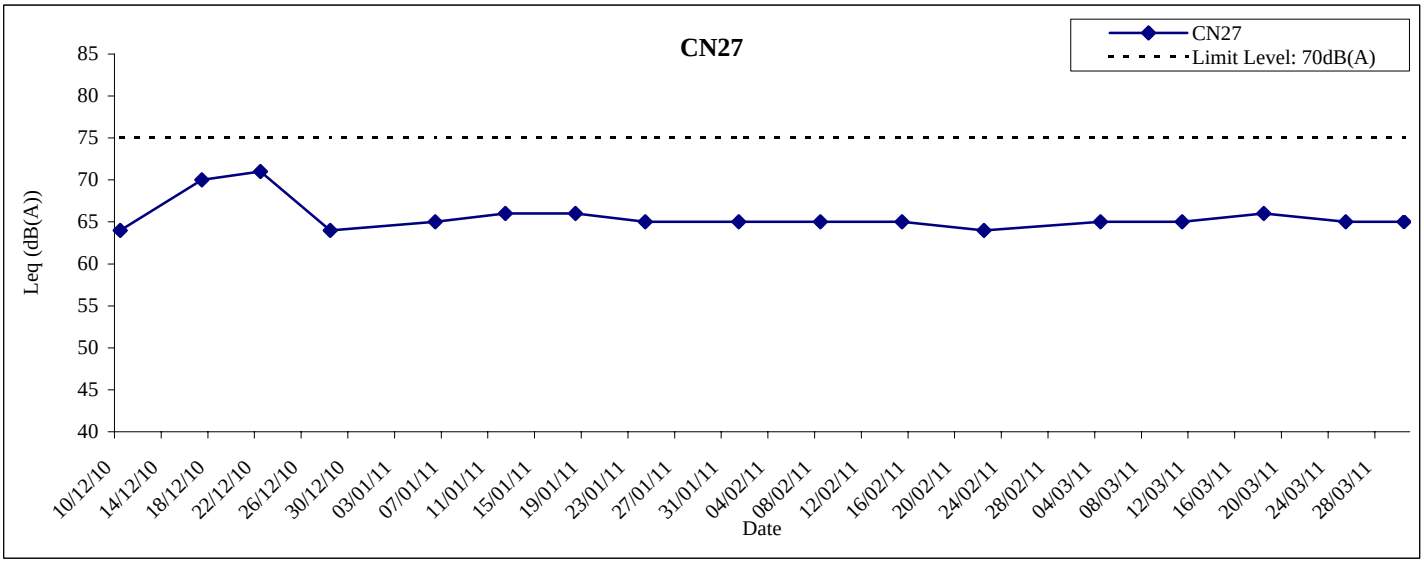
Remarks:

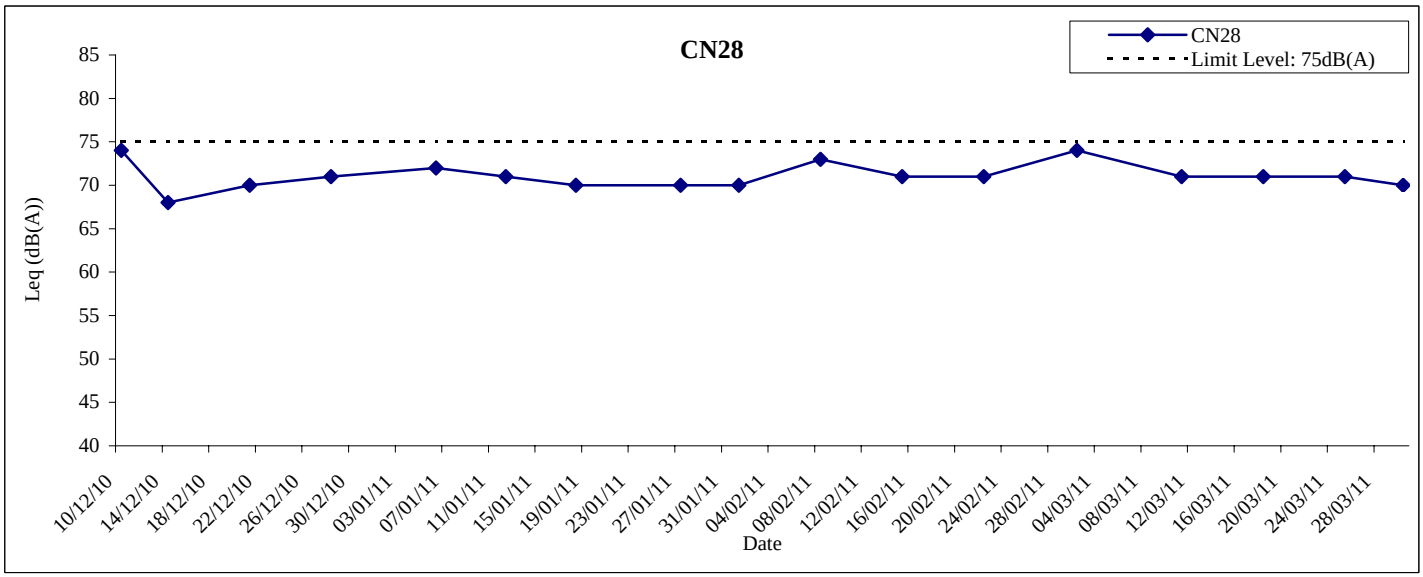
-Noise limit level of CN24 & CN25, which are school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

-Daytime baseline noise level of CN24 is 67dB(A). As the noise monitoring result on 17 Mar 11 does not exceed baseline noise level. It does not considered as exceedance.

MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN23, CN24 and CN25**	**Date**	**2011**
		APPENDIX	**F**

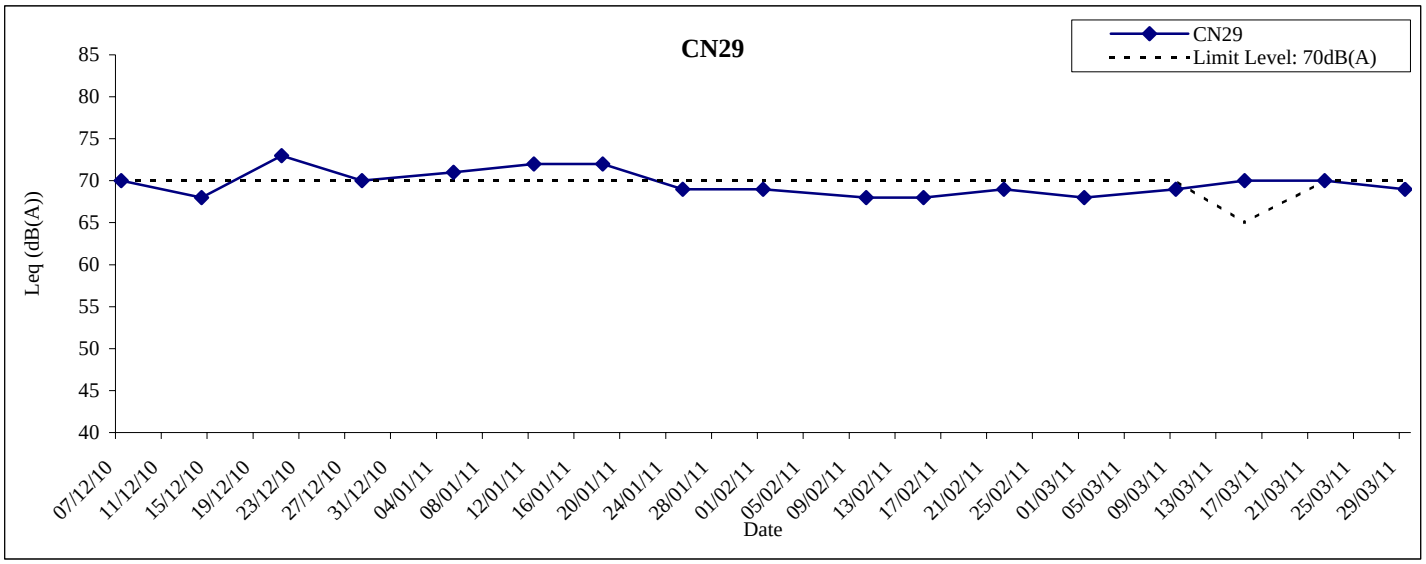


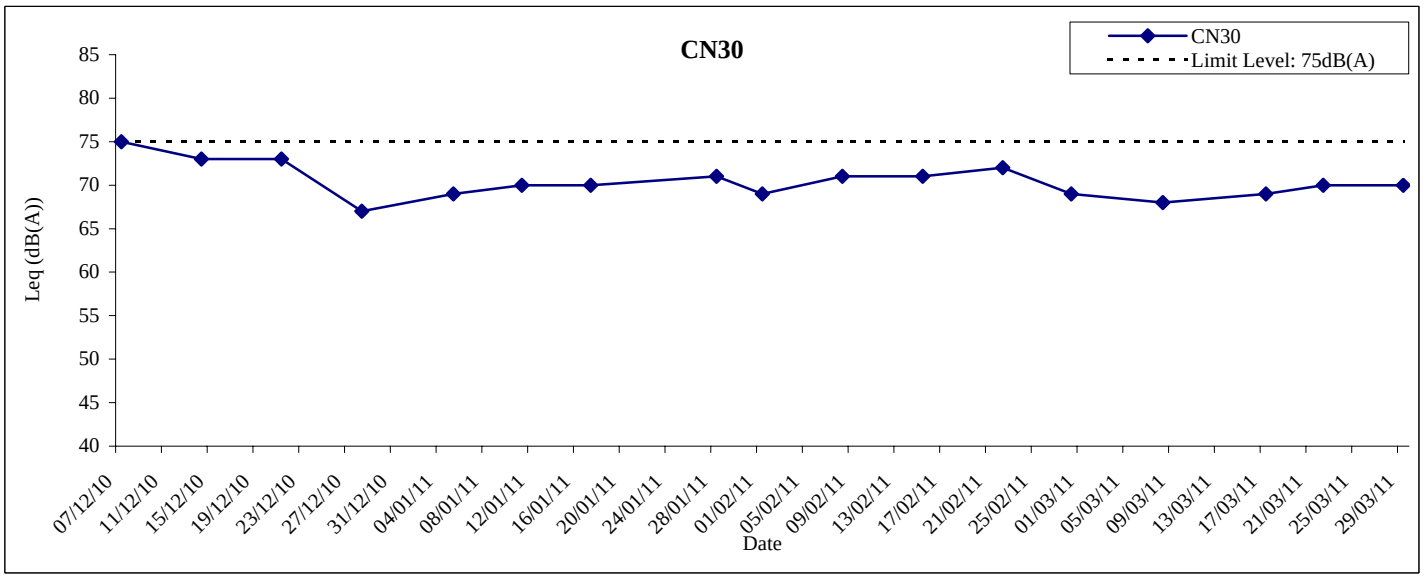


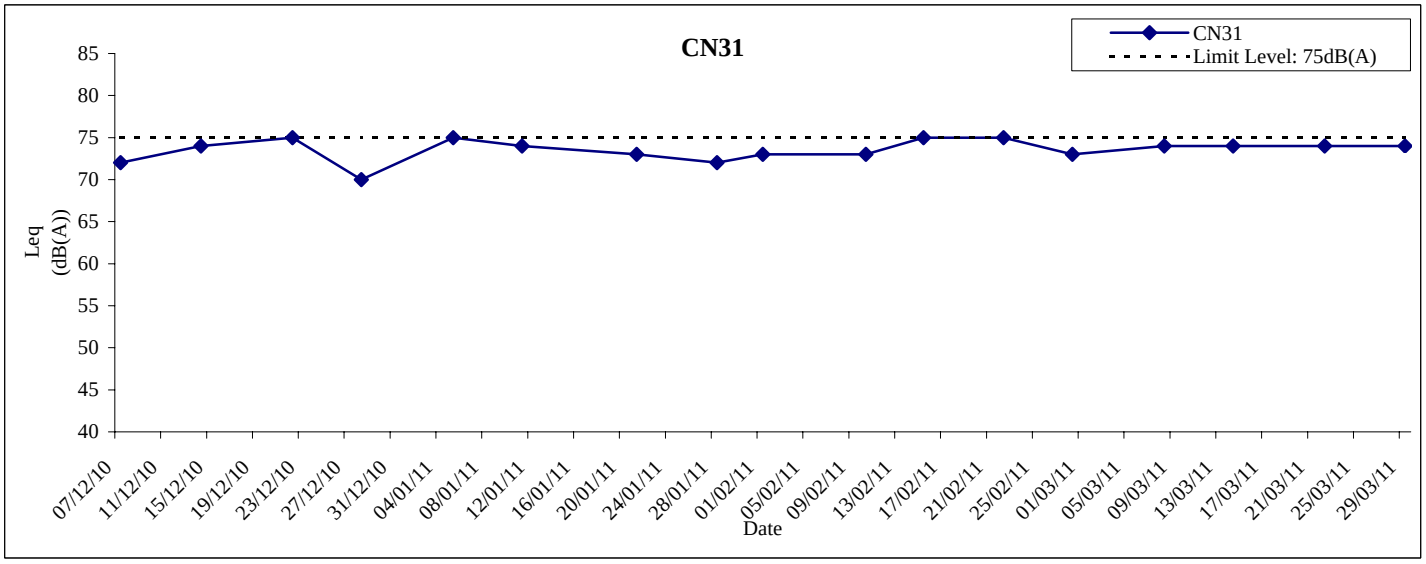


Remarks:
Noise limit level of CN26, which is school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN26, CN27 and CN28**	**Date**	**2011**
		APPENDIX	**F**

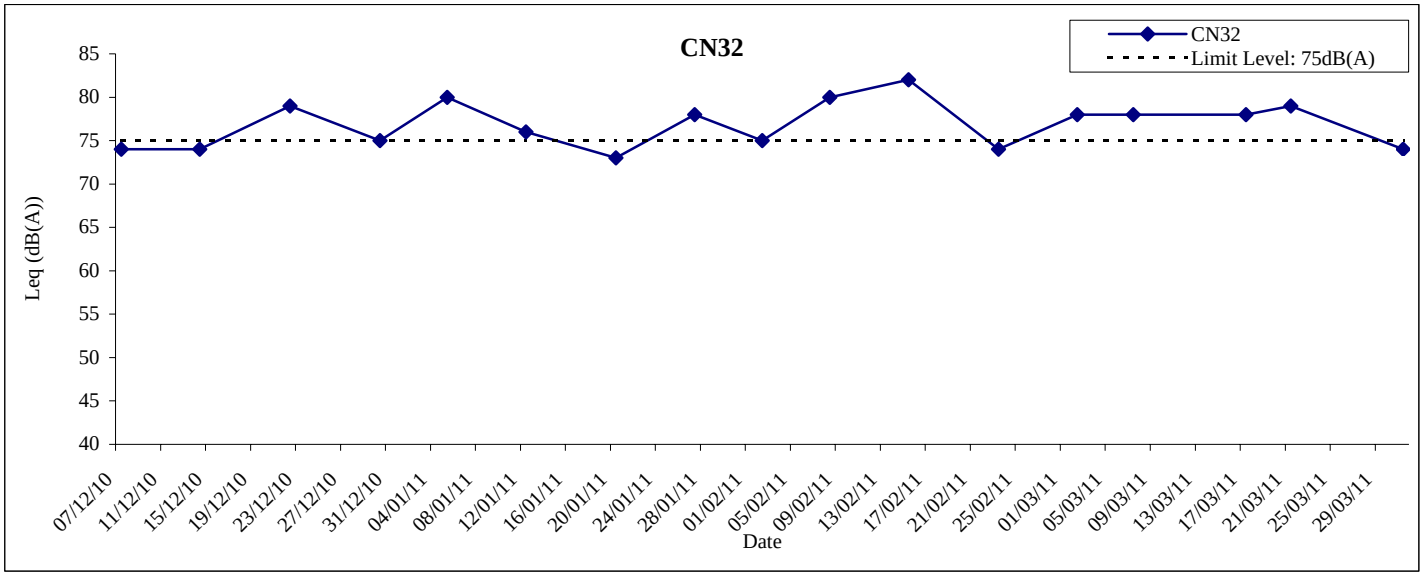


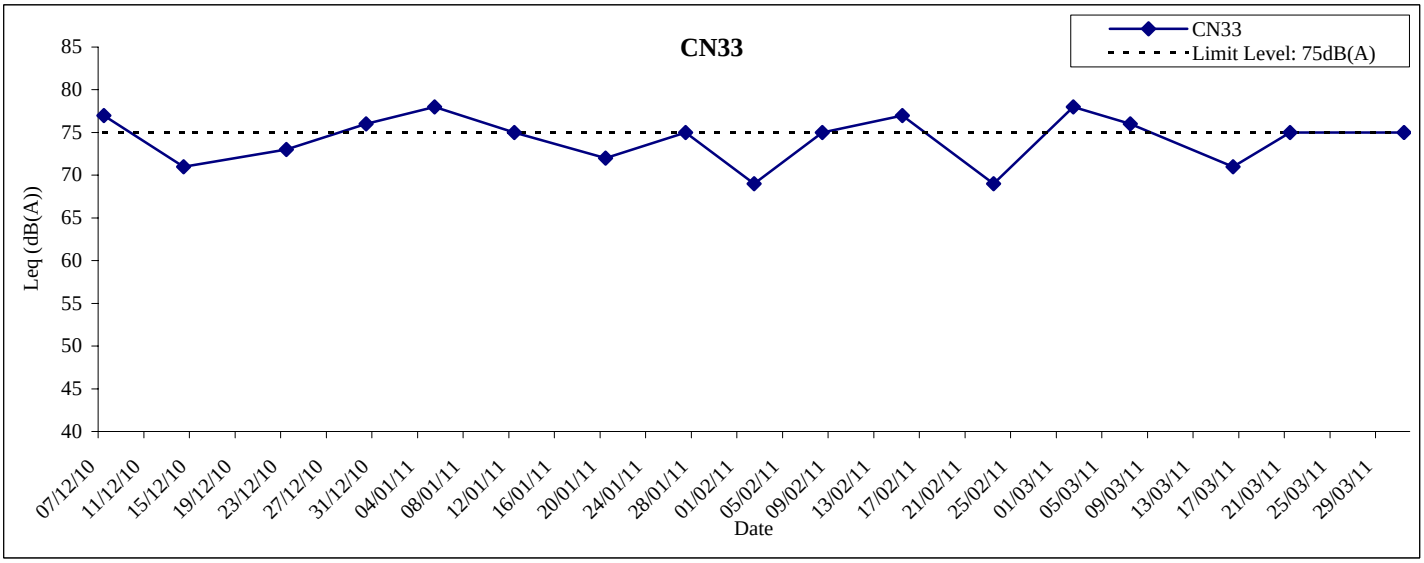


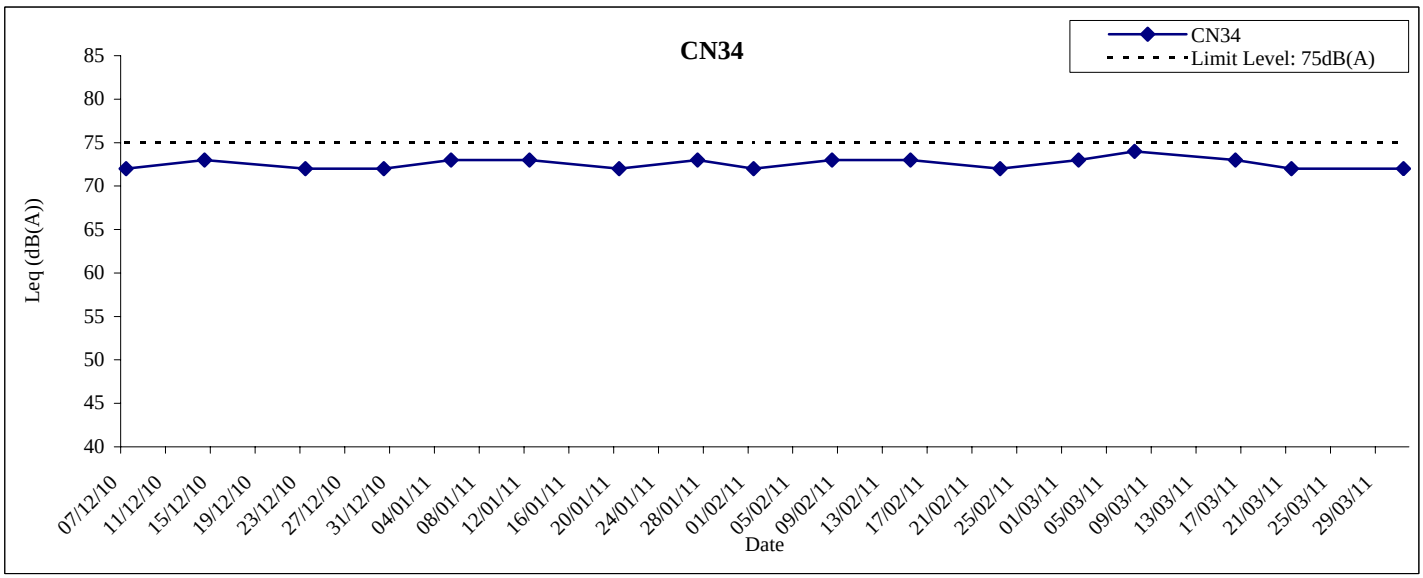


Remarks:
Noise limit level of CN29, which is school, is 70dB(A) on normal weekdays and 65dB(A) during examination period.

MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN29, CN30 and CN31**	**Date**	**2011**
		APPENDIX	**F**







MTR	Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link **Graphical Presentation of Noise** **Monitoring Results for Location CN32, CN33 and CN34**	**Date**	**2011**
		APPENDIX	**F**

Appendix G

Bird Species and Abundance Recorded during Avifauna Survey

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: MPV
Survey Site: MPV-1
Survey Date: 25 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location												Sub-total	Walk Transect
			MPV-1/P1	MPV-1/P2	MPV-1/P3	MPV-1/P4	MPV-1/P5	MPV-1/P6	MPV-1/P7	MPV-1/P8	MPV-1/P9	MPV-1/P10	MPV-1/P11	MPV-1/P12		
Little Grebe	小鸊鹈	P	4	3	5			1							13	
Great Cormorant	鸕鷀	W		34			2				1	1	3		41	√
Grey Heron	蒼鷺	W										1			1	
Great Egret	大白鷺	P								1		1			2	
Little Egret	小白鷺	P	2	1	6		8	2	3	1		5			28	√
Cattle Egret	牛背鷺	P										2			2	
Chinese Pond Heron	池鷺	P	2	2	2				1	2				1	10	√
Osprey	鶚(魚鷹)	W													0	√
Black Kite	黑鳶(麻鷹)	W,R													0	√
White-breasted Waterhen	白胸苦惡鳥	R	1	1											2	√
Common Moorhen	黑水雞	R			1										1	
Little Ringed Plover	金眶鴴(黑領鴴)	W,R			1									6	7	
Marsh Sandpiper	澤鷸	M,W										2			2	
Wood Sandpiper	林鷸	M,W						3			2	2			7	
Common Sandpiper	磯鷸	M,W						3		1		4			8	
Spotted Dove	珠頸斑鳩	R	1	1						6	3				11	√
Common Koel	噪鵑	Su,R													0	√
Greater Coucal	褐翅鴉鵑	R												1	1	
Little Swift	小白腰雨燕	R,SpM													0	√
Pied Kingfisher	斑魚狗	R										1			1	√
Common Kingfisher	普通翠鳥	AM,P		1					1			1			3	
Barn Swallow	家燕	SpM,Su	1		5		2	1	3		8				20	√
Yellow Wagtail	黃鶺鴒	M,W		2	1	1	2	2							8	√
White Wagtail	白鶺鴒	W,R			4					3					7	√
Richard's Pipit	田鷚	W,R						2							2	
Olive-backed Pipit	樹鷚	W									2				2	
Red-throated Pipit	紅喉鷚	M,W			1			1							2	
Red-whiskered Bulbul	紅耳鵯	R	1							3					4	√
Chinese Bulbul	白頭鵯	R								5		1	4		10	√
Oriental Magpie Robin	鵲鴝	R	1	1						1					3	
Common Stonechat	黑喉石鵲	W,M	2					2	1	1					6	
Masked Laughingthrush	黑臉噪鹛	R												3	3	√
Yellow-bellied Prinia	黃腹山鷦鶯	R		1	5			1	2	3				2	14	√
Plain Prinia	純色山鷦鶯	R		1	2		4		1	8	1	3			20	√
Yellow-browed Warbler	黃眉柳鶯	R,W													0	√
Japanese White-eye	暗綠繡眼鳥	R,?W								1					1	
Eurasian Tree Sparrow	麻雀	R					2			3					5	
Red-billed Starling	絲光椋鳥	W				1									1	
Black-collared Starling	黑領椋鳥	R			1										1	√
Crested Myna	八哥	R					1		1		1	2			5	
Common Magpie	喜鵲	R			1					1					2	
Large-billed Crow	大嘴烏鴉	R							2			1			3	
Collared Crow	白頸鴉	R						1				1			2	
No. of Birds at Each Point:			**15**	**48**	**35**	**2**	**21**	**19**	**15**	**40**	**18**	**28**	**7**	**13**		
No. of Birds Recorded from Point Count:			**261**													
No. of Species Recorded from Point Count:			**38**													
Total No. of Species:			**43**													
Total No. of Species of Conservation Interest:			**12**													

Note:

(1) Species in bold represents Species of Conservation Interest.

(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; A=autumn; Sp=spring; P=present all year; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al* . (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: Access road leading to TPP
Survey Site: TPP-1
Survey Date: 25 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location					Sub-total	Walk Transect
			TPP-1/P1	TPP-1/P2	TPP-1/P3	TPP-1/P4	TPP-1/P5		
Little Egret	小白鷺	P						0	√
Chinese Pond Heron	池鷺	P			2			2	
Black Kite	黑鳶(廉鷹)	W,R	1					1	
White-breasted Waterhen	白胸苦惡鳥	R	1					1	
Little Ringed Plover	金眶鴴(黑領鴴)	W,R		2				2	
Green Sandpiper	白腰草鷸	W			2			2	
Wood Sandpiper	林鷸	M,W	1					1	
Common Sandpiper	磯鷸	M,W	2	1	2			5	
Spotted Dove	珠頸斑鳩	R	5	3	1			9	√
Common Koel	噪鵑	Su, R						0	√
White-throated Kingfisher	白胸翡翠	AM, P						0	√
Large Hawk Cuckoo	鷹鵑	Su						0	√
Grey Wagtail	灰鶺鴒	W	1	1	1		1	4	
White Wagtail	白鶺鴒	W,R	1	1	4	1		7	
Olive-backed Pipit	樹鷚	W			1			1	
Red-throated Pipit	紅喉鷚	M,W	1		2	1		4	
Red-whiskered Bulbul	紅耳鵯	R	1					1	√
Chinese Bulbul	白頭鵯	R		1				1	√
Oriental Magpie Robin	鵲鴝	R	2	1	1			4	√
Common Stonechat	黑喉石鴴	W,M			2	1	1	4	
Masked Laughingthrush	黑臉噪鶥	R						0	√
Barn Swallow	家燕	SpM, Su		25	13	2		40	√
Yellow-bellied Prinia	黃腹山鶯	R		2	1	5	1	9	
Plain Prinia	純色山鶯	R				1		1	
Common Tailorbird	長尾縫葉鶯	R				1		1	√
Dusky Warbler	褐柳鶯	W		2				2	
Japanese White-eye	暗綠繡眼鳥	R,?W						0	√
Eurasian Tree Sparrow	麻雀	R				3		3	√
Red-billed Starling	絲光椋鳥	W	3	62	11			76	√
Black-collared Starling	黑領椋鳥	R	5	2	4			11	√
Crested Myna	八哥	R			3			3	
		No. of Birds at Each Point:	**24**	**103**	**50**	**15**	**3**		
		No. of Birds Recorded from Point Count:	**195**						
		No. of Species Recorded from Point Count:	**25**						
		Total No. of Species:	**31**						
		Total No. of Species of Conservation Interest:	**5**						

Note:

(1) Species in bold represents Species of Conservation Interest.

(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; A=autumn; Sp=spring; P=present all year; ?W=the extent of immigration in winter is unclear

[Principal status was assessed with reference to Carey *et al*. (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: Access road leading to TPP
Survey Site: TPP-2
Survey Date: 25 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location				Sub-total	Walk Transect
			TPP-2/P1	TPP-2/P2	TPP-2/P3	TPP-2/P4		
Little Egret	小白鷺	P					0	√
Chinese Pond Heron	池鷺	P					0	√
Little Ringed Plover	金眶鴴(黑領鴴)	W,R				2	2	
Green Sandpiper	白腰草鷸	W		1	1		2	
Common Sandpiper	磯鷸	M,W		1	1		2	
Spotted Dove	珠頸斑鳩	R			1		1	
Common Koel	噪鵑	Su,R					0	√
Barn Swallow	家燕	SpM,Su	2	3	13	2	20	
Yellow Wagtail	黃鶺鴒	M,W				1	1	
Grey Wagtail	灰鶺鴒	W	1				1	
White Wagtail	白鶺鴒	W,R	1	2	2		5	
Red-whiskered Bulbul	紅耳鵯	R					0	√
Chinese Bulbul	白頭鵯	R					0	√
Oriental Magpie Robin	鵲鴝	R					0	√
Yellow-bellied Prinia	黃腹山鷦鶯	R		2	1		3	
Plain Prinia	純色山鷦鶯	R		1			1	√
Common Tailorbird	長尾縫葉鶯	R					0	√
Great Tit	大山雀	R					0	√
Fork-tailed Sunbird	叉尾太陽鳥	R					0	√
Japanese White-eye	暗綠繡眼鳥	R,?W					0	√
Black-collared Starling	黑領椋鳥	R					0	√
Eurasian Tree Sparrow	麻雀	R					0	√
Common Magpie	喜鵲	R			1		1	√
No. of Birds at Each Point:			**4**	**10**	**20**	**5**		
No. of Birds Recorded from Point Count:			**39**					
No. of Species Recorded from Point Count:			**11**					
Total No. of Species:			**23**					
Total No. of Species of Conservation Interest:			**2**					

(1) Species in bold represents Species of Conservation Interest.

(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; Sp=spring; P=present all year; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al*. (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: Access road leading to TPP
Survey Site: TPP-3
Survey Date: 25 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location			Sub-total
			TPP-3/P1	TPP-3/P2	TPP-3/P3	
Spotted Dove	珠頸斑鳩	R	2		1	3
White Wagtail	白鶺鴒	W,R	1			1
Olive-backed Pipit	樹鷚	W			1	1
Red-whiskered Bulbul	紅耳鵯	R	5	2	4	11
Chinese Bulbul	白頭鵯	R	5		1	6
Long-tailed Shrike	棕背伯勞	R			1	1
Masked Laughingthrush	黑臉噪鶥	R			2	2
Yellow-bellied Prinia	黃腹山鷦鶯	R		1	1	2
Common Tailorbird	長尾縫葉鶯	R	2			2
Japanese White-eye	暗綠繡眼鳥	R,?W	7	3		10
White-cheeked Starling	灰椋鳥	W			3	3
Black-collared Starling	黑領椋鳥	R			4	4
Hair-crested Drongo	髮冠卷尾	M,Su,W			3	3
No. of Birds at Each Point:			**22**	**6**	**21**	
No. of Birds Recorded from Point Count:			**49**			
No. of Species Recorded from Point Count:			**13**			
Total No. of Species:			**13**			
Total No. of Species of Conservation Interest:			**1**			

Note:
(1) Species in bold represents Species of Conservation Interest.
(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al* . (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: SSS / ERS
Survey Site: SSS-3
Survey Date: 24 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location											Sub-total	Walk Transect
			SSS-3/P1	SSS-3/P2	SSS-3/P3	SSS-3/P4 *	SSS-3/P5 *	SSS-3/P6	SSS-3/P7	SSS-3/P8	SSS-3/P9	SSS-3/P10	SSS-3/P11	SSS-3/P12		
Little Egret	小白鷺	P							1			3		1	5	
Cattle Egret	牛背鷺	P										2	3		5	
Chinese Pond Heron	池鷺	P							6			1	1		8	
White-breasted Waterhen	白胸苦惡鳥	R									1		1		2	√
Spotted Dove	珠頸斑鳩	R	1	1	1			1	3		1		1	1	10	√
White-throated Kingfisher	白胸翡翠	AM,P								1		1			2	
Barn Swallow	家燕	SpM,Su						2		1		15	4		22	√
Yellow Wagtail	黃鶺鴒	M,W										2			2	√
Grey Wagtail	灰鶺鴒	W													0	√
White Wagtail	白鶺鴒	W,R	1					2			1	2		1	7	√
Olive-backed Pipit	樹鷚	W									2			3	5	√
Red-whiskered Bulbul	紅耳鵯	R	1					2	6		7	2	6		24	√
Common Koel	噪鵑	Su,R						2	1					1	4	
Richard's Pipit	田鷚	W,R		1											1	
Chinese Bulbul	白頭鵯	R			2				1		1			1	5	√
Long-tailed Shrike	棕背伯勞	R									1				1	
Oriental Magpie Robin	鵲鴝	R		1				1	3				1		6	√
Common Stonechat	黑喉石鵐	W,M	1		1								1	1	4	√
Dusky Thrush	斑鶇	W													0	√
Grey-backed Thrush	灰背鶇	W		1											1	√
Masked Laughingthrush	黑臉噪鸝	R							4		1				5	√
Zitting Cisticola	棕扇尾鶯	W												1	1	
Yellow-bellied Prinia	黃腹山鷦鶯	R			1			1	2		2	2	1	3	12	√
Plain Prinia	純色山鷦鶯	R										1		1	2	√
Common Tailorbird	長尾縫葉鶯	R							2		3				5	√
Dusky Warbler	褐柳鶯	W						1						1	2	√
Yellow-browed Warbler	黃眉柳鶯	R,W													0	√
Great Tit	大山雀	R													0	√
Japanese White-eye	暗綠繡眼鳥	R,?W			1				1				2		4	√
Scaly-breasted Munia	斑文鳥	R											5		5	√
Eurasian Tree Sparrow	麻雀	R						1					2		3	√
Black-collared Starling	黑領椋鳥	R							2					1	3	√
White-shouldered Starling	灰背椋鳥	M,W,Su											2		2	
Common Myna	家八哥	R													0	√
Crested Myna	八哥	R	1								1	1		2	5	√
Black Drongo	黑卷尾	M,Su													0	√
Common Magpie	喜鵲	R											2		2	√
No. of Birds at Each Pond:			**5**	**4**	**6**	**0**	**0**	**13**	**32**	**2**	**21**	**32**	**32**	**18**		
No. of Birds Recorded from Pond Count:			**165**													
No. of Species Recorded from Pond Count:			**31**													
Total No. of Species:			**37**													
Total No. of Species of Conservation Interest:			**4**													

Note:
(1) Species in bold represents Species of Conservation Interest.
(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; A=autumn; Sp=spring; P=present all year; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al*. (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: TUW
Survey Site: TUW-1
Survey Date: 24 March 2011

Common Name [1]	Chinese Name	Principal Status [2]	Point Count Location							Sub-total	Walk Transect
			TUW-1/P1	TUW-1/P2	TUW-1/P3	TUW-1/P4	TUW-1/P5	TUW-1/P6	TUW-1/P7		
Little Egret	小白鷺	P						1		1	√
Cattle Egret	牛背鷺	P				1				1	
White-breasted Waterhen	白胸苦惡鳥	R	1							1	
Spotted Dove	珠頸斑鳩	R	5	3	2	3	3		3	19	√
Large Hawk Cuckoo	鷹鵑	Su			1					1	
Plaintive Cuckoo	八聲杜鵑	Su								0	√
Common Koel	噪鵑	Su,R		1	1					2	
White-throated Kingfisher	白胸翡翠	AM,P				1				1	
Barn Swallow	家燕	SpM,Su	2	2	16	16		6	2	44	
Yellow Wagtail	黃鶺鴒	M,W							1	1	
Grey Wagtail	灰鶺鴒	W		1	1					2	
White Wagtail	白鶺鴒	W,R	1			1		1		3	
Richard's Pipit	田鷚	W,R				2				2	
Red-whiskered Bulbul	紅耳鵯	R	7	10	7	8	5	6	2	45	√
Chinese Bulbul	白頭鵯	R	2	6	12	2				22	√
Long-tailed Shrike	棕背伯勞	R					1	1		2	
Oriental Magpie Robin	鵲鴝	R	3	6	4	3		1	2	19	
Common Stonechat	黑喉石鴴	W,M	1	1	2	3			1	8	
Masked Laughingthrush	黑臉噪鶥	R		4	4		3	1		12	√
Yellow-bellied Prinia	黃腹山鷦鶯	R	1			4	2	6	4	17	√
Plain Prinia	純色山鷦鶯	R				1				1	
Common Tailorbird	長尾縫葉鶯	R		2	1	1				4	
Dusky Warbler	褐柳鶯	W			1				1	2	
Great Tit	大山雀	R								0	√
Fork-tailed Sunbird	叉尾太陽鳥	R				1				1	
Japanese White-eye	暗綠繡眼鳥	R,?W	19	3						22	
Eurasian Tree Sparrow	麻雀	R	4		10					14	√
Black-collared Starling	黑領椋鳥	R				1	1	8	2	12	√
White-shouldered Starling	灰背椋鳥	M, W, Su			1					1	
Common Myna	家八哥	R		4						4	
Crested Myna	八哥	R	2			2	1			5	√
No. of Birds at Each Point:			**48**	**43**	**63**	**50**	**16**	**31**	**18**		
No. of Birds Recorded from Point Count:			**269**								
No. of Species Recorded from Point Count:			**29**								
Total No. of Species:			**31**								
Total No. of Species of Conservation Interest:			**1**								

Note:
(1) Species in bold represents Species of Conservation Interest.
(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; A=autumn; Sp=spring; P=present all year; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al* . (2001): The Avifauna of Hong Kong]

Appendix G Bird Species and Abundance Recorded during the Avifauna Monitoring in March 2011

Works Area: TUW and PHV
Survey Site: TUW-2 and PHV-1 (grouped together due to overlapping of survey area)
Survey Date: 24 March 2011

Common Name (1)	Chinese Name	Principal Status (2)	Point Count Location		Sub-total	Walk Transect
			TUW-2 and PHV-1/P1	TUW-2 and PHV-1/P2		
Black Kite	黑鳶(麻鷹)	W,R			0	√
Crested Serpent Eagle	蛇鵰	R, M			0	√
Spotted Dove	珠頸斑鳩	R			0	√
Common Koel	噪鵑	Su, R			0	√
Plaintive Cuckoo	八聲杜鵑	Su	1		1	
Red-whiskered Bulbul	紅耳鵯	R		5	5	√
Chinese Bulbul	白頭鵯	R	3		3	
Grey-chinned Minivet	灰喉山椒鳥	R, W	1		1	√
Scarlet Minivet	赤紅山椒鳥	R	1		1	√
Oriental Magpie Robin	鵲鴝	R	1		1	√
Blue Whistling Thrush	紫嘯鶇	R			0	√
Streak-breasted Scimitar Babbler	棕頸鈎嘴鹛	R			0	√
Masked Laughingthrush	黑臉噪鹛	R			0	√
Dusky Warbler	褐柳鶯	W		1	1	
Yellow-bellied Prinia	黃腹山鷦鶯	R			0	√
Common Tailorbird	長尾縫葉鶯	R			0	√
Hwamei	畫眉	R	1		1	√
Scarlet-backed Flowerpecker	朱背啄花鳥	R	1		1	√
Fork-tailed Sunbird	叉尾太陽鳥	R			0	√
Japanese White-eye	暗綠繡眼鳥	R,?W			0	√
No. of Birds at Each Point:			**9**	**6**		
No. of Birds Recorded from Point Count:			**15**			
No. of Species Recorded from Point Count:			**9**			
Total No. of Species:			**20**			
Total No. of Species of Conservation Interest:			**1**			

Note:
(1) Species in bold represents Species of Conservation Interest.
(2) R=resident; W=winter visitor; Su=summer visitor; M=migrant; ?W=the extent of immigration in winter is unclear
[Principal status was assessed with reference to Carey *et al* . (2001): The Avifauna of Hong Kong]

Appendix H

Representative Photographs of the Avifauna Monitoring

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
MPV-1 (Fishponds at Mai Po)



Plate 1 Little Grebe at Point Count Location MPV-1/P1



Plate 2 Chinese Pond Heron at Point Count Location MPV-1/P1



Plate 3 Aggregation of Great Cormorant at Point Count Location MPV- 1/P6

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
MPV-1 (Fishponds at Mai Po)



Plate 4 Pond Aeration at Point Count Location MPV-1/P6



Plate 5 Wood Sandpipers at Point Count Location MPV-1/P5



Plate 6 Fish Harvesting at Point Count Location MPV-1/P2

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
TPP-1 (Drainage Channel KT5 at Tai Kong Po)



Plate 7 Red-billed Starling near Point Count Location TPP-1/P2

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
TPP-2 (Main drainage channel 95CD along Chi Ho Road)



Plate 8 Point Count Location TPP-2/P1



Plate 9 Point Count Location TPP-2/P2



Plate 10 Point Count Location TPP-2/P3

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
TPP-3 (Abandoned meander 43CD-1 besides Chi Ho Road)



Plate 11 Point Count Location TPP-3/P1



Plate 12 Point Count Location TPP-3/P3

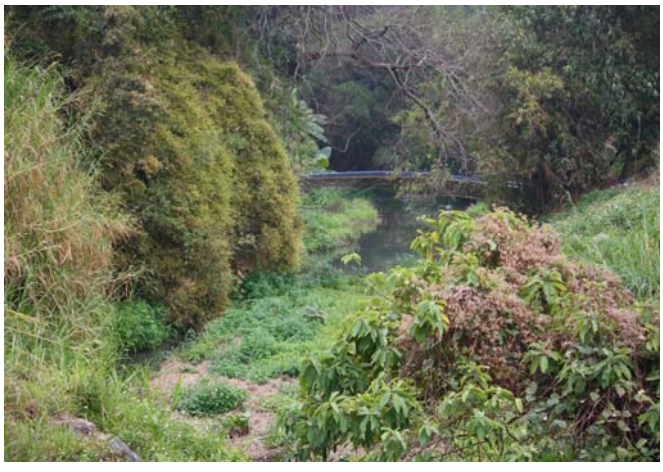


Plate 13 Point Count Location TPP-3/P2

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011 SSS-3 (Agricultural lands between Shek Kong and Kam Sheung Road)



Plate 14 Erection of Site Hoarding and Excavation Works at Point Count Location SSS-3/P8



Plate 15 Cattle Egret at Point Count Location SSS-3/P11



Plate 16 Chinese Pond Heron at Point Count Location SSS-3/P7

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011
TUW-1 (Agricultural Lands at Tse Uk Tsuen)



Plate 17 Point Count Location TUW-1/P3



Plate 18 Cattle Egret at Point Count Location TUW-1/P4



Plate 19 Point Count Location TUW-1/P4

Appendix H Representative Photographs taken during the Avifauna Monitoring in March 2011 TUW-2 and PHV-1 (Secondary Woodland at Pat Heung)



Plate 20 Point Count Location TUW-2 and PHV-1/P1



Plate 21 Point Count Location TUW-2 and PHV-1/P2



Plate 22 Walk Transect of TUW-2 and PHV-1 Survey Site

Appendix I

Certified Arborist Inspection Record

MTR Express Rail Link, Contract 801

Monthly Audit Inspection Record

March 2011

Audit of tree works, including tree protection, pruning work, transplanting work, maintenance works in the temporary holding nursery, and compensation tree planting

Date	Contract	Activity Description	Purpose
08/04/2011 26/03/2011 29/03/2011	801 – Siu Lang Shui (Nursery) So Kwun Wat Nursery CLP private plot in Tai Po Kau	Inspection of trees to be transplanted within the contract	Regular monthly audit of tree works
29/03/2011	802 - Nam Cheong Property Parcel 40.2, and Sham Mong Rd Footpath, Private Lot NKIL6436	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
24/03/2011	803C Parcels 45.1, 45.3, 45.6, 45.7	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
29/03/2011	805 - Sham Mong Road Parcel 41.4,38.3, Sham Mong Road Footpath (near 38.3), and Footpath of Sham Mong Rd, Parcels 38.6/38.7 (footpath alongside CLP Building) NKIL 6363 (CLP Building)	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
24/03/2011	811A—WKT station North Ngo Cheung Road, Hoi Wang Road, Lin Cheung Road	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
24/03/2011	811B - WKT Approach Tunnels – South Parcel 44.1, Lin Cheung Road, and Jordan Road Footpath & Central Divider	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
29/03/2011	820 - Mei Lai Road to Hoi Ting Road Tunnels Parcel 37.2, 37.3, Kwai Chung Road (Footpath near	Inspection of retained trees and trees to be	Regular monthly audit of tree works

	37.5) Sham Mong Road & Hing Wah Street West Footpath Parcel 39.1, 40.4, Sham Mong Road (Nam Cheong Park) Private Lot STT-KX2382, Private Lot STT-KX2416	transplanted within the contract	
24/03/2011	821—Shek Yam to Mei Lai Road Tunnels Parcel NT-9 (slope) NT-10	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
04/04/2011 (Pat Heung) 26/03/2011	822 - Tse Uk Tsuen to Shek Yam Tunnels Parcels NT-6 (Pat Heung), NT-7, and NT-8, Site Office - San Kwai Street, Kwai Hing, Parcel NT-17 (6.6, 6.9) 822—Siu Lam FW Service Reservoir	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
04/04/2011	823A - Kam Tin Tunnels Parcels NT-5A, NT-5.1A, and NT-5.3A	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
04/04/2011	823B - SSS and ERS Parcels NT-5.1B, NT-5.2, and NT-5.3B	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
23/03/2011	824 Ngau Tam Mei to Tai Kong Po Tunnels NT-3, NT-5.1A, NT-4	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
23/03/2011	825 - Mai Po to Ngau Tam Mei Tunnels Parcels NT-1a (Mai Po), CP-12, and verges of Castle Peak Road - Mai Po	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works

Signed by:
Matthew PRYOR (RLA, CA)



Appendix J

Environmental Review Report for Stage 1 Ground Treatment Works at Hoi Wang Road

Environmental Review Report

Proposed Grouting Works for XRL Contract 820 Stage 1: Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden

April 2011



Project/Deliverable Number:	J533C | D01/01
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Report Name:	Environmental Review Report
Report Date:	April 2011
Report for:	Dragages – Bouygues Joint Venture

PREPARATION, REVIEW AND AUTHORISATION

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1 INTRODUCTION

1.1 Background

1.1.1 The Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) aims to provide a fast and convenient railway service linking these three cities.

1.1.2 The Hong Kong section of the XRL will be a 26km long underground rail line on a dedicated track that runs from the terminus in West Kowloon to the boundary at Huanggang, where it will connect with the XRL Mainland section. The two termini of the XRL will be at West Kowloon in Hong Kong and Shibi in Guangzhou. Intermediate stations include Futian and Longhua in Shenzhen and Humen in Dongguan.

1.1.3 In April 2008, the Hong Kong Special Administration Region (HKSAR) Government gave permission to the Mass Transit Railway Corporation Limited (MTRC) to proceed with further planning and design of the Hong Kong section of the XRL. The scope of the Hong Kong Section of the XRL comprises the following key elements:

- Approximately 26km of underground railway running from the terminus in West Kowloon to the boundary at Huanggang;
- A terminus in West Kowloon, and its associated building elements such as ventilation facilities, public transport interchange, traction sub-station, and seawater cooling facility;
- Seven tunnel ventilation buildings at Mai Po, Ngau Tam Mei, Pat Heung, Shing Mun, Kwai Chung, Nam Cheong and Mong Kok West, and an EAP at Tai Kong Po;
- Stabling sidings and maintenance facilities located at Shek Kong (Shek Kong Stabling Sidings (SSS)) to provide for train stabling, minor maintenance and cleaning; and
- An emergency rescue station (ERS) located next to the SSS.

1.1.4 An Environmental Impact Assessment (EIA) (AEIAR-143/2009) was carried out for the XRL and was approved (with conditions) by the Environmental Protection Department (EPD) on 28 September 2009. The Environmental Permit (EP) (EP-349/2009), the first Variation of an Environmental Permit (VEP) (EP-349/2009/A) and the second VEP (EP-349/2009/B) for the XRL were issued on 16 October 2009, 27 September 2010 and 24 January 2011, respectively.

1.1.5 Contract 820 – Mei Lai Road to Hong Ting Road Tunnels (C820, or “the Project”) is shown in ***Figure 1-1***. Contract 811A – West Kowloon Terminus Approach Tunnel (North) is adjacent to C820. On 3 May 2010, C820 was awarded to Dragages-Bouygues Joint Venture (DBJV).

1.1.6 C820 includes the construction of two parallel single track tunnels, each 3.5km long with 14 no. connecting cross-passages, a ventilation building, underpinning a flyover and the removal of various foundations and underground obstructions along the tunnel alignment. According to the scheme design and the EIA, C820 is to be constructed by Tunnel Boring Machine (TBM).

1.1.7 For XRL C820, the proposed TBM tunnel of C820 connected to C811A will be constructed underneath Hoi Wang Road and it will be in close proximity to a number of existing buildings. According to the Existing Building Impact Report (EBIR), six existing buildings as listed below are considered to be "at risk" due to the tunnelling works:

1. HKIVE Haking Wong Waterfront Annex;
2. Hoi Lai Shopping Centre;
3. Hoi Yu House of Hoi Fu Court;
4. Block 8 of Charming Garden;
5. Block 9 of Charming Garden; and
6. Yau Ma Ti Catholic Primary School (Hoi Wang Road).

1.1.8 Jet-grouting is proposed to be the protective measure for strengthening the foundations of the mentioned buildings in order to mitigate the risk. Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court will be the first batch of buildings to be treated. The duration of the proposed ground treatment (Stage 1) will tentatively be carried out between late April and July 2011.

1.1.9 The jet-grouting works were not assessed in the previously approved EIA and so an environmental review of the potential environmental impacts arising from these works is needed.

1.1.10 SMEC Asia Limited (SMEC) has been engaged by DBJV to prepare an Environmental Review Report (ERR) for assessing the associated environmental impacts arising from the proposed jet grouting works for Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court.

1.2 Objectives

1.2.1 Noise impact is considered to be the most critical environmental issue because of the close proximity to Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court. Other key environmental impacts associated with the jet grouting works relate to water quality impacts and waste management, as mixture of grout and eroded soil will be air lifted from below ground to the surface. The air quality impacts should be less of an issue.

1.2.2 The scope of the ERR comprises:

- Identification and assessment of the environmental impacts associated with the proposed jet grouting works for C820, including air, noise and water quality impacts, waste management issue, additional mitigation measures, etc.; and
- Review of the EIA to identify any changes to the anticipated environmental impacts and mitigation measures, based on the new assessments of the proposed jet grouting works. Specifically, to highlight where there are overall reductions in environmental impacts and/or need for mitigation as a result of the proposed works.

1.3 Review of Environmental Impacts

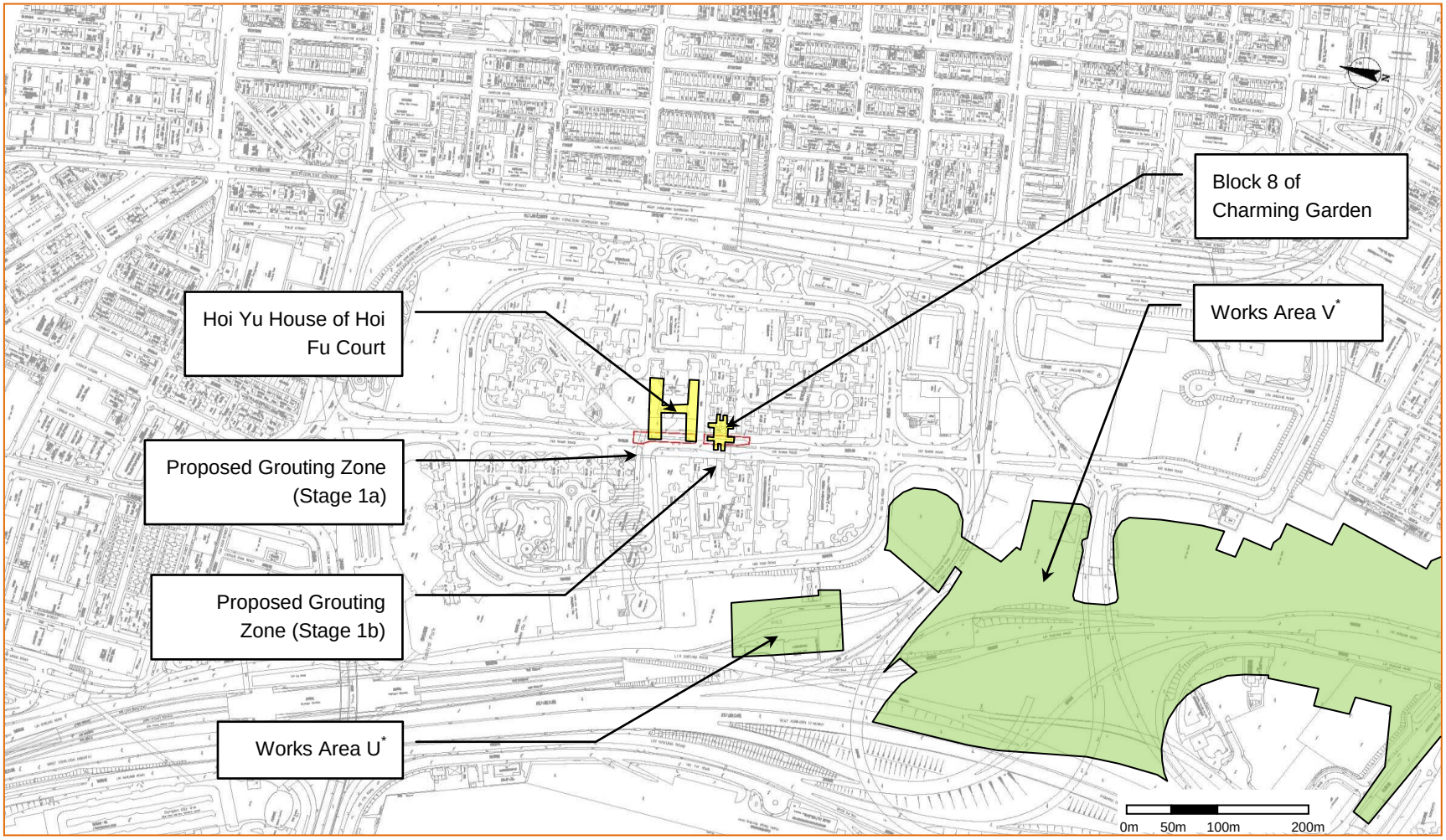
1.3.1 A number of environmental impacts were assessed in the approved EIA, including ecological impact, fisheries impact, landscape and visual impact, cultural heritage impact, land contamination, landfill gas hazard etc. Subject to the proposed jet grouting works at Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court, the following environmental impacts are considered to be relevant and will be reviewed in the following sections:

- Section 3 – Air Quality Impact Review
- Section 4 – Noise Impact Review
- Section 5 – Water Quality Impact Review
- Section 6 – Waste Management Implication Review

1.3.2 Other environmental impacts including ecological impact, fisheries impact, landscape and visual impact, cultural heritage impact, land contamination and landfill gas hazard are considered to be negligible or not applicable to the proposed jet grouting.

1.3.3 Conclusions are provided in ***Section 7***.

Figure 1-1 The Proposed Grouting Zones of XRL C820 at Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court



Note: * Works area IDs are referred to Figure NOL / ERL / 300 / C / XRL / ENS / M50 / 008

2 BRIEF DESCRIPTION OF JET GROUTING WORKS

2.1.1 In accordance with the initial design of the jet-grouting works with a total silo capacity of less than 50 tonnes, the grouting zones for Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden will be:

1. Hoi Yu House of Hoi Fu Court
   - Treatment Cross-Section Area: 91.95m^2
   - Treatment Width: 25.00m
   - Treatment Volume: 2,298.80m^3
2. Block 8 of Charming Garden
   - Treatment Cross-Section Area: 48.64m^2
   - Treatment Width: 7.05m
   - Treatment Volume: 342.91m^3

2.1.2 The grouting layouts are shown in ***Figure 2-1*** and ***Figure 2-2***.

2.1.3 Jet grouting is an *in-situ* mixing of soils with a stabilizer – neat cement grout in this case. The stabilizer is injected at very high pressures through a nozzle of small diameter. The grout is injected by a Jet Grouting Crawler Drilling Rig. The grout is injected at high velocity, which enables the jet grouting process to destroy the natural matrix of the soil and creates a mixing of the stabilizer with the in-situ soil.

2.1.4 A double jet system is proposed in view of the difficult site conditions (jetting depth and ground conditions). Compared to a single jet system, the use of air enhances the jetting efficiency and facilitates the spoil return to ground surface (reduces the occurrence of plugging).

2.1.5 The jetting pipes (or rods) for the double jet system consist of two concentric hollow stem pipes. While the inner tube conveys grout, the outer tube carries compressed air. A special jet monitor fitted to one or two of the jet and air nozzles is fitted at the bottom of the rod.

2.1.6 The rods and jet monitor are inserted into the ground by rotation drilling. Water and air are used as drilling fluid. Annulus spacing is created due to the drilling operation as a result of the difference of sizes between the drill bit and the drilling rod. At the top of the drill string, special swivels are fitted to divert the two fluids to their respective channels.

2.1.7 Once the required depth is reached, the grouting process (high pressure and high flow jet) is accomplished by withdrawing and rotating the rods at a predetermined constant rate so as to create a column of treated soil comprising a mixture of the grout and soil.

2.1.8 With the aid of the air lift, any surplus grout+soil mixture (in a slurry) travels up the annulus between the rods and the borehole to the pit at the ground surface. When the pit is not closed to the working area, slurry pumps can be used.

2.1.9 The grout+soil slurry is treated via sedimentation tanks to settle out the grout and soil as a sludge, which is disposed of at an approved disposal facility. The treated water is disposed of in accordance with the Discharge Licence to be obtained under the Water Pollution Control Ordinance.

Figure 2-1 Grouting Layouts for Hoi Yu House of Hoi Fu Court

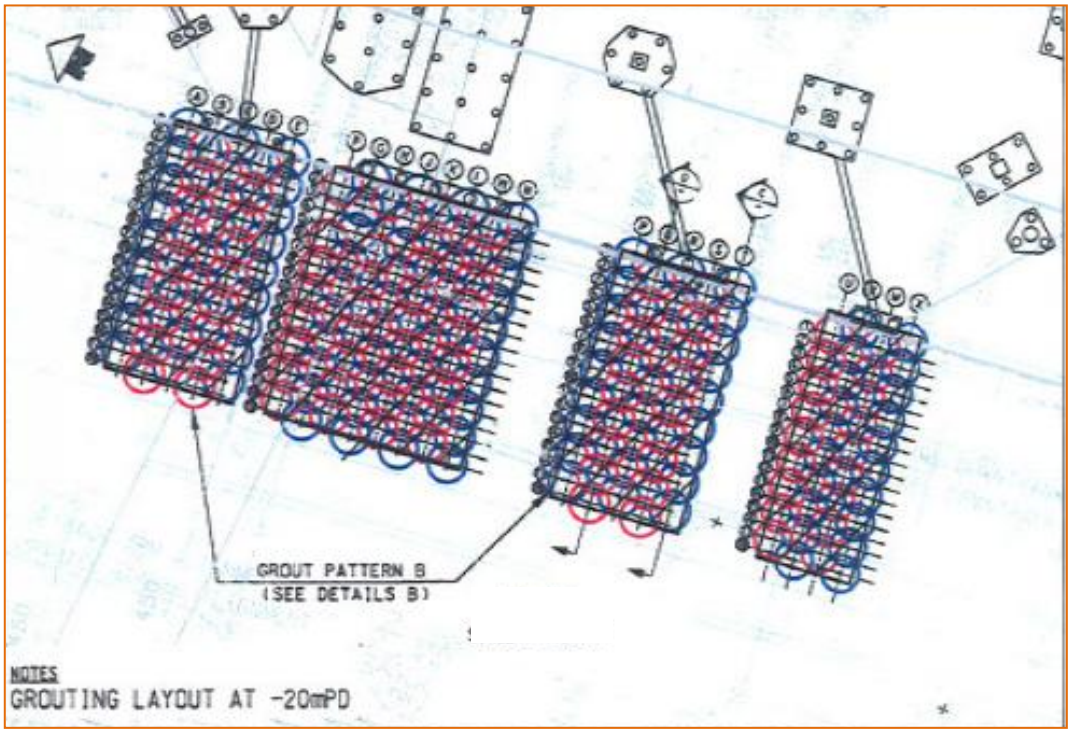
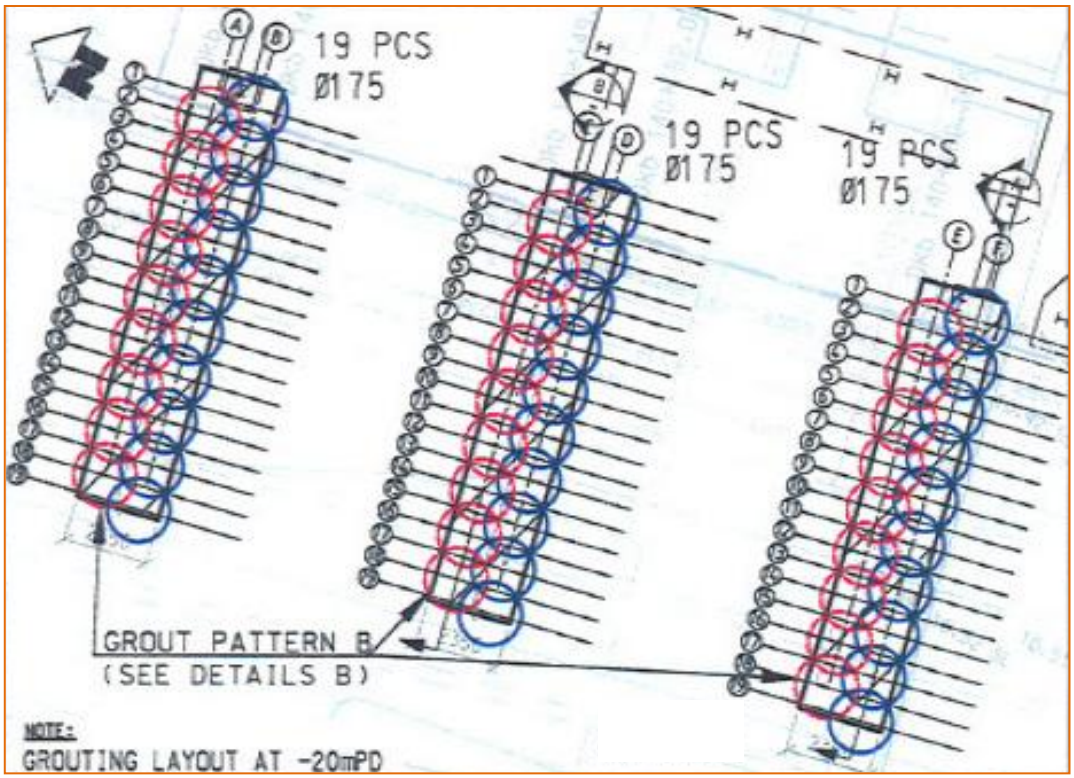


Figure 2-2 Grouting Layouts for Block 8 of Charming Garden



3 AIR QUALITY IMPACT REVIEW

3.1 Introduction

3.1.1 An air quality impact assessment was undertaken in the EIA to evaluate the potential air quality impacts associated with the construction and operation of the XRL. Since the proposed jet grouting works were not assessed in the approved EIA, the air quality impacts arising from such works should be assessed.

3.1.2 Since the proposed works will not affect the air quality of the operation stage, the operation air quality impacts are not addressed in this report.

3.2 Air Sensitive Receivers (ASRs)

3.2.1 As the proposed works will be carried out on the same alignment as that assessed in the approved EIA, the representative Air Sensitive Receivers (ASRs) identified in the EIA are still applicable to this ERR. The relevant ASRs within 500m air quality study area from the boundary of the proposed jet grouting in accordance with Figures NOL/ERL/300/C/XRL/ENS/M60/019 (Rev B) and NOL/ERL/300/C/XRL/ENS/M60/019 (Rev B) of the EIA are listed in ***Table 3-1***.

Table 3-1 Representative Air Sensitive Receivers for the Proposed Works

ASR No.*	Name	Land Use	Shortest Distance to Site Boundary (m)	No. of Storeys
MKA1	Yaumatei Catholic Primary School (Hoi Wang Road)	School	60	8
MKA2	Hong Kong Community College – West Kowloon Campus	School	140	16
WKA2	Planned Residential Development at Hoi Wang Road	Residential (Planned)	Planned	N/A

Note: *ASR Nos. are the same as those presented in the EIA Study.

3.3 Evaluation of Impacts

3.3.1 The main source of impact will be from the release of dust from plant and equipment, such as cement containers, cement tankers / silos with a total capacity of less than 50 tonnes and mixers.

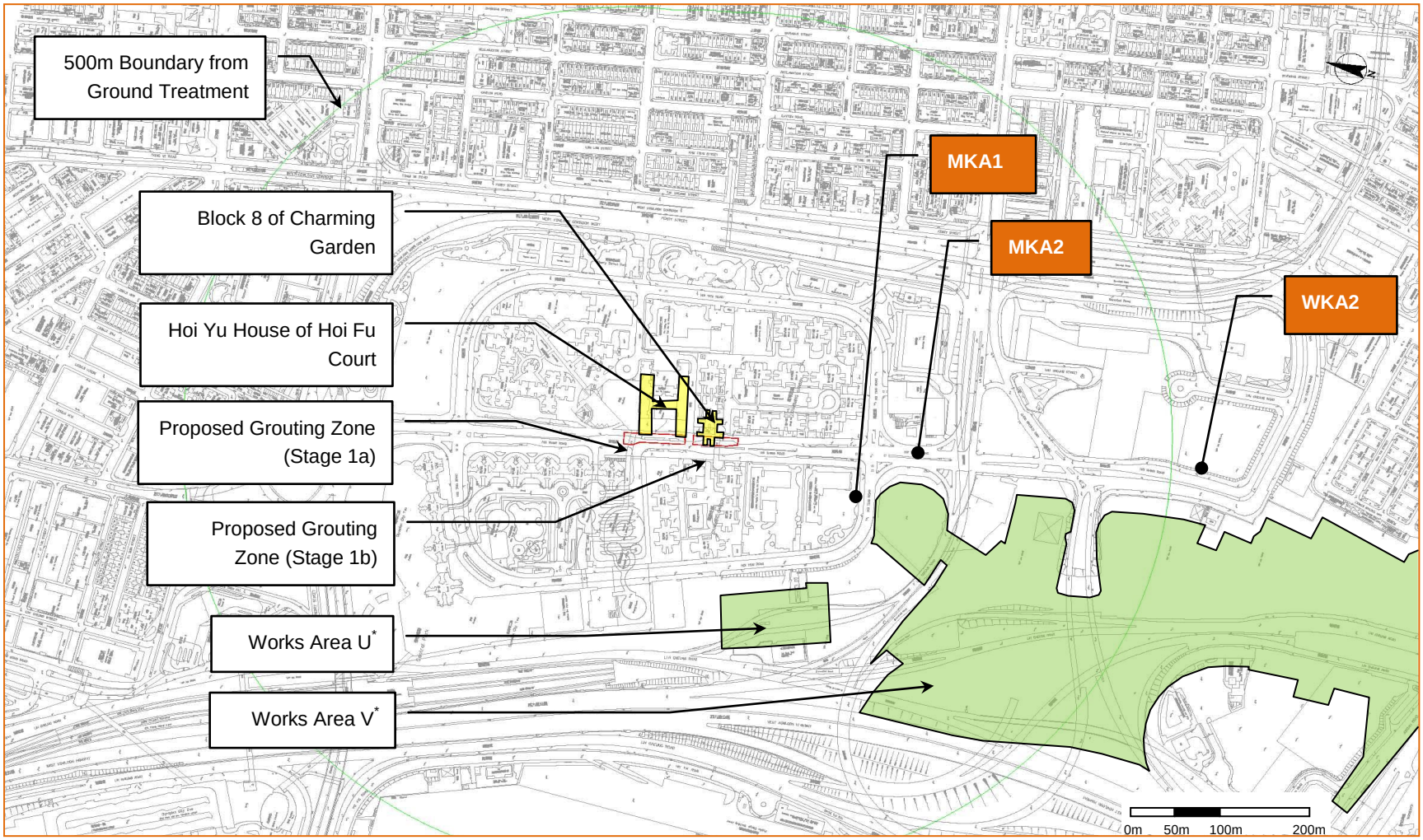
3.3.2 Cement containers will be connected to cement tankers / silos for pumping the cement. Since the connection system will be air-tight, the release of dust from the connection system is not anticipated. A fabric filter will also be installed at each outlet of the cement containers. Furthermore, the dust control measures recommended in "*A Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2 (93)*" published by EPD in September 2008. Therefore, there should be no significant change in the level of dust impact compared to that assessed in the EIA.

3.3.3 Cement will be mixed with water immediately after leaving the cement containers. Since such wet mixing will be utilised for subsequent processes of the jet grouting and so the dust impacts from these processes are eliminated.

3.4 Conclusions

3.4.1 Overall, the proposed jet grouting works are not expected to impose significant additional dust impacts compared to that assessed in the original EIA. This is because the release of dust from the cement containers will be controlled by fabric filters and no dust will be released during cement pumping from the cement tanker to the cement containers. No further mitigation measures are therefore required. No changes to the Environmental Monitoring and Audit (EM&A) requirements are needed.

Figure 3-1 ASR Locations



Note: * Works area IDs are referred to Figure NOL / ERL / 300 / C / XRL / ENS / M50 / 008

Air Sensitive Receivers (ASRs) identified in the EIA Report

4 NOISE IMPACT REVIEW

4.1 Introduction

4.1.1 A noise impact assessment was undertaken in the EIA to evaluate potential noise impacts associated with the construction works of the XRL. Since the proposed jet grouting works were not assessed in the approved EIA, the noise impacts arising from this change should be assessed.

4.1.2 Since the proposed works will not affect noise levels during the operation stage, the operation noise impacts are not addressed.

4.2 Noise Sensitive Receivers (NSRs)

4.2.1 The Noise Sensitive Receivers (NSRs) identified in the EIA within 300m noise study area from the boundaries of the proposed jet grouting works in accordance with Figures NOL/ERL/300/C/XRL/ENS/M52/019 (Rev B) and NOL/ERL/300/C/XRL/ENS/M52/020 (Rev B) of the EIA are listed in ***Table 4-1***.

Table 4-1 NSRs from the EIA Relevant to the Proposed Works

NSR No.*	Name	Land Use	Existing / Planned NSR	No. of Storeys
MK1	Yau Ma Ti Catholic Primary School (Hoi Wang Road)	School	Existing	8
MK2	HKMA David Li Kwok Po College	School	Existing	9
MK3	Block 11, Charming Garden	Residential	Existing	23
MK4	Block 1, Charming Garden	Residential	Existing	21
MK5	Hong Kong Community College – West Kowloon Campus	School	Existing	16
MK6	Planned Development at GIC Zone	Institutional	Planned	N/A

Note: *NSR Nos. are the same as those presented in the EIA Study.

4.2.2 With the exception of MK5, none of the NSRs have a direct "line of sight" view to the proposed jet grouting works. MK5 is located at ~150m from the boundaries of the jet grouting works, which is less representative. Therefore, the potential construction noise impact arising from the proposed jet grouting works on Block 8 of Charming Garden (N1), Hoi Yu House of Hoi Fu Court (N2) and HKMA David Li Kwok Po College (MK2a) which will be the most representative NSRs for assessment, as shown in ***Table 4-2*** and ***Figure 4-1***.

Table 4-2 Representative NSRs for the Proposed Works

NSR No.	Name	Land Use	Existing / Planned NSR	No. of Storeys	Criteria, dB(A)
N1	Block 8, Charming Garden	Residential	Existing	21	75
N2	Hoi Yu House of Hoi Fu Court	Residential	Existing	18	75
MK2a	HKMA David Li Kwok Po College	School	Existing	9	70 or 65 during examinations

Note: The noise criteria are in terms of $L_{eq(30min)}$ during 0700 to 1900 on any day not being a Sunday or general holiday

4.3 Airborne Noise Assessment

4.3.1 Stage 1 jet grouting works will be carried out at the works areas designated “Stage 1a” for Hoi Yu House of Hoi Fu Court and “Stage 1b” for Block 8 of Charming Garden. Owing to the limited site area, cement filling, drilling, grouting and spoil disposal will not be carried out at the same time.

4.3.2 In addition, the possible concurrent construction works within 300m from the NSRs will be at Works Area U and Works Area V of XRL C811A. A quantitative noise assessment for N1 and MK2a has therefore been carried out, as shown in ***Table 4-3*** to ***Table 4-5***, respectively. In order to minimize the noise impact due to the close proximity of the works to Block 8 of Charming Garden and Hoi Yu House of Hoi Fu Court, the generator will be provided with an acoustic enclosure of acoustic mats, as shown in ***Figure 4-2***. In addition, noise arising from drilling rig will be abated by using fabric while compressor, grout mixer and grout pump will be enclosed to minimize the construction noise impact.

4.4 Evaluation of Impacts

4.4.1 With reference to the assessment results shown in ***Table 4-3*** to ***Table 4-5***, the predicted noise levels (PNLs) would be 73 – 74dB(A) at N1, 68 – 69dB(A) at N2 and 62 – 63dB(A) at MK2a, which will be within the construction noise criteria of 75dB(A) for residential premises and 70dB(A) for educational uses during non-restricted hours (0700 to 1900 not being a holiday).

4.5 Conclusions

4.5.1 No unacceptable noise impacts are anticipated at the NSRs close to the proposed jet grouting areas on Hoi Wang Road for Contract 820.

4.5.2 Nevertheless, all the relevant noise control measures as stipulated in Table 18.1 Implementation Schedule of the EIA for airborne construction noise shall be implemented by DBJV for the proposed jet grouting, as far as practicable. No changes to the Environmental Monitoring and Audit (EM&A) requirements are needed.

Table 4-3 Construction Noise Impact Assessment at N1 (Block 8 of Charming Garden)

PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Cement Filling												
Generator	CNP 103	95	1	95	9.2	30.0	100%	-27.3	0.0	-10.0[Note 2]	3.0	60.7
Cement Tanker[Note 3]	BS5228 C.4/18	103	1	103	9.2	9.0[Note 4]	30%	-27.3	-5.2	0.0	3.0	73.5
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*62.4*
											Total	**74**
Drilling Works												
Generator	CNP 103	95	1	95	9.2	30.0	100%	-27.3	0.0	-10.0[Note 2]	3.0	60.7
Drilling Rig	CNP 072	110	1	110	9.2	18.0	60%	-27.3	-2.2	-10.0[Note 6]	3.0	73.5
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*62.4*
											Total	**74**
Grouting Works												
Generator	CNP 103	95	1	95	9.2	30.0	100%	-27.3	0.0	-10.0[Note 2]	3.0	60.7
Air Compressor	CNP 001	100	1	100	9.2	30.0	100%	-27.3	0.0	-10.0[Note 5]	3.0	65.7
Grout Mixer	CNP 105	95	1	95	9.2	30.0	100%	-27.3	0.0	-10.0[Note 5]	3.0	60.7
Grout Pump	CNP 106	105	1	105	9.2	30.0	100%	-27.3	0.0	-10.0[Note 5]	3.0	70.7
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*62.4*
											Total	**73**

PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Spoil Disposal												
Generator	CNP 103	95	1	95	9.2	30.0	100%	-27.3	0.0	-10.0[Note 2]	3.0	60.7
Excavator[Note 7]	QPME	99	1	99	9.2	15.0	50%	-27.3	-3.0	0.0	3.0	71.7
Dump Truck	CNP 068	105	1	105	9.2	2.0[Note 8]	6.7%	-27.3	-11.8	0.0	3.0	68.9
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*62.4*
											Total	**74**

Notes:

1. Distance is the slant distance assuming the noise source is 0.5m above ground and the first floor of the NSR in which ground floor (shops, clinics with closed doors) is non-noise sensitive is ~5m above ground based on the site observation..
2. A shed made by acoustic mat will be provided for the generator to protect Charming Garden or Hoi Fu Court. A screening effect of -10dB is assumed for Block 8 of Charming Garden or Hoi Yu House of Hoi Fu Court.
3. No sound power level (SWL) for a cement tanker is recommended in the technical memorandum or "SWLs of Other Commonly Used PME". Item 18 of Table C.4 of BS5228 regarding cement mixer truck (discharging) with a sound pressure level of 75dB(A) at 10m is assumed.
4. Cement loading to the silo will be about 9 minutes as advised by the Contractor.
5. Air compressor, grout mixer and grout pump will be enclosed and a noise reduction of -10dB should be achieved.
6. Drilling rig will be provided with fabric so as to provide a noise reduction of -10dB with reference to the approved EIA Report
7. Small excavator which is similar to QPME EPD-00081 or EPD-00083 will be used due to limited site area.
8. Owing to the limited site area, a dump truck will only be operated less than 2 minutes within any 30 minutes.
9. “Works Area U” is the site storage at Hoi Ting Road Works Area and “Works Area V is Hoi Ting Road Works Area.
10. Only the works for Diaphragm Wall, Bulk Excavation/Fill - Soft or Concrete Works at Hoi Ting Road Works Area of XRL C811A will be carried out concurrently, of which the SWL of Diaphragm Wall was assumed to be the maximum as per Appendices 5.7 & 5.8 of the EIA Report.

Table 4-4 Construction Noise Impact Assessment at N2 (Hoi Yu House of Hoi Fu Court)

PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Cement Filling												
Generator	CNP 103	95	1	95	17.6	30.0	100%	-32.9	0.0	-10.0[Note 2]	3.0	55.1
Cement Tanker[Note 3]	BS5228 C.4/18	103	1	103	17.6	9.0[Note 4]	30%	-32.9	-5.2	0.0	3.0	67.9
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*250.0*	*30.0*	*100%*	*-55.9*	*0.0*	*0.0*	*3.0*	*59.1*
											Total	**69**
Drilling Works												
Generator	CNP 103	95	1	95	17.6	30.0	100%	-32.9	0.0	-10.0[Note 2]	3.0	55.1
Drilling Rig	CNP 072	110	1	110	17.6	18.0	60%	-32.9	-2.2	-10.0[Note 6]	3.0	67.9
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*250.0*	*30.0*	*100%*	*-55.9*	*0.0*	*0.0*	*3.0*	*59.1*
											Total	**69**
Grouting Works												
Generator	CNP 103	95	1	95	17.6	30.0	100%	-32.9	0.0	-10.0[Note 2]	3.0	55.1
Air Compressor	CNP 001	100	1	100	17.6	30.0	100%	-32.9	0.0	-10.0[Note 5]	3.0	60.1
Grout Mixer	CNP 105	95	1	95	17.6	30.0	100%	-32.9	0.0	-10.0[Note 5]	3.0	55.1
Grout Pump	CNP 106	105	1	105	17.6	30.0	100%	-32.9	0.0	-10.0[Note 5]	3.0	65.1
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*250.0*	*30.0*	*100%*	*-55.9*	*0.0*	*0.0*	*3.0*	*59.1*
											Total	**68**

PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Spoil Disposal												
Generator	CNP 103	95	1	95	17.6	30.0	100%	-32.9	0.0	-10.0[Note 2]	3.0	55.1
Excavator[Note 7]	QPME	99	1	99	17.6	15.0	50%	-32.9	-3.0	0.0	3.0	66.1
Dump Truck	CNP 068	105	1	105	17.6	2.0[Note 8]	6.7%	-32.9	-11.8	0.0	3.0	63.3
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*170.1*	*30.0*	*100%*	*-52.6*	*0.0*	*0.0*	*3.0*	*51.4*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*250.0*	*30.0*	*100%*	*-55.9*	*0.0*	*0.0*	*3.0*	*59.1*
											Total	**69**

Notes:

1. Distance is the slant distance assuming the noise source is 0.5m above ground and the first floor of the NSR in which ground floor (shops) is non-noise sensitive is ~5m above ground based on the site observation..
2. A shed made by acoustic mat will be provided for the generator to protect Charming Garden or Hoi Fu Court. A screening effect of -10dB is assumed for Block 8 of Charming Garden or Hoi Yu House of Hoi Fu Court.
3. No sound power level (SWL) for a cement tanker is recommended in the technical memorandum or "SWLs of Other Commonly Used PME". Item 18 of Table C.4 of BS5228 regarding cement mixer truck (discharging) with a sound pressure level of 75dB(A) at 10m is assumed.
4. Cement loading to the silo will be about 9 minutes as advised by the Contractor.
5. Air compressor, grout mixer and grout pump will be enclosed and a noise reduction of -10dB should be achieved.
6. Drilling rig will be provided with fabric so as to provide a noise reduction of -10dB with reference to the approved EIA Report
7. Small excavator which is similar to QPME EPD-00081 or EPD-00083 will be used due to limited site area.
8. Owing to the limited site area, a dump truck will only be operated less than 2 minutes within any 30 minutes.
9. “Works Area U” is the site storage at Hoi Ting Road Works Area and “Works Area V is Hoi Ting Road Works Area.
10. Only the works for Diaphragm Wall, Bulk Excavation/Fill - Soft or Concrete Works at Hoi Ting Road Works Area of XRL C811A will be carried out concurrently, of which the SWL of Diaphragm Wall was assumed to be the maximum as per Appendices 5.7 & 5.8 of the EIA Report.

Table 4-5 Construction Noise Impact Assessment at MK2a (HKMA David Li Kwok Po College)

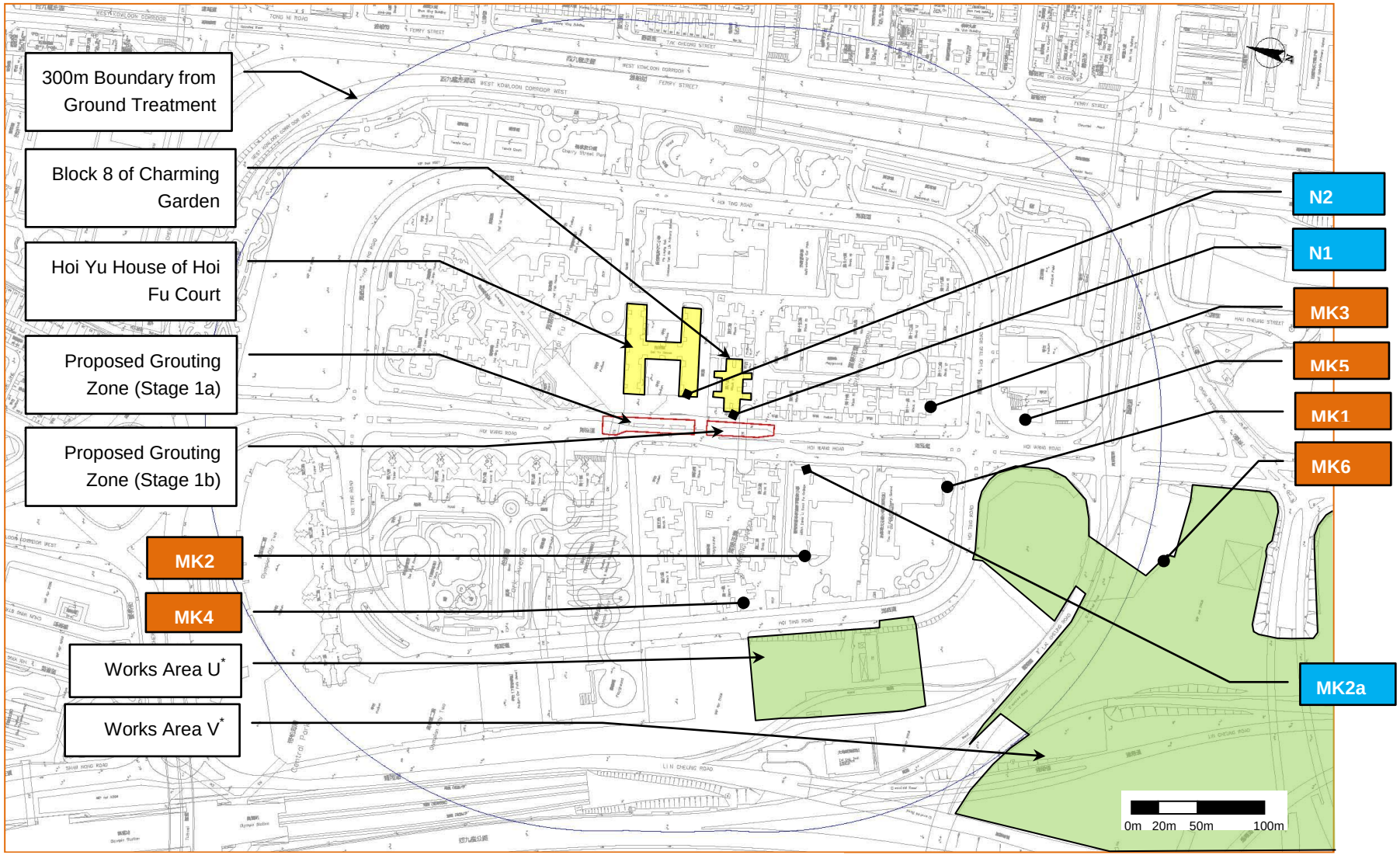
PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Cement Filling												
Generator	CNP 103	95	1	95	43.2	30.0	100%	-40.7	0.0	0.0[Note 2]	3.0	57.3
Cement Tanker[Note 3]	BS5228 C.4/18	103	1	103	43.2	9.0[Note 4]	30%	-40.7	-5.2	0.0	3.0	60.1
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*130.1*	*30.0*	*100%*	*-50.3*	*0.0*	*-10.0*[Note 11]	*3.0*	*43.7*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*150.1*	*30.0*	*100%*	*-51.5*	*0.0*	*-10.0*[Note 11]	*3.0*	*53.5*
											Total	**63**
Drilling Works												
Generator	CNP 103	95	1	95	43.2	30.0	100%	-40.7	0.0	0.0[Note 2]	3.0	57.3
Drilling Rig	CNP 072	110	1	110	43.0	18.0	60%	-40.7	-2.2	-10.0[Note 6]	3.0	60.1
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*130.1*	*30.0*	*100%*	*-50.3*	*0.0*	*-10.0*[11]	*3.0*	*43.7*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*150.1*	*30.0*	*100%*	*-51.5*	*0.0*	*-10.0*[11]	*3.0*	*53.5*
											Total	**63**
Grouting Works												
Generator	CNP 103	95	1	95	43.2	30.0	100%	-40.7	0.0	0.0[Note 2]	3.0	57.3
Air Compressor	CNP 001	100	1	100	43.2	30.0	100%	-40.7	0.0	-10.0[Note 5]	3.0	52.3
Grout Mixer	CNP 105	95	1	95	43.2	30.0	100%	-40.7	0.0	-10.0[Note 5]	3.0	47.3
Grout Pump	CNP 106	105	1	105	43.2	30.0	100%	-40.7	0.0	-10.0[Note 5]	3.0	57.3
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*130.1*	*30.0*	*100%*	*-50.3*	*0.0*	*-10.0*[Note 11]	*3.0*	*43.7*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*150.1*	*30.0*	*100%*	*-51.5*	*0.0*	*-10.0*[Note 11]	*3.0*	*53.5*
											Total	**62**

PME	ID code	SWL, dB(A)	No. PME	Total SWL, dB(A)	Slant dist, m [Note 1]	Operation time per 30 min, min	% of time	Distance correction, dB(A)	% on time correction, dB(A)	Screening, dB(A)	Façade correction, dB(A)	PNL, dB(A)
Spoil Disposal												
Generator	CNP 103	95	1	95	43.2	30.0	100%	-40.7	0.0	0.0[Note 2]	3.0	57.3
Excavator[Note 7]	QPME	99	1	99	43.2	15.0	50%	-40.7	-3.0	0.0	3.0	58.3
Dump Truck	CNP 068	105	1	105	43.2	2.0[Note 8]	6.7%	-40.7	-11.8	0.0	3.0	55.5
Possible Concurrent Works at XRL C811A												
Works Area U[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*101*	*130.1*	*30.0*	*100%*	*-50.3*	*0.0*	*-10.0*[Note 11]	*3.0*	*43.7*
Works Area V[Notes 9, 10]	*N/A*	*N/A*	*N/A*	*112*	*150.1*	*30.0*	*100%*	*-51.5*	*0.0*	*-10.0*[Note 11]	*3.0*	*53.5*
											Total	**63**

Notes:

1. Distance is the slant distance assuming the noise source is 0.5m above ground and the first floor of the NSR in which ground floor is a covered playground and non-noise sensitive is ~5m above ground based on the site observation.
2. A shed made by acoustic mat will be provided for the generator to protect Charming Garden or Hoi Fu Court. A screening effect of -10dB is assumed for Block 8 of Charming Garden or Hoi Yu House of Hoi Fu Court.
3. No sound power level (SWL) for a cement tanker is recommended in the technical memorandum or "SWLs of Other Commonly Used PME". Item 18 of Table C.4 of BS5228 regarding cement mixer truck (discharging) with a sound pressure level of 75dB(A) at 10m is assumed.
4. Cement loading to the silo will be about 9 minutes as advised by the Contractor.
5. Air compressor, grout mixer and grout pump will be enclosed and a noise reduction of -10dB should be achieved.
6. Drilling rig will be provided with fabric so as to provide a noise reduction of -10dB with reference to the approved EIA Report
7. Small excavator which is similar to QPME EPD-00081 or EPD-00083 will be used due to limited site area.
8. Owing to the limited site area, a dump truck will only be operated less than 2 minutes within any 30 minutes.
9. "Works Area U" is the site storage at Hoi Ting Road Works Area and "Works Area V is Hoi Ting Road Works Area.
10. Only the works for Diaphragm Wall, Bulk Excavation/Fill - Soft or Concrete Works at Hoi Ting Road Works Area of XRL C811A will be carried out concurrently, of which the SWL of Diaphragm Wall was assumed to be the maximum as per Appendices 5.7 & 5.8 of the EIA Report.
11. The view of the works at XRL C811A on MK2a would be fully screened and so a screening effect of -10dB should be applied in accordance with GW-TM.

Figure 4-1 NSR Locations

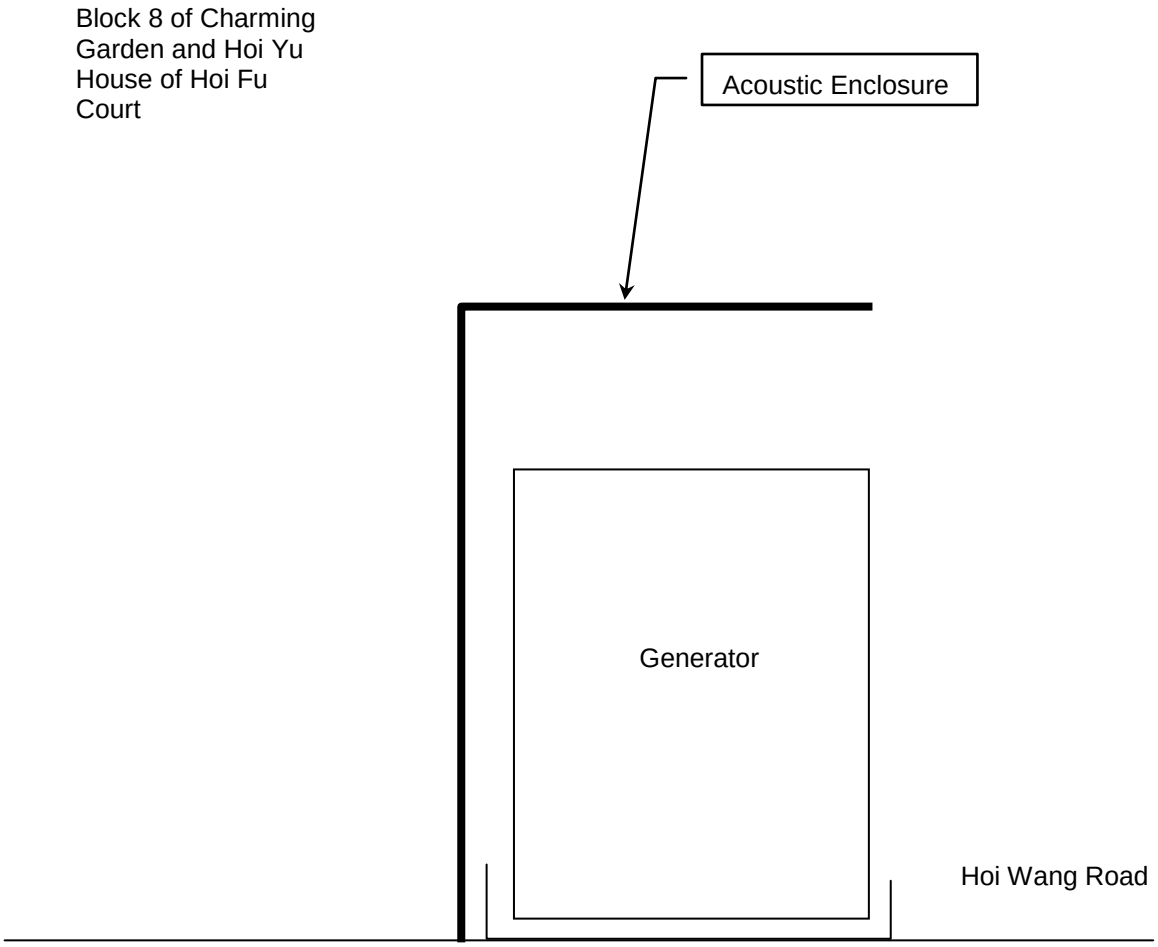


Note: * Works area numbers are referred to Figure NOL / ERL / 300 / C / XRL / ENS / M50 / 008

The Noise Sensitive Receivers (NSRs) identified in the EIA Report

The Representative NSRs identified in this ERR

Figure 4-2 Conceptual Design of the Acoustic Enclosure for the Generator



5 WATER QUALITY IMPACT REVIEW

5.1 Introduction

5.1.1 A water quality impact assessment was undertaken in the EIA to evaluate the potential environmental impacts associated with the construction and operation of the XRL. Since the proposed jet grouting works were not assessed in the approved EIA, the water quality impacts arising from such works should be assessed.

5.1.2 Since the proposed works will not affect the water quality during the operation stage, the operation water quality impacts are not addressed.

5.2 Evaluation of Impacts

5.2.1 The surplus grout+soil mixture that is air lifted to the surface as a slurry will require treatment via sedimentation tanks to settle out the grout and soil as a sludge, which is disposed of at an approved disposal facility. The treated water is disposed of in accordance with the Discharge Licence to be obtained under the Water Pollution Control Ordinance and will therefore be considered acceptable.

5.3 Conclusions

5.3.1 Overall, there will be more surface water impacts compared to that assessed in the original EIA, due to the use of grout in the proposed works. However, with the provision of treatment such as sedimentation tanks, no significant additional water quality impacts are anticipated. No changes to the EM&A requirements are needed.

6 WASTE MANAGEMENT IMPLICATION REVIEW

6.1 Introduction

6.1.1 An assessment of the handling and disposal of wastes was undertaken in the EIA to evaluate the potential waste impacts associated with the construction and operation of the XRL Project. Since the proposed jet grouting works were not assessed in the approved EIA, the waste impacts arising from such works should be assessed.

6.1.2 Since the proposed works will not affect the handling and disposal of waste during the operation stage, the operation waste impacts are not addressed.

6.2 Evaluation of Impacts

6.2.1 The types and quantities of wastes to be generated and disposed of during the construction stage were estimated in the EIA. The waste types identified include construction and demolition (C&D) materials, sediments, chemical wastes, general refuse and sewage. The potential environmental impacts from the management of solid wastes (i.e. potential hazards, air and odour emissions, noise, wastewater discharges and transport) and the impacts on the capacity of waste collection, transfer and disposal facilities were also assessed in the EIA.

6.2.2 As stated in ***Section 2.1.1***, the total treatment volume will be some 3,000m^3. The jet grouting works will also generate a grout+water slurry. Assuming that the generated spoil will double the treated volume due to mixing with grout + water, the maximum volume of spoil should be some 6,000m^3, which should not be a significant increase compared with the wet spoil (1,511,000m^3) estimated in the EIA (Table 10.16 of the EIA Report refers). The proposed jet grouting works are therefore not anticipated to generate significant additional waste.

6.3 Conclusions

6.3.1 Overall, there will be more waste generated compared to that assessed in the original EIA, due to the generation of additional sludge from the jet grouting works. However, the amount of sludge from the proposed works would not be significant when compared to the overall quantities evaluated in the EIA.

6.3.2 Similarly, the impacts associated with handling and transportation of this additional waste (i.e. potential hazards, air and odour emissions, noise, wastewater discharges and transport) would not be significant. No additional mitigation measures are therefore required. No changes to the EM&A requirements are needed.

7 CONCLUSIONS

7.1.1 Prior to the passage of the TBM drive beneath Hoi Wang Road, to be conducted under Contract 820, ground treatment works are required for a number of existing buildings. The ground beneath Hoi Yu House of Hoi Fu Court and Block 8 of Charming Garden are to be treated first in Stage 1. Ground treatment works were not assessed in the previously approved EIA and so an environmental review of the potential environmental impacts arising from the works is necessary to demonstrate compliance with the findings of the EIA Report.

7.1.2 This ERR has concluded the following relating to the proposed jet grouting works:

- **Air Quality (Dust).** No significant additional air quality impacts are expected from the proposed works because the release of dust from plant and equipment are controlled by fabric filters at the outlets of cement containers. No mitigation measures are therefore required. No changes to the EM&A requirements are needed.
- **Noise.** No unacceptable construction noise impact is anticipated due to the use of plant and equipment for the proposed jet grouting works in accordance with the assessment results. No changes to the EM&A requirements should be needed.
- **Water Quality.** There will be greater surface water impacts compared to that assessed in the original EIA, due to the use of grout in the proposed works. However, with the provision of treatment of surplus grout+soil slurry via sedimentation tanks, no significant additional water quality impacts are anticipated. No changes to the EM&A requirements are needed.
- **Waste.** There will be more waste generated compared to that assessed in the original EIA, due to the generation of additional sludge from the jet grouting works. However, the amount of sludge from the proposed works would not be significant when compared to the overall quantities evaluated in the EIA. Similarly, the impacts associated with handling and transportation of this additional waste would not be significant. No additional mitigation measures are therefore required. No changes to the EM&A requirements are needed.

7.1.3 Condition 1.7 of the current VEP (EP-349/2009/B) requires that:

> *"The Permit Holder shall ensure that the Project is designed, constructed and operated in accordance with the information and all recommendations described in the EIA Report (Register No.: AEIAR- 143/2009), the application documents for an environmental permit including all attached documents (Application No. AEP-349/2009), the applications for variation of an environmental permit including all attached documents (Application Nos. VEP-323/2010 and VEP-334/2010), other relevant documents in the Register; and the information or mitigation measures described in this Permit, and mitigation measures to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in this Permit, and mitigation measures to be recommended under ongoing surveillance and monitoring activities during all stages of the Project"*

7.1.4 A VEP is required only if there is a need to change the conditions of the current EP. Based on this environmental review, there are a number of minor environmental impacts resulting from proposed jet grouting works but, overall, there will be similar environmental impacts to those anticipated in the EIA. The only mitigation measure required would be the provision of sedimentation tanks for maintaining water quality.

7.1.5 The proposed jet grouting works are not considered not to be a material change in accordance with Sections 6.1 and 6.2 of the *Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)* because:

- There is no change in the ultimate design of the tunnels and the proposed works would not adversely affect existing or planned community, ecologically important areas or sites of cultural heritage;
- No reclamation or dredging will be involved in the works;
- No significant increase in pollution emissions, discharges or waste generation due to the proposed jet grouting works;
- No increase in throughput or scale of the project;
- Rare, endangered or protected species, or an important ecological habitat, or a site of cultural heritage would not be affected; and
- The environmental performance requirements (air, noise, waste, water and risk) would not be exceeded or violated by the proposed works.

7.1.6 As such, there is no material change to the Project as a result of the proposed works. There is no need to change any of the conditions of the current EP – the proposed jet grouting works can be conducted without breaching any of the conditions of the current EP – and so it is considered unnecessary to apply for a VEP at this time.

7.1.7 The environmental performance requirements set out in the EIA report will be fully met if jet grouting is used. As such, the proposed works are considered to be no less environmentally acceptable than that assessed in the EIA. It is therefore considered that application for a VEP is not warranted and that the proposed works can be carried out, if DBJV wishes, under the current EP.

Appendix K

Modification in Tai Kong Po Emergency Access Point Building

Tai Kong Po Plant Building

Tai Kong Po Plant Building (TKP) sits directly above the railway tracks and accommodates some of its plant within the shaft connecting the tunnels to the surface. The size of the shaft was kept to the minimum necessary for accessing the tunnels during construction. In order to minimise visual impact of the building above ground, the space within the shaft was fully utilised to house plant and other space requirements of the building.

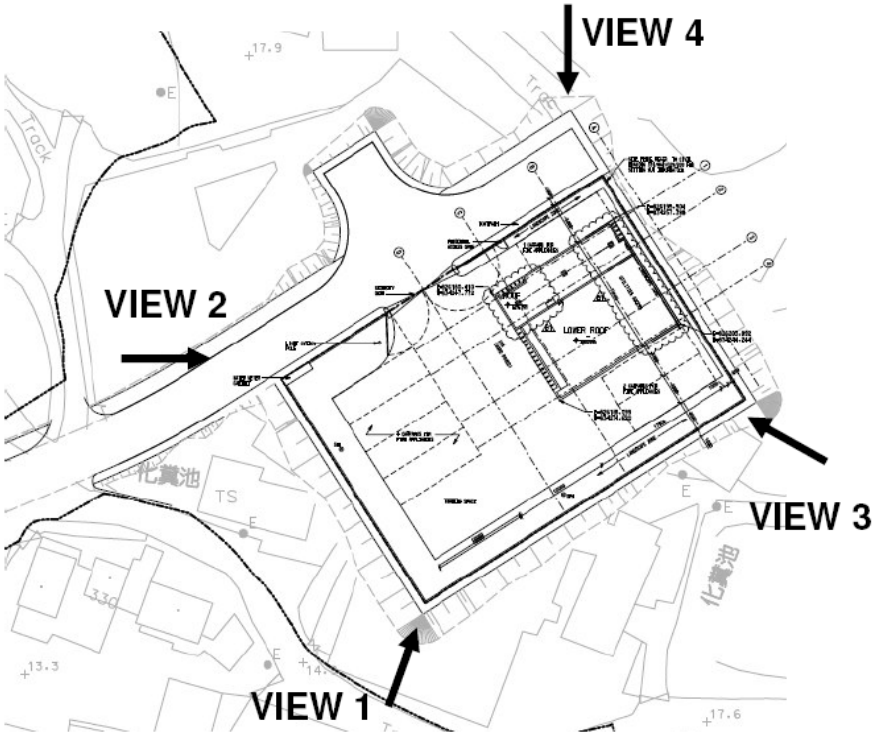
In order to cater for a number of FSD requests, the design of TKP has been modified. To accommodate the additional space required by FSD while at the same time maintaining the size of the shaft has meant that the building's footprint at ground level has been enlarged. It has been possible to limit the increase in size to one plan dimension only and the original building heights have been maintained. The increase in the footprint is approximately 66m^2 with the plan dimensions increasing from 15.6m x 13.7m to 15.6m x 17.9m.

The increase in size was able to be accommodated within the existing gazettal boundary. No additional land is required and the original boundary fence remains unchanged. The additional 66m^2 required for the enlarged building footprint was converted from Service Access which is now exclusively from two rather than three sides. The building was always well screened from the surrounding area by planting and this has been maintained. The overall massing of the building has increased but the impact has been kept to a minimum. A comparison of overall massing is illustrated in the attached images.

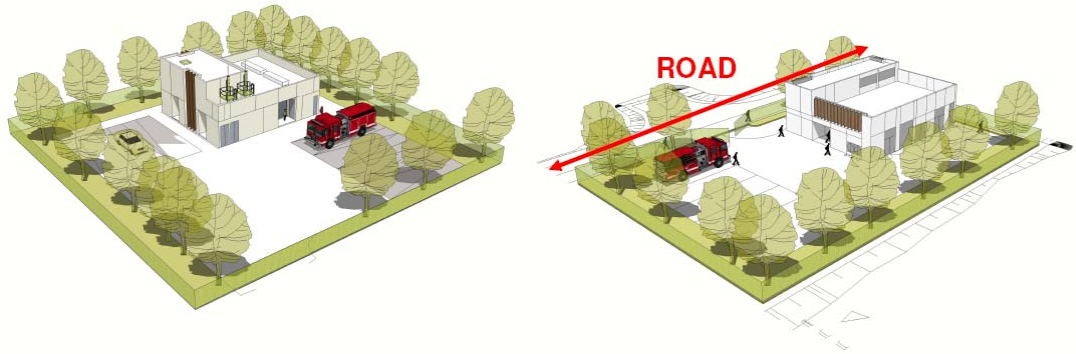
TKP is within an agricultural zone on the site of an abandoned pig farm. The increase in the footprint of the building itself is relatively small and is still within the permanent works boundary as proposed in the EIA. There are no changes to the proposed lot size, the height of the building or the landscaping proposals. As a result, there will be no incremental impacts to Ecology, Fisheries, Landscape & Visual, Cultural Heritage, Land Contamination, Waste Management, Water Quality, Air Quality and Hazard to Life beyond those identified in the Final EIA Report.

TKP is an emergency access point and has no tunnel ventilation hence no fixed plant noise. Therefore, there should be no airborne noise impact of an

increase in footprint. Similarly, there will be no change to Ground-borne Noise.



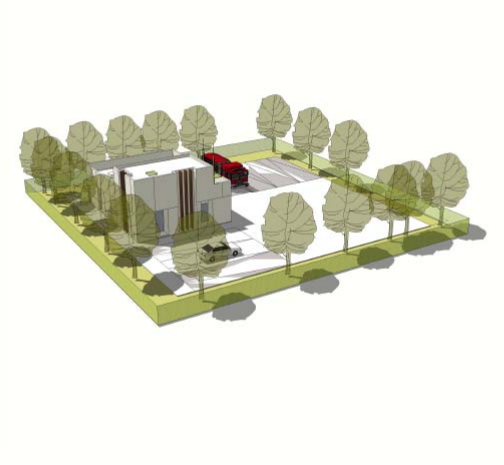
view 1



TKP EIA PROPOSAL

TKP REVISED PROPOSAL

view 2

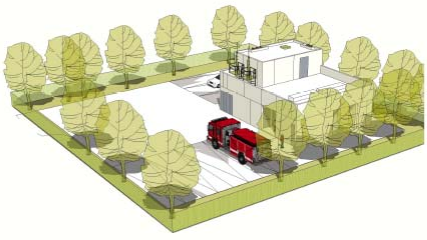


TKP EIA PROPOSAL

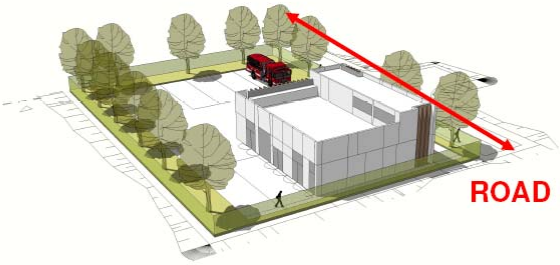


TKP REVISED PROPOSAL

view 3

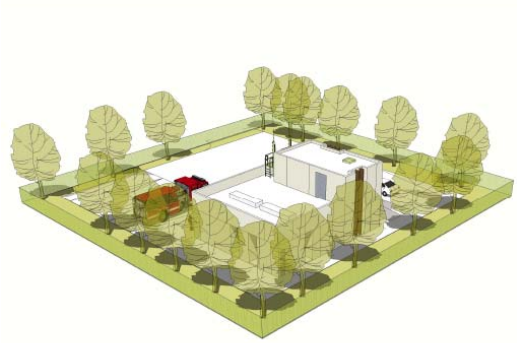


TKP EIA PROPOSAL

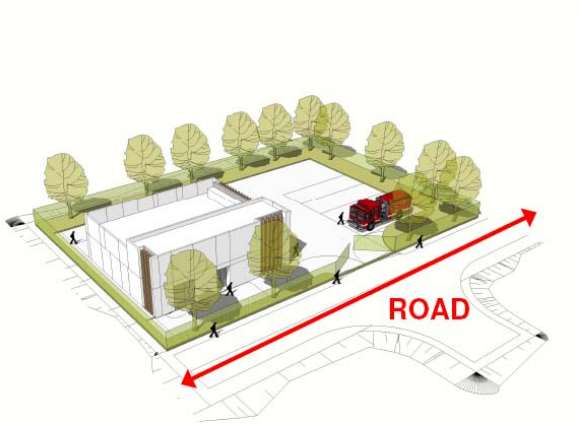


TKP REVISED PROPOSAL

view 4



TKP EIA PROPOSAL



TKP REVISED PROPOSAL